

University Court: 29.03.2023
Appendix-4

AMENDMENTS TO ORDINANCES
AND
APPENDICES TO THE ORDINANCES

(Amendments approved by the Executive Council in its meetings
dated 25.03.2022, 18.08.2022, 08.12.2022)



UNIVERSITY OF DELHI

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Note : Notifications to all the above mentioned amendments regarding the syllabi of 1st & 2nd Semester of courses under UGCF are available on the website of the University {[NEP: UGCF 2022 Syllabi - Delhi University \(du.ac.in\)](#)}.

1. Amendment to Appendix -II-A to the Ordinance V (2-A) of the Ordinances of the University vide EC Resolution 18-1-20 dated 18.08.2022 regarding Value Addition Courses (VAC)

Following addition be made to Appendix-II-A to the Ordinance V (2-A) of the Ordinances of the University;

Add the following:

**VALUE ADDITION COURSES (VACs)
UNDER
UGCF-2022
LISTED UNDER APPENDIX-II-A TO THE ORDINANCE V (2-A) OF THE
ORDINANCES OF THE UNIVERSITY
(With effect from Academic Year 2022-23)**

In pursuance of the objectives outlined in the National Education Policy 2020, the Value Addition Courses (VACs) seek to fulfil the mandate of providing holistic education to the students. As the NEP elucidates, “the purpose of the education system is to develop good human beings capable of rational thought and action, possessing compassion and empathy, courage and resilience, scientific temper and creative imagination, with sound ethical moorings and values.” The Value Addition Courses will introduce students to the rich heritage of the nation as well as to important social concerns of the current times, helping them to make connections between what they learn and how they live.

The courses have a sound theoretical base as well as appropriate hands-on components. At the same time, they clearly set out measurable and attainable Learning Outcomes. Knowledge, in essence, being integrated, these courses are essentially multidisciplinary in nature.

Designed to ignite the intellectual curiosity of the learners, the Value Addition courses will inspire and guide them in their journey of personal and professional development making them thoughtful, well-rounded, and creative individuals, with a sense of service and responsibility towards the Nation.

A student who pursues any undergraduate programme in the University and its Colleges is offered a pool of Value Addition Courses, from which he has to choose one to study in the first Semester. A list of such courses as passed by the Executive Council in its meeting dated 18.08.2022 is as below:

| SL.NO. | COURSE TITLE | TOTAL CREDITS: 2 |
|--------|---|------------------|
| 1 | Ayurveda and Nutrition | |
| 2 | Constitutional Values and Fundamental Duties | |
| 3 | Culture and Communication | |
| 4 | Digital Empowerment | |
| 5 | Emotional Intelligence | |
| 6 | Ethics and Culture | |
| 7 | Ethics and Values in Ancient Indian Traditions | |
| 8 | Financial Literacy | |
| 9 | Fit India | |
| 10 | Gandhi and Education | |
| 11 | Ecology and Literature | |
| 12 | National Cadet Corps-I | |
| 13 | Panchkosha: Holistic Development of Personality | |
| 14 | Reading Indian Fiction in English | |
| 15 | Science and Society | |
| 16 | Social and Emotional Learning | |
| 17 | Sports for Life-I | |
| 18 | Swachh Bharat | |
| 19 | The Art of Being Happy | |
| 20 | Vedic Mathematics-I | |
| 21 | Yoga: Philosophy and Practice | |
| 22 | भारतीय भक्ति : परम्परा और मानव मूल्य | |
| 23 | साहित्य संस्कृति और सिनेमा | |
| 24 | सृजनात्मक लेख के आयाम | |

(VAC 1: AYURVEDA AND NUTRITION)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|------------------------|---------|-----------------------------------|----------|---------------------|--------------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Ayurveda and Nutrition | 02 | 1 | 0 | 1 | Pass in Class 12 th | NIL |

Learning Objectives

The Learning Objectives of the course are:

- To introduce the basic principles of nutrition in Ayurveda
- To link the Ayurvedic nutrition with modern dietary practices for health
- To analyse basic tenets of traditional diets and health recipes
- To understand the contemporary food habits in everyday life

Learning outcomes

The Learning outcomes of the Course are:

- Awareness of traditional food cultures of India
- Evaluate changing food patterns and lifestyle over the years
- Understand Indian Knowledge Systems (IKS) and key Vedic principles with respect to Food and Nutrition
- Apply basic tenets of traditional diets for health and disease
- Prepare selected healthy recipes based on Ayurvedic principles

SYLLABUS OF AYURVEDA AND NUTRITION

UNIT – I Introduction to Ayurvedic Nutrition

(4 Weeks)

- Ayurveda and Indian food cultures
- Nutrition and lifestyle transition over the years
- Regional Food Traditions of India

UNIT – II Basic principles of Food and Nutrition and Ayurveda (6 Weeks)

- Understanding rich sources of nutrients
- Concept of Doshas & assessment
- Ayurvedic Principles of food habits and factors determining quality of food (Ahara vidhi visheshayatana)
- FSSAI regulations on Ayurvedic Aahar

UNIT – III Ayurvedic Diets (5 Weeks)

- Principles of Diet: Aharavidhi vidhan, Sattvic, Rajasi, Tamasic foods
- Incompatible food (Viruddha Ahara), Pathya; Apathya; Viprita Ahaar
- Lifestyle Management with Dincharya and Ritucharya
- Application of Ayurvedic diets to stress linked food behaviour

Practical component (if any) – (15 Weeks)

- Visit your local market and classify the available food items according to Sattvic, Rajasi, Tamasic foods
- Conduct a survey of 10-15 households in your locality:
 - i. to study food behaviour and analyse them in light of Ayurvedic dietary principles of Sattvic, Rajasi, Tamasic
 - ii. to study the food consumption patterns and intake of incompatible food: Viruddha Ahara, Pathya; Apathya; Viprita Ahaar
 - iii To know about their adopted lifestyle Dincharya and Ritucharya
- Students are required to visit available e-resources of University of Delhi, Ministry of Ayush with regard to Ayurveda and Nutrition.
- If required, students can share their experiences in the form of a Project Report.
- The students may share their experiences in the form of audio-visual presentations of 15-30 minutes.
- Any other Practical/Practice as decided from time to time

Essential Readings

- Rastogi S (2014) Ayurvedic Science of Food and Nutrition. ASIN: BOOHWMV094, Springer: ISBN-13:978-1461496274
- Rastogi S (2010) Building bridges between Ayurveda and modern science. Int J Ayurveda Res. 1(1):41-46.
- FSSAI regulations on Ayurveda Aahar Regulations 2022. Gazette of India CG-DL-E-07052022-235642. New Delhi, Friday, May 6, 2022/ Vaisakha 16, 1944.
- Frawley D (2012) Ayurvedic healing: A comprehensive guide. Lotus Press, India.
- <https://iksindia.org/>: Indian Knowledge Systems

Suggested Readings

- Charaka Samhita, Charaka (1998) In: Tripathi BN (ed) Sutra Stahan Maharashitiya Adhyay. Chaukhamba Orientelia, Varanasi.
- Kapoor Kapil & Singh AK Indian Knowledge Systems Volume – 1. Indian Institute of Advanced Study Shimla. Published by DK Printworld (P) Ltd, N.Delhi.
<https://www.lkouniv.ac.in>.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time



VAC 1: CONSTITUTIONAL VALUES AND FUNDAMENTAL DUTIES**Credit distribution, Eligibility and Pre-requisites of the Course**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|--------------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Constitutional Values And Fundamental Duties | 02 | 1 | 0 | 1 | Pass in Class 12 th | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- Enrich students with knowledge and relevance of the Constitution.
- Develop awareness about Duties and Values.
- Inculcate a sense of Constitutionalism in thought and action.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Understand the Constitution and its relevance
- Appreciate the values and goals embedded in the Constitution.
- Recognise the importance of Fundamental Duties enshrined in the Constitution.
- Apply the spirit of fundamental values and duties in everyday national life.

SYLLABUS OF CONSTITUTIONAL VALUES AND FUNDAMENTAL DUTIES**UNIT – I The Constitution of India – An Introduction (5 Weeks)**

- Federal Republic, Rule of Law, Separation of Powers
- Sovereignty, Socialism, Democracy
- Secularism and Sarva Dharma Sama Bhava

UNIT – II Constitutional Values (5 Weeks)

- Justice: Social, Political, Economic

- Liberty: Thought, Expression, Belief, Faith, Worship
- Equality: Equality before law & equal application of laws
- Fraternity: Dignity, Unity and Integrity

UNIT – III Fundamental Duties

(5 Weeks)

- Reflecting on the ancient Indian notions of righteousness and duty consciousness
- Fundamental Duties- Article 51A [(a) – (k)]
- Legal status of Fundamental Duties - Judicial approach

Practical component (if any) –

(15 Weeks)

- Reflections on some of the constitutional values/ fundamental duties and its contemporary relevance in day-to-day national life through group discussions and projects.
- Conduct workshops to spread awareness on the Fundamental Duties and Values.
- Students are required to conduct a survey (minimum 25 respondents) on assessing the awareness of the constitutional duties amongst the citizens.
- Students may share their experiences on Fundamental Duties and Values in the form of a Project Report.
- Any other Practical/Practice as decided from time to time

Essential/recommended readings

- Preamble to the Constitution of India, 1950.
- The Constitution of India, Articles - 14, 19, 21.
- The Constitution of India, Fundamental Duties [Ar. 51 A (a) – (k)].

Suggested readings

- Durga Das Basu, et al., Introduction to the Constitution of India (LexisNexis, 26th edn, 2022).
- Leila Seth, We, the Children of India: The Preamble to Our Constitution (New Delhi, Puffin Books, Penguin Books India, 2010).
- Mahendra Pal Singh, V.N. Shukla's Constitution of India, (Eastern Book Company, Lucknow, 13th revised edn. 2017)
- B.R. Ambedkar Selected Speeches, (Prasar Bharati, New Delhi, 2019) available at: https://prasarbharati.gov.in/whatsnew/whatsnew_653363.pdf.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

VAC: Culture and Communication

| Course Title & Code | Credits | Credit Distribution of the Course | | | Eligibility Criteria | Prerequisite of the Course |
|------------------------------|---------|--------------------------------------|----------|------------------------|-----------------------------------|----------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Culture and Communication | 02 | 1 | 0 | 1 | Pass in Class 12 th | NIL |

Learning Objectives:

- To focus on traditional values disseminated from Indian cultural heritage.
- To understand the interconnections between the legacy of our past and needs of our contemporary society.
- To learn to adapt, interact and celebrate our diversity and pluralistic culture.
- To develop communication skills in speaking, listening, reading and writing and apply them in our quotidian life as young citizens of contemporary India.
- To integrate ethical values and life skills.

Course Outcomes

- Students will be able to appreciate the relevance of ancient Indian wisdom and core ethical values in our contemporary life.
- Students will be able to engage in a dialogue between the past and the present and inculcate the best principles towards a meaningful life.
- Students will be encouraged to involve themselves in team work and group activities to address challenges faced in metropolitan cities.
- Students will be able to develop communication skills, that is, analytical reading, empathetic listening, considerate speaking as well as informed writing.

- Extension activities will equip the students, drawn from diverse backgrounds, with life skills and confidence to integrate with a multicultural environment and work towards an inclusive community.
- Students will be encouraged to envisage and work towards an ethically robust society and thereby strengthen the nation.

| | |
|---|------------------|
| UNIT - I Ethical Values from Indian Cultural Heritage <ul style="list-style-type: none"> • <i>Vasudhaiva Kutumbakam</i> • United We Stand, Divided We Fall • <i>Ek Bharat, Shresht Bharat</i> | 3 Classes |
| UNIT - II Developing Life Skills <ul style="list-style-type: none"> • Empathy • Adaptability • Conserving our natural resources • Sharing knowledge resources | 4 Classes |
| UNIT - III Effective Communication in Everyday Life <ul style="list-style-type: none"> • Empathetic listening • Considerate speaking • Analytical reading • Informed writing | 8 Classes |

Practical/ Practice Component

(15 Sessions of 2 hours each= 30 hours)

As hands-on experience is an essential component of the course, this section will focus on the practical aspects to correlate with the fundamental principles and learnings of the theory portion. Students will be encouraged to use the communication tools learnt through Unit 3 and corroborate the continuities of core principles studied in Unit 1 and 2.

- Students will be asked to conduct surveys/interviews in their neighbourhood or commuting routes to assess the nature and quality of negotiating our cultural diversity and pluralist traditions.

- Students would be assigned visits to old-age homes, hospitals, cancer wards, etc. to interact and write about their experiences with old people, caregivers, patients, nursing staff, helpers, etc.
- They will also be assigned visits to historically important places and monuments within the city and also converse with the tourists in order to trace a comprehensive view of the rich cultural history of India. They may create video documentaries, take and record tourists' interviews and/or write a journal entry of the visit using the communication skills learnt.
- Students shall make group presentations or individual reports on the activities undertaken. Discussions with classmates and the teacher shall be undertaken to evolve clarity of vision on the ethical values and effective communication skills learned through this course.
- Any other related activity.

Essential Readings:

- Aurobindo, Sri. *Introduction To The Gita*. Sri Aurobindo Ashram Press, 2017. pp 23-40
- Dhanavel. S.P. *English and Soft Skills*. Orient Black Swan, 2010.
- Haksar, A. N. D. 'Chanakya Niti Shastra', *Chanakya Niti*. India, Penguin Random House India Private Limited, 2020.
- Malik, Keshav. "A Dehumanized Environment". *Culture of Peace: Experience and Experiment*, edited by Baidyanath Saraswati. Indira Gandhi National Centre for the Arts, New Delhi, 1999. pp 77-79
- Murthy, Sudha. 'How to Beat the Boys', *Three Thousand Stitches: Ordinary People, Extraordinary Lives*. Penguin Books, 2017.
- Ramanujan, A.K. 'A Flowering Tree', *Cultural Diversity, Linguistic Plurality & Literary Traditions in India*. Department of English, OUP, 2015. pp 125-138.
- Vande Mataram Song from Chatterji, Bankimchandra. *Anandamath, or The Sacred Brotherhood*. Translated by Julius J. Lipner, Oxford University Press, 2005. pp 297-299.
- Vivekananda, Swami. "Response to the Welcome and Address at the Final Session." *Swami Vivekananda: A Contemporary Reader*, edited by Makarand R. Paranjape, Routledge, New Delhi, 2015, pp. 3–4, 18–19.

VAC 1: DIGITAL EMPOWERMENT

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------|---------|-----------------------------------|----------|---------------------|--------------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Digital Empowerment | 02 | 1 | 0 | 1 | Pass in Class 12 th | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- Understand the digital world and need for digital empowerment
- Create awareness about Digital India.
- Explore, communicate and collaborate in cyberspace.
- Building awareness on cyber safety and security.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Use ICT and digital services in daily life.
- Develop skills to communicate and collaborate in cyberspace using social platforms, teaching/learning tools.
- Understand the significance of security and privacy in the digital world.
- Evaluate ethical issues in the cyber world

SYLLABUS OF DIGITAL EMPOWERMENT

UNIT – I Digital inclusion and Digital Empowerment

(5 Weeks)

- Needs and challenges
- Vision of Digital India: DigiLocker, E-Hospitals, e-Pathshala, BHIM, e-Kranti (Electronic Delivery of Services), e-Health Campaigns
- Public utility portals of Govt. of India such as RTI, Health, Finance, Income Tax filing, Education

UNIT – II Communication and Collaboration in the Cyberspace (4 Weeks)

- Electronic Communication: electronic mail, blogs, social media
- Collaborative Digital platforms
- Tools/platforms for online learning
- Collaboration using file sharing, messaging, video conferencing

UNIT – III Towards Safe and Secure Cyberspace (4 Weeks)

- Online security and privacy
- Threats in the digital world: Data breach and Cyber Attacks
- Blockchain Technology
- Security Initiatives by the Govt of India

UNIT – IV Ethical Issues in Digital World (2 Weeks)

- Netiquettes
- Ethics in digital communication
- Ethics in Cyberspace

Practical component (if any) (15 Weeks)

- The course should be conducted in an interactive mode through demonstration, using appropriate tools.
- Conduct workshops on e-services initiated under Digital India.
- Spread digital literacy/awareness amongst the vulnerable groups and marginalised sections of the society like street vendors, domestic help, security guards, senior citizens.
- Students will take up team activities/ projects exploring digital services in the areas such as education, health, planning, farming, security, cyber security, financial inclusion, and justice, e-Kranti.
- Any other Practical/Practice as decided from time to time.

Essential Readings /Online Resources

- Rodney Jones and Christoph Hafner. "Understanding digital literacies: A practical
- Introduction". Routledge Books, 2nd edition, 2021.

- <https://www.digitalindia.gov.in>
- <https://www.digilocker.gov.in>
- <https://www.cybercrime.gov.in>
- <https://www.cybersafeindia.in>
- <https://www.meity.gov.in/cyber-surakshit-bharat-programme>

Suggested Readings

- David Sutton. "Cyber security: A practitioner's guide", BCS Learning & Development Limited, UK, 2017.
- <https://www.mha.gov.in/document/downloads/cyber-safety-handbook>

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time



VAC 1: EMOTIONAL INTELLIGENCE

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|------------------------|---------|-----------------------------------|----------|---------------------|--------------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Emotional Intelligence | 02 | 1 | 0 | 1 | Pass in Class 12 th | NIL |

Learning Objectives

The Learning Objectives of the course are:

- Introduce the concept of emotional intelligence, its models and components.
- Understand the significance of emotional intelligence in self-growth and building effective relationships.
- Identify the measures of emotional intelligence.

Learning outcomes

The Learning Outcomes of the course are

- Self-Awareness, Self-Management, Social Awareness & Relationship Management.
- Discover personal competence and techniques of building emotional intelligence.
- Gain insights into establishing positive relationships.

SYLLABUS OF EMOTIONAL INTELLIGENCE

UNIT – I Fundamentals of Emotional Intelligence

(4 Weeks)

- Nature and Significance
- Models of emotional intelligence: Ability, Trait and Mixed
- Building blocks of emotional intelligence: self-awareness, self-management, social awareness, and relationship management

UNIT – II Personal Competence

(5 Weeks)

- Self Awareness: Observing and recognizing one's own feelings, Knowing one's strengths and areas of development.
- Self Management: Managing emotions, anxiety, fear, and anger.

UNIT – III Social Competence

(3 Weeks)

- Social Awareness: Others' Perspectives, Empathy and Compassion
- Relationship Management: Effective communication, Collaboration, Teamwork, and Conflict management

UNIT – IV Emotional Intelligence: Measurement and Development (3 Weeks)

- Measures of emotional intelligence
- Strategies to develop and enhance emotional intelligence

Practical component (if any)

(15 Weeks)

Students will practice self-management techniques to regulate emotions such as

- Mindfulness
- Conditioned relaxation response
- Boundary setting
- Any other

Students will practice various techniques of relationship management such as engaging with:

- Display of empathy
- Effective communication
- Teamwork
- Conflict resolution
- Any other
- If required, students can share their experiences in the form of a Project Report.
- Any other Practical/Practice as decided from time to time

Essential/recommended readings

- Bar-On, R., & Parker, J.D.A.(Eds.) (2000). The handbook of emotional intelligence. San Francisco, California: Jossey Bros.
- Goleman, D. (2005). Emotional Intelligence. New York: Bantam Book.
- Sternberg, R. J. (Ed.). (2000). Handbook of intelligence. Cambridge University Press.

Suggested Readings

- HBR's 10 Must Reads on Emotional Intelligence (2015)

- HBR's 10 Must Reads on Managing Yourself (2011)
- Self Discipline: Life Management, Kindle Edition, Daniel Johnson.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time



VAC 1: ETHICS AND CULTURE

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------|---------|-----------------------------------|----------|---------------------|--------------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Ethics and Culture | 02 | 1 | 0 | 2 | Pass in Class 12 th | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To help students explore ethical and cultural dimensions of their lives.
- To provides a forum for students to pause, revisit their assumptions and beliefs, and become mindful of their thoughts, emotions and actions.
- To give the students an opportunity to express themselves and inquire into their decision making processes.
- To cultivate ethical values and participate in the creation of a society based on acceptance, compassion, and justice.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Explore perspectives on ethics in thoughts, words and actions
- Evolve ethical decision making practises
- Understand the need for an ethical society and culture
- Introspect, become conscious of and assess one's stance in life
- Cultivate empathy, tolerance and compassion
- Apply the values learnt in the course to everyday life

SYLLABUS OF ETHICS AND CULTURE

UNIT – I Introduction - The Basis of Ethics

(3 Weeks)

- Getting to Know Each Other
- What to Expect from the Course?
- Recognition of Our Common Humanity
- Empathy, Compassion and Justice

UNIT – II The Role of Intelligence, Reason and Emotions

(4 Weeks)

- Discernment: What Is The Right Thing To Do?
- The Art of Conflict Resolution
- Destructive and Constructive Emotions
- The Need for Emotional Balance

UNIT – III Cultivating Inner Values- Ethics in the World of Work and Play

(4 Weeks)

- Training the Mind: Mindfulness and Kindness
- Meditation
- Discovering your Vocation and Interests
- Self-discipline, Integrity, Commitment, Creativity
- Work-Life Balance

UNIT – IV Striving for a Better World | Outreach Activities

(4 Weeks)

- Means and Ends
- Debate and Dialogue
- Culture as Shared Values
- Creating and Sustaining Ethical Cultures: The Role of Philosophy, Religion, Literature, Theatre, Cinema, Music, Media
- Outreach Activities

Practical component (if any) –

(15 Weeks)

Unit 1

1. The teacher may ask students to introduce themselves, sharing their regional and cultural roots. They may be asked to reflect on those aspects of their identities that reflect their cultural roots.
2. After a round of initial introduction, the teacher may ask students to list down a set of values that they think they have developed through their parents and grandparents. Are these values unique to their families, regional and/or ethnic backgrounds? Of these, which are the values they would like to sustain and which are the ones they would wish to modify?
3. The teacher may draw upon the values discussed by students in the previous lesson. Using these as the base, the teacher may ask students to think of ethical values that form the basis of their decisions.

4. The teacher may ask students to think of people who they think have lived an 'ethical life'. These may be people who they know from their personal lives or people known for upholding ethical values in the face of adversity.
5. Students are encouraged to identify what common human values are necessary are Realise shared common humanity– the feeling of interconnectedness/interdependence.
6. Class to be divided in small groups to discuss how each would make an effort to cultivate new morals/ethical values for betterment of their local environment.
7. Celebrating 'Sharing and Caring' based on regional diversity can be encouraged.
8. Engage students to do activities of 'being in the shoes of others' (peers, parents, siblings, house help/support or in any local community grappling with problems) to understand the problems empathetically.
9. The students can be asked to make bookmarks/cards to remind them about virtues pertaining to empathy versus sympathy, need versus greed, just versus unjust or compassion versus insensitivity.
10. Compassion is about cultivation of it as a daily value so students can in small groups undertake compassion based activities of looking after animals, birds, needy, elderly, differently abled, non-privileged etc. and share their thoughts in the class.

Unit 2

1. Make the student think of a hard decision they have made. What made it hard? How did you make the decision? How do you assess it retrospectively?
2. Encourage students to think of judgements and decisions based on the dilemmas and challenges they faced? How do they go about making these decisions?
3. The teacher may introduce any well known story and ask the students to discuss the story from the point of view of the different characters.
4. Ask students how willing they are to deal with a conflict when it occurs. What strategies do they adopt to resolve the conflict?
5. The teacher may ask students to prepare posters with captions like "avoidance", "competition", "cooperation" and "adaptation" and then may ask students to identify with one of these styles which according to them best represents their style of dealing with conflict.
6. The students may be asked to discuss different such similar situations that they may have encountered and a discussion may be initiated on how they resolve those conflicts.
7. The students can be asked to write down certain destructive emotions that they are experiencing presently. How would they work to make them constructive? A classroom discussion could follow around this.

8. Ask the students to note down a list of constructive emotions experienced by them recently. Were the constructive emotions less powerful as compared to the destructive ones experienced by them? Discussion in class can follow.
9. How do you (i) express, (ii) handle anger/ disgust/ distress/ fear (any destructive emotion can be taken up). A healthy discussion in the class can take place around this.
10. Students may be asked to practice a simple breathing exercise. They can sit straight with eyes opened or closed in a comfortable position to just observe their breathing. They can repeat this exercise six to eight times and share (if they like) their experience of silence.
11. To identify your interests and develop a meaningful hobby.
12. Have an open conversation in the class about happiness.

Unit 3

1. The students could observe various emotions that bottle-up in their minds and be asked to watch the flow of emotions non-judgmentally.
2. Students may be asked to recall their journey to the college that morning. Do they remember road signs, faces of people they crossed, the roads that they took, the people they interacted with, the sights and smells around them, or anything else?
3. Students could be asked to cultivate the habit of simple greeting as practice of gratitude and celebrate a day of joyful giving.
4. The students can close their eyes for 2-3 minutes and be asked to observe their thoughts, list them and categorise them into 'to be kept' or 'to let go'.
5. The teacher may ask students to close their eyes and imagine a situation in which they are truly happy. Students could wish for the well-being of two students in the same classroom in their meditative state.
6. Students could meditate on who has been their inspiration and the qualities of the person who has inspired them and then express gratitude to the person concerned.
7. The teacher may ask the students to think retrospectively about what they thought they would take up as a vocation when they were younger. How and why their choices were influenced and changed, if at all.
8. The teacher may ask the students to imagine and chart a journey and destination for themselves. They may also talk about the challenges they foresee.
9. The teacher may encourage the students to maintain a daily diary of their scheduling of time or a worklog and see how much time they effectively give to their work. The teacher may help the students identify the distractors and where one may be 'wasting' time and energy. The activity is designed to help students understand the value of effective time utilisation.

10. In this lesson, the teacher may ask the students to draw up a list of team ethics. They may build this based on their experiences of working with each other in groups.
11. The teacher may ask the students to share an incident each where they felt pressurised/ bored to complete some work. How did they deal with their stress and monotony of work?

Unit 4

1. Students will be asked to work in pairs and develop situations that pose ethical dilemmas and how to resolve them.
2. Students may be asked to look at a film or at an advertisement and discuss what they think about the question/s posed in them. The teacher may ask them if they can think of an alternative ethical approach to the problem posed.
3. Students will be asked to think of situations in which they lost their temper. Have they ever felt that in a fit of emotion they said something that they regretted later? If they had paused to listen and then respond, what would the other person have said? How would the outcome of the situation have been different?
4. A debate on any relevant topic may be conducted in the class. After the first round the students may be asked to adopt and argue their opponents point of view. At the end of this exercise the students can have an open discussion on which position finally appealed to them.
5. The teacher may give a short story to the students and ask them to change the ending. They may be asked to observe how characters and their views may have undergone change in the process.
6. There can be a discussion around a topic such as, the idea of corporal punishment, euthanasia etc. Students can be given a sheet of paper and can be asked to write for or against the theme. The idea is to enable them to understand that the positions they have taken vis-a-vis the theme are a result of different value orientations.
7. Popular foods from many parts of India can be discussed. Their origins can be traced to chart a kind of food history.
8. The teacher on the basis of discussions with students can draw from Philosophy, Religion, Literature, Theatre, Cinema, and Media to highlight that the choices people/characters make are grounded in their culture.
9. The students can discuss classical/folk dances that are performed in their respective groups. Details can be drawn based on the number of dancers, music (live or recorded) and costumes. 3. The role of oral traditions and literature in indicating the importance of ethics in our everyday lives can be discussed.

Suggested Activities for Outreach: Social/ Community Engagement and Service

In the weeks that follow, students will be expected to engage in outreach activities that shall enable them to put into practice some of the ethical considerations deliberated upon and imbibed in the previous modules. A list of suggested outreach activities is as follows:

- Adopt a village with the aim of cultural and ethical learning
- Discussing health and hygiene issues in a community
- Tutoring students
- Gender sensitisation
- Working on environmental issues
- Working with Child Care Centres such as Anganwadis and Balwadis
- Working with differently abled students
- Preserving cultural and heritage sites
- Spending time with senior citizens including in a Senior Citizens Home
- Extending care to animals in animal welfare shelters
- Addressing issues relating to Reproductive Health
- Spreading awareness about adolescent health
- Addressing issues relating to mental health
- Health and nutrition awareness
- Swacchata Abhiyaan
- Sensitisation towards disease awareness
- Vriksharopan
- If required, students can share their experiences in the form of a Project Report.
- Any other Practical/Practice as decided from time to time

Suggested Readings:

- Aristotle. Nichomachean Ethics. London: Penguin Classics, 2004
- Swami Vivekananda. The Complete Works of Swami Vivekananda. Advaita Ashrama, 2016.
---https://www.ramakrishnavivekananda.info/vivekananda/complete_works.html
- Panch Parmeshwar in English translation as The Holy Panchayat by Munshi Premchand
- The Silas Marner by George Eliot
- We are Seven by Wordsworth
- The Chimney Sweeper by William Blake

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

VAC 1: ETHICS AND VALUES IN ANCIENT INDIAN TRADITIONS

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|--------------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Ethics and Values in Ancient Indian Traditions | 02 | 1 | 0 | 1 | Pass in Class 12 th | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand the rich cultural traditions relating to discourses on life and its purpose, instilling of values relating to ethical and moral propriety.
- To make students more engaged with the past traditions of the country.
- To introduce students to early epics: Puranic, Buddhist and other traditions.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Students will develop an overview of indigenous philosophies.
- Understanding the richness of Indian heritage leading to greater sensitivity.
- Inspiration from history to deal with contemporary issues.
- Appreciate the traditions of diversity, discussions, debates and knowledge transmission.

SYLLABUS OF ETHICS AND VALUES IN ANCIENT INDIAN TRADITIONS

UNIT – I The idea of India and Bharat

(5 Weeks)

- 'Jambudvipa'; 'Aryavrata'; 'Bharat' ; India
- Early discourse on moral order- ṛta in Vedic traditions
- Debates in the Upanishads and the Shramanic traditions

UNIT – II State, Society and Dharma

(5 Weeks)

- Kingship and Society: Dharma, Neeti and Daṇḍa
- Rashtra, Sanskar and making of socio-cultural milieu

UNIT – III The ‘Purpose of Life’ in Texts

(5 Weeks)

- Right Conduct’: Buddhist, Jaina and Shramanic Traditions
- Puruṣārtha Chatushtaya: Dharma, Artha, Kāma and Mokṣa
- Assimilation and Assertion: Ethical issues in Epics and Puranic traditions

Practical component (if any) –

(15 Weeks)

- Discuss in your locality, in 10-15 households with regard to Ethics and Values in Indian traditions:
 - i. Vedic traditions
 - ii. Puruṣārtha Chatushtaya
 - iii. Buddhist, Jaina and Shramanic Traditions
 - iv. Jambudvīpa; Aryavrata; Bharat; India
- Students are required to explore e-resources available with University of Delhi and academic institutions.
- Students are required to watch documentaries and films on the subject-related topics.
- If required, students can share their experiences in the form of a Project Report.
- Students may share their experiences in the form of audio-visual presentations of 15-30 minutes.
- Any other Practical/Practice as decided from time to time

Essential/recommended readings

- Buitemen, J.A.B. Van, The Bhagwadgita in the Mahabharata: Text and Translation, Chicago: Chicago University Press, 1981. Bhagwadgita by Geeta Press Gorakhpur.
- Bhasham, A.L, Wonder that was India: A Survey of the Culture of the Indian Subcontinent Before the Coming of the Muslims. London, Sidgwick and Jackson, 1954
- Dasgupta, S. N. History of Indian Philosophy. Cambridge University Press, 1923, Vol. I-II.
- Hiltebeitel, Alf. Rethinking the Mahabharata: A Reader’s Guide to the Education of the Dharma King. Chicago: Chicago University Press, 2001.
- Kane, P.V. History of Dharmashastra (Ancient and Medieval Religious and Civil Law), vol. II, parts 1-2; vol. III 3rd ed. Pune: Bhandarkar Oriental Research Institute, [1941, 1946].

- Olivelle, Patric. King, Governance, and Law in Ancient India: Kautilya's Arthashastra, Oxford: Oxford University Press, 2013.
- Sharma, Arvind. 'On Hindu, Hindustan, Hinduism and Hindutva'. Numen, 49(1), 2002, p. 1-36.

Suggested readings

- Olivelle, Patric. (text and trans.) *Manu's Code of Law: A Critical Edition and Translation of the Manava-Dharmashastra*. New Delhi: Oxford University Press, 2006.
- Rocher, Ludo. 'The Concept of Boundaries in Classical India', in Peter Gaefkke and David Utz (eds.), *The Countries of South Asia: Boundries, Extensions, and Interrelations*.
- Philadelphia: University of Pennsylvania, Department of South Asia Regional Studies (Proceedings of The South Asia Seminar, III, 1982-1983), 1988, p. 3-10
- Sukthankar, V.S., S.K. Belvalkar, and P.L. Vaidya(ed.). *The Mahabharata*. Poona: Bhandarkar Oriental Research Institute, 1933-66.
- Tripathi, Radhavallabh, ed. *India's Intellectual Traditions: A Revealed Through Sanskrit Sources*. New Delhi: Sahitya Akademi, 2016.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

VAC 1: FINANCIAL LITERACY

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------|---------|-----------------------------------|----------|---------------------|--------------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Financial Literacy | 02 | 1 | 0 | 1 | Pass in Class 12 th | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- Familiarity with different aspects of financial literacy such as savings, investment, taxation, and insurance
- Understand the relevance and process of financial planning
- Promote financial well-being

Learning outcomes

The Learning Outcomes of this course are as follows:

- Develop proficiency for personal and family financial planning
- Apply the concept of investment planning
- Ability to analyse banking and insurance products
- Personal tax planning

SYLLABUS OF FINANCIAL LITERACY

UNIT – I Financial Planning and Financial Products

(3 Weeks)

- Introduction to Saving
- Time value of money
- Management of spending and financial discipline

UNIT – II Banking and Digital Payment

(4 Weeks)

- Banking products and services

- Digitisation of financial transactions: Debit Cards (ATM Cards) and Credit Cards., Net banking and UPI, digital wallets
- Security and precautions against Ponzi schemes and online frauds

UNIT – III Investment Planning and Management (4 Weeks)

- Investment opportunity and financial products
- Insurance Planning: Life and non-life including medical insurance schemes

UNIT – IV Personal Tax (4 Weeks)

- Introduction to basic Tax Structure in India for personal taxation
- Aspects of Personal tax planning
- Exemptions and deductions for individuals
- e-filing

Note: Some of the theoretical concepts would be dealt with during practice hours.

Practical component (if any) – (15 Weeks)

- Regular class activities to enhance students' understanding of topics and the application of concepts. The case study method may be followed as a teaching pedagogy.
- Numerical questions pertaining to each unit wherever applicable should be practiced.
- For the second unit, students may be assigned a project wherein they can log on to the website of various banks and conduct an in-depth analysis and comparison of various financial products offered.
- For Unit III, a Project related to building a dummy portfolio of stocks and tracking their returns may be given.
- An investment budget may be given to the students to select investment options that maximize the return and minimize the tax implications.
- For the last unit, students may also file a dummy IT return to get hands-on experience with e-filing.
- Students may conduct a financial literacy survey among at least 25 respondents to measure the level of financial literacy and share the findings in the awareness in the form of a report.
- Any other Practical/Practice as decided from time to time

Essential/recommended readings

- Introduction to Financial Planning (4th Edition 2017) – Indian Institute of Banking

& Finance.

- Sinha, Madhu. Financial Planning: A Ready Reckoner July 2017, McGraw Hill.

Suggested readings

- Halan, Monika, Lets Talk Money: You've Worked Hard for It, Now Make It Work for You, July 2018 Harper Business.
- Pandit, Amar The Only Financial Planning Book that You Will Ever Need , Network 18 Publications Ltd.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

VAC 1: FIT INDIA**Credit distribution, Eligibility and Pre-requisites of the Course**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------|---------|-----------------------------------|----------|---------------------|--------------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Fit India | 02 | 0 | 0 | 2 | Pass in Class 12 th | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- Encourage physical activity through engaging the students in sports and yoga.
- Understand the importance of a balanced diet .
- Build skills for self-discipline, self-confidence, cooperation and teamwork.
- Promote fitness as a joyful activity

Learning outcomes

The Learning Outcomes of this course are as follows:

- Adopting a healthy lifestyle.
- Knowledge of nutrition, diet and psycho-physiological aspects of fitness.
- Develop Self-esteem, Self-confidence, Self-discipline and team spirit as indicators of fitness.

SYLLABUS OF FIT INDIA**ONLY PRACTICAL**

Note: Concepts are to be taken up during the practical/practice hours.

Practical component (if any) –

(15 Weeks)

UNIT – I Participation in Physical Activity

(4 Weeks)

- Fit India Protocol

- Physical Activity, Health and Fitness
- Indicators of Fitness

Practical/Practice

- Aerobic Work Out / Physical Activity (Walking)
- Yoga – Asanas (Lying, Sitting and Standing positions) and Pranayama
- Cardiovascular Testing by 12min/9 min Cooper Run/Walk test

UNIT – II Health Related Fitness and their Components (4 Weeks)

- Muscular Strength and Endurance
- Body Composition and Flexibility

Practical/Practice

- Flexibility Training: Back Saver Sit and Reach test
- Muscular Strength Training: Curl Ups / Standing Broad Jump/ Vertical Jump/ Plyometric
- Endurance Training: 1 Mile RockPort Test or 12 /9 minute Cooper run/walk test.
- Ideal Body Weight, Body Mass Index (BMI), Waist-Hip Ratio, Waist-Height Ratio (Data of at least 10 persons to be collected)

UNIT – III Nutrition and Fitness (4 Weeks)

- Healthy Eating Plate
- Balanced Diet
- Caloric Content of Food

Practical/Practice

- Preparing Daily Diet and Calorie Chart
- Aerobic Work Out / Physical Activity (Walking)
- Assessment of Physical Activity with the Calorie intake.
- Asanas for digestive system excretory system

UNIT – IV Sports Physiology and Psychology (3 Weeks)

- Depression, Anxiety and Stress Scale (DASS)
- Rosenberg Self Esteem Scale

Practical/Practice

- Skills learning and Participation in sports
- Group Games / Relays/ Minor Games
- Meditative Asanas and Pranayama
- Fitness component testing (as per Fit India Protocol and Norms) and Analysis of Results
- Data of at least 10 persons to be collected on DASS and self-esteem scale

Essential/recommended readings

- Fit India Website: <https://fitindia.gov.in>
- Wener W.K. Hoeger, Sharon
- A. Hoeger - Fitness and Wellness-Cengage Learning (2014).

Suggested readings

- Charles B. Corbin, Gregory J Welk, William R Corbin, Karen A Welk - Concepts of Fitness And Wellness_ A Comprehensive Lifestyle Approach-McGraw-Hill (2015)
- W.Larry Kenney, Jack H. Wilmore, Devid L.Costil(2015). Physiology of Sports and Exercise, Second Edition. USA. Human Kinetics.
- Websites of International Sports Federations
- Website of Ministry of Youth Affairs and Sports

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

VAC 1: GANDHI AND EDUCATION

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|----------------------|---------|-----------------------------------|----------|---------------------|--------------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Gandhi and Education | 02 | 1 | 0 | 1 | Pass in Class 12 th | NIL |
| | | | | | | |

Learning Objectives:

The Learning Objectives of the course are:

- Seek inspiration from Gandhi's thoughts on education.
- Analyse Gandhian education philosophy for moral and character development.
- Understand Gandhi's Idea on Self-reliant education (Swavalambi Shiksha)
- Relate Gandhi's educational thoughts to NEP 2020

Learning Outcomes

The Learning Outcomes of the course are:

- Value Gandhian perspective on education
- Appreciate the significance of education in Indian languages
- Evaluate the application of Gandhian thoughts in NEP 2020
- Realise the principles of NEP 2020 in vocational and skill oriented education.

SYLLABUS OF GANDHI AND EDUCATION

UNIT – I : Gandhi's Philosophy and education

(Weeks: 5)

- Gandhi's Philosophy on education
- Education for character building and moral development
- Education relating to health, hygiene, heritage, and handicraft

UNIT – II Gandhi's Experiment in Education

(Weeks: 5)

- Gandhi's educational ideas on use of Indian Language as a medium of Instruction, TextBook and Teacher.
- Gandhi's educational thought on Elementary and Adult Education.
- Gandhi's vision on Higher Education

UNIT – III : Gandhi's Educational Thought on Skill and Vocational Education

(Weeks: 5)

- Rural development through Skill and Local Need Based education
- Skill education in NEP 2020 and Gandhi
- Gandhi's Idea on Self-reliance (Swavalambi Shiksha) and its reflection in contemporary educational policy.

Practical component (if any) -

(15 Weeks)

- Regular visits to Gandhi Museum and library to gain insight on Gandhi
- Excursion to Gandhi Ashrams located in different places like Sewagram, Wardha, Sabarmati, Ahmedabad etc.
- Workshops/projects in collaboration with Gandhi Bhawan, Gandhi Smriti and Darshan, Gandhi Peace Center. Ashrams based on innovation in village & cottage industry, Khadi, handicrafts, organic farming etc.
- Adoption of one place for Swachhta Mission or Skill Education
- If required, students can share their experiences in the form of a Project Report.
- Any other Practical/Practice as decided from time to time

Essential/recommended readings

- महात्मा गांधी. (2014). बुनियादी शिक्षा. वाराणसी : सर्व सेवा संघ प्रकाशन.
- गांधी, मो. क. (2010). मेरे सपनों का भारत. अहमदाबाद : नवजीवन प्रकाशन मंदिर.
- नवजीवन प्रकाशन मंदिर. (1960). शरीर-श्रम. अहमदाबाद: मो. क. गांधी. pp– 196-231
- प्रभु, आर. के. व राव, यू. आर. (1994). महात्मा गांधी के विचार. इंडिया: नेशनल बुक ट्रस्ट.
- Anand T. Hingorani, ed.] Gandhi, M.K. Our Language Problem (Bombay:
- Bharatiya Vidya Bhavan,), pp. 53-55
- TOWARDS NEW EDUCATION written by M. K. Gandhi Edited by Bharatan Kumarappa

Suggestive readings

- गांधी, मो.क. (2012). सत्य के प्रयोग अथवा आत्मकथा (त्रिवेदी, काशीनाथ, अनुवादक)
अहमदाबाद: नवजीवन प्रकाशन मंदिर.
- गांधी, मो.क. (2012). हिंद स्वराज (नणावती, अमृतलाल ठाकोरदास, अनुवादक).
अहमदाबाद. नवजीवन प्रकाशन मंदिर
- Coomaraswamy, Anand K . (1910). Art and Swadeshi . Munshi Ram Manoharalal.
Delhi

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

VAC 1: ECOLOGY AND LITERATURE

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|------------------------|---------|-----------------------------------|----------|---------------------|--------------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Ecology and Literature | 02 | 1 | 0 | 1 | Pass in Class 12 th | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To raise awareness among students towards the urgent predicament of Environmental and Ecological crisis and the need for reducing our carbon footprint upon fast depleting, ravaged ecological reserves.
- To develop a heightened ecological consciousness among students, leading to more responsible ecological behavior.
- To view environmental concerns as raised through plays, stories and poems.

Learning outcomes

The Learning Outcomes of this course are as follows:

- The course will highlight the urgency of environmental crisis, making Students conscious and aware of the role each one of us plays.
- Students will be trained into environmental sensitivity and responsible Ecological behavior.
- Students will be encouraged to respond to incidents of habitat destruction deforestation, etc. and realize the need for our urgent intervention

SYLLABUS OF ECOLOGY AND LITERATURE

UNIT – I Negotiating environmental issues creatively

(5 Weeks)

- William Wordsworth: 'In April beneath the scented thorn'
- Rabindranath Tagore: 'The Waterfall'
- Gieve Patel: 'On Killing a Tree'

UNIT – II Ecocritical literary representations

(5 Weeks)

- Mary Oliver: 'Sleeping in the Forest'
- 2.AK Ramanujan: 'A Flowering Tree'
- 3.Mamang Dai: 'Small Towns and the River'

UNIT – III Empathetic exploration and imaginative re-enactments (5 Weeks)

- Amitav Ghosh's 'Part I: Stories' from The Great Derangement: Climate Change and the Unthinkable.
- Thangjamlbopishak: 'Volcano, You cannot erupt' from Dancing Earth: An Anthology of Poetry from North-East India
- Thangjamlbopishak: 'Dali, Hussain, or Odour of Dream, Colour of Wind' from Dancing Earth: An Anthology of Poetry from North-East India

Practical component (if any) –

(15 Weeks)

- Students would undertake field visits to a school or a slum in the neighborhood or the play area of residential complexes to share, narrate stories, poems and articulate the ideas engaged with in the classroom lectures.
- They shall apply imaginative and creative ways of presenting socially responsible ecological behavior through re-tellings of the texts they have studied in the class.
- Creative re-enactment of key ideas studied by students in the form of a play, to be done individually and/or in a group to create awareness regarding environmental consciousness.
- They can also collectively organize a tree plantation drive in and around the college campus and adopt a sapling each in the college premises and in their neighborhood to take care of.
- Any other Practical/Practice as decided from time to time

Essential/recommended readings

- Akhter, Tawhida, and Ahmad Bhat, Tariq. Literature and Nature. United Kingdom, Cambridge Scholars Publishing, 2022.
- Shiva, Vandana. 'Development, Ecology and Women', Staying Alive: Women Ecology and Development. India: Zed Books, 1988. pp 1-14
- Carl, Safina. Prologue & Chapter 1, Beyond Words: What animals think and feel. Souvenir Press, 2015.
- Garrard, Greg. Ecocriticism. United Kingdom: Taylor & Francis, 2011.
- Wohlleben, Peter. The Hidden Life of Trees: What They Feel, How They Communicate—Discoveries from a Secret World. India: Penguin Books Limited, 2016.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

VAC 1: NATIONAL CADET CORPS- I

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-------------------------|---------|-----------------------------------|----------|---------------------|--------------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| National Cadet Corps -I | 02 | 1 | 0 | 1 | Pass in Class 12 th | Enrolled as NCC Cadet |
| | | | | | | |

Learning Objectives

The Learning Objectives of this course are as follows:

- Provide knowledge about the history of NCC, its organization, and incentives of NCC for their career prospects.
- Inculcate spirit of duty and conduct in NCC cadets.
- Provide understanding about different NCC camps and their conducts.
- Provide understanding about the concept of national integration and its importance.
- Provide understanding about the concept of self-awareness and emotional intelligence.
- Provide understanding about the concept of critical & creative thinking.
- Provide understanding about the process of decision making & problem solving.
- Provide understanding about the concept of team and its functioning.
- Provide understanding about the concept and importance of Social service.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Critically think and analyse.
- Understand the basic concept of NCC.
- Respect the diversity of different Indian culture.
- Practice togetherness, teamwork and empathy in all walks of their life.
- Do their own self-analysis and will work out to overcome their weakness for Better performance in all aspects of life.

SYLLABUS OF NATIONAL CADET CORPS-I

UNIT – I NCC General (4 Weeks)

- Aims, Objectives and Organization of NCC
- Incentives for NCC Cadets
- Duties of NCC Cadets
- NCC Camps: Types and Conduct

UNIT – II National Integration (4 Weeks)

- National Integration: Importance and Necessity
- Factors affecting National Integration
- Unity in Diversity
- Threats to National Security

UNIT – III Personality Development (5 Weeks)

- Factors
- Self-Awareness
- Empathy
- Critical and Creative Thinking
- Decision Making and Problem Solving

UNIT – IV Social Service and Community Development (2 Weeks)

- Basics of Social Service
- Rural Development Programmes
- NGO's
- Contribution of Youth

Practical component (if any) - (15 Weeks)

- Drill
- Field Craft & Battle Craft
- Map Reading
- Weapon Training
- Social Service & Community Development
- Any other Practical/Practice as decided from time to time

Suggested readings

- DGNCC Cadet's Hand Book - Common Subjects -All Wings (in English)
- DGNCC Cadet's Hand Book - Common Subjects -All Wings (in Hindi)
- DGNCC Cadet's Hand Book – Specialised Subjects –Army, Navy and Air Wing

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

VAC 1: PANCHKOSHA: HOLISTIC DEVELOPMENT OF PERSONALITY

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|---------|-----------------------------------|----------|---------------------|--------------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Panchkosha: Holistic Development of Personality | 02 | 1 | 0 | 1 | Pass in Class 12 th | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To introduce Five Koshas – five levels of mind-body complex – Annamaya, Pranayama, Manomaya, Vigyanamaya and Anandamaya Kosha; for a holistic development of personality.
- To generate awareness about physical and mental wellbeing through the Indian concept of Panchkosha.
- To develop a positive attitude towards self, family and society amongst students.
- To guide students build personalities based on the understanding of Panchkosha.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Enhanced physical and mental health.
- Coping with peer pressures and stress.
- Improved concentration leading to better overall performance.
- Manage life situations through a balanced and mature approach.

SYLLABUS OF HOLISTIC DEVELOPMENT OF PERSONALITY

UNIT – I Elements of Personality

(4 Weeks)

- PanchaKosha: Introduction
- Five aspects of Human Personality: Annamaya Kosha (Physical

body), Pranamaya Kosha (Vital life force energy), Manomaya Kosha (Psychological wellness), Vijnanamaya Kosha (Intellect), Anandamaya Kosha (Happiness and Blissfulness)

- Health: Mental and Physical

UNIT – II *Annamaya Kosha and Pranamaya Kosha*

(4 Weeks)

- Human Body and Pancha Karmendriyas
- Annamaya Kosha: Balanced diet and exercise for healthy body
- Pranamaya Kosha: Development of life force, Pranayam
- Charucharya: Social Etiquettes

UNIT – III *Manomaya Kosha and Vijnanamaya Kosha*

(4 Weeks)

- Antahkarana and its functions
- Pancha Gyanendriyas
- Manomaya Kosha : Controlling the Mana (mind)
- Vijnanamaya Kosha: Ability of discretion and decision making

UNIT – IV *Anandamaya Kosha and Beyond*

(3 Weeks)

- Anandamaya Kosha: Experience of happiness and bliss
- Self-realisation, Nature of Consciousness: Sat-Chit-Ananda

Practical component (if any) –

(15 Weeks)

- Recitation of select verses from Taitiriyopansid
- Asana
- Pranayama
- Meditation
- Visit to a Yog shivir or meditation centres
- Students are required to watch documentaries and films on the subject-related topics.
- If required, students can share their experiences in the form of a Project Report.
- Any other Practical/Practice as decided from time to time

Essential Readings

- पंचकोश वि वेक, स्वामी परमहंस योगनन्द, <https://ndl.iitkgp.ac.in/> पर उपलब्ध
- वि वेक चूड़ामणि , आदि शंकराचार्य द्वारा लि खि त, अरवि न्द आनंद द्वारा अनुदि त,

चौखम्भा प्रकाशन, वाराणसी, 2015

- Vivek Chudamani, Adi Shankaracharya, Swami Turiyananda (Sanskrit and English), Sri Ramakrishna Math, Mylapore, 2019
- सभी के लिए योग, बी.के.एस. आयंगर, प्रभात प्रकाशन, 2018
- Yoga The Path to Holistic Health: The Definitive Step-by-step Guide, B.K.S. Iyengar, Dorling Kingsley, London, 2021
- The Sacred Science of Yoga & The Five Koshas, Christopher Sartain, CreateSpace Independent Pub, 2015

Suggested Readings

- PanchaKosha: The five sheaths of the human being, Swami Nishchalanand, Kindle edition.
- Upanisadvakya Mahakosa. (An Upanishadic Concordance, taken from 239 Upanishads, G. S. Sadhale (Compiled by). Chowkhamba Vidyabhanan, Varanasi, 2014
- The Pentagon of Creation: As Expounded in the Upani

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

VAC 1: READING INDIAN FICTION IN ENGLISH

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-----------------------------------|---------|-----------------------------------|----------|---------------------|--------------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Reading Indian Fiction in English | 02 | 1 | 0 | 1 | Pass in Class 12 th | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- Acquaint students with Indian Fiction in English.
- Familiarise students with Indian ethos and values through Indian fiction.
- Analyze novels critically and in the context of their own lived situations.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Understanding of Indian ethos and values through Indian fiction.
- Develop creative thinking through reading of fiction..
- Realise the potential of fiction in bringing out social and cultural change

SYLLABUS OF READING INDIAN FICTION IN ENGLISH

UNIT – I

(2 Weeks)

- How to Read a Novel
- Novel as Reflection of Society

UNIT – II

(7 Weeks)

- Bankim Chandra Chatterjee: Anandamath (English translation by Sri Aurobindo and Barindra K Ghosh)

Points of Discussion:

- Patriotism and Nationalism
- The song Bande Mataram
- Elements of History and Romance
- Issues of Gender
- Natural calamity
- Genre of Text and Feature Film

UNIT – III

(6 Weeks)

- Chaman Nahal: Azadi. Houghton Mifflin publication, 1975.

Points of Discussion:

- The Story of Partition
- Violence and Trauma
- Autobiographical voices in the novel
- Elements of history, politics and art
- Personal and Political

Practical component (if any) –

(15 Weeks)

- Students may be asked to do a dramatic recitation of selected parts of a novel.
- Students may be asked to organize the major events of the plot of a novel through different methods: graphically, making a plot outline or sketching a storyboard.
- Students may be asked to classify each instance of figurative language (simile, metaphor, etc.) and explain its effect on that section of the text.
- Students may share their understanding of any particular aspect of the novels through a brief write up.
- Discuss the portrayal of any major characters of the novel with reference to the central theme of the text.
- Think about and discuss Indian fiction in relation to cultural and critical contexts.
- Any other Practical/Practice as decided from time to time

Essential/recommended readings

- Bankim Chandra Chatterjee: Anandamath (English translation by Sri Aurobindo and Barindra K. Ghosh)

- Chaman Nahal: Azadi. Houghton Mifflin publication, 1975
- E. M. Forster: Aspects of the Novel

Suggested Reading:

- Srinivasa Iyengar, K. R. Indian Writing in English. India, Sterling Publishers, 1987.
- 2. Naik, M. K. A History of Indian English Literature. India, SahityaAkademi, 1982.
- 3. Nayar, Pramod K. The Indian Graphic Novel: Nation, History and Critique. India, Taylor & Francis, 2016.
- 4. Gopal, Priyamvada. The Indian English Novel: Nation, History, and Narration. United Kingdom, Oxford University Press, 2009.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

VAC 1: SCIENCE AND SOCIETY

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------|---------|-----------------------------------|----------|---------------------|--------------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Science and Society | 02 | 1 | 0 | 1 | Pass in Class 12 th | NIL |

Learning Objectives

The Learning Objectives of this course are:

- The primary objective of this course is to instil in students an appreciation for science and a scientific outlook and temper.
- The course further aims to increase awareness about fundamental scientific concepts that play an important role in our daily life using various examples and case studies.
- Pedagogy in this course should largely rely on learning by enquiry, observations, experimentation and group discussions using case studies/examples.
- Efforts should be made to instil an interest in students for science. Students should be encouraged to understand and appreciate scientific concepts and their applications rather than solely memorizing factual information.

Learning outcomes

The Learning Outcomes of this course are:

- This paper is interdisciplinary in nature and would provide students with basic exposure to scientific methods, technologies and developments that have played a significant role in the evolution of human society from ancient to modern times.
- 2. Students would also be made aware of the scientific rationale of technological developments that would enable them to make informed decisions about their potential impact on society.

SYLLABUS OF SCIENCE AND SOCIETY

UNIT – I Science and Technology – from Ancient to Modern Times (10 Weeks)

In this section, students should also be made aware about the contributions of Indian scientists since ancient times and the contributions of women in science.

Subtopics

- Philosophy of science, the scientific method, importance of observation, questions and experimental design, rational thinking, myths vs. Facts
- Science, Technology and Traditional Practices: Suggestive areas include: Water harvesting structures and Practices; Construction, architecture and design – use of natural environment-friendly designs and materials; Agriculture including domestication of plants and animals.
In this section, students should also be made aware about the contributions of Indian scientists since ancient times and the contributions of women in science.
- Science and Technology in Modern Times: Suggestive areas include: Public Health: Nutrition, Hygiene, Physical and Mental Health, Vaccines and Antibiotics, Anti-microbial resistance; Food Security: Green Revolution, White Revolution; IT Revolution, E-Governance; Clean Energy, Renewable Energy; Space Science and Exploration; Evolution, Ecology and Environment

UNIT II: Scientific Principles, and Concepts in Daily Life (5 Weeks)

Unit Description:

This section aims to encourage appreciation of the scientific method through observation, experimentation, analysis and discussions. Students are required to participate in activities and experiments. A suggestive list is given below:

Subtopics:

Suggested Activities:

- Observing and documenting flora and fauna of College campus/city.
- Visits to science laboratories in the College or neighbouring College/Institute.
- Visits to science museums, planetarium.
- Visits to biodiversity parks and nature walks.
- Participation in a citizen science project/initiative.

Suggested Experiments (minimum any four):

- Measuring the height of the college building using a stick.
- Measuring the curvature of earth, using distance and shadow length.
- Isolation of DNA (DNA Spooling)
- Observing transpiration and photosynthesis in plants
- The blood typing game (online)
- Are fruit juices, soap, carbonated drinks acidic or alkaline? (using pH strips or developing your own Litmus Test)
- Do plants learn and remember?
- Experiments on how migratory birds find their way. (Online)
- How can a mosquito sit on a water surface or a blade float on water?
- How does a submarine dip or rise in the ocean?
- How and why does the path of the sun in the sky change with the seasons?
- Identification of celestial objects with the naked eye
- Types of clouds
- Science of musical sounds
- Science of splitting of colours from white light: rainbow, CD-rom, prism, oil films.
- Lenses, mirrors and the human eye

Practical/ Practice Component : **Please Refer to Unit II.**

Essential/recommended readings

- Basu and Khan (2001). Marching Ahead with Science. National Book Trust
- Gopalakrishnan (2006). Inventors who Revolutionised our Lives. National Book Trust
- Yash Pal and Rahul Pal (2013) Random Curiosity. National Book Trust
- Hakob Barseghyan, Nicholas Overgaard, and Gregory Rupik (****) Introduction to History and Philosophy of Science
- John Avery (2005). Science and Society, 2nd Edition, H.C. Ørsted Institute, Copenhagen.
- Dharampal (2000). Indian Science and Technology in the Eighteenth Century, OIP.

Suggested Readings:

Section 1. Science and Technology – from Ancient to Modern Times:

Philosophy of science:

<https://blogs.scientificamerican.com/doing-good-science/what-is-philosophy-of-scienceand-should-scientists-care/>

http://abyss.uoregon.edu/~js/21st_century_science/lectures/lec01.html

https://wps.ablongman.com/wps/media/objects/1449/1483820/18_2.pdf

Myths vs. facts:

<https://www.sciencelearn.org.nz/resources/415-myths-of-the-nature-of-science>

History of technology:

<https://www.visualcapitalist.com/history-of-technology-earliest-tools-modernage/>

Water harvesting:

<https://worldwaterreserve.com/introduction-to-rainwater-harvesting/>

Public Health :

[https://www.ajpmonline.org/article/S0749-3797\(11\)00514-9/fulltext](https://www.ajpmonline.org/article/S0749-3797(11)00514-9/fulltext)

<https://study.com/academy/lesson/public-health-vs-medicinedifferences-similarities.html>

<https://www.deepc.org.in/video-tutorials/public-health>

Food Security:

<https://www.concern.net/news/what-food-security>

Energy:

<https://www.nrdc.org/stories/renewable-energy-clean-facts>

Space Science:

<https://www.isro.gov.in/spacecraft/space-science-exploration>

<https://www.isro.gov.in/pslv-c11-chandrayaan-1>

<https://www.isro.gov.in/chandrayaan2-home-0>

<https://www.britannica.com/science/space-exploration>

Contribution of Indian Scientists & Women Scientists:

<https://www.tifr.res.in/~outreach/biographies/scientists.pdf>

<https://indiabioscience.org/media/articles/ISTI.pdf>

<https://www.thebetterindia.com/63119/ancient-india-science-technology/>

<https://ncsm.gov.in/indian-women-in-science-technology/>

Evolution:

<https://www.livescience.com/474-controversy-evolution-works.html>

<https://www.ibiology.org/evolution/origin-of-life/>

Climate change and global warming

<https://letstalkscience.ca/educational-resources/backgrounders/introductionclimate-change>

Biodiversity

<https://india.mongabay.com/2020/09/nature-in-peril-as-biodiversity-losses-mount-alarmingly-states-the-living-planet-report/>

Genomics and Modern Medicine

<https://www.nationalgeographic.com/science/article/partner-contentgenomics-health-care>

<https://www.mja.com.au/journal/2014/201/1/impact-genomics-future-medicine-and-health>

<https://www.nature.com/scitable/topicpage/pharmacogenomics-andpersonalized-medicine-643/>

Genetically modified engineered crops

<https://www.nature.com/scitable/topicpage/genetically-modified-organismsgmos-transgenic-crops-and-732/>

<https://factly.in/explainer-what-is-the-status-of-gm-crops-in-india/>

<https://www.fda.gov/food/agricultural-biotechnology/how-gmo-crops-impactour-world>

Artificial Intelligence and Robotics

<https://www.ohio.edu/mechanical-faculty/williams/html/PDF/IntroRob.pdf>

<https://nptel.ac.in/content/storage2/courses/106105078/pdf/Lesson%2001.pdf>

Big Data Analytics

https://www.researchgate.net/publication/328783489_Big_Data_and_Big_Data_Analytics_Concepts_Types_and_Technologies

Section 2. Scientific Principles, and Concepts in Daily Life Measuring buildings, earth curvature:

<https://www.youtube.com/watch?v=hrwL3u2Z4Kg>

<https://www.youtube.com/watch?v=khRMzxONpLg>

<https://www.youtube.com/watch?v=YaPa4esJJx4>

Isolation of DNA



https://melscience.com/US-en/articles/home-dnaextraction/?irclickid=2hh2pqRY8xyLTbawUx0Mo3ENUkBwIX3pGQDJSc0&utm_source=impact&irpid=2201352&irmpname=Science%20Journal%20for%20Kids&irgwc=1

Transpiration & Photosynthesis

<https://www.youtube.com/watch?v=JQvdXX7hGqI>
<https://www.youtube.com/watch?v=U4rzLhz4HHk>
<https://www.youtube.com/watch?v=pFaBpVoQD4E>

Online game on blood typing

<https://educationalgames.nobelprize.org/educational/medicine/bloodtypinggame/gamev3/1.html>

Determination of pH

https://www.youtube.com/watch?v=BEz6t_e6gpc

Plant behaviour

<https://youtu.be/KyoeCFTIXKk>
<https://youtu.be/gBGt5OeAQFk>

Migratory Birds

<https://www.scienceabc.com/nature/how-migrating-birds-geese-navigate-long-distance-earthmagnetic-field.html>

VAC 1: SOCIAL AND EMOTIONAL LEARNING

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-------------------------------|---------|-----------------------------------|----------|---------------------|--------------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Social and Emotional Learning | 02 | 1 | 0 | 1 | Pass in Class 12 th | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- This course aims to develop social and emotional awareness in students and initiate them towards better personal and social well-being.
- To create an awareness towards self, others, the environment and their harmonious coexistence.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Students will be able to become aware of oneself and the society.
- Make informed lifestyle choices and extend the self in the joy of giving.
- Develop empathy, compassion, connect with nature and evolve emotionally to create a more harmonious society.
- Cultivate sensitivity towards discriminatory practices and explore possible solutions.

SYLLABUS OF SOCIAL AND EMOTIONAL LEARNING

UNIT – I Introduction - Self-Awareness and Happiness (3 Weeks)

- Getting to Know Each Other
- What to Expect from this Course?
- Getting to Know Oneself
- What Makes One Happy/ Unhappy? Outer vs Inner Sources of Happiness, Joy of Giving

UNIT – II Social Relationships | Mindfulness (4 Weeks)

- Sharing vs Power: Peers, Family and Society
- Going Beyond Power Relationships Through Open Conversation
- The Value of Silence and Reflection
- Practice of Mindfulness

UNIT – III Identity, Self-Image, Status, Self-Worth- Digital Identity (4 Weeks)

- Identity Construction and Expression: Individual and Collective
- Accepting and Valuing Oneself
- Understanding the Gendered World
- Identifying and transcending stereotypes
- Identity Formation and Validation in the Digital World
- Discrimination and its Forms

UNIT – IV Lifestyle Choices | Stress and Its Management (4 Weeks)

- What Choices Does One Get To Make?
- Is Choice influenced? Relationships, Career Choices
- Career Pressures, Examinations
- Dealing with Disappointment, Coping Skills, Health and Fitness
- Connect With Nature: Sensitivity Towards Other Sentient Beings

Practical component (if any) – (15 Weeks)

Unit 1

Getting to Know Each Other

In this lecture, the teacher will facilitate social engagement and personal reflection through a round of introductions. This also provides an opportunity for the teacher and students to recognise the deeper meanings that lie underneath routine exercises of introduction. For example, the adjectives that people use to describe themselves are indicative of the image that they wish others to hold of them. But do they hold the same image about themselves?

Teachers may begin the class by introducing themselves. Any introductory exercise that serves as an ice breaker and creates the classroom space as one of vibrant and open discussions, may be used. Teachers should try and ensure participation of all students in this exercise.

Activities

1. Who is in your circle?

Students may be asked to draw three concentric circles on their notebooks. The central circle is for the topic, the second for 'Love', and third for 'Like'. The space outside the circles is for 'Don't like'. The class decides on one topic, such as food, movies, web series, books, music, interests, etc. Each topic is taken up in turn and students are asked to write what they love, like, and don't like in the circles and share it with others. The exercise helps students to identify with their peers in commonalities and differences. The teacher may use prompts such as 'Why do you like this show?', 'Why do you dislike this food?' etc.

2. I am...

Students are asked to complete the sentences. The teacher may take turns and ask random students to answer it or the teacher may write these on the board and ask every student to write the answer in their notebooks. Some suggested prompt sentences are:

I am excited about.....

I wish I could.....

I am wondering.....

I am feeling anxious about....

Students can choose to share some of the answers with the class. The purpose of the exercise is to bring most students to speak in class and share their honest feelings and thoughts.

3. Introduce Yourself. Know Yourself

In this exercise, the teacher asks all students to take turns to introduce themselves. It is likely that most students will talk about their names, previous qualifications and hobbies. At the end of the introductions, the teacher can identify

commonalities such as previous courses undertaken, regional identities, age, or similar common factors. The teacher may then use the following prompts to facilitate discussion:

Do these define you? Are you something more? Would you like to change any of these qualifiers?

Is there something about you that you would like to share with us? Do you ever wonder about your identity/ identities?

What to Expect from this Course?

In this class, the focus is on understanding the relevance of the course and providing a course overview. Students will be able to explore the various dimensions of their lives and develop insights about themselves and their relationships. By discussing the outline of the course and the suggested activities, the teacher shall bring to the fore the exploratory journey that the students will embark upon. The students' questions relating to the course contents will also be addressed in this lecture.

Activities

In this class, the teacher may undertake an overview of the course, discussing each week's themes briefly. The nature of assignments and evaluation can also be detailed out. The teacher may hold a discussion with students on the following:

1. Why is social and emotional learning important?
2. What can the teacher do to make the classroom a more welcoming and open space for you?
3. What would be some of the activities that you would like to undertake during the course? Such as watching movies, reading books, maintaining a reflective journal, engagement in the field, mindfulness exercises, etc.

Self Awareness and Happiness

The aim of this module is to help students develop awareness about themselves – who they are, what their strengths and limitations are, and how they can develop themselves. This will help them to learn interlinkages and distinctions between thoughts, emotions and behaviours. This module will make them aware of the differences between happiness and pleasure and help them ponder on sources of happiness.

Self Awareness

Self-awareness is the experience and understanding of one's own personality – how an individual understands his own feelings, motives, desires, and behaviour, and the triggers for the same. Hence, self-awareness can be considered to be vital for personal development. Students would thereby become more grounded and confident. This lesson will focus on the student's intrapersonal and interpersonal awareness through discussions and activities.

Activities

1. Students are asked to make a timeline of important events in their life and how each one affected them at that time. Do they see it differently today?
2. SWOT Analysis can be done by each student – Strengths, Weaknesses, Opportunities and Threats.
3. How do they envision their ideal person – What does your ideal person look like? What characteristics do they possess? Identify the gap. How do they plan to fill/reduce the gap?

Happiness

The term 'happiness' includes pleasant and positive emotions which can range from deep satisfaction and contentment to pleasure and excitement. The focus of this session would be to discuss techniques to develop the long-lasting feelings of contentment rather than momentary and short-lived emotions of excitement and pleasure. This will encourage and foster feelings of wellbeing and life satisfaction. The teacher will use activities in order to inculcate the ways of developing and sustaining happiness.

Activities

Writing a gratitude Journal – include in it what you are grateful for. Mindfulness exercises and developing a mindful way of doing things.

"As one door closes, another door opens". A discussion based on the three opportunities that they think they lost and consider what it was they gained in the process.

Unit 2

Social Relationships

In this module, students will be asked to turn their gaze towards the society in which they are located and where they form social relations. They will be asked to introspect and understand the ways in which they connect with their immediate and extended social surroundings. In this context, peers and family exercise a significant influence on the identities of adolescents and young adults. The students will be asked to assess the nature of their relationship with friends and family and explore these negotiations in the context of sharing versus power.

The teacher will help students broaden their understanding by extending the discussion to include other social relationships, beyond peers and family. They will be encouraged to think about how they are influenced and how they in turn influence the people around them. The class shall explore the importance of open conversation as a means to resolve conflicts and contradictions.

Sharing vs Power: Peers

Identity formation and development is significantly dependent on the peer group with which the individual interacts. During this class, the students may pose the following question to themselves and to each other- What is the nature of the relationships that they share with their peers? Adolescents and young adults like to conform to peer expectations. Students may explore whether relationships between peers are equal. What forces mediate these relationships? By posing examples from real life, the teacher will encourage the students to closely examine their relationships with their friends and family.

Activities

Ask the students to describe their close friends with fictitious names. They should then be asked why they are close to them and what is the one quality about their friends that they appreciate.

Divide students into groups of 5 each. This can vary depending on the class size. Each group can discuss how they were influenced by their friends in decision making processes.

The class/ group can share a story from their life about how they made a decision based on peer pressure. They should also share the result. Were they happy or unhappy about it? The findings can be discussed in the class.

Sharing vs Power: Family

The family is often considered to be a given and stable construct in which one is born or placed. As the relationships of adolescents with people outside the home grow, their interactions with their families evolve and take on a new and sometimes difficult character. Discussions and activities in the class should help the students objectively analyse their family space and the way in which they negotiate with it at different points of time. Through examples from day to day life, the teacher will help the students understand such spaces and the role they play.

Activities

Describe the ideal family. The students can think about the nature of the ideal created by them. What is the role played by siblings in your personal development?

Role play can be used to perform the different roles in a family so as to understand the different points of view within it.

Sharing vs Power: Society

The individuals generally extend the nature of their relationships with the family to the larger social world. In their pursuit to seek autonomy and independence, they may form new kinds of relationships in the larger social context. These relationships may be characterised by imbalances in power. This lecture will try to help the students strike a balance between self and society and stress the role of dialogue, sharing and cooperation.

Activities

The teacher can ask the students to describe any one constructive social role performed by them. (Any way in which they helped people around them). They can draw, speak, share a photograph or write a creative piece about it.

In the years to come what kind of role do you see yourself performing in society?

Share any one story about a person that has really influenced you? It can be about a public figure or anyone around you.

Going Beyond Power Through Open Conversation

In the previous lectures, the discussion has been around family, peer groups and society. In this session, the focus will be on the ways to build a more egalitarian society—one that is more collaborative, inclusive and takes into account different points of view. Open Conversation is suggested as a way by which acceptance, active listening and empathy can be encouraged.

Activities

The students can be asked to present a brief performance showing the way in which open conversation can help in conflict resolution.

Movies in line with classroom discussions held in the past few weeks can be shown to the students. Movie screening should be followed by a discussion.

A short story, poem or a play can be used to build on classroom discussions.

Mindfulness

This module focuses on the significance of silence, introspection and non-judgmental awareness of the present moment. These mental practices are for understanding and building humane connection with self and others. The students are sometimes unable to spare time for their inner growth. Mindfulness practices aim at self-awareness and self-acceptance for overall well being. Valuing and practicing silence helps in the process of deeper reflection and builds inner strength to face conflicts with calmness. It hones the ability to develop mental equanimity and equipoise.

The Value of Silence and Reflection

The students will learn to understand the value of silence in the noise around. The practice of silence helps in self-reflection and connecting the inner and outer worlds. It enables one to experience joy, contentment and peace. Silence is a way of understanding how to enjoy one's own company and not to confuse being alone with loneliness. The students will appreciate that silence and solitude are positive and constructive.

Activities

The students can be asked to maintain silence and watch the flow of thoughts and emotions. In the process of silence the students can identify what gives them happiness and what they can do to create happiness for others.

The students can visit natural spaces to understand how silence runs in the sounds of nature which can help them realise peace.

Practice of Mindfulness

Through this lesson, the students will understand the significance of mindfulness as a daily practice for understanding that happiness depends on the self-training of mind. The joy of living in the moment with full awareness and steadiness of mind are important for accepting and cherishing all experiences positively and non-judgmentally.

Suggested Activities

Mindful walk/trek in the garden/forest/mountains or at a monument. Mindful eating while enjoying all elements of tastes in different types of food can also be done.

The students can be engaged in groups for non-judgmental listening

The class can be divided to discuss what activities of the day they engage with full awareness and where the moments go unnoticed

Unit 3

Identity, Self-image, Status, Self-worth

The module is designed to help the learners revisit the constructs of identity, self and personhood. It builds on questions such as 'who am I', 'how do others and I see myself', 'does status and self-image affect my sense of self-worth'. Specifically, it deals with how one's identity takes shape and thereon begins to be an integral part of oneself. It encourages the students to think about what factors influence their self-worth, such as achievements and accumulations, wealth, career or popularity. The students learn to accept and appreciate self and others.

Identity Construction and Expression: Individual and Collective

This lesson is aimed to help the learners deconstruct their sense of identity and rechart the signifiers/ markers and processes which have played a pivotal role in constructing their sense of identity and self. It unfolds processes of socialisation within family, school, community and society at large have played a role in making students who they are. How do

these processes shape our notions of self-concept, self-evaluation, and self-esteem? The students will be able to become aware of their individual and collective sense of identity and self.

Activities

The teacher may ask the students to imagine one's identity in different contexts that are significant for identity construction. For instance, what does identity of being someone's 'child' entail; likewise what kind of an identity does one expect of oneself as a sibling, student and as a friend.

The teacher may ask the students to read from biographies/autobiographies of people from other cultures and discuss excerpts from the books. The teacher may elaborate the qualities of these people.

The teacher may organise a field visit with the students to different places. Ask the students to survey people from those locales about their experiences.

Accepting and Valuing Oneself

This lesson builds on the previous lesson by unpacking how concerns revolving around self- image and status may affect one's sense of self. It aims to make one aware why a challenge to

one's identity may lead to discomfort and conflict. Students will be encouraged to accept their physical appearance and identity and to value self-worth. This lesson invites them to undertake an inward journey.

Activities

The teacher may ask students to respond to different characters in a movie where challenges to their identity lead to different kinds of responses.

What will change after 10 years in terms of your identity and what according to you will not change?

The teacher may ask the students to identify an 'open space' and 'sit alone' and write a reflective essay on the theme, 'remember what makes you, you'.

Gender Roles

The objective of this module is to enable the students to differentiate between biological and psychological context of gender in order to understand how

their gendered identities are socially constructed. Gender refers to the characteristics of men and women and includes norms, behaviour and roles associated with being man or woman, girl or boy. Further, this will enable the students to become aware that their destiny need not be determined by biology.

Understanding a Gendered World

The objective of this lecture is to enable the students to understand that gender roles are taught by the process of socialization, beginning with the family. Everyday things that we do like eating, speaking, walking, our gestures and even the professions that we think we choose are all often influenced by societal norms.

Activities

The teacher may ask the students to list things associated under the heading; men and women. Once listed, the headings can be interchanged and a discussion may follow.

Ask students to bring an artefact from home, it can be a childhood picture. On the basis of the picture students can share childhood experiences. Through the narrative of their oral history students can share experiences of how they acquired gender.

Identifying and Transcending Stereotypes

In the previous lecture, students have been made aware that gender stereotypes are socially constructed, that the ways in which we interact with others and with ourselves are shaped by gender. The objective of this lecture is to explain the importance of thinking beyond the stereotypes and to reinforce that biological differences between genders should not lead to social discrimination.

Activities

Movie viewing: Students and teachers can choose any movie for discussion.

Quiz cards: On the cards the following can be written and the student can be asked to identify which is socially constructed and which refers to biology.

Men are Breadwinners, Women are homemakers.

Males have XY chromosomes, Females have XX chromosomes. Women give birth to babies, men don't.

Boys don't cry

Digital Identity

It may be constricting to identify exclusively with ideas like region, ethnicity, language, gender, nationality. For, in this increasingly interconnected world, students find themselves at the intersection of many ideas - evolving and fixed, dominant and marginalised. This rainbow of ideas provides an opportunity to appreciate the diversity in the constitution of an individual's identity. But what happens when one is given a chance to construct a digital identity for oneself? Digital platforms and social networking sites arguably provide an individual the choice to portray oneself the way one likes. Do we choose to present our authentic selves or do we prefer to present highly curated versions of ourselves? Do social media posts reflect self-respect and self-love?

Identity Formation and Validation in the Digital World

Through this session, students are expected to realise the ways in which they construct themselves digitally and how that construction is a manifestation of conformity, resistance and/or subversion, of the dominant ideologies. Students should be encouraged to reflect on what exactly they are seeking from engaging with social media. They need to think how the joy of sharing ideas may be different from the egoic need for compulsive validation.

Activities

Think of the digital filters that you use before sharing your photographs with others. Why do you think you need to do that?

We often feel happy about being validated in the form of 'likes' and positive comments on our social media posts. However, do you feel sad when that does not happen? What could be the possible reason for your mind to have this line of thought?

Digital Identities: Impact on the Self

The students will carry forward the learnings from the previous session and continue their inquiry in the realm of motivations for curating a digital self and its relation to self-esteem. They would be encouraged to engage in a non-judgemental conversation which would motivate them to inquire whether

their digital activities are a result of anxiety which may be emanating from their self-image.

Activities

Do you think the use of digital filters is disrespectful to your self? Is not using them a source of anxiety for you? Can this have anything to do with your self-esteem?

Think of situations that make you feel sad on social media. Note them down. Do you think not exposing yourself to such a situation is a solution or do you think you also need to locate the issue within yourself?

Try spending a day without doing any activity on social media like posting anything or surfing other people's accounts for their activities. At the end of the day observe how you feel.

Unit IV

Lifestyle Choices

How we choose to live and behave influences our social and emotional wellbeing. In this module we analyse our lifestyle choices relating to material and cultural consumption, relationships and career. Students will be encouraged to inquire whether our everyday choices are based on a culture of passive consumption and conformism. We will seek to explore possibilities of alternative forms of living premised on ethical consumption, altruism, simple and sustainable living.

What Choices Does One Get to Make?

In this session, the attempt will be to explore the extent to which consumerism impacts our lifestyle choices and the repercussions of these on our natural and social environment. Today we live in an era of mass consumption and consumer culture fostered by advanced technologies and global production systems. Overt materialism, wasteful and conspicuous consumption unmindful of the larger implications are key aspects of this phenomenon. In this lecture, we explore our lifestyle choices such as our physical image, attire, dietary choices, desire for dream homes and destination weddings. This would be the starting point for a re-imagination of a world based upon choices that would lead to simple and sustainable living.



Suggested Activities

Students may be asked to work through their consumption history right from their childhood. A discussion may then be initiated by asking the students to reflect on their consumption choices and their motives behind the same.

The teacher may identify a few products like tea, coffee, coca-cola, jeans etc and ask the students to trace product histories and geographies.

The students may be asked to discuss a strong desire to possess an object and then deconstruct that desire. Discussion may emphasise upon why they wanted it?

Is Choice Influenced? Relationships, Career Choices

In this lecture, we examine the extent to which lifestyle choices, regarding relationships and career, get influenced and by what factors. Do we really have a choice as regards the career that we intend to pursue? Often factors like family, gender, the need for security and stability influence our choices. Recognizing and mapping the space of freedom and unfreedom with respect to our choices is a necessary life skill that would enable a more self-aware and harmonious living.

Activities

Reflect on an instance where you may have inflicted pain on someone and also think of a moment when you felt someone was insensitive in their conduct of a relationship.

The teacher may divide the class into small groups and hold a discussion on what constitutes a successful career.

Reflect on the various career options available in your society and discuss what you would prefer to pursue and why?

Discrimination

The module is designed to help the learners understand the origin and nature of discrimination and the effects thereof. Discrimination can be on various grounds such as ethnicity, religion, caste, race, gender, disability, or place of birth. One's discriminatory actions can lead to social fragmentation. The module encourages the learners to introspect their actions and seeks to celebrate diversity.

Why and How? Forms of Discrimination



The objective of this lesson is to make learners aware of different forms of discrimination. On the one hand, an individual can be a victim of discrimination, and on the other, the same person

may harbour prejudice or discriminate against others. It is pertinent to understand our own biases and introspect our actions.

Activities

The teacher can ask students to count their friends who belong to different backgrounds. They can reflect on what they have learned by interacting with these friends.

Ask students to learn about their neighbourhood and document what groups live there, what has been the nature of their relationships.

An exercise on privilege using nothing but wadded up papers and a trash can.
Students Learn A Powerful Lesson About Privilege.
<https://youtu.be/2KlmvmuxzYE>

Stress and Its Management

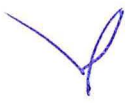
This module is designed to give students an opportunity to articulate the pressures and

challenges that one experiences in life. It gives students a chance to spell out how pressure to perform well can become a source of stress. The module is aimed to equip the learners with ways of dealing with disappointments with regard to the choice of career path and with performance related stress. It brings to fore skills of coping with stress and disappointments. It also highlights the role of physical well-being in keeping oneself mentally healthy.

Career Pressures, Examinations

This lesson is designed to help students have a relook at the challenges and pressures they have recently faced or are facing on account of career choices and examinations. It gives them a space to articulate what they might have faced while making these choices. This lesson also gives them an opportunity to highlight the uncertainties and challenges they foresee in their future lives.

Activities



The teacher may ask the students to organise themselves in groups of 4-6. Each of the groups have to do a role-play around the themes on career pressures.

Show images of different people and ask the students to quickly jot down impressions. The collective answers serve as a springboard for discussions. Students may learn about their own biases through this activity.

The teacher may ask the students to identify movies where struggles related to career and performance pressure stand out.

The teacher may ask the students to share their experiences about the following:

- First few months into an academic programmes
- 2 months before examinations
- On the day of examination
- 15 days after examinations get over

Dealing with Disappointments, Coping Skills, Health and Fitness

This session aims to equip the learners with coping skills to manage stress and deal with disappointments. Furthermore, it makes them aware of the importance of health and fitness for maintaining mental health.

Activities

The teacher can ask the students to write how they come to know they are stressed and what they do when they are stressed? The teacher may engage them in a discussion on coping skills and channelize students' energies into positive ways of resolutions of conflict and stress.

The teacher may ask the students to discuss the lives of high achievers and low achievers and

how performance pressures drive their lives. Can they draw similarities and differences in the sources of stresses and how they deal with these stresses?

Ask each of the students to share their daily regime to keep themselves physically fit. The students may also share how each one mentally 'feels/experiences' when one is engaged in physical exercises.

Connect with Nature

This module is designed to strengthen bonds with nature while understanding its intrinsic value as opposed to its instrumental value. Issues of global warming

and environmental degradation are the consequences of a disconnect between humans and nature. The aim is to cultivate environmental awareness through virtues of altruistic responsibility, empathy, cohesiveness, and mutual sustainability between nature, flora-fauna, animals and humans. The students may be engaged in activities to build bridges between the inner environment (one's self) and external environment (nature). In this way, they can celebrate oneness with nature and perceive nature not as a means but an end in itself.

Sensitivity Towards Other Sentient Beings

The students, in this session, would participate in group based environmental activities as a way of building social responsibility towards all sentient beings. Any action against even a part of nature impacts the whole. Thus, it is the responsibility of all, to create a safe environment for all sentient beings to live in harmony.

Activities

Students can be encouraged for Nature walks, nature drives, treks and hikes, nature photography, adopting natural spaces in local areas, plantation drives, visiting biodiversity parks, adopting spaces for greening etc.

Visits to animal shelters can be organised to sensitise the students.

Films can be screened on environmental sustainability, environmental consciousness etc

- Any other Practical/Practice as decided from time to time

Suggested Readings

- Black, Donna Lord (2022). Essentials of Social and Emotional Learning (SEL). NJ : Wiley.
- Goleman, Daniel (2005). Emotional Intelligence. USA: Bantam.
- Swami Vivekanand. (2016). The complete works of Swami Vivekanand. Advaita Ashrama. (<https://www.ramakrishnavivekanand.info/vivekanand/complete-works.html>)

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

VAC 1: SPORTS FOR LIFE - I

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------|---------|-----------------------------------|----------|---------------------|--------------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Sports for Life - I | 02 | 0 | 0 | 2 | Pass in Class 12 th | NIL |

Learning Objectives

The Learning Objectives of this course are

- To imbibe the significance of sports to promote health, fitness and wellness in life.
- To understand the values of teamwork, tolerance, goal-setting and decision making.
- To learn the strategies and tactical moves while playing a sport.
- To understand the importance of physical activity in reference to 3S: strength, speed and suppleness.

Learning outcomes

The learning Outcomes of this course are

- Acquire values of cooperation, team spirit, determination, and endurance.
- Acquire good health and psychological well-being through sports participation.
- Apply the decision making-ability and goal-setting skills acquired through sports participation in everyday life.
- Acquire skills for engaging in moderate or vigorous physical activity and sports participation.
- Reduce exposure to screen time on electronic gadgets and channelising energy through sports participation.

SYLLABUS OF SPORTS LIFE 1
ONLY PRACTICAL

UNIT – I: Rules and Techniques

(4 Weeks)

Concept

- Rules of the Sport
- Techniques / skills in the sport/ Aerobic Skills

Practical

- Marking of the court / field
- Outdoor Adventure Activity
- Skills learning in sports
- Group Games / Relays
- Participation in Intramural competitions

UNIT – II: Components of Fitness

(4 Weeks)

Concepts

- Meaning and Development of Strength, Speed,
- Endurance, Flexibility and Coordinative Abilities.

Practical

- Skills learning and Participation in sports
- Group Games / Relays / Minor games
- Participation in Intramural competitions

UNIT – III: Benefits of sports and physical activity

(4 Weeks)

Concepts

- Effect of exercise on the body
- Organizing of a sports competition
- Balanced Diet

Practical

- Skills learning and participation in sports
- Group Games, / Relays /Step Aerobics
- Participation in Intramural competitions

UNIT – IV Sports in Contemporary Times

(3 Weeks)

Concepts

- Honours and Awards associated with sports and sportspersons

Practical

- Skills learning and Participation in sports
- Participation in Intramural competitions

Practical component : 30x2 (15 weeks)

The concepts are to be dealt with during the practical/practice classes: Aerobics and Physical Activity, Athletics, Archery, Badminton, Basketball, Boxing, Chess, Carrom, Cricket, Football, Handball, Hockey, Kabaddi, Kho-Kho, Swimming, Shooting, Squash, Table-Tennis, Tennis, Taekwando, Volleyball, Wushu, Wrestling etc.

Suggestive readings

- James R Morrow Jr., Dale P. Mood, James G. Disch, Minsoo Kang - Measurement and Evaluation in Human Performance-Human Kinetics Publishers (2015)
- W.Larry Kenney, Jack H. Wilmore, Devid L.Costil.(2015). Physiology of Sports and Exercise, Second Edition. USA.Human Kinetics.
- Wener W.K. Hoeger, Sharon A. Hoeger - Fitness and Wellness-Cengage Learning (2014)
- Kansal DK (2012).A practical approach to Measurement Evaluation in Physical Education & Sports selection. Sports & Spiritual Science Publications, New Delhi.
- Websites of International Sports Federations, Ministry of Youth Affairs and Sports Govt. of India

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time



VAC 1: SWACHH BHARAT

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------|---------|-----------------------------------|----------|---------------------|--------------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Swachh Bharat | 02 | 1 | 0 | 1 | Pass in Class 12 th | NIL |

Learning Objectives

The Learning Objectives of the Course are:

- To understand the developmental challenges with reference to sanitation infrastructure and practices.
- To build values of cleanliness, hygiene and waste management in diverse socio-economic contexts.
- To understand planning of social policy and programmes.
- To use waste management techniques at community level.
- To instil a sense of service towards society and the Nation.

Learning Outcomes

The Learning Outcomes of the course are:

- Understanding the significance of the Swachh Bharat Abhiyan.
- Ability to analyse and predict the sanitation challenges of India
- Determine the link between sanitation and development.
- Contribute to the Swachh Bharat Abhiyan through real time projects/fieldwork.

SYLLABUS OF SWACHH BHARAT

UNIT – I Introduction to Swachh Bharat Abhiyan

(4 Weeks)

- Gandhian philosophy of Cleanliness
- Swachh Bharat Abhiyan (SBA)
- Hygiene, Sanitation & Sustainable Waste Management
- Agencies and nodal Ministries for SBA

- Different phases of the SBA and its evaluation
- Citizens' Responsibilities: Role of Swacchagrahi

UNIT – II Swachh Bharat: Rural and Urban Facets

(8 Weeks)

- Indicators for Swachh Bharat
- Rural
 - i. Sanitation coverage across households (2014 vs. 2022)
 - ii. Open Defecation Free (ODF) Villages: Parameters
 - iii. ODF plus model: Key indicators
- Urban
 - i. Sustainable sanitation
 - ii. Waste/water and solid waste management
 - iii. Garbage Free Cities

UNIT – III Prospects and Challenges

(3 Weeks)

- Attitudes and Perceptions
- Operational and Financial issues
- Monitoring & Supervision
- Community Mobilization

Practical component (if any) –

(15 Weeks)

Suggested Activities: List of activities to be undertaken:

- Identify plastic and e-waste in and around the institution and suggest innovative technologies to minimize wastage.
- Identify events/fests that generate maximum waste and ways to minimize it.
- Visit canteen/shops and track the lifecycle of wet/dry waste in and around the institution and document the findings in the form of a Project Report.
- Conduct interviews of stakeholders to understand the level of awareness.
- Conduct a Clean Audit of the Institution and identify areas for action.
- Conduct cleanliness drives.
- Organise Swachhata Pakhwada meetings, rallies, and mobilization camps within the identified communities.
- Students may participate in the Swachh Bharat Internship programme.
- If required students can share their experiences in the form of a Project Report.
- Any other Practical/Practice as decided from time to time

Essential Readings

- "Swachh Bharat Mission - Gramin, Department of Drinking Water and Sanitation, Ministry of Jal Shakti"
- India 2021, Ministry of Information & Broadcasting
- <http://swachhbharatmission.gov.in/SBMCMS/swachhta-pakhwada.htm>
- <https://swachhbharatmission.gov.in/SBMCMS/about-us.htm>
- https://www.communityledtotalsanitation.org/sites/communityledtotalsanitation.org/files/ODF_verification_checklist.pdf
- <https://sbm.gov.in/phase2dashboard/PhaseII/NationDashboard.aspx>
- <https://www.niti.gov.in/sites/default/files/2019-08/Report%20of%20Sub-Group%20of%20Chief%20Ministers%20on%20Swachh%20Bharat%20Anhiyaan.pdf>

Suggested Readings

- <https://swachhbharatmission.gov.in/SBMCMS/writereaddata/Portal/Images/pdf/brochure/Greywatermanagement.pdf>
- https://swachhbharatmission.gov.in/SBMCMS/writereaddata/Portal/Images/pdf/brochure/PWMB5_28th_June.pdf
- GoI (2020). Swachh Bharat Mission (Grameen) Phase 2: Operational guidelines. Department of Drinking Water and Sanitation, Ministry of Jalshakti.
- MoHUA (2017). Guidelines for Swachh Bharat Mission - Urban (PDF). Ministry of Housing and Urban Affairs, Government of India.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

VAC 1: THE ART OF BEING HAPPY

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|------------------------|---------|-----------------------------------|----------|---------------------|--------------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| The Art of Being Happy | 02 | 1 | 0 | 1 | Pass in Class 12 th | NIL |
| | | | | | | |
| | | | | | | |

Learning Objectives

- To synthesize the insights developed by Human Development experts, Psychologists, Anthropologists on one hand, and the intellectual traditions of Vedantic Philosophy and Indology on the other towards the experience of happiness.
- To illustrate various factors that determine the subjective experience of happiness in a cross cultural context.

Learning outcomes

- The students shall be able to evaluate the factors contributing to the phenomenon of happiness in the personal, familial and community life of an individual in different cultures in the Indian context.
- They will be able to develop healthy interpersonal relationships and wellbeing cherishing the values of Indian culture and philosophy.
- They will be able to relate to the global phenomenon of sustainable development and become sensitive to the needs of the planet.
- They will be able to apply the experience of *Aananda* at a personal level.

SYLLABUS OF THE ART OF BEING HAPPY

UNIT – I Human Ecology and Happiness Lectures

(3 Weeks)

- Definitions/Factors of Happiness: Environmental and Social

- Physical, emotional and psychological well-being for happiness
- Physiological and hormonal basis of happiness
- Coping with Stress: A life saving skill

UNIT – II Indological Theories of Happiness

(4 Weeks)

- *Panch Kosh* Theory & Idea of Well-Being
- Idea of Self and other
- Hierarchy and stages of happiness

UNIT – III Happiness: Cross-cultural Contexts

(4 Weeks)

- Culture and Happiness
- Interpersonal Relationship: Comparative Perspective
- Towards Self-Actualization

UNIT – IV Local and Global Perspective of Happiness

(4 Weeks)

- Measuring happiness: Key indicators
- Happiness Index
- India in Global Happiness Indices

Practical component (if any) –

(15 Weeks)

The course will be based on students' identification and operationalization of the concept of happiness and well-being. Students will explore the indicators and actualization of these concepts in everyday life.

- Community surveys on the facilities promoting positive mental health practices such as Yoga and Meditation Centres, Recreation clubs, and Parks for youth and senior citizens shall be carried out by the students.
- Extending help and social service by visiting old age homes/ hospitals/slum areas or any other disadvantaged groups.
- Students can undertake a field work / project independently or work as an Intern with NGOs working in the area of happiness and well-being.
- Critical appreciation of a documentary/ film based on Happiness and Well-being can be undertaken by the students.
- Workshops/ Sessions for the actualization of innate creative potential- (Music, Drawing, Calligraphy, Dramatics)

- Hands-on Happiness: Gardening, Cleaning, Washing, Cooking, etc.
- If required, students can share their experiences in the form of a Project Report.
- Students may share their experiences in the form of Audio-video presentations of 15-20 minutes.
- Any other Practical/Practice as decided from time to time

Essential/recommended readings

- Banavathy, Vinayachandra & Choudry, Anuradha. (2013). Understanding Happiness: A Vedantic Perspective. Psychological Studies. 59. 141-152. 10.1007/s12646-013-0230-x.
- Leontiev, Dmitry. (2012). Anthropology of Happiness: the state of Well-Being and the way of Joy, In Social Science, Vol 43. No 2 P93-104.
- Snyder .C.R. S.J. Lopez & J.T. Pedrotti. (2015). Positive Psychology (The Scientific and Practical Explorations of Human Strengths): Sage Publication. (Chapter 5: Subjective Well-being: The Science of Happiness and Life Satisfaction, Page 63 to 73)
- World Development Indicators 2016. (2016). United States: World Bank Publications.
- Zelenski, John. (2019) Positive Psychology: The Science of Well-Being, Carleton University, Ottawa, Canada, Sage Publications Chapter 3: Happiness; page (77 to 110)

Suggestive readings

- Baumgardner, S & Crothers, M. (2014). Positive Psychology. New Delhi: Pearson Education, India.
- Goleman, D. (2007). Social Intelligence: The new science of human relationships, RHUK
- Mathews, Gordon and Carolina Izquierdo (eds). (2010). Pursuits of Happiness: Well being in Anthropological Perspective. Berghan Books
- Seligman, M. (2002). Authentic happiness: Using the new positive psychology to realize your potential for lasting fulfillment. New York: Free Press.
- Sri Aurobindo, The Synthesis of Yoga, Part Three: The Yoga of Divine Love, Chapter 7, The Ananda Brahman, pp. 569-570

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

VAC 1: VEDIC MATHEMATICS - I

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-----------------------|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Vedic Mathematics - I | 02 | 1 | 0 | 1 | 12 TH Pass | NIL |

Learning Objectives

The Learning Objectives of the course are:

- Foster love for maths and remove its fear through Vedic Mathematics
- Enhance computation skills in students through Vedic Mathematics
- Develop logical and analytical thinking
- Promote joyful learning of mathematics
- Discuss the rich heritage of mathematical temper of Ancient India

Learning outcomes

The Learning Outcomes of the course are

- Overcome the fear of maths
- Improved critical thinking
- Familiarity with the mathematical underpinnings and techniques
- Ability to do basic maths faster and with ease.
- Appreciate the Mathematical advancements of Ancient India.

SYLLABUS OF VEDIC MATHEMATICS - I

UNIT – I Vedic Maths- High Speed Addition and Subtraction Sessions/Lectures (5 Weeks)

- Vedic Maths: History of Vedic Maths and its Features
- Vedic Maths formulae: Sutras and Upsutras
- Addition in Vedic Maths: Without carrying, Dot Method

- Subtraction in Vedic Maths: Nikhilam Navatashcaramam Dashatah (All from 9 last from 10)
- Fraction –Addition and Subtraction

UNIT – II Vedic Maths- Miracle Multiplication and Excellent Division (4 Weeks)

- Multiplication in Vedic Maths: Base Method (any two numbers upto three digits)
- Multiplication by Urdhva Tiryak Sutra
- Miracle multiplication: Any three-digit number by series of 1's and 9's
- Division by Urdhva Tiryak Sutra (Vinculum method)

UNIT – III Vedic Maths-Lightening Squares and Rapid Cubes (3 Weeks)

- Squares of any two-digit numbers: Base method
- Square of numbers ending in 5: Ekadhikena Purvena Sutra
- Easy square roots: Dwandwa Yoga (duplex) Sutra
- Square root of 2: Baudhayana Shulbasutra
- Cubing: Yavadunam Sutra

UNIT – IV Vedic Maths-Enlighten Algebra and Geometry (3 Weeks)

- Factoring Quadratic equation: Anurupyena, Adyamadyenantyamanty Sutra
- Concept of Baudhayana (Pythagoras) Theorem
- Circling a square: Baudhayana Shulbasutra
- Concept of pi: Baudhayana Shulbasutra
- Concept angle (θ) 0o, 30o, 45o, 60o and 90o: Baudhayana number

Practical component : (If any) (15 Weeks)

The students are expected to demonstrate the application of Vedic Maths: Sutra and Upsutra

- Conduct workshops under the supervision of the course teacher to spread awareness on the utility of Vedic Mathematics.
- Students are required to visit nearby retail shops/local vendors to purchase stationery/vegetables/bread and butter and use tricks of Vedic maths of addition and subtraction to calculate the amount to pay and receive the difference.
- Students may share their experience with the class teacher in the form of audio-video presentations of 15 minutes.
- If required, students can share their experiences in the form of a Project Report.
- Any other Practical/Practice as decided from time to time

Essential Readings

- The Essential of Vedic Mathematics, Rajesh Kumar Thakur, Rupa Publications, New Delhi 2019.
- Vedic Mathematics Made Easy, Dahaval Bathia, Jaico Publishing, New Delhi 2011
- Vedic Mathematics: Sixteen Simple Mathematical formulae from the Vedas, Jagadguru Swami Sri Bharati Krishna Trithaji, Motilal Banarasidas, New Delhi 2015.
- Learn Vedic Speed Mathematics Systematically, Chaitnaya A. Patil 2018.

Suggested Readings

- A Modern Introduction to Ancient Indian Mathematics, T S Bhanumurthy, Wiley Eastern Limited, New Delhi.
- Enjoy Vedic Mathematics, S M Chauthaiwale, R Kollaru, The Art of Living, Bangalore.
- Magical World of Mathematics, VG Unkalkar, Vandana publishers, Bangalore.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

VAC 1: Yoga: PHILOSOPHY AND PRACTICE

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-------------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Yoga: Philosophy and Practice | 02 | 1 | 0 | 1 | 12 th Pass | NIL |

Learning Objectives

The Learning Objectives of the course are:

- To learn the fundamentals of Yoga for harmonising the body, mind and emotions.
- To demonstrate the value and the practice of holistic living.
- To value the heritage of Yoga for self and society.

Learning outcomes

The Learning Outcomes of the course are:

- Understanding ways to harmonise the body and mind through Yoga.
- Disciplining the mind through practicing Yoga.
- Understanding of consciousness through practical training.

SYLLABUS OF YOGA: PHILOSOPHY AND PRACTICE

UNIT – I Yoga: *Asana*, *Prāṇāyāma* and *Dhyana*

(5 Weeks)

- History of Yoga
- Significance of Asana
- Effect of Prāṇāyama
- Importance of Dhyana

UNIT – II Patanjali's *Yogasūtra* and *Chakra*

(6 Weeks)

- Patanjali's *Yogasūtra*: a summary
- First sutra
- Second sutra
- Chakras (psychic centres)

UNIT – III Understanding *Asana* and *Pranayama*

(4 Weeks)

- Asana: the basics
- Surya Namaskara
- Nadishodhana Pranayama

Practical component (if any)

(15 Weeks)

- Surya Namaskar
- Selected Asana
- Pranayama
- Relaxation exercises for the eyes (7 steps) neck (4 steps)
- Concentration on Bhramadhy
- Project Work (effect of everyday concentration on breath for 15 minutes: reflections to be compiled in the form of a Project report.
- Any other Practical/Practice as decided from time to time

Essential Readings

- Āsanas, Prāṇāyāma and Mudra Bandh , Swami Satyananda Saraswati, Yoga Publications Trust, Munger, Bihar, India, 2004.
- Patanjali Yogasutras, Commentary by Swami Vivekanand, Rajyoga

Suggested Reading

- Patanjali Yog Pradeep- Swami Omanand Saraswati, Gita Press, Gorakhpur, 2013.
- Science of Pranayama-Swami Sivananda, Edition by David De Angellis, 2019, All Rights Reserved.
- Udayveer Shastri Granthavali, 4, Patanjali- Yoga Darshanam, Udayavir Shastri, Govindram Hasanand, Delhi 6.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

VAC 1: भारतीय भक्ति परंपरा और मानव मूल्य**Credit distribution, Eligibility and Pre-requisites of the Course**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-----------------------------------|---------|-----------------------------------|----------|---------------------|--------------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| भारतीय भक्ति परंपरा और मानव मूल्य | 02 | 1 | 0 | 1 | Pass in Class 12 th | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- भारतीय भक्ति की महान परंपरा, प्राचीनता और इसके अखिल भारतीय स्वरूप से छात्रों का परिचय कराना
- भारतीय भक्ति परंपरा के माध्यम से छात्रों में मानव मूल्यों और गुणों को जगाकर उनका चारित्रिक विकास करना और एक अच्छे मनुष्य का निर्माण करना।
- छात्रों को भारतीय नैतिक, सांस्कृतिक और सामाजिक मूल्यों के प्रति जागरूक करना।
- भारतीय भक्ति परंपरा के माध्यम से राष्ट्रीयता और अखिल भारतीयता की भावना जागृत करना।

Learning outcomes

The Learning Outcomes of this course are as follows:

- भारतीय भक्ति परंपरा के माध्यम से छात्रों में मानव मूल्यों और गुणों को विकास होगा और वे एक अच्छे और चरित्रवान मनुष्य बन सकेंगे।
- भारतीय भक्ति परंपरा के सांस्कृतिक और सामाजिक पक्षों की जानकारी हो सकेगी।
- भक्ति की प्राचीनता और अखिल भारतीय स्वरूप की जानकारी से राष्ट्रीयता और अखिल

भारतीयता की भावना जागृत और मजबूत होगी।

- प्रमुख भक्त कवियों का परिचय और उनके विचारों की जानकारी हो सकेगी।

SYLLABUS OF परंपरा और मानव मूल्य

UNIT – I भारतीय भक्ति परंपरा

(5 Weeks)

- भक्ति : अर्थ और अवधारणा
- भक्ति के विभिन्न संप्रदाय और सिद्धांत
- भारत की सांस्कृतिक एकता और भक्ति
- भक्ति का अखिल भारतीय स्वरूप

UNIT – II भारत के कुछ प्रमुख भक्त और उनके विचार

(5 Weeks)

संतति रुक्मिण, आण्डाल, अक्कमहादेवी, ललदयद, मीराबाई, तुलसीदास, कबीरदास, रैदास, गुरु नानक, सूरदास, जायसी, तकुाराम, नामदेव, नरसिंह मेहता, वेमना, कंचन, नम्बियार, चतैन्य महाप्रभु, चंडीदास, सारला दास, शंकरदेव

UNIT – III मानव मूल्य और भक्ति

(5 Weeks)

मानव मूल्य का अर्थ

चयनित भक्त कवियों की जीवन मूल्यपरक कविताएँ

Practical component (if any) –

(15 Weeks)

- पाठ्यक्रम में उल्लिखित कवियों में से किसी एक कवि की रचनाओं में विभिन्न मानव मूल्यों के आधार पर प्रोजेक्ट
- वर्तमान समय में भक्ति की प्रासंगिकता को समझना; सर्वे और साक्षात्कार पद्धति के आधार पर.
- जीवन में मानव मूल्यों के प्रति पालन पर सर्वे और साक्षात्कार के आधार पर एक रिपोर्ट बनाना.

- उल्लिखित कवियों में से किसी एक कवि से संबंधित किसी मठ, आश्रम या मंदिर आदि, अथवा कोई फिल्म/ डॉक्यूमेंट्री के आधार पर रिपोर्ट बनाना.
- आवश्यक हो, तो छात्र प्रोजेक्ट रिपोर्ट के रूप में अपने अनुभव साझा करें
- Any other Practical/Practice as decided from time to time

Essential/recommended readings

- 'भक्ति का उद्भव और विकास तथा वैष्णव भक्ति के विविधरूप, भारतीय साहित्य का समेकित इतिहास, संपादक- डॉ नगेंद्र, हिंदी माध्यम कार्यान्वयन निदेशालय, दिल्ली विश्वविद्यालय, दिल्ली, पृष्ठ संख्या 215-250
- कुछ प्रमुख कवियों के चयनित पद
- 'भक्ति आंदोलन और भक्ति काव्य', शिव कुमार मिश्र, अभिव्यक्ति प्रकाशन, इलाहाबाद, 1994
- 'मानव मूल्य और साहित्य, डॉ धर्मवीर भारती, भारतीय ज्ञानपीठ, नई दिल्ली, 1999

Suggested readings

- 'भक्ति के आयाम', डॉ. पी. जयरामन, वाणी प्रकाशन, नई दिल्ली
- 'हिंदी साहित्य का इतिहास, आचार्य रामचंद्र शुक्ल, लोक भारती प्रकाशन, इलाहाबाद
- 'मध्यकालीन हिंदी काव्य का स्त्री पक्ष', डॉ. पूनम कुमारी, अनामिका पब्लिशर्स एंड डिस्ट्रीब्यूटर्स, नई दिल्ली
- 'मध्यकालीन हिंदी भक्ति काव्य: पुनर्मूल्यांकन के आयाम', डॉ. पूनम कुमारी, अनामिका पब्लिशर्स एंड डिस्ट्रीब्यूटर्स, नई दिल्ली

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

VAC 1: साहित्य संस्कृति और सिनेमा**Credit distribution, Eligibility and Pre-requisites of the Course**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|----------------------------|---------|-----------------------------------|----------|---------------------|--------------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| साहित्य संस्कृति और सिनेमा | 02 | 1 | 0 | 1 | Pass in Class 12 th | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- साहित्य, संस्कृति और सिनेमा के माध्यम से छात्रों का सर्वांगीण विकास करना
- छात्रों को नैतिक, सांस्कृतिक और संवैधानिक मूल्यों के प्रति जागरूक करना
- भारतीय ज्ञान परंपरा, वैज्ञानिक दृष्टिकोण और तार्किक क्षमता को प्रोत्साहित करना
- साहित्य, संस्कृति और सिनेमा के माध्यम से राष्ट्र प्रेम की भावना जागृत करना
- सामूहिक कार्यों के माध्यम से सम्प्रेषण, प्रस्तुतीकरण एवं कौशल दक्षता विकसित करना

Learning outcomes

The Learning Outcomes of this course are as follows:

- साहित्य, संस्कृति और सिनेमा के माध्यम से नैतिक, सांस्कृतिक और संवैधानिक मूल्यों की समझ विकसित होगी
- भारतीय ज्ञान परंपरा और नैतिक मूल्यों के प्रति सकारात्मक दृष्टिकोण बनेगा
- वैचारिक समझ एवं तार्किक क्षमता का विकास होगा
- परियोजना के माध्यम से सम्प्रेषण एवं प्रस्तुतीकरण दक्षता का विकास होगा
- छात्रों के व्यक्तित्व का सर्वांगीण विकास होगा

SYLLABUS OF साहित्य संस्कृति और सिनेमा

UNIT – I साहित्य, संस्कृति और सिनेमा का सामान्य परिचय (2 Weeks)

- साहित्य, संस्कृति और सिनेमा : परिभाषा और स्वरूप
- साहित्य , संस्कृति और सिनेमा का अंतःसंबंध

UNIT – II साहित्यिक कृतियों पर आधारित सिनेमा (6 Weeks)

- साहित्यिक कृतियों पर आधारित सिनेमा में परिकल्पना
- साहित्यिक कृतियों पर आधारित सिनेमा की प्रासंगिकता
- साहित्यिक कृतियों पर आधारित सिनेमा- आनंदमठ 1952, तीसरी कसम 1966, रजनीगंधा 1974, पद्मावत 2016

UNIT – III हिन्दी सिनेमा में सामाजिक –सांस्कृतिक मूल्यों की अभिव्यक्ति (7 Weeks)

- सामाजिक - सांस्कृतिक मूल्य
- सामाजिक - सांस्कृतिक मूल्य के शक्तिशाली उपकरण के रूप में सिनेमा
- हिन्दी सिनेमा में अंतर्निहित सामाजिक- सांस्कृतिक मूल्य – मदर इंडिया 1957, बंदिनी 1963, पूरब और पश्चिम 1970, हम आपके हैं कौन 1994, टॉयलेट: एक प्रेमकथा 2017

Practical component (if any) – (15 Weeks)

- भारतीय सांस्कृतिक मूल्यों पर आधारित लघु फिल्म हेतु पटकथा लेखन (8-10 मि नट)
- साहित्यिक रचनाओं का फिल्मांतरण (8-10 मि नट); यह सामूहिक क्रियाकलाप होगा
- राष्ट्रप्रेम, कुटुंब, शांति , पर्यावरण, जल-संरक्षण, स्वच्छता, मित्रता, सत्यनिष्ठा, कर्मनिष्ठा, समरसता में से किसी एक विषय पर मूक फिल्म निर्माण (8-10 मि नट)
- आवश्यक हो, तो छात्र प्रोजेक्ट रिपोर्ट के रूप में अपने अनुभव साझा करें
- Any other Practical/Practice as decided from time to time

Essential/Recommended readings

- 'संस्कृति क्या है (निबंध) संस्कृति ,भाषा और राष्ट्र, रामधारी सिंह दिनकर, लोक भारती प्रकाशन,2008,पृष्ठ संख्या 60-64.
- साहित्य का उद्देश्य(निबंध) ,प्रेमचंद ,एस. के.पब्लिशर्स,नई दि ल्ली,1988,पृष्ठसंख्या 7-18.
- भारतीय संस्कृति के स्वर,महादेवी वर्मा , राजपाल एंड संस प्रकाशन 2017 .
- हि ंदी सिनेमा ; भाषा ,समाज और संस्कृति (लेख), पृष्ठ संख्या 11-18 भाषा ,साहित्य ,समाज और संस्कृति खंड 6,प्रो. लालचंद राम, अक्षर पब्लिशर्स एंड डिस्ट्रीब्यूटर्स,2020
- सिनेमा और साहित्य का अंतःसंबंध (लेख) पृष्ठ संख्या 30-34,साहित्य और सिनेमा, परुषोत्तम कंु दे (संपा.) साहित्य संस्थान,2014
- साहित्यिक रचनाओं का फिल्मांतरण (लेख) पृष्ठ संख्या 206-212,लोकप्रिय सिनेमा और सामाजिक यथार्थ ,जवरीमल पारख, अनामि का पब्लिशर्स एंड डिस्ट्रीब्यूटर्स प्रा.लि., 2019

Suggested readings

- सिनेमा और संस्कृति ,राही मासूम रजा, वाणी प्रकाशन, प्रकाशन वर्ष, 2018.
- जीवन को गढ़ती फिल्में, प्रयाग शुक्ल
- सिनेमा और संसार, उदयन वाजपेयी
- साहित्य,संस्कृति और समाज परिवर्तन की प्रक्रि या(नि बंध)अज्ञेय, संपा०कृष्णदत्तपालीवाल, सस्ता साहित्य मंडल,नई दि ल्ली, 2010, पृष्ठसंख्या 25-41
- सिनेमा समकालीन सिनेमा ,अजय ब्रह्मात्मज,वाणी प्रकाशन,2006
- कल्चर इन्डस्ट्री रिकन्सि डर्डः पृष्ठसंख्या- 98-106 कल्चरइन्डस्ट्रीःथ्योडोरएडोर्नो , राउटलेज (भारतीयसंस्करण)
- दि सिग्निफिकेन्स ऑफ कल्चर इन अन्डस्टैंडिंग ऑफ सोशल चेंज इन कन्टेम्पररि इंडियाः पृष्ठसंख्या- 25-39.
- कल्चर चेंज इन इंडियाःआइडन्टिटी एंड ग्लोबलाइजेशनः योगेन्द्र सिंह .रावत पब्लिकेशन, जयपुर,भारत.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

VAC 1: सृजनात्मक लेखन के आयाम

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|------------------------|---------|-----------------------------------|----------|---------------------|--------------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| सृजनात्मक लेखन के आयाम | 02 | 1 | 0 | 1 | Pass in Class 12 th | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- सृजनात्मकता और भाषायी कौशल का संक्षिप्त परिचय कराना
- विचारों का प्रभावी प्रस्तुति करण करना
- सृजनात्मक चिंतन और लेखन क्षमता को विकसित करना
- मीडिया लेखन की समझ विकसित करना

Learning outcomes

The Learning Outcomes of this course are as follows:

- सृजनात्मक चिंतन और लेखन क्षमता का विकास हो सकेगा
- लेखन और मौखिक अभिव्यक्ति की प्रभावी क्षमता विकसित हो सकेगी
- मीडिया लेखन की समझ विकसित होगी
- विद्यार्थी में अपने परिवेश, समाज तथा राष्ट्र के प्रति संवेदनशीलता का विकास होगा

SYLLABUS OF सृजनात्मक लेखन के आयाम

UNIT – I सृजनात्मक लेखन

(5 Weeks)

- सृजनात्मक लेखन : अर्थ, स्वरूप और बोध

- सृजनात्मक लेखन और परिवेश
- सृजनात्मक लेखन और व्यक्तित्व निर्माण

UNIT – II सृजनात्मक लेखन : भाषिक संदर्भ

(5 Weeks)

- भाव और विचार का भाषा में रूपान्तरण
- साहित्यिक भाषा की विभिन्न छवि याँ
- प्रिंट तथा इलेक्ट्रॉनिक माध्यमों की भाषा का अंतर

UNIT – III सृजनात्मकता लेखन – विविध आयाम

(5 Weeks)

- कविता, गीत, लघु कथा
- हास्य - व्यंग्य लेखन,
- पल्लवन, संक्षेपण , अनुच्छेद

Practical component (if any) –

(15 Weeks)

- कक्षा में प्रत्येक विद्यार्थी द्वारा 'मेरी पहली रचना' शीर्षक से किसी भी विधा में लेखन
- किसी भी साहित्यिक रचना का भाषा की दृष्टि से विश्लेषण
- इकाई- 3 में उल्लिखित विधाओं में विद्यार्थी यों द्वारा लेखन एवं सामूहिक चर्चा
- प्रत्येक इकाई से संबन्धित परि योजना कार्य:
 - i. समसामयिक विषयों पर किसी भी विधा में लेखन – बदलते जीवन मूल्य, महामारी, राष्ट्र निर्माण में छात्र की भूमि का, युवाओं के कर्तव्य, पर्यावरण संरक्षण, लोकतन्त्र में मीडिया की भूमि का, ऑनलाइन शॉपिंग अथवा अन्य समसामयिक विषय
 - ii. किसी उत्सव, मेला, प्रदर्शनी, संग्रहालय और किसी दर्शनीय स्थल का भ्रमण तथा उस पर परियोजना कार्य
- प्रिंट माध्यम के खेल, राजनीति , आर्थिक और फिल्म जगत आदि से जुड़ी सामग्री का भाषा की दृष्टि से विवेचन
- इलेक्ट्रॉनिक माध्यम के समाचार, धारावाहिक, विज्ञापन आदि का भाषा की दृष्टि से विवेचन
- आवश्यक हो, तो छात्र प्रोजेक्ट रिपोर्ट के रूप में अपने अनुभव साझा करें

- Any other Practical/Practice as decided from time to time

Essential/recommended readings

- लेखन एक प्रयास, हरीश चन्द्र काण्डपाल
- रचनात्मक लेखन, सं. रमेश गौतम
- साहित्य – चिंतन: रचनात्मक आयाम, रघुश

Suggested readings

- अग्नि की उड़ान, अबुल कलाम आज़ाद
- टेलीविजन की भाषा - हरीश चन्द्र बर्णवाल, राधाकृष्ण प्रकाशन, नई दिल्ली
- छोटे पर्दे का लेखन, हरीश नवल
- काव्यभाषा : रचनात्मक सरोकार, प्रो. राजमणि शर्मा
- कविता रचना प्रक्रिया, कुमार विमल

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

2. Amendment to Appendix -II-A to the Ordinance V (2-A) of the Ordinances of the University vide EC Resolution 18-1-21 dated 18.08.2022 regarding Skill Enhancement Courses (SECS)

Following addition be made to Appendix-II-A to the Ordinance V (2-A) of the Ordinances of the University;

Add the following:

**SKILL ENHANCEMENT COURSES (SECS)
UNDER
UGCF-2022
LISTED UNDER APPENDIX-II-A TO THE ORDINANCE V (2-A) OF THE
ORDINANCES OF THE UNIVERSITY
(With effect from Academic Year 2022-23)**

The NEP 2020 envisages imparting life skills as well as technical and professional skills as part of holistic education. University of Delhi has prepared various Skill Enhancement Courses in different domains to provide kinds of skills to the students, such as Communication Skills, Computer related skills, Coding skills, financial management skills, etc. with higher degree of hands on learning so as to equip them with the skills of their choice suitable to the academic path they choose.

A student who pursues any undergraduate programme in the University and its Colleges is offered a pool of Skill Enhancement Courses, from which he has to choose one to study in the first Semester. A list of such courses as passed by the Executive Council in its meeting dated 18.08.2022 is as below:

| SL.NO. | COURSE TITLE | TOTAL CREDITS: 2 |
|--------|----------------------------------|------------------|
| 1 | Advanced Spreadsheets Tools | |
| 2 | Analytics/ Computing With Python | |
| 3 | APP Development using Flutter | |
| 4 | Back-End Web Development | |
| 5 | Basic IT Tools | |

| | |
|----|--|
| 6 | Big Data Analytics |
| 7 | Beginners Course to Calligraphy |
| 8 | Business Communication |
| 9 | Business Intelligence and Data Visualisation |
| 10 | CAD for Fashion |
| 11 | Communication in Everyday Life |
| 12 | Communication in Professional Life |
| 13 | Creative Writing |
| 14 | Cyber Sphere and Security : Global Concern |
| 15 | Developing sustainability plans for a business |
| 16 | Digital Film Production |
| 17 | Digital Marketing |
| 18 | Essentials of Python |
| 19 | E-Tourism |
| 20 | Finance for Everyone |
| 21 | Financial Database and Analysis Software |
| 22 | Front End Web Design and Development |
| 23 | Graphics Design & Animation |
| 24 | Harmonium |
| 25 | Introduction to Arabic Calligraphy |
| 26 | Introduction to Blockchain |
| 27 | Introduction to Cloud Computing (AWS) |
| 28 | Negotiations and Leadership |
| 29 | Personal Financial Planning |
| 30 | Personality Development and Communication |
| 31 | Political Leadership and Communication |
| 32 | Programing with Python |
| 33 | Prospecting E-Waste for Sustainability |
| 34 | Public Speaking in English Language and Leadership |
| 35 | Statistical Software Package |
| 36 | Statistics with 'R' |
| 37 | Sustainable Ecotourism and Entrepreneurship |
| 38 | Visual Communication and Photography |
| 39 | पटकथा लेखन |
| 40 | रंगमंच |
| 41 | रचनात्मक लेखन |



ADVANCED SPREADSHEETS TOOLS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------|---------|-----------------------------------|----------|------------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Advanced Spreadsheets Tools | 2 | 0 | 0 | 2 | 12 th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To enable the students to use Excel for advanced data analysis
- To equip the students to with automation skills on excel
- To enable the students to use excel for informed decision making.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to make meaningful representations of data in the form of charts and pivot tables.
- By studying this course, students will be able to draw analysis on data using spreadsheets and use interpretation to make decisions.
- By studying this course, students will be able to generate word documents with appropriate formatting, layout, proofing.
- By studying this course, students will be able to manage data for generating queries, forms and reports in a database.

SYLLABUS

Unit 1: Excel Advanced Techniques

(3 Weeks)

Templates, Efficiency, and Risk (Standard Deviation, Variance, and Coefficient of Variation), Data Validation; *Functions and Power functions, Array Formulae (Frequency Distribution, mode.mult, mode.sngl), Tables, Advanced Range Names, What-if-analysis: Goal-seek, Data tables, and Scenario Manager; Data analysis ToolPak: Descriptive Statistics, Moving averages, Histogram, Covariance, correlation, and Regression analysis (only for projection); solver add-

in. Problem Solving using Solver (optimal product mix, workforce scheduling, transportation, capital budgeting, financial planning), Integrating excel with other tools: MS word, outlook, PowerPoint, Access, Power BI.

Unit 2: Excel Interactivity and Automation

(4 Weeks)

Index and Match, Offset, Dynamic Charting, Database functions, Text functions, and Error functions: IfError, IsError, Aggregate, Circular Reference, Formula Auditing, Floating-Point Errors, Form Controls (Button, Combo, Check box, Spinner, List, Option), Visual Basic (only basic). Recording Macros, Absolute and relative macros, editing macros, Use of spinner buttons and command buttons; Sub Procedure, Function Procedure (creating New Functions); Working with Loops: Do_while loop, For_Next loop; Creating User Forms: Message Box, Input Box; If_Then_Else.

Unit 3: Introduction to VBA

(4 Weeks)

Conditional Formatting, Charts that Inspire (Waterfall, Column, Line, Combo, Thermometer, Scatter, Histogram) Slicers, Sparklines, Graphics Tricks and Techniques, Worksheet Automation using Macros: Absolute and relative macros, editing macros, Creating new functions using macros, Use of spinner buttons and command buttons.

Unit 4: Data Analysis and Decision-Making

(4 Weeks)

Working with External Data, Advanced Uses of PivotTables, PowerPivot, Reporting with PowerPivot, Power query, Dashboard, Creating a spreadsheet in the area of: Loan and Lease statement; Ratio Analysis; Payroll Accounting; Capital Budgeting (NPV & IRR), Portfolio Management, Breakeven analysis, and Sensitivity analysis; Operations Management: Constraint, Forecasting & Trend Analysis optimization, Assignment Problems; Depreciation Accounting (Single Method); Graphical representation of data; Frequency distribution and its statistical parameters; Correlation and Regression Analysis

Essential/recommended readings

- Excel 2016 Power Programming with VBA, Michael Alexander, Dick Kusleika, Wiley.
- Financial Analysis and Modelling Using Excel and VBA, Chandan Sengupta, Second Edition, Wiley Student Edition.
- MS Excel 2016, Data Analysis & Business Modelling, Wayne Winston, PHI.

Suggestive readings

- Microsoft Excel 2016 - Data Analysis and Business Modelling Paperback – 1 May 2017 Wayne L. Winston, Microsoft Press.
- Microsoft Excel Practical Formulae: From Basic Data Analysis to Advanced Formulae
- Manipulation Diane Griffiths.



Examination scheme and mode:

Total Marks: 100

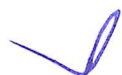
Internal Assessment: 25 Marks

Practical Exam (Internal): 25 Marks

End Semester University Exam: 50 Marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.



ANALYTICS / COMPUTING WITH PYTHON

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|----------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Analytics/computing with Python | 2 | 0 | 0 | 2 | 12th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To introduce machine learning techniques to students using Python programming
- To enable students to use various tools and packages for advanced data analysis

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to learn about Python's main features and how they make Python a great tool for financial analysts.
- After studying this course, students will be able to get familiarized with Anaconda and Jupyter Notebook.
- After studying this course, students will be able to learn basics of Machine learning.
- After studying this course, students will be able to apply these techniques on data.

SYLLABUS

Unit I

(5 weeks)

Python: General overview, Python vs. Excel , Anaconda and Jupyter notebook: Interface overview, Data types in Python, Python basic syntax: Assignment statements, creating variables, indentation, conditionals, and loops, writing user defined functions. Working with libraries: Pandas, NumPy, Matplotlib, and Seaborn. Python SQL Database Access: Introduction, Installation, DB Connection, Creating DB Table.

Unit II

(5 weeks)

Pandas: Working with Data Frame, Importing from Excel or .csv files, Powerful filters and indexes. Numpy: Selecting data with loc and iloc, Using NumPy for speed, Trade-offs between arrays and lists, Array functions. Data cleansing and normalization: Libraries for data visualization, Types of charts/graphs and how to build them.

Unit III

(5 weeks)

Machine learning: Introduction, Definitions, Supervised, unsupervised, python libraries for machine learning: Sci-kit learn, Regression: Linear regression, logistic regression, over-fitting and regularization.

Essential/recommended readings

- Pilgrim, M. (2004). Dive Into Python. Apress. Ch. 1,2,4
- S Raschka, Python Machine Learning, V Mirjalili (2020), Ch 3
- Mitchell, T. M. (1997). Machine Learning. New York: McGraw-Hill.

Suggested Readings

- Liu, Y. (2019). Python machine learning by example: Implement machine learning algorithms and techniques to build intelligent systems (Second edition.). Packt Publishing.
- Boschetti, A. (2016). Regression Analysis with Python (1st ed.). Packt Publishing. Retrieved from <https://www.perlego.com/book/4457/regression-analysis-with-python-pdf> (Original work published 2016)
- Sivanandam, S.N., & Deepa, S.N. (2011). Principles of soft computing.

Examination scheme and mode:

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.



APP Development using Flutter

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-------------------------------|---------|-----------------------------------|----------|------------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| APP development using Flutter | 2 | 0 | 0 | 2 | 12 th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To enable the students for developing simple mobile applications that can run on Android, IOS and Web.
- To learn the fundamentals of Flutter platform.
- To enable the students to write cross-platform applications.

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to Install and use flutter
- After studying this course, students will be able to use DART language
- After studying this course, students will be able to build a cross-platform APP
- After studying this course, students will be able to deploy application with single codebase.

SYLLABUS

Unit 1

(3 weeks)

Introduction to Flutter, Flutter – installation, Widgets, Gestures (Title, Body, Layouts, Columns, Row, Run app)

Unit 2

(4 weeks)

State Management, Flutter – Introduction To Package, Build method, Dart packages, app bar, text widgets, Scaffold, Containers, Structuring flutter apps, Using GitHub repos of flutter.

Unit 3

(4 weeks)

Flutter – Accessing Rest API, Database Concepts, Testing (Widget Testing).

Unit 4

(4 weeks)

Deployment (Android Application On Play Store, IOS Application On APP Store)

Practical Exercises

(15 weeks)

- Build a simple quiz app in flutter for android, ios, and web.
- Build a cross-platform app based on your own idea. Use as many features of flutter as you can.

Essential/recommended readings

- <https://docs.flutter.dev/>
- <https://github.com/flutter>

Examination scheme and mode:

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.



Back-End Web Development

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Back-End Web Development | 2 | 0 | 0 | 2 | 12 th Pass | NIL |

Learning Objectives

The Learning Objective of this course is as follows:

- To introduce the basic concepts and techniques of server side web programming.
- To enable the students to apply the basic concepts and techniques of server side web programming.

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to build interactive and dynamic websites.
- After studying this course, students will be able to write the server side programming techniques with Django for accessing the contents to/from the server
- After studying this course, students will be able to learn to validate server-side/backend data
- After studying this course, students will be able to use GET and POST methods for sending data within client and server.

SYLLABUS

Unit 1

(7 weeks)

Installation of Django ,Introduction to Django;;Model–view–controller(MVC) model; Django structure; HTML templates; URL dispatcher ,Django Template System, Interacting with a Database



Unit 2**(8 weeks)**

The Django Administration Site , Wrapper Functions, Custom Views GET and POST methods ;Deployment of Django; Automating tasks with Django; Building Web APIs using Django REST

Project work**(15 weeks)**

Build a website for student admission in a college/university.

Essential/recommended readings

- <https://docs.djangoproject.com/>

Examination scheme and mode:

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.



Basic IT Tools

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------|---------|-----------------------------------|----------|------------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic IT Tools | 2 | 0 | 0 | 2 | 12 th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To enable students develop IT skills that are a pre-requisite in today's work environment.
- To equip them with basic computing skills that will enhance their employability in general.
- To enable the student to analyse and present information in a meaningful manner.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to use word-processor to generate documents with appropriate formatting, layout, review and referencing.
- By studying this course, students will be able to manage data in worksheets and workbooks and analyze it using spreadsheet functions and inbuilt formulas.
- By studying this course, students will be able to draw analysis on data using spreadsheets to make decisions.
- By studying this course, students will be able to make meaningful representations of data in the form of charts and pivot tables.
- By studying this course, students will be able to manage data in database tables and use the same for generating queries, forms and reports.



SYLLABUS

Course Contents:

Unit 1: Introduction to Spreadsheets

(4 Weeks)

Spreadsheets: Concept of worksheets and workbooks, creating, opening, closing and saving workbooks, moving, copying, inserting, deleting and renaming worksheets, working with multiple worksheets and multiple workbooks, controlling worksheet views, naming cells using name box, name create and name define; Exchanging data using clipboard, object linking and

embedding; Printing and Protecting worksheets: Adjusting margins, creating headers and footers, setting page breaks, changing orientation, creating portable documents and printing data and formulae; Implementing file level security and protecting data within the worksheet; Understanding absolute, relative and mixed referencing in formulas, referencing cells in other worksheets and workbooks, correcting common formula errors, working with inbuilt function categories like mathematical, statistical, text, lookup, information, logical, database, date and time and basic financial functions.

Unit 2: Data Analysis in Spreadsheets

(4 Weeks)

Consolidating worksheets and workbooks using formulae and data consolidate command; Choosing a chart type, understanding data points and data series, editing and formatting chart elements, and creating sparkline graphics, Analysing data using pivot tables: Creating, formatting and modifying a pivot table, sorting, filtering and grouping items, creating calculated field and calculated item, creating pivot table charts, producing a report with pivot tables. Introduction to recording and execution of macros.

Unit 3: Word Processing

(3 Weeks)

Introduction: Creating and saving your document, displaying different views, working with styles and character formatting, working with paragraph formatting techniques using indents, tabs, alignment, spacing, bullets and numbering and creating borders; Page setup and sections: Setting page margins, orientation, headers and footers, end notes and foot notes, creating section breaks and page borders; Working with tables: Creating tables, modifying table layout and design, sorting, inserting graphics in a table, table math, converting text to table and vice versa; Create newspaper columns, indexes and table of contents, Spell check your document using inbuilt and custom dictionaries, checking grammar and style, using thesaurus and finding and replacing text; Create bookmarks, captions and cross referencing, adding hyperlinks, adding sources and compiling and bibliography; Mail merge: Creating and editing your main document and data source, sorting and filtering merged documents and using merge instructions like ask, fill-in and if-then-else; Linking and embedding to keep things together.

Unit 4: Databases**(4 Weeks)**

Introduction to Database Development: Database Terminology, Objects, Creating Tables, working with fields, understanding Data types, Changing table design, Assigning Field Properties, Setting Primary Keys, using field validation and record validation rules, Indexing, working with multiple tables, Relationships & Integrity Rules, Join Properties, Record manipulation, Sorting & Filtering; Select data with queries: Creating Query by design & by wizard (Select, Make Table, Append, Delete, Cross Tab, Update, Parameterized Query, Find Duplicate and Find Unmatched), Creating multi table queries, creating & working with table joins. Using operators & expressions: Creating simple & advance criteria; Working with forms: Creating Basic forms, working with bound, unbound and calculated controls, understanding property sheet, Working with Data on Forms: Changing Layout, creating Sub Forms, creating list box, combo box and option groups; Working with Reports: Creating Basic Reports, Creating Header & Footer, Placing Controls on reports, sorting & grouping, Creating Sub reports.

Essential/recommended readings

- Swinford, E., Dodge, M., Couch, A., Melton, B. A. (2013). Microsoft Office Professional 2013. United States: O'Reilly Media.
- Wang, W. (2018). Office 2019 For Dummies. United States: Wiley. Microsoft Lambert, J. (2019). Microsoft Word 2019 Step by Step. United States: Pearson Education.

Suggestive readings

- Jelen, B. (2013). Excel 2013 Charts and Graphs. United Kingdom: Que.
- Alexander, M., Jelen, B. (2013). Excel 2013 Pivot Table Data Crunching. United Kingdom: Pearson Education.
- Alexander, M., Kusleika, R. (2018). Access 2019 Bible. United Kingdom: Wiley.

Examination scheme and mode:

Total Marks: 100

Internal Assessment: 25 Marks Practical

Exam (Internal): 25 Marks

End Semester University Exam: 50 Marks

The Internal Assessment for the course may include Class participation, Assignments, Classtests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.



Big Data Analytics

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Big Data Analytics | 2 | 0 | 0 | 2 | 12 th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To Understand the Big Data Platform and its Uses
- Provide an overview of Apache Hadoop
- Provide HDFS Concepts and Interfacing with HDFS.
- Provide hands on Hadoop Eco System
- To understand spark framework

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to identify Big Data and its Business Implications.
- After studying this course, students will be able to list the components of Hadoop and Hadoop Eco-System.
- After studying this course, students will be able to access and process data on distributed file system,
- After studying this course, students will be able to manage job execution in Hadoop environment.
- After studying this course, students will be able to develop Big Data Solutions using Hadoop Eco System.

SYLLABUS

Unit 1: Fundamentals of Big Data Analysis (3 weeks)

Data Storage and Analysis, Characteristics of Big Data, Big Data Analytics, Typical Analytical Architecture, Requirement for new analytical architecture, Challenges in Big Data Analytics – Need of big data frameworks

Unit 2: Hadoop Framework (4 weeks)

Hadoop, Requirement of Hadoop Framework, Design principle of Hadoop –Comparison with other system, Hadoop Components – Hadoop 1 vs Hadoop 2, Hadoop Daemon's – HDFS Commands, Map Reduce Programming: I/O formats, Map side join, Reduce Side Join, Secondary sorting, Pipelining Map Reduce jobs

Unit 3: HDFS (Hadoop Distributed File System) (4weeks)

The Design of HDFS, HDFS Concepts, Command Line Interface, Hadoop file system interfaces, Data flow, Data Ingest with Flume and Scoop and Hadoop archives, Hadoop I/O: Compression, Serialization, Avro and File-Based Data structures.

Unit 4: Spark Framework and Data Analysis with Spark Shell (4 weeks)

Introduction to GPU Computing, CUDA Programming Model, CUDA API, Simple Matrix, Multiplication in CUDA, CUDA Memory Model, Shared Memory Matrix Multiplication, Additional CUDA API Features. Writing Spark Application - Spark Programming in Scala, Python, R, Java - Application Execution.

Practical Exercises (15 weeks)

- Downloading and installing Hadoop.
- Understanding different Hadoop modes. Startup scripts, Configuration files.
- Hadoop Implementation of file management tasks, such as Adding files and directories, retrieving files and Deleting files.
- Run a basic word count Map reduce program to understand map reduce paradigm: To count words in a given file, to view the output file, and to calculate the execution time.
- Map Reduce Program to analyse time-temperature statistics and generate report with max/min temperature.
- Implement of Matrix Multiplication with Hadoop Map Reduce.
- Implementation of K-means clustering using Map Reduce.
- To study and implement basic functions and commands in R programming.
- To build Word cloud, a text mining method using R for easy to understand and visualization than a table data.
- To implement clustering program using R programming



Essential/recommended readings

- Seema Acharya, Subhasini Chellappan, "Big Data Analytics" Wiley 2015.
- Mike Frampton, "Mastering Apache Spark", Packt Publishing, 2015.
- Tom White, "Hadoop: The Definitive Guide", O'Reilly, 4th Edition, 2015.
- Nick Pentreath, Machine Learning with Spark, Packt Publishing, 2015.
- Mohammed Guller, Big Data Analytics with Spark, Apress, 2015.
- Donald Miner, Adam Shook, "Map Reduce Design Pattern", O'Reilly, 2012

Examination scheme and mode:

Total Marks: 100

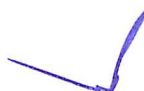
Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.



Beginners Course to Calligraphy

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|----------|-----------------------------------|----------|------------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Beginners course to Calligraphy | 2 | 0 | 0 | 2 | 12th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To teach students the art of Calligraphy.
- To make students better at handwriting and embellish the scripts.
- To help the students communicate with creativity.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Students will be skilled in calligraphy scripts.
- Learning flourishing will help to develop good writing.
- Practice sessions will further a project at the end of semester.
- Will induce skills to set up a business, too.

SYLLABUS

Unit 1: Introduction to Calligraphy

(3 Weeks)

- Definition, History of calligraphy, Calligraphy at the Global level, Types of Calligraphy: Classical Calligraphy & Modern Calligraphy
- Practice Sessions: Introducing students to Calligraphy and its types through images, videos and animations.

Unit 2: Introduction to the Writing tools

(5 Weeks)

- Tool Kit, Different Types of Pens, Different Types of Nibs, Different Types of Brushes, Different Types of Inks
- Practice Sessions: Display of Writing items, Discussion on the usage of different types of pens, nibs and brushes through hands-on activities

Unit 3: Foundation to Calligraphy**(7 Weeks)**

- How to write letters?, Majuscules, Miniscules, Numbers, Learning Strokes, Sans Serif B-point, Celtic, Italian Script, Roman Script, Gothic Script
- Practice Sessions: Learning and practicing strokes- Upstroke, Downstroke, Overturn, Underturn, Compound curve, Oval, Ascending loop
- Hands-on activities and Assessment on Sans Serif B-point, Celtic, Italian Script, Roman Script, Gothic Script, Flourishing

Essential/recommended readings

- Suepsuan, P. A. (2021). Start Calligraphy The Right way to write: Learn Calligraphy The Complete Book - Modern Calligraphy Pen For Beginners, Learning Resources Step By Step Number Line, Mastering Modern Calligraphy. Independently published.
- C., & Co., T. P. (2020). Modern Calligraphy Set for Beginners: A Creative Craft Kit for Adults featuring Hand Lettering 101 Book, Brush Pens, Calligraphy Pens, and More. Paige Tate & Co.

Examination scheme and mode:

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.



Business Communication

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Business Communication | 2 | 1 | 0 | 1 | 12 th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To train students to enhance written as well as oral communication in the corporate world.
- To help students in understanding the principles and techniques of business communication.
- To understand the use of electronic media for communication.

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to explain the need for communication in management.
- After studying this course, students will be able to appreciate the need of effective writing for communication.
- After studying this course, students will be able to demonstrate the skill of effective report writing and summarizing annual reports.
- After studying this course, students will be able to analyse business correspondence and e-correspondence.
- After studying this course, students will be able to appreciate oral presentations.

SYLLABUS

Unit 1: Introduction to the essentials of Business Communication (3 weeks)

Meaning, process and functions. Need and importance. Medium: verbal & non-verbal communication. Channels: formal & informal. Levels of communication. Direction of communication: downward, upward, lateral, & diagonal. Effective communication: difficulties/barriers and solutions. Interactive and non-interactive techniques of communication. Listening as a tool of communication, Guidelines for effective listening.

Unit 2: Effective Writing (3 weeks)

Guidelines for clear writing. References, bibliographical research tools. Citing methods, footnotes, discussion footnotes. Use of library and internet for collection, classification and interpretation of data and information.

Unit 3: Report Writing**(3 weeks)**

Types of reports. Formal report: components and purpose. Organising information: outlining & numbering sections, section headings, sub-headings, & presentation. Writing reports on field work/visits to industries, business concerns. Summarising annual reports of companies: purpose, structure and principles. Drafting minutes.

Unit 4: Business Correspondence and E-Correspondence**(3 weeks)**

Need and importance of business letters. Office memorandum, office circulars, notices and orders. Technology for communication. Effective IT communication tools. Electronic mail: advantages, safety and smartness in email. E-mail etiquettes.

Unit 5: Spoken English and Oral Presentation**(3 weeks)**

Effective negotiation: elements, process and general guidelines. Telephonic conversation. Conducting & facing interviews. Conducting & participating in group decisions. Making presentations: content and organising. Features of a good presentation. Delivering a presentation.

Practical Exercises:**(15 weeks)**

The learners are required to:

- learn how to summarise annual reports of companies.
- prepare presentations using power-point.
- participate in Group discussions and mock interviews.
- smartly draft business emails.

Essential/recommended readings

- C.B.Gupta (2019). Essentials of Business Communication, Sultan Chand & Sons.
- Kaul, A. Effective Business Communication, 2nd ed. PHI learning
- Lesikar, R.V. & Flatley, M.E. (2001). Basic Business Communication Skills for Empowering the Internet Generation, Tata McGraw Hill Publishing Company Ltd. New Delhi.
- Ludlow, R. & Panton, F.(1992). The Essence of Effective Communications, Prentice Hall of India Pvt. Ltd., New Delhi.
- Meyer C,Dev(2021). Communicating for Results,Oxford University Press
- Quintanilla, Kelly M, (2021), Business and Professional Communication, 4e, Sage Textbook
- R. C. Bhatia (2008), Business Communication, Ane Books Pvt Ltd, New Delhi.
- Raman and Singh(2012). Business Communication. Oxford University Press
- Scot, O., Contemporary Business Communication. Biztantra, New Delhi.

Note: Learners are advised to use the latest edition of readings.

Examination scheme and mode:

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Business Intelligence and Data Visualisation

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Business Intelligence and Data Visualisation | 2 | 0 | 0 | 2 | 12th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- ☐ To understand data and generate insights from it is by visualising it using a range of data visualization tools available.
- ☐ To understand large volume of data, discover trends, communicate effectively with all stakeholders and influence decisions.
- ☐ To develop Business Analytics skillset about how to create effective charts and interactive dashboards is extremely useful.

Learning outcomes

The Learning Outcomes of this course are as follows:

- ☐ After studying this course, students will be able to understand and describe the main concepts of data visualization.
- ☐ After studying this course, students will be able to determine the right type of graph for different types of data available or provided through hands on experience with handling real data sets.
- ☐ After studying this course, students will be able to read reports, charts, graphs, figures, maps and derive meaning from them.
- ☐ After studying this course, students will be able to create reports, data visualizations, and dashboards using Power BI and Tableau.
- ☐ After studying this course, students will be able to understand how to automate tasks, perform ETL, create data models, perform computations, and present insights using data visualization and dashboards.

SYLLABUS

Unit-1 (POWER BI)

(5 weeks)

DATA PREPARATION- Connecting to different data sets, Basic data prep and model on Power Query, Drill down and Tooltip, AI visuals (Q&A, Analyze, Decomposition)

DATA VISUALIZATION AND DASHBOARDS- Inbuilt visuals, Custom visuals, Learn from existing reports, Visualization as a Tooltip, Final dashboard – putting it together Filter, slicer, bookmarks, buttons



Unit-2 (POWER BI)**(6 weeks)**

PERFORMING COMPUTATIONS - Combine multiple files and folders, Merge and append, Custom calculations Conditional columns, Column from examples, Advanced Editor.

DAX - Introduction to Measures, Calculated Columns vs Quick Measures, Creating a Date Table, Time Intelligence Functions

POWER BI SERVICE - Publishing to Power BI Service, Power BI dataflows, Dashboards and Cross-Reporting

Unit- 3 (TABLEAU)**(4 weeks)**

VISUALIZATIONS- Introduction to Dimensions and Measures, Bar Chart, Line Chart, Table, Heat Map, Treemap, Packed Bubble, Tooltip

CALCULATIONS- Calculated Fields, Parameters, Introduction to Level of Detail (LOD)

FINAL DASHBOARD- Animations, Tooltips, Dashboard and Stories

Essential/recommended readings

- ☐ The Definitive Guide to DAX – 2nd Edition
Marco Russo Alberto Ferrari
- ☐ M Is for (Data) Monkey: A Guide to the M Language in Excel Power Query
Ken Puls & Miguel Escobar
- ☐ Tableau Your Data! Fast and Easy Visual Analysis with Tableau Software by Daniel G. Murray. 1st Edition, WILEY.
- ☐ Steve Wexler, Jeffrey Shaffer, Andy Cotgreave: The Big Book of Dashboards – visualizing your data using real world business scenarios; Wiley
- ☐ Ryan Sleeper: Practical Tableau
- ☐ Cole Nussabaumer Knaflitz : Storytelling with data- a data visualization guide for business professionals ; Wiley
- ☐ Visualize This: The Flowing Data Guide to Design, Visualization, and Statistics by Nathan Yau. 1st Edition

Useful Weblinks

- <https://docs.microsoft.com/en-us/power-bi/>
- <https://powerbi.microsoft.com/en-us/customer-showcase/>
- <https://powerquery.microsoft.com/en-us/>
- <https://www.sqlbi.com/>

Examination scheme and mode:

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

CAD FOR FASHION

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------|----------|-----------------------------------|----------|------------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| CAD for Fashion | 2 | 0 | 0 | 2 | 12th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand the concept of fashion sketching and fabric rendering
- To learn different softwares for fashion designing and rendering

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to understand the basics of garmentsketching and fabric rendering manually.
- After studying this course, students will be able to gain the knowledge about variouscomputer design softwares – Adobe Photoshop, CorelDraw, Adobe Illustrator and Open source
- After studying this course, students will be able to learn the application of selectedcomputer design softwares for fashion sketching.
- After studying this course, students will be able to develop proficiency in CAD forthe creation of fabric textures and colour schemes.
- After studying this course, students will be able to Design a theme-based fashion collection using computer design software.

SYLLABUS

Unit I: Fashion sketching

(7 weeks)

Unit Description: Fashion sketching plays an important role in designing to preview and visualize designs before sewing actual clothing. Thus, this unit aims to help students develop the skills in designing apparel through flat sketching of garment components both manually and digitally.

Topics: Flat sketching of garment components by hand – necklines, collars, sleeves, skirts, tops, and trousers, Introduction to vector-based drawing softwares – CorelDraw, Adobe Illustrator and open-source software like Inkscape, Introduction to features and tools of CorelDraw/Illustrator/Inkscape, Project - Application of software tools for drawing technicalflats on any vector-based computer design software

Unit II: Fabric rendering

(8 weeks)

Unit Description: This unit will help students to develop skills to render the fabrics and silhouettes used in the garment. Students will be taught to imitate fabric textures in their drawing both manually and through computer aided design softwares. In addition, they will also learn to develop their own textile prints and their colour ways.

Topics: Learning to simulate textures of various fabrics manually - cotton, silk, fur, net, leather, velvet, denim, corduroy, georgette, chiffon, knit, crochet, lace, embroidery and prints. Understanding the basics of design repeat and how to create seamless prints manually.

Introduction to raster -based editing softwares –Adobe Photoshop and open-source software like GIMP, Photopea etc.

Introduction to features and tools of Photoshop/Photopea/GIMP Application of software tools for creating seamless patterns.

Project - Application of software tools for designing various textile products with different fabric textures in three different colour schemes

All the above work will be collated as a digital portfolio.

Essential Readings

- Abing, B., (2019). Fashion Sketchbook, Bloomsbury Publication, UK
- Aldrich, W., (1994). CAD in Clothing and Textiles, 2nd Edition, Wiley-Blackwell Publishing, USA
- Jain, S. & Geetha M. (2018). CorelDraw Training Guide, BPB Publications, India
- Lazear, M. Susan, (2007). Adobe Photoshop for Fashion Design, Pearson Publishing
- Callender, J. (2011). 2000 Pattern Collection, Anova Books Company Limited, London.

Suggested Readings

- CorelDraw tutorial: <https://www.youtube.com/watch?v=89VZfov7p8Q>
- Photoshop tutorial: <https://helpx.adobe.com/in/photoshop/tutorials.html>
- Shuffle Botham, R., 2014, Photoshop cc, In Easy Steps Limited, UK

Examination scheme and mode:

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Communication in Everyday Life

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Communication in Everyday Life | 2 | 0 | 0 | 2 | 12 th Pass | Nil. |

Learning Objectives

The Learning Objectives of this course are as follows:

- To lay down a basic foundation for basic communication that is a part of a student's everyday life.
- To inculcate the fundamentals of communication with the aim to enhance listening, speaking and writing skills.
- To hone practical skills that can be used in day-to-day affairs.

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to improve mediation skills.
- After studying this course, students will be able to building human relationships.
- After studying this course, students will be able to foster societal understanding & develop an independent perspective.
- After studying this course, students will be able to enhance social communications skills of students.

SYLLABUS

UNIT 1

(2 Weeks)

Theory of Communication

- Meaning, Features, Uses, Cycle, Feedback, Advantages
- Barriers
- 7 C's of Communication

UNIT 2

(3 Weeks)

Listening Skills

- Netiquettes
- Audio-book Listening & Discussions
- Note-taking

UNIT 3

(4 Weeks)

Speaking Skills

- Oral Presentation- Audio-Visual aids, Audience & Feedback, Delivery of Presentation, Handling Questions
- Group Discussion- Culture & History, Current Affairs, Society-related
- Public Speaking- Public Speech, Extempore
- Interview- Personal, Conversational, Public

UNIT 4

(2 Weeks)

Reading Skills

- Close Reading
- Skimming
- Scanning

UNIT 5

(4 Weeks)

Writing Skills

- Summarising
- Paraphrasing
- Note-making
- Essays- Expository Essay, Descriptive Essay, Narrative Essay
- Letter Writing- Formal Letter, Informal Letter
- Reports- Incidence, Newspaper, Organisational Report
- Analysis & Interpretation- Textual
- Intra & Inter-personal Skills - Monologue, Dialogue

Suggested Readings

- Chaudhary, Shoma. "Understanding Interviews, Billy Elliot is my Story, Only LessHappy". Tehelka: The People's Paper, 18 February 2006.
- Kumar, Dinesh. "Understanding Values, Our Muddled Generation". The Hindu, 26March 2006.
- Learning to Write I, "Free Writing". In Fluency in English II, ed. Varma, Pramodiniand Mukti Sanyal, pp. 1-5, Oxford, New Delhi, 2015.
- Learning to Write II, "Editing". In Fluency in English II, ed. Varma, Pramodini andMukti Sanyal, pp. 25-27, Oxford, New Delhi, 2015.
- Learning to Write III, "What makes Good Writing Good". In Fluency in English II, ed. Varma, Pramodini and Mukti Sanyal, pp. 48-51, Oxford, New Delhi, 2015.

Examination scheme and mode:

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.



Communication in Professional Life

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Communication in Professional Life | 2 | 0 | 0 | 2 | 12th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To prepare the students for their upcoming professional fields.
- To inculcate the fundamentals of professional and business communication.
- To learn aspects of global communication.
- To enhance employability skills of the learners by enabling them to write effective resumes and face interviews with confidence

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to improve presentation skills to be learnt by effective use of verbal and non-verbal communication for the professional field.
- After studying this course, students will be able to acquire practical employability skills to be disseminated through focused sessions on practical employable knowledge.
- After studying this course, students will be able to enhance professional communication.
- After studying this course, students will be able to improve persuasion and negotiation skills which will be useful for the professional field.

SYLLABUS

UNIT 1

(2 Weeks)

- Theory of Business Communication
- Introduction
- What is Business Communication?
- Language of Business Communication
- Cultural Components – Cross-Cultural Communication, Cultural Shock, Stereotyping, Ethnocentrism
- Miscommunication & Effective Communication

UNIT 2

(3 Weeks)

Listening Skills

- Netiquettes
- Audio-book Listening & Discussions
- Note-taking

UNIT 3

(5 Weeks)

Speaking Skills

- Presentation Skills- Oral Presentation, Ppt. Preparation, Ppt. Presentation
- Group Discussion
- Talks- Domain-specific, Ted-Talks, Business Meets, Motivational Talks
- Telephonic Skills
- Persuasion Skills
- Meeting & Negotiation
- Interview- Promotion Interview, Job Interview, Business Interview
- Functions and activities of PR

UNIT 4

(5 Weeks)

Writing Skills

- Summarising & Paraphrasing
- Job-Oriented Skills- CV, Resume & Bio- Data, Job Application Letter
- Documentation
- Advertisements & Invitation
- Letter Writing- Applications, Business Letters
- Report- Analytical Report, Project Report
- Digital Communication in Social Space- Social Media Posts (Twitter, Facebook), Blog Writing, Review Writing
- Advertisement/Invitation/Poster Designing- Canva/MS Word/Coral
- Memo, Office Order, Minutes
- Making Online Academic/Work Profile- LinkedIn



Suggested Readings

- Kaushik, J.C. and K.K. Sinha eds., English for Students of Commerce, Oxford University Press, New Delhi.
- Sethi, Anjana & Bhavana Adhikari, Business Communication, Tata McGraw Hill.
- Anjana Neira Dev, et.al, eds. Business English, Department of English, University of Delhi, 2011, Pearson Publications, New Delhi.

Examination scheme and mode:

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25
marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.



Creative Writing

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-------------------------|----------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Creative Writing | 2 | 0 | 0 | 2 | 12th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To build creative writing skills of students in the main modes of creative writing viz poetry, fiction (novel, short stories), non-fiction (life narratives, autobiographies and biographies) and drama.
- To inculcate practical skills in students by mapping their creative talent which be beneficial for employability too.
- To perform hands-on-activities to students to develop their creative skills through practical sessions.

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to be sensitive to the texture of literary language.
- After studying this course, students will be able to develop craft in creative writing.
- After studying this course, students will be able to develop sense of expressing themselves through poetry/short story/biography.
- After studying this course, students will be able to induce an understanding of the relationship between an individual and society.
- After studying this course, students will be able to get into different fields and pursue versatile career opportunities.
- After studying this course, students will be able to develop an understanding of theatre and performance through drama will also help them to develop observational and behavioural skills.
- After studying this course, students will be able to develop a critical thought process and a knack in putting it in words. Students may also utilise the learnings of proofreading and editing for their academic and professional growth.
- After studying this course, students will be able to go for publishing their own work.
- After studying this course, students will be able to write a book and submit to professional bodies & academic organisations.

SYLLABUS

UNIT 1

(5 Weeks)

- Introduction to Creative Writing- Meaning, Importance
- Imagination & Writing- Peer-interaction, Activities on Imagination
- Tropes, Motifs and Figures- Learning tropes, motifs and figures through videos, Discussion on the findings
- Craft of Writing- Figure of Speech, Word Play, Character Creation
- Character Creation- Dialogue Enaction, Learning Characters through discussion on famous writings, Character Analysis, Writing activities on creating different types of characters (gender/social background/ethnicity etc.)

UNIT 2

(5 Weeks)

- Close Reading
- Analysis and Interpretation- Reading different works in Literature, Discussion in small groups, Practice Writing Session
- Proofreading & Editing- Practice sessions on Proofreading & Editing of different types of writing

UNIT 3

(5 Weeks)

- Steps of Creative Writing- Pre-Writing, Writing, Post-Writing/Final Draft
- Types of Creative Writing- Poetry, Fiction, Non-Fiction (Life Narratives), Drama
- Creative Writing & Media- Film Review, Book Review, Other Writings in Media, Submission, Publication
- Learning to write Poetry- Reading & understanding Poetry; Practising tone, rhyme, metre, verses; Writing sessions
- Learning to write Fiction- Reading & understanding Fiction; Practicing different elements of fiction (Short story, Novella, Novel); Writing sessions
- Learning to write Non-Fiction- Reading & understanding Non-Fiction (Biographies & Autobiographies); Practicing different elements of non-fiction; Writing sessions
- Learning to write Drama- Reading & understanding Drama; Practicing different elements (plot, character, climax, verbal & non-verbal cues) of Drama; Writing sessions
- Submission & Publication (in Print & Digital) - Discussions over how & where to submit and publish (online/offline), Hands-on activities

Suggested Readings

- *Creative Writing: A Beginners' Manual* by Anjana Neira Dev et al. for The Department of English, University of Delhi (New Delhi: Pearson, 2008).

Examination scheme and mode:

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Cyber Sphere and Security: Global Concerns

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|------------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Cyber Sphere and Security: Global Concerns | 2 | 1 | 0 | 1 | 12th Pass | NIL |

Learning Objectives

The Learning Objective of this course is as follows:

- To spread awareness and enlightening visions of the indiscriminate and diversified students to ensure their immediate and basic cyber safety and prevent loss due to sheer ignorance.

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to apprehend key terms of cyber domain and identify cyber threats.
- After studying this course, students will be able to understand cyber law concepts, intellectual property and Digital Rights Management.
- After studying this course, students will be able to diagnose and examine basic security loopholes, anomalous behavior in internet.
- After studying this course, students will be able to understand principles of web security.
- After studying this course, students will be able to secure and protect personal data with safe Internet usage.
- After studying this course, students will be able to assimilate approaches for incident analysis and response, risk management and best cyber security practices.

SYLLABUS

Unit I: Introducing Cyber 'Sphere' and 'Security' (3 Weeks)

- Cyber Terminologies: Cyber Sphere, Cyber Security, Cyber Crime, Cyber Attack, Cyber Espionage, Cyber Warfare, Cybernetics
- Cyber Security and Paradigms
- Cyber Security: Objectives and Roles

Unit II: Cyber Crime: Insight, Mitigation and Control (3 Weeks)

- Cyber Crime and Cyber Activism: An Overview
- Typologies of Cyber Crimes: Generic Cyber Crimes, Advanced Persistent Threats (APTs), Cyber Threat in Mobile Technology, Cloud Computing and BYOD
- Cyber Crime Identification, Risk Assessment, Management and Control

Unit III: Cyber Policies and Cyber Law (3 Weeks)

- Cyber Policies and Cyber Law: Dimensions, Determinants, Dilemmas
- Existing Cyber Policies and Must Follow Up Actions
- Grey Areas in Cyber Laws

Unit IV: Security Tools and Usage (3 Weeks)

- Knowledge and Identification of Security Tools
- Cyber Security Aspects
- Cyber Security Toolkits

Unit V: Cyber Security: Case Studies (3 Weeks)

- Government Institutions
- Banks and Financial Institutions, Commercial Websites, Point of Sale issues and Online Payment
- Real Time Cases

Essential Readings:

- Bertrand Venard (2019). 'Cyber Security: The New Art of War', Lecture delivered at Developing Countries Research Centre [drcr], University of Delhi, 1 April 2019.
- Bertrand Venard (2019). 'The Determinants of Cybersecurity Behaviours: Qualitative Research Among French Students' in C. Onwubiko, X. Bellekens, A. Erola, M. Jaatun and C. Nogueira (eds.), Proceedings of the Cyber Science 2019: Cyber Situational Awareness for Predictive Insight and Deep Learning. UK: University of Oxford.
- Bertrand Venard (2019). Cybersecurity Among students. UK: Wolfson College, University of Oxford.
- Bertrand Venard (2019). Cyber Aggressions in the XXIst Century: Equation of a Crisis. UK: University of Oxford.
- Cristopher Hadnagy (2018). Social Engineering: The Science of Human Hacking, 2nd Edition. New York: Wiley.

- John Erickson (2008). The Art of Exploitation (2nd Edition). San Francisco: No Starch Press.
- Kevin Mitnick and Robert Vamosi (2017). The Art of Invincibility. Boston: Little, Brown and Company.
- Kevin Mitnick (2012). The Ghost in the Wires: My Adventures as the World's Most Wanted Hacker. New York: Back Bay Books.
- Yogesh Atal and Sunil K Choudhary (2013). Combating Corruption: The Indian Case. Hyderabad and New Delhi: Orient Blackswan.

Examination scheme and mode:

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.



DEVELOPING SUSTAINABILITY PLANS FOR A BUSINESS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Developing sustainability plans for a business | 2 | 0 | 0 | 2 | 12th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To assess the status of integration of social and ecological values into business practices
- To determine strengths and weaknesses in linkages between people, planet, and profit during business practices
- To correlate the changes in ecological footprint with growth in corporate responsibility
- To recommend strategies to improve current CSR practices for environmental conservation and enhance the return on investment of the organization

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to develop CSR plans to balance ecological security with economic success.
- After studying this course, students will be able to evolve methods for the financial stability of different organizations/companies
- After studying this course, students will be able to develop a framework to reduce energy consumption, adopt renewable resources and integrate waste management strategies among employees
- After studying this course, students will be able to design sustainable business plans having major positive impacts on plant and next-generation business setting



SYLLABUS

Practical/Hands-on Exercises

(15 weeks)

- Determine strategies to reduce carbon footprint and improve supply chain efficiency of an organization
- Assess the current status of renewable energy use and investment and develop strategies to become carbon negative in the next decade
- Identify opportunities for sustainable alternatives for an environmental cause that aligns well with the organizational goal and areas of philanthropic investments
- Analyze material use at different stages of organizational process based on a set of sustainable principles and suggest environment-friendly alternatives to reduce waste
- Calculate the water footprint of the organization and develop methods for mindful water consumption to improve human health and reduce the economic cost
- Examine the current status of infrastructure with respect to the energy-efficient lighting system and evolve strategies for shifting to 100% renewable energy
- Determine the ecological impact of current infrastructure using guiding principles of LEED (Leadership in Energy and Environmental Design) Certification and identify areas for biophilic design, green spaces, and work conditions
- Optimize to reduce waste by improved methods of handling and disposing of waste
- Develop guidelines for eco-friendly transportation to reduce fuel usage and maximize route efficiency
- Eco-innovation in developing energy alternatives and providing solutions to complex environmental challenges
- Document the biological wealth (especially plants, insects, and birds) of an organization and develop the green design to maintain and enrich the biological wealth

Teaching and learning interface for practical skills:

To impart training on technical and analytical skills related to the course objectives, a wide range of learning methods will be used, including (a) laboratory practicals; (b) field-work exercises; (c) customized exercises based on available data; (d) survey analyses; and (e) developing case studies; (f) demonstration and critical analyses; and (h) experiential learning individually and collectively.

Prospective sector(s):

(a) Environmental Consultancies, (b) Sustainability Advisors, (c) All Multi-National Large-Scale Industries, and (d) Environmental NGOs



Suggested readings

- Calkins, M., 2012. The Sustainable Sites Handbook: A Complete Guide to the Principles, Strategies, and Best Practices for Sustainable Landscapes (Vol. 39). John Wiley & Sons.
- Daniels, T., 2017. The Environmental Planning Handbook: For Sustainable Communities and Regions. Routledge.
- Davoudi, S., Cowell, R., White, I. and Blanco, H. eds., 2019. The Routledge Companion to Environmental Planning. Routledge.
- Quaddus, M.A. and Siddique, M.A.B. eds., 2013. Handbook of Sustainable Development Planning: Studies in Modelling and Decision Support. Edward Elgar Publishing.
- USEPA, 2012. Planning for Sustainability: A Handbook for Water and Wastewater Utilities.

Examination scheme and mode:

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.



Digital Film Production

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Digital Film Production | 2 | 0 | 0 | 2 | 12 th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To introduce the students to the art of digital video making and editing
- To learn about the tools required for video making and editing
- To learn about the various aspects in pre and post production of videos.

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to understand the importance of various aspects of audio-video production
- After studying this course, students will be able to prepare an effective layout for making an effective video.
- After studying this course, students will be able to apply the tools required for video production and editing.

SYLLABUS

Unit 1: Introduction, Financial Planning and Budgeting (3 weeks)

Audio Production: Concept of Sound, Types of sound, Audio range, Know your equipment's (Acoustic, Microphone, Recorder, Audio Mixer, Cables & connectors), Process of recording, Mixing, Sound processing, Recording level, Audio Editing, Dubbing & voiceover (Process, steps)

Unit 2: (4 weeks)
Video Production (Pre-Production): Concept, What is pre-production, Concept/visualization, R & D, Screen play writing, Storyboard making, Shooting script writing, Peoples involved in pre-production, Set making, Copyright , Music making, Budgeting, Production Design, Location hunting, Hiring of equipment & crew members

Unit 3: (4 weeks)
Video Production (Production): Know your equipment, Camera & accessories, Lights & Camera support, Clapboard, Sound equipment, Field Monitor, Blocking, Rehearsal, Lighting, Shooting

Unit 4: (4 weeks)
Video Production (Post Production): Compiling the concept and Shooting material to final stage, Peoples involved in Post-production, Know your equipment, Editing, Color grading, Publicity, Transmission, Distribution and Rating

Practical Exercises and Projects (15 weeks)

- Recording & Mixing of multi-track audio
- Budget Making & Script writing 05 minutes program
- Shooting for 05 minutes program (News / Music Video / Documentary / Feature / Chat show / Discussion etc.)
- Editing of 05 minutes video program

Audio Production (Project)

- Knowing the audio equipment's & software
- Recording process
- Mixing & Editing of various sound
- Exporting sound in various audio formats & project

Video Production (Project)

- Story writing, Storyboard making, Shooting script writing
- Location hunting, Breakdown making, Budget making
- Set making, Lighting, Shooting
- Editing, BGM posting, Color grading, Publicity, Exhibition & Transmission

Suggested Readings:

- Digital Filmmaking for Beginners A Practical Guide to Video Production (ELECTRONICS) by Michael K. Hughes, McGraw Hill TAB.
- Digital Filmmaking for Beginners A Practical Guide to Video Production, McGraw Hill TAB
- The Digital Filmmaking Handbook, Mark Brindle
- Video Production, Vasuvi Belavdi, Oxford Higher Education

- Editing Digital Video: The Complete Creative and Technical guide, Robert Goodman and Patrick McGrath, McGraw Hill Education TAB
- Digital Video Camerawork, Peter Ward, Routledge.
- Digital Video Hacks: Tips & Tools for Shooting, Editing, and Sharing, Joshua Paul, O'Reilly Media.

Note: Learners are advised to use the latest edition of readings.

Examination scheme and mode:

Total Marks: 100


Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.



Digital Marketing

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------|----------|-----------------------------------|----------|------------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Digital Marketing | 2 | 0 | 0 | 2 | 12th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- ☐ To acquaint the students with the knowledge of growing integration between the traditional and digital marketing concepts and practices in the digital era.
- ☐ To familiarize the students with the tools and techniques used by the digital marketers for driving the marketing decisions to attain marketing objectives.

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to understand the concept of digital marketing and its integration with traditional marketing.
- After studying this course, students will be able to understand customer value journey in digital context and behaviour of online consumers.
- After studying this course, students will be able to understand email, content and social media marketing and apply the learnings to create digital media campaigns.
- After studying this course, students will be able to examine various tactics for enhancing a website's position and ranking with search engines.
- After studying this course, students will be able to leverage the digital strategies to gain competitive advantage for business and career.



SYLLABUS

Unit 1: Marketing in the Digital World

(3 weeks)

Digital marketing: Concept, Features, Difference between traditional and digital marketing, Moving from traditional to digital Marketing; c

Digital Marketing Channels: Intent Based- SEO, Search Advertising; Brand Based- Display Advertising; Community Based-Social Media Marketing; Others- Affiliate, Email, Content, Mobile.

Customer Value Journey: 5As Framework; The Ozone O3 Concept Key; Traits of online consumer

Unit 2: Content and Email Marketing

(2 weeks)

Content Marketing: Step-by-step Content Marketing Developing a content marketing strategy Email Marketing: Types of Emails in email marketing, Email Marketing best practices

Unit 3: Social Media Marketing and Display Marketing

(5 weeks)

Social Media Marketing: Building Successful Social Media strategy; Social Media Marketing Channels; Facebook, LinkedIn, YouTube (Concepts and strategies)

Display Advertising: Working of Display Advertising; Benefits and challenges; Overview of Display ad Process.; Define- Customer, Publisher, Objectives; Format- Budget, Media, Ad Formats, Ad Copy.

Unit 4 Search Engine Marketing

(5 weeks)

Introduction of SEM: Working of Search Engine; SERP Positioning; online search behaviour, DMI's 5P Customer Search Insights Model.

Search Engine Optimization: Overview of SEO Process; Goal Setting-Types.

On-Page Optimization: Keyword Research, SEO Process -Site Structure, Content, Technical Mechanics, Headings, Image & Alt text, Social Sharing, Sitemaps, Technical Aspects- Compatibility, Structured Data Markup.

Off Page Optimisation: Link Formats, Link Building, Content Marketing, Social Sharing; Black and White Hat Techniques

Search Advertising: Overview of PPC Process; Benefits of Paid Search; Basis of Ranking; Goal Setting-Objectives; Account Setting-Creation of Google Ads, Campaign architecture, Campaign setup, Targeting, Bid Strategy, Delivery, Ad Scheduling, Ad Rotation, Keyword Selection; Ad Copy composition, Ad Extension

Essential/recommended readings

- Dodson, I. (2016). The art of digital marketing: the definitive guide to creating strategic, targeted, and measurable online campaigns. John Wiley & Sons.
- Kartajaya, H., Kotler, P., & Setiawan, I. (2016). Marketing 4.0: moving from traditional to digital. John Wiley & Sons.
- Ryan, Damien: Understanding Digital Marketing - Marketing Strategies for Engaging the Digital Generation. Kogan Page Limited.



Suggested Readings

- ☐ Moutusy Maity: Internet Marketing: A practical approach in the Indian Context: Oxford Publishing
- ☐ Seema Gupta: Digital Marketing: McGraw Hill
- ☐ Ultimate guide to digital Marketing by Digital Marketer

Examination scheme and mode:

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

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Essentials of Python

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Essentials of Python | 2 | 0 | 0 | 2 | 12 th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To introduce programming concepts using python
- To use python programming to solve problems of different domains

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to understand the basics of programming language
- After studying this course, students will be able to develop, document and debug modular python programs
- After studying this course, students will be able to apply suitable programming constructs and built in data structures to solve a problem

SYLLABUS

Unit I

(3 weeks)

Introduction

What can Python do? Why Python? Python Syntax compared to other programming languages, Python Installation.

The print statement, Comments, Python Data Structures & Data Types, String Operations in Python, Simple Input & Output, Simple Output Formatting, Operators in python

Python Program Flow

Indentation, The If statement and its' related statement, An example with if and it's related statement, The while loop, The for loop, The range statement, Break &Continue, Assert, Examples for looping



Functions& Modules

Create your own functions, Functions Parameters, Variable Arguments, Scope of a Function, Function Documentations, Lambda Functions& map, n Exercise with functions, Create a Module, Standard Modules

Unit 2

(4 weeks)

Exceptions Handling

Errors, Exception handling with try, handling Multiple Exceptions, Writing your own Exception

File Handling

File handling Modes, Reading Files, Writing& Appending to Files, Handling File Exceptions, The with statement

Classes In Python

New Style Classes, Creating Classes, Instance Methods, Inheritance, Polymorphism, Exception Classes & Custom Exceptions

Generators and iterators

Iterators, Generators, The Functions any and all, With Statement, Data Compression

Unit 3

(4 weeks)

Data Structures

List Comprehensions, Nested List Comprehensions, Dictionary Comprehensions. Functions, Default Parameters, Variable Arguments, Specialized Sorts

Collections

namedtuple(), deque, ChainMap, Counter, OrderedDict, defaultdict, UserDict, UserList, UserString

Writing GUIs in Python (Tkinter)

Introduction, Components and Events, An Example GUI, The root Component, Adding a Button, Entry Widgets, Text Widgets, Check buttons

Python SQL Database Access

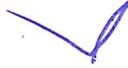
Introduction, Installation, DB Connection, Creating DB Table, INSERT, READ, UPDATE, DELETE operations, COMMIT & ROLLBACK operation, handling Errors

Network Programming

Introduction, A Daytime Server, Clients and Servers, The Client Program, The Server Program

Date and Time

Sleep, Program execution time, more methods on date/time



Unit 4

(4 weeks)

Filter, Map, Reduce, Decorators, Frozen set, Collections

Regular Expression

Split, Working with special characters, date, emails, Quantifiers, Match and find all, character sequence and substitute, Search method

Threads ESSENTIAL

Class and threads, Multi-threading, Synchronization, Treads Life cycle, use cases

Accessing API ESSENTIAL

Introduction, Facebook Messenger, Openweather

DJANGO

Django Overview, Django Installation, Creating a Project, Usage of Project in depth Discussion, Creating an Application, Understanding Folder Structure, Creating a Hello WorldPage, Database and Views, Static Files and Forms, API and Security

Essential/recommended readings

- "Starting Out with Python plus My Programming Lab with Pearson eText -- AccessCard Package (3rd Edition) Tony Gaddis ISBN-13: 978-0133862256".
- Python Crash Course: A Hands-On, Project-Based Introduction to Programming(2nd Edition).
- Head-First Python: A Brain-Friendly Guide (2nd Edition) by Paul Barry.
- Learn Python the Hard Way: 3rd Edition by Zed A. Shaw.
- Python Programming: An Introduction to Computer Science (3rd Edition) by John M. Zelle.
- Python Cookbook: Recipes for Mastering Python 3 (3rd Edition) by Brian Jones andDavid Beazley
- <https://docs.djangoproject.com/>
- Introduction to Programming using Python by Y. Daniel Liang. Publisher Pearson
- Taneja, S., Kumar, N. Python Programming- A modular Approach, PearsonEducation India, 2018.
- Balaguruswamy E., Introduction to Computing and Problem Solving using Python, 2 nd edition, McGraw Hill Education, 2018

Examination scheme and mode:

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time

E-Tourism

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course(if any) |
|------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|-------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| E-Tourism | 2 | 0 | 0 | 2 | 12 th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To learn about the application of e-business in tourism sector with understanding of contemporary issues of the use of electronic technology in the tourism business.
- To learn about e-business strategies and how to apply it to help them comprehend a variety of basic e-business ideas and theories.
- To teach fundamental concept of what e-business is and how to conduct e-business successfully in the tourism sector.

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to gain insight into concept of e-tourism, travel intermediaries and travel websites.
- After studying this course, students will be able to learn and explain the emerging ICT tools and its impact in the industry.
- After studying this course, students will be able to understand and implement the use of social media platforms/artificial intelligence in e-tourism.

SYLLABUS

Unit-I

(5 Weeks)

Introduction to E-tourism, stages of ICT revolution, ICTS and new business tools, Strategic and Operational use of IT in Tourism, The Internet and tourism – a powerful combination. Networks for intermediaries: Travel trade intermediaries-Features of a travel trade web site, implementing a travel trade website, online travel intermediaries.

Unit– II**(5 Weeks)**

E-business for Destination Management Organizations: Principles and concepts – Positioning DMOs in value net, destination e-business system model, e-Business Partnerships for DMOs, Case Studies of Red Apple DMC, OYO Rooms, OLX, Zoom Car, Ofo Cycles etc.

Unit– III**(5 Weeks)**

Social Media Marketing in Tourism - Facebook, Twitter, YouTube, WhatsApp - Travel Blogs –Usage of Artificial Intelligence- Virtual Reality - Challenges for conventional business models and Competitive strategies.

Essential/Recommended Readings

- Reynolds, Jonathan. (2012). E-Business: A management Perspective. OxfordUniversity Press.
- Kulkarni. P, Jahirabadkar. S & Chande. P. (2012). E-Business. Oxford UniversityPress.
- World Tourism Organization. (2001). E-business for tourism: Practical guidelines for tourism, Destinations and businesses. World Tourism Organization.
- D. Buhalis: e-Tourism, Information Technology for Strategic Management
- Buhalis & Costa: Tourism Business Frontiers
- Poon: Tourism, Technology and Competitive Strategies Harish Bhatt & Badan:Impact of ICT in Tourism

Suggested Reading:

- Stiakakis. E. & Georgiadis C. K. (2009). Drivers of a tourism e-business strategy: the impact of information and communication technologies. Oper Res Int J. DOI 10.1007/s12351-009-0046-6.
- European Commission (2004). Electronic Business in Tourism: Key issues, case studies, conclusions. European Commission. Enterprise publications. Sector Report: No. 07-II, August 2004.
- Šimunić. M, Pilepić L., Šimunić M. (2013). Tourism and e-business: the semanticparadigm as a precondition for success. Informatol. 46, 2013., 1, 1–7.
- Buhalis. D., & Hyun Jun S. (2011). E-Tourism. Contemporary Tourism Reviews: Series. Goodfellow Publishers Limited, Woodeaton, Oxford, OX3 9TJ.

Examination scheme and mode:

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Finance for Everyone

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------|----------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Finance for Everyone | 2 | 1 | 0 | 1 | 12th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To offer an integrated approach to the understanding of concepts and applications of financial planning.
- To help the students in their financial planning.

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to understand the importance of financial literacy and the institutions providing financial services.
- After studying this course, students will be able to prepare a financial plan, budget and manage personal finances.
- After studying this course, students will be able to open, avail and manage services offered by banks.
- After studying this course, students will be able to open, avail and manage services offered by post offices.
- After studying this course, students will be able to plan for life insurance and property insurance.
- After studying this course, students will be able to choose instruments for investment in shares.



SYLLABUS

Unit 1: Introduction, Financial Planning and Budgeting (3 weeks)

Meaning, importance and scope of financial literacy; Prerequisites of financial literacy – level of education, numerical and communication ability; Various financial institutions – banks, insurance companies, post offices, mobile app based services. Need of availing of financial services from banks, insurance companies and postal services. Concept of economic wants and means for satisfying these needs; Balancing between economic wants and resources; Meaning, importance and need for financial planning; Personal budget, family budget, business budget and national budget; Procedure for financial planning and preparing a budget; Budget surplus and budget deficit, Avenues for savings from surplus, Sources for meeting the deficit.

Unit 2: Banking Services (3 weeks)

Types of banks; Banking products and services – Various services offered by banks; Types of bank deposit accounts – savings bank account, term deposit, current account, recurring deposit; pan card, address proof, KYC norm; Various types of loans – education loan, consumer durable loan, vehicle loan, housing loan, short term, medium term, long term, microfinance, bank overdraft, cash credit, mortgage, reverse mortgage, hypothecation, pledge, Agricultural and related interest rates offered by various nationalized banks; Cashless banking, e-banking, check counterfeit currency; CIBIL, ATM, net banking, RTGS, NEFT, IMPS, electronic clearance services (ECS), debit and credit card, app based payment system, bank draft and pay order; banking complaints and ombudsman.

Unit 3: Financial Services from India Post Office (3 weeks)

Post office savings schemes: savings bank, recurring deposit, term deposit, monthly income scheme, kisan vikas patra, NSC, PPF, senior citizen savings scheme, sukanya samriddhi yojana; india post payments bank. money transfer: money order, e-money order. instant money order, collaboration with the western union financial services; mo videsh, international money transfer service, money gram international money transfer, indian postal order.

Unit 4: Insurance Services (3 weeks)

Life insurance policies: life insurance, term life insurance, endowment policies, pension policies, ULIP, health insurance plans, comparison of policies offered by various life insurance companies, comparison of policies offered by various health insurance companies. Property insurance policies. Post office life insurance schemes: postal life insurance and rural postal life insurance.

Unit 5: Stock Markets – Some Basic Concepts (3 weeks)

Terms used in stock markets: SENSEX, NIFTY, primary markets, secondary markets, initial public offering(IPO), follow-on public offering (FPO), offer for sale (OFS), block deal, equity shares, preference shares, debentures, bonus shares, stock split, dividend, buyback, DEMAT

account, trading account, delivery instruction slip (DI Slips), blue chips, defensive stocks, face value, market value, market capitalisation, pre-opening session, trading session, opening price, closing price, business days, bull, bear, bull market, bear market, risk, stop loss, derivatives, call option, put option, hedge, holding period; Tax on short term capital gains and long-term capital gains, Mutual Fund and its various schemes.

Practical Exercises:

(15 weeks)

The learners are required to:

- Visit banks, post offices, and insurance companies to collect information and required documents related to the services offered by these institutions and to know the procedure for availing of these services.
- Carry out the comparative analysis of different types of life insurance policies.
- Carry out the comparative analysis of different types of health insurance policies.
- Prepare a personal and family budget for one/six/ twelve months on imaginary figures.

Suggested Readings:

- Avadhani, V. A. "Investment Management" Himalaya Publishing House Pvt. Ltd., Mumbai.
- Batra, J.K., Accounting and Finance for Non-finance Managers, Sage Textbook
- Chandra, P. "Investment Game: How to Win" Tata McGraw Hill Education, New Delhi.
- Kothari, R. "Financial Services in India-Concept and Application" Sage Publications India Pvt. Ltd., New Delhi.
- Milling, B. E. "The Basics of Finance: Financial Tools for Non-Financial Managers" Universe Company, Indiana,
- Mittra, S., Rai, S. K., Sahu, A. P., & Starn, H. J. "Financial Planning" Sage Publications India Pvt. Ltd., New Delhi.
- Zokaityte, A. "Financial Literacy Education" Palgrave Macmillan, London.

Note: Learners are advised to use the latest edition of readings.

Examination scheme and mode:

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

FINANCIAL DATABASE AND ANALYSIS SOFTWARE

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Financial Database and analysis software | 2 | 0 | 0 | 2 | 12 th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To enable students to obtain data from financial database.
- To enable to use R language for statistical & econometric data analysis.
- To develop skills that can help in solving your research problems.

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to understand the utility of a financial database
- After studying this course, students will be extract data from financial database (Prowess IQ)
- After studying this course, students will be perform data analysis using R
- After studying this course, students will be apply 'R' and Prowess IQ in financial analysis and research.

SYLLABUS

Unit I (Financial Database)

(3 weeks)

An Introduction to financial database Prowess IQ from CMIE: Creating company set-, creating spreadsheets, use of elements in Ribbons – Company address and identity indicators, business segments and products, Ownership structure and governance indicators, Financial Statements, Stock prices and capital changes, Capex and M&A, indices and index number. Formulating queries and advance queries Student is expected to be able to extract different types of data for an index, an industry and company data Selection of company/s, period to be studied. Data extraction from balance sheet, profit & loss statement and cash flow statements

Stock market data- price and volume, BSE/NSE, adjusted prices Saving and exporting data to a spreadsheet for further analysis.

Unit II (Fundamentals of R)

(4 weeks)

Overview of the R language, Input and output of data in R, Help command and Directory in R, In-built functions in R, Operators in R; Assignment, Arithmetic, logical, and Relational operators, Using R studio, Scripts, Text editors for R, Graphical User Interfaces (GUIs) for R, installing packages and libraries, Variable classes (numeric, character, logical, complex, missing), Data Types in R; Vectors, Matrices, Arrays, Lists, Factors, and Data Frames, Important operations of these Data Types, Using data from external files- reading & writing data to external files, Creating and storing R workspaces.

Unit III (Descriptive Analysis and Data Visualizations)

(4 weeks)

Data preparation; Data cleaning and Missing value treatment, Data Exploration and Manipulation, Data Visualization; Bar chart, pie chart, Histogram, Frequency curve, Scatter plot, Box & Whisker plot etc., Important R functions for Describing a data; Mean, Median, Range, Standard deviation, Variance, Five number summary, Correlation coefficients for a bivariate data.

Unit III (Predictive Analysis)

(4 weeks)

Simple and Multiple Regression using R, Estimating Regression Equation by Ordinary Least Squares in R, Violations of Classical Assumptions: multicollinearity, heteroscedasticity, autocorrelation and model specification errors, their identification, their impact on parameters; tests related to parameters and impact on the reliability and the validity of inferences in case of violations of Assumptions; methods to take care of violations of assumptions, goodness of fit. Time Series Analysis using R (Basic idea only).

Essential/recommended readings

- Gardener, M., *Beginning R: The Statistical Programming Language*, Wiley & Sons. 2018
- Wickham, H., et al. *R for Data Science: Import, Tidy, Transform, Visualize, and ModelData*, O'Reilly', 2017
- Motwani, B., *Data Analytics with R*, Wiley & Sons, Indian edition 2021
- Chang, R *Graphics Cookbook- Practical Recipes for Visualizing Data*; O' Reilly Media
- Gujarati, D.N. et al. *Basic Econometrics*, McGraw Hill India, 5e, 2018

Useful web links

- <https://prowessiq.cmie.com>
- CRAN website: <https://cran.r-project.org/> <https://rstudio.com/products/rstudio/download/> (R studio)
- <http://r-statistics.co>

Examination scheme and mode:

Total Marks: 100

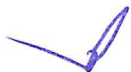
Internal Assessment: 25 marks Practical

Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.



Front End Web Design and Development

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Front End Web Design and Development | 2 | 0 | 0 | 2 | 12 th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To introduce the basic concepts and techniques of client-side web programming.
- To enable the students to develop simple, interactive, and stylish websites using HTML, CSS and JavaScript.

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to build websites using the elements of HTML.
- After studying this course, students will be able to build interactive and stylish websites using the client side programming techniques with CSS and Javascript.
- After studying this course, students will be able to learn to validate client-side data.
- After studying this course, students will be able to define the structure and content of the website using different features of CSS.

SYLLABUS

Unit 1 **(3 weeks)**
Introduction: Introduction to internet and web design. Basic concepts of web architecture.

Unit 2 **(4 weeks)**
HTML: Introduction to hypertext mark-up language (html), creating web pages, lists, hyperlinks, tables, web forms, inserting images, frames.



Unit 3

(4 weeks)

Cascading style sheet (CSS): Concept of CSS, creating style sheet, Importing style sheets, CSS properties, CSS styling (background, text format, controlling fonts), CSS rules, Style Types, CSS Selectors, CSS cascade, working with block elements and objects, working with lists and tables, CSS id and class, box model (introduction, border properties, padding properties, margin properties).

Unit 4

(4 weeks)

Basics of Javascript: Document object model, data types and variables, functions, methods and events, controlling program flow, built-in objects and operators, validations.

Practical Exercises

(15 weeks)

HTML

- ☐ Create an HTML document with following formatting – Bold, Italics, Underline, Colors, Headings, Title, Font and Font Width, Background, Paragraph, Line Brakes, Horizontal Line, Blinking text as well as marquee text.
- ☐ Create an HTML document with Ordered and Unordered lists, Inserting Images, Internal and External linking
- ☐ Create an HTML document for displaying the current semester's timetable.
- ☐ Create a website with horizontal and vertical frames. Top horizontal frame needs to show your college's name and logo. Bottom horizontal frame is to be split into two vertical frames. The left frame has hyperlinks to pages related to faculty, courses, student activities, etc. The right frame shows the corresponding webpage based on the link clicked on the left frame.
- ☐ Create a student registration form using HTML which has the following controls and make an interactive content presentation using CSS.:
 - I. Text Box II. Dropdown box III. Option/radio buttons
 - IV. Check boxes V. Reset and Submit button
- ☐ Create a webpage for your department with a drop-down navigation menu for faculty, courses, activities, etc.. Implement the webpage using styles, rules, selectors etc. learned in CSS
- ☐ Write event-driven programs in JavaScript for the following:
 - Enter a number and on click of a button print its multiplication table.
 - Print the largest of three numbers entered by the user.
 - Find the factorial of a number entered by the user.
 - Enter a list of positive numbers using the prompt terminated by a zero. Find the sum and average of these numbers.
- ☐ Create a student registration form using text, radio button, check box, drop down box, text field and all other required HTML elements. Customize the CSS and javascript to input and validate all data. Create functions to perform validation of each element, example:
 - a. Roll number is a 7-digit numeric value
 - b. Name should be an alphabetical value (String)
 - c. Non-empty and valid fields like DOB

Essential/recommended readings

- Nixon, R., Learning PHP, MySQL & JavaScript with jQuery, CSS and HTML5, O'Reilly, 2018.
- Powell, T.A. HTML & CSS: The Complete Reference, 5th edition, TataMcGrawHill, 2017.
- Duckett, J., JavaScript and JQuery: Interactive Front-End Web Development, Wiley, 2014.

Suggested Readings

- Boehm, A., & Ruvalcaba, Z., Murach's HTML5 and CCS, 4th edition, Mike Murach & Associates, 2018.
- Ivan Bayross, Web Enabled Commercial Application Development Using Html, Dhtml, Javascript, Perl CGI, BPB Publications, 2010.

Examination scheme and mode:

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

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Graphics Design & Animation

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------|---------|-----------------------------------|----------|------------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Graphics Design & Animation | 2 | 0 | 0 | 2 | 12 th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To introduce the students to the skill of animation.
- To learn about the application of 2D and 3D animation.

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to understand the importance of animation and graphics design
- After studying this course, students will be able to learn graphics design in 2D and 3D animation.
- After studying this course, students will be able to learn the application of graphics design in 2D and 3D animation in advertising and other areas.

SYLLABUS

Unit 1:2D Animation

(7 weeks)

Introduction to 2D Animation: Introduction to 2D Animation, Drawing concept, Colour theory & basics, Incorporating sound into 2D animation

Layout & Designing: Basic of sketching, still life and assignment of basic drawing, Composition of basic elements, Work in different media, such as drawing, collage, and painting, Explore the relationship between elements and principal, Pixel and resolution: Vector and Bitmap Graphics

Graphics and advertising (Practical)

- Creating Digital Layout
- Professional image editing (PHOTOSHOP)
- Advertising and relevant case , Graphics and illustration (Corel Draw, Paint)
- Vector Composition , 2D animation (Macromedia Flash)

Broadcast Design (Practical)

- Working with visual images
- Story Boarding
- Titles and Credit Making
- Stop motion animation

Production / Post-Production (Practical)

- Paint & animate (scanning, tracing, ink & Paint)
- Understanding Background composition
- Basic Understanding of 2D animation and technique
- Animation with flash, Portfolio Making

Unit 2: 3D Animation**(8 weeks)**

3D Modeling: Introduction to 3D space in Blender, Introduction to Modeling Techniques, In-organic Modeling, Organic Modeling

3D Shading: Use of Materials & Shader, Shader and Texture Editing, Shading Organic Model, Shading In-Organic Models

3D Animation and Rigging (Practical)

- Introduction to 3D Animation
- Create, Edit and working with Animation Graph, Rigging using Blender
- Setting up controllers for joints
- Simple Skeleton structure with proper joint orientation

3D Lighting and Rendering (Practical)

- Understanding Lighting in Cycles
- Direct and Indirect Lighting
- Light Linking, Final Composition
- Creating composition and Light with the Shaded Models

3D Dynamics (Practical)

- Introduction to Dynamics, Active and Passive Bodies
- Creating basic Simulation and collusion using Rigid body
- Cloth Simulation, Simulation of Brick wall collusion
- Introduction to Fluid Effects, Creating fluid simulation



Project

(Digital Imaging)

- Design Print advertisement for Service
- Design Print advertisement for Product
- Design Print advertisement an Event
- Design Print advertisement on Social Awareness
- Design a collage with a social message

2D Animation

- Drawing fundamentals using lines
- Sketching of cartoon characters
- 2D Logo designing
- Storyboarding of a 30 seconds film
- Portfolio making of an organization

3D Animation

- Exploring the Interface of 3D application & Basic Modeling
- Create different types of Materials and create a Shading
- Create a simple walk cycle using the character rigs
- Create a composition and Light set up
- Create a Fluid simulation & rendering

Suggested Readings:

- The Illusion of Life: Disney Animation, Ollie Johnston and Frank Thomas, Disney Editions.
- Blender Production Creating Short Animations from Start to Finish, Roland Hess, Routledge.
- Animating with Blender: Creating Short Animations from Start to Finish, Roland Hess, Focal Press
- Simplified Drawing for Planning Animation, Wayne Gilbert, Anamie Entertainment Ltd.
- Getting Started in 3D with Maya, Adam Watkins, Routledge.
- Creating Characters with Personality: For Film, TV, Animation, Video Games, and Graphic Novels, Tom Bancroft, Watson-Guption
- Force: Dynamic Life Drawing for Animators, Mike Mattesi, Focal Press

Note: Learners are advised to use the latest edition of readings.

Examination scheme and mode:

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

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Harmonium

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Harmonium | 2 | 0 | 0 | 2 | 12 th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To initiate the students to a very popular instrument of Indian music through a general discussion on the role of Harmonium in accompanying various singing forms
- To throw light on the various types of musical instruments that are played in Hindustani music
- To discuss the features of various types of wind instruments
- To teach the student the fundamentals of playing the Harmonium, such as the correct placement of the fingers on the instrument, the right posture for sitting etc.
- To demonstrate tonal exercises, such as palta-s and alankar-s, vital for playing.
- To initiate his training in the realm of playing the instrument with the basic ragas, like Alhaiya, Bilawal and Yaman

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to learn the origin, development and classification of musical instruments.
- After studying this course, students will be able to learn the importance of wind instruments.
- After studying this course, students will be able to learn gat and dhun in prescribed ragas.
- After studying this course, students will be able to demonstrate the various talas and their layakaries.
- After studying this course, students will become well-versed with the techniques of Playing Harmonium
- After studying this course, students will be able to achieve dexterity of the hand, through regular practice of the playing exercises at home.
- After studying this course, students will be able to read and learn new compositions in the prescribed ragas.
- After studying this course, students will be able to grasp the various grammatical aspects of the prescribed ragas, like how they arise, what are the respective rules that govern these ragas, how do the notes move in the ragas, what are the performing times of the ragas etc.
- After studying this course, students will be able to learn the art of playing a raga, especially with regard to having the Tabla as an accompanying instrument.

SYLLABUS

Unit I (2 weeks)
Origin and Development of Musical Instruments

Unit II (2 weeks)
Classification of instruments

Unit III (2 weeks)
Study of Wind Instruments

Unit IV (3 weeks)
Writing notation of compositions in prescribed ragas

Unit V (3 weeks)
Writing notation of Talas with Thah, Dugun, Tigun and Chaugun in Kaharva

Unit VI (3 weeks)
Theoretical knowledge of the prescribed ragas

Recommended Books:

- Sangeet Bodh – Sharadchandra Shridhar. Paranjape:-Madhye Pradesh Hindi Granth Academy, Bhopal, 1st Edition: 1972
- Samvadini – Jayant Bhalodkar :- Kanishka Publication, New Delhi, 1st Edition: 2006
- Dhvani Aur Sangeet - Lalit Kishore Singh:- Bhartiye Gyanpeeth, Lodi Road, New Delhi, 1st Edition: 1954
- Kramik Pustak Malika – Part- II :- V.N. Bhatkhande, Sangeet Karyalaya, Hathras, Editor: Laxminarayan Garg, January: 2008
- Sangeet Shastra Vigyan - Dr.Pannalal Madan:- Rajasthan Hindi Granth Academy, Jaipur, 2nd Edition: 1991, Abhishek Publication
- Tal Parichay Part III ,Girishchandra Srivastava, Rubi Prakashan , Allahabad, 2nd

Edition: June: 2002

(Practical - 1): Stage Performance & Viva-Voce:

(15 weeks)

Prescribed Ragas:

Alhaiya Bilawal

Yaman

Khamaj

Unit I

Ability to play five alankars in the prescribed ragas.

Unit II

One Sargam Geet to be played each in the prescribed ragas

Unit III

One Lakshan Geet each to be played in the prescribed ragas

Unit IV

Two Drut Khyals with elaborations in any of the prescribed ragas

Unit V

Ability to play a Dhun in raga Khamaj

Unit VI

In-depth knowledge of the prescribed ragas

Unit VII

Knowledge and demonstration of the following tala with dugun, tigon and chaugun -Kaharva

Unit VIII

Basic knowledge of Harmonium and its various parts

Examination scheme and mode:

Total Marks: 100

Internal Assessment: 25 marks Practical Exam

(Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.



Introduction to Arabic Calligraphy

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction to Arabic Calligraphy | 2 | 0 | 0 | 2 | 12 th Pass | Nil. |

Learning Objectives

The Learning Objectives of this course are as follows:

- To make the learners familiar with Arabic Calligraphy.
- To make them aware of different Arabic scripts.

Learning outcomes

After completion of the course the student will be able to:

- Know about the history of Arabic Calligraphy.
- Read and write Arabic letters and text.
- Recognize different Arabic scripts/fonts.
- Write in two Arabic scripts: Naskh and Ruq'ah.

SYLLABUS

UNIT 1

(5 Weeks)

- Calligraphy
- Arabic Calligraphy
- Origin and Development of Arabic Calligraphy
- Lesson on Arabic Alphabet
- Introduction to Arabic script Ruq'ah
- Introduction to Arabic script Naskh

UNIT 2

(5 Weeks)

- Importance and Characteristics of the Arabic Script Ruq'ah in modern time.
- Importance and Characteristics of the Arabic Script Naskh in modern time.
- Familiarity with different Arabic scripts.
- Al-Aqlaam Al-Sittah
- Pioneers of the Arabic scripts/calligraphy.
 - ✓ Ibn Muqlah
 - ✓ Ibn Al-Bawwab

UNIT 3

(5 Weeks)

- Benefits of Good handwriting
- Famous Arabic fonts of computer
- Practice of the Arabic scripts: Naskh and Ruq'ah



Essential Readings

1. M. Ziauddin: Muslim Calligraphy, Kitab Bhawan, Delhi

2. مولانا نور عالم خلیل دہلوی: خط رقعی کتبوں اور کتب سبکوں؟، دیوبند

3. د. عادل دہلوی: الخط العربی نشأته وتطوره، القاهرة.

4. د. إبراهيم سليمان شيخ العبد، الخط العربی حضارة وممارسة، مكتبة سم، منصور، غزة، فلسطين.

Suggested Resources:

1. Muhammad Sohail: Administrative and Cultural History of Islam, New Delhi.

2. مركز الملك فيصل للبحوث والدراسات الإسلامية: الخط العربی من خلال المخطوطات، المملكة العربية السعودية.

Examination scheme and mode:

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Introduction to Blockchain

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------------|---------|-----------------------------------|----------|------------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction to Blockchain | 2 | 0 | 0 | 2 | 12 th Pass | NIL |


Learning Objectives

The Learning Objectives of this course are as follows:

- To introduce the students to the basic concept of blockchain.
- To make the students learn and implement blockchain technology.
- To learn about the distributed organizations and distributed ledger.

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to understand how Ethereum transactions are validated by miners.
 - After studying this course, students will be able to understand Ethereum Blockchain.
 - After studying this course, students will be able to learn Solidity programming language to develop Smart Contracts.
 - After studying this course, students will be able to understand the key concepts like cryptography and public , private blockchain.
 - After studying this course, students will be able to gain a deep insight into Ethereum, Hyperledger and its network.
- 

SYLLABUS

Unit 1 (7 weeks)

Blockchain: Basics And Applications: Node Fundamentals,Blockchain Basics, Blockchain Features, Ethereum Fundamentals, Smart Contract Development In Ethereum, Dapp Development In Ethereum.

Unit 2 (8 weeks)

Building A Distributed Application On Hyperledger Fabric:

HyperledgerFundamentals, Fabric Network Setup, Chaincode Development ,DAPP Development.

CAPSTONE PROJECT (15 weeks)

- **Assignment/Project**

Suggested Web links

- <https://ethereum.org>
- <https://www.hyperledger.org/>

Examination scheme and mode:

Total Marks: 100


Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.



Introduction to Cloud Computing (AWS)

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------------------|---------|-----------------------------------|----------|------------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction to Cloud Computing (AWS) | 2 | 0 | 0 | 2 | 12 th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To learn about cloud computing through Amazon Web Services (AWS) platform.
- To learn about AWS cloud concepts, services, security and architecture to build an application.

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to Understanding cloud computing platform
- After studying this course, students will be able to differentiate between on-premises, hybrid-cloud, and all-in cloud
- After studying this course, students will be able to describe the basic global infrastructure of the AWS Cloud
- After studying this course, students will be able to understanding the core AWS services, including compute, network, databases, and storage



SYLLABUS

Unit 1 (5 weeks)

Introduction to cloud computing, Creating AWS account, AWS Management Console, AWS Documentation overview, Availability Zones, AWS Global Infrastructure.

Unit 2 (5 weeks)

Compute in the Cloud :- Amazon EC2, instance types.

Unit 3 (5 weeks)

Storage and Databases: - Amazon Simple Storage Service (Amazon S3), Amazon Relational Database Service (Amazon RDS), Amazon DynamoDB.

Project (15 weeks)

Create an AWS account and implement AWS cloud for deploying any application.

Suggested Sources

- Any free platform can be used, for example Amazon, Google, Azure etc.

Examination scheme and mode:

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Negotiation and Leadership

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------------|---------|-----------------------------------|----------|------------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Negotiation and Leadership | 2 | 0 | 0 | 2 | 12 th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To introduce the students to the importance of negotiation skills
- To expose the students to diverse contexts and situations that require negotiation skills
- To learn about the management of critical and crisis situations
- To evolve relationship building skills

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to apply negotiation skills to obtain desired results
- After studying this course, students will be able to understand the various aspects of a crisis situation for appropriate management.
- After studying this course, students will be able to learn how to manage complex negotiation situations.
- After studying this course, students will be able to understand the process of relationship building.
- After studying this course, students will be able to test and judge the legitimacy of the terms of negotiation



SYLLABUS

Unit 1

(3 weeks)

Negotiation Fundamentals Key concepts and core vocabulary of negotiation process, deal-making and dispute resolution, Assumptions and biases that are barriers to effective negotiation, Collaborative approaches, risk & opportunities to achieve win-win outcomes

Negotiation Canvas Introduction of a framework for negotiation preparation and how to use it, Elements of negotiation canvas i.e. relationship, alternatives, legitimacy, options, interests among others, Difference between position and interests

Unit 2

(4 weeks)

Managing critical moments

Types of negotiation approaches used by negotiators Critical moments that can make or break the deal How to identify these critical moments, Strategies to manage critical moments in the negotiation

Effective Communication and Relationship Building

Role of communication and relationship in negotiation, Understanding the other party's psychology to understand their interests, build trust and improve the scope of the negotiation, Unconditionally constructive behaviours, Methods of building trust, and empathy, Overcoming communication barriers, difficult behaviours and information asymmetry

Unit 3

(4 weeks)

Discovering, creating and claiming value

Methods of value discovery during negotiation, How is value divided and claimed between the negotiating parties?, What are the tradeoffs, mutual gains and contingencies?, Concept of distributive bargaining, equitable solutions, and ZOPA (zone of possible agreement), Biases and enemies of value creation

Complex Negotiations

Strategies for negotiations are not straightforward, involve several issues, include multiple stakeholders, and /or involve powerful parties, Hofstede's Culture dimensions, Dealing with people with difficult behaviours

Unit 4

(4 weeks)

Managing Alternatives

Concept of BATNA (Best Alternative to Negotiated Agreement), Methods to evaluate alternative options/offers, Management of one's alternatives and other party's alternatives during negotiation.

Legitimacy and Building Commitment

When to say yes to agreed terms, and when to walk away, Criteria for decision-making on negotiated terms, Assessment of the legitimacy of negotiated terms, Leading all parties to commit to the negotiated agreement, Steps from plan to execution

Essential/Recommended Readings

- Getting to Yes: Negotiating Agreement Without Giving in by Roger Fisher, William L. Ury, and Bruce Patton. Penguin Books
- Difficult Conversations: How to Discuss What Matters Most by Douglas Stone, Bruce Patton, Sheila Heen. Penguin Books
- Value Negotiation: How to Finally Get the Win-Win Right by Horacio Falcão. Pearson Education

Articles

- The Seven Myths of Win-Win Negotiations, by Horacio Falcão
- Control the Negotiation before it begins by Deepak Malhotra

Examination scheme and mode:

Total Marks: 100

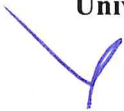
Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.



Personal Financial Planning

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------------------|----------|-----------------------------------|----------|------------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Personal Financial Planning | 2 | 1 | 0 | 1 | 12th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To familiarize students with different aspects of personal financial planning like savings, investment, taxation, insurance, and retirement planning
- To develop the necessary knowledge and skills for effective financial planning.

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to understand the meaning and appreciate the relevance of financial planning.
- After studying this course, students will be able to understand the concept of investment planning and its methods.
- After studying this course, students will be able to examine the scope and ways of personal tax planning.
- After studying this course, students will be able to analyse insurance planning and its relevance.
- After studying this course, students will be able to develop insight into retirement planning and its relevance.

SYLLABUS

Unit 1: Introduction to Financial Planning: (3 weeks)

Financial goals, steps in financial planning, budgeting incomes and payments, time value of money. Introduction to savings, benefits of savings, management of spending & financial discipline, Setting alerts and maintaining sufficient funds for fixed commitments.

Unit 2: Investment Planning: (3 weeks)

Process and objectives of investment, concept and measurement of return & risk for various asset classes, measurement of portfolio risk and return, diversification & portfolio formation. Gold bond; Real estate; Investment in greenfield and brownfield Projects; Investment in fixed income instruments, financial derivatives & commodity market in India. Mutual fund schemes; International investment avenues. Currency derivatives and digital currency.

Unit 3: Personal Tax Planning: (3 weeks)

Tax structure in India for personal taxation, Scope of personal tax planning, exemptions and deductions available to individuals under different heads of income and gross total income. Comparison of benefits - Special provision u/s 115 BAC vis-à-vis General provisions of the Income-tax Act, 1961, tax avoidance versus tax evasion.

Unit 4: Insurance Planning: (3 weeks)

Need for insurance. Life insurance, health insurance, property insurance, credit life insurance and professional liability insurance.

Unit 5: Retirement Benefits Planning: (3 weeks)

Retirement planning goals, process of retirement planning, Pension plans available in India, Reverse mortgage, Estate planning.

Practical Exercises: (15 Weeks)

The learners are required to:

- Perform electronic fund transfers through net banking and UPI.
- Identify certain recent Ponzi schemes in the market.
- Prepare tax planning for a hypothetical individual.

Suggested Readings:

- Halan, M. "Let's Talk Money: You've Worked Hard for It, Now Make It Work for You" Harper Collins Publishers, New York.
- Indian Institute of Banking & Finance. "Introduction to Financial Planning" Taxmann Publication, New Delhi.
- Keown A.J. "Personal Finance" Pearson, New York.
- Madura, J. "Personal Finance", Pearson
- Pandit, A. "The Only Financial Planning Book that You Will Ever Need" Network 18 Publications Ltd., Mumbai.
- Sinha, M. "Financial Planning: A Ready Reckoner" McGraw Hill Education, New York.
- Tripathi, V. "Fundamentals of Investment" Taxmann Publication, New Delhi.



Note: Learners are advised to use the latest edition of readings.

Examination scheme and mode:

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.



PERSONALITY DEVELOPMENT AND COMMUNICATION

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Personality Development | 2 | 1 | 0 | 1 | 12 th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To develop inter personal and effective communication skills.
- To develop problem solving skills and understand its influence on behaviour and attitudes of individuals.

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to understand the importance of oral and written communication in day-to-day working of the organisation.
- After studying this course, students will be able to develop inter personal skills and problem-solving skills.
- After studying this course, students will be able to understand the role of body language in effective communication.

SYLLABUS

Unit 1

(4 Weeks)

Introduction, need for Communication, Process of Communication, Written and Verbal Communication, Visual communication, Signs, Signals and Symbols, Silence as a Mode of Communication, Inter-cultural, Intra-cultural, Cross-cultural and International communication, Communication through Questionnaires, Business Letter Writing, Electronic Communication.

Unit 2

(4 Weeks)

Business Cases and Presentations, Letters within the Organizations, Letters from Top Management, Circulars and Memos, Business Presentations to Customers and other stakeholders, presenting a Positive Image through Verbal and Non-verbal Cues, Preparing and Delivering the Presentations, Use of Audio-visual Aids, Report Writing.

Unit 3**(4 Weeks)**

Barriers to Communication, Improving Communication Skills, Preparation of Promotional Material, Non-verbal communication, Body language, Postures and gestures, Value of time, Organizational body language, Importance of Listening, Emotional Intelligence. Working individually and in a team, Leadership skills, Leadership Lessons, Team work and Team building, Feedback, Feed forward Interpersonal skills – Delegation, Humour, Trust, Expectations, Values, Status, Compatibility and their role in building team – work Conflict Management – Types of conflicts, how to cope with conflict.

Unit 4**(3 Weeks)**

Negotiation Skills, Types of Negotiation, Negotiation Strategies, Selling skills – Selling to customers, Selling to Superiors Selling to peer groups, team mates and subordinates, Conceptual selling, Strategic selling, Selling skills – Body language.

Essential/recommended readings

- Kushal Jin – Business Communication, VK India.
- Krishnamacharyulu, C. S. G, Ramakrishnan Lalitha – Personality Development, Interpersonal Skills and Career Management, Himalaya Publishing.
- Corvete Budjac – Conflict Management: A Practical Guide to Developing Negotiation Strategies, Pearson.

Suggestive Readings

- Mitra, B. K., Personality Development and Soft Skills, Oxford University Press.
- Kumar Sanjay and Pushplata, Communication Skills, Oxford University Press.
- Mandal S. K., Effective Communication and Public Speaking, Jaico Publishing.

Note: Latest edition of the readings may be used

Examination scheme and mode:

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Political Leadership and Communication

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|------------------------|-------------------------|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Political Leadership and Communication | 2 | 1 | 0 | 1 | 12 th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand the cross-cutting multi-disciplinary linkage of the subject.
- To gain a basic understanding of specific concepts and critical review of political communication and election campaign studies.
- To be able to construct a linkage between political communication and leadership.
- To learn conceptual frameworks and qualitative research skills for the analysis of modes and techniques of political communication and leadership.

Learning outcomes

The Learning Outcome of this course is as follows:

- After studying this course, students will be able to have a professional/career-oriented insight by facilitating their journey as Media managers, policy makers, political analysts, Journalists, Public relations officers in government agencies, political parties and higher education.

SYLLABUS

Unit I: Explaining Political Communication

(3 weeks)

- Meaning, Nature and Scope
- Evolution and Transformation

Unit II: Exploring Leadership

(3 weeks)

- Themes, Theories and Typologies
- Participation and Performance

Unit III: Expanding Political Communication and Leadership: Orientation and Action

(3 weeks)

- Developing Communication and Leadership through Research
- Strengthening Techniques of Communication and Leadership


Unit IV: Extending Political Communication and Leadership: Research Issues and Challenges

(3 weeks)

- Researching Communication and Leadership through Survey: Opinion Poll, Exit Poll.
- Examining Contemporary Issues and Challenges in Communication and Leadership

Unit V: Executing Political Communication and Leadership: Empirical and Professional Implications

(3 weeks)

- 
- Psephology as an Art and Vocation
 - Exploring Career Options

Essential/recommended Readings:

- Pole (2009). Blogging the Political: Politics and Participation in a networked Society. New York: Routledge.
- D. A. Graber (2005). 'Political Communication Faces the 21st Century', Journal of Communication, September: 479-507.
- Frank Esser and Barbara Pfetsh (eds.). (2004). Comparing Political Communication-Theories, Cases and Challenges. Cambridge: Cambridge University Press.
- G. Gerbner, L. Gross, M. Morgan and N. Signorielli (1982). 'Charting the Mainstream: Television's Contribution to Political Orientations', Journal of Communication, 32(2): 100-27.
- H. A. Semetko and M. Scammell (eds.) (2012). The SAGE Handbook of Political Communication. London: Sage.
- John C Maxwell (2008). Developing the Leader Within You. New Delhi: Harper Collins.
- Kiran Prasad (ed.) (2003). Political Communication: The Indian Experience. New Delhi: B.R. Publishers.
- Max Depree (2004). Leadership is an Art. RHUS Publications.
- Yogesh Atal (2014). 'Matdataoin Ka Sansar', Pratiman, Vol.2, No.1.
- Yogesh Atal (2018). 'Chunav Shastra Aur Rajniti', Pratiman, No.11.

Web Source

- <http://www.politicalcommunication.org/history.html>

Examination scheme and mode:

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.



Programming using Python

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------------|----------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Programming with Python | 2 | 0 | 0 | 2 | 12th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- ☐ To provide exposure to basic problem-solving techniques with computers
- ☐ To develop logical thinking abilities and to propose novel solutions for real world problems through programming language constructs.
- ☐ To deepen the empirical knowledge on applying programming on business domains.

Learning outcomes

The Learning Outcomes of this course are as follows:

- ☐ After studying this course, students will be able to interpret the basic representation of the data structures and sequential programming
- ☐ After studying this course, students will be able to gain knowledge of, and ability to use control framework terminologies.
- ☐ After studying this course, students will be able to work out using the core data structures as lists, dictionaries, tuples, and sets.
- ☐ After studying this course, students will be able to choose appropriate programming paradigms, interrupt and handle data using files to propose solutions through reusable modules.
- ☐ After studying this course, students will be able to propose possible error-handling constructs for unanticipated states/inputs .
- ☐ After studying this course, students will be able to implements exemplary applications on real-world problems.



SYLLABUS

Unit-1: Introduction

(3 weeks)

Relationship between computers and programs, Basic principles of computers, File systems, Using the Python interpreter, Introduction to binary computation, Input / Output

Unit-2: Data types and control structures

(4 weeks)

Operators (unary, arithmetic, etc.), Data types, variables, expressions, and statements, Assignment statements, Strings and string operations, Control Structures: loops and decision

Unit-3: Modularization and Classes

(4 weeks)

Standard modules, Packages, Defining Classes, Defining functions, Functions and arguments(signature)

Unit-4: Data structures and Object-oriented design

(4 weeks)

Data Structures (array, List, Dictionary), Error processing, Exception Raising and Handling Programming types, Object Oriented Programming, Object Oriented Design, Inheritance and Polymorphism

Practical Exercises

(15 weeks)

- ☐ Running instructions in Interactive interpreter and a Python Script
- ☐ Write a program to purposefully raise Indentation Error and Correct it
- ☐ Write a program to compute distance between two points taking input from the user. (Pythagorean Theorem)
- ☐ Write a program add.py that takes 2 numbers as command line arguments and prints its sum.
- ☐ Write a Program for checking whether the given number is an even number or not.
- ☐ Using a for loop, write a program that prints out the decimal equivalents of 1/2, 1/3, 1/4, 1/10
- ☐ Write a program using a for loop that loops over a sequence. What is the sequence?
- ☐ Write a program using a while loop that asks the user for a number, and prints a countdown from that number to zero.
- ☐ Find the sum of all the primes below two million. Each new term in the Fibonacci sequence is generated by adding the previous two terms. By starting with 1 and 2, the first 10 terms will be: 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, ...
- ☐ By considering the terms in the Fibonacci sequence whose values do not exceed four million, find the sum of the even-valued terms.
- ☐ Write a program to count the numbers of characters in the string and store them in a dictionary data structure.
- ☐ Write a program to use split and join methods in the string and trace a birthday with a dictionary data structure.
- ☐ Write a program combining lists that combines these lists into a dictionary.
- ☐ Write a program to count the frequency of characters in a given file. Can you use



character frequency to tell whether the given file is a Python program file, C program file or a text file?

- ☐ Write a program to print each line of a file in reverse order.
- ☐ Write a program to compute the number of characters, words and lines in a file.
- ☐ Write a function ball collide that takes two balls as parameters and computes if they are colliding. Your function should return a Boolean representing whether or not the balls are colliding. Hint: Represent a ball on a plane as a tuple of (x, y, r), r being the radius. If (distance between two balls centers) \leq (sum of their radii) then (they are colliding)
- ☐ Find mean, median, mode for the given set of numbers in a list.
- ☐ Write a function nearly equal to test whether two strings are nearly equal. Two strings a and b are nearly equal when a can be generated by a single mutation on b.
- ☐ Write a function dups to find all duplicates in the list.

Essential/recommended readings

- ☐ "Starting Out with Python plus My Programming Lab with Pearson eText --Access Card Package (3rd Edition) Tony Gaddis ISBN-13: 978-0133862256".
- ☐ Python Crash Course: A Hands-On, Project-Based Introduction to Programming (2nd Edition).
- ☐ Head-First Python: A Brain-Friendly Guide (2nd Edition) by Paul Barry.
- ☐ Learn Python the Hard Way: 3rd Edition by Zed A. Shaw.
- ☐ Python Programming: An Introduction to Computer Science (3rd Edition) by John M. Zelle.
- ☐ Python Cookbook: Recipes for Mastering Python 3 (3rd Edition) by Brian Jones and David Beazley.

Examination scheme and mode:

Total Marks: 100

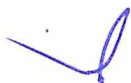
Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

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PROSPECTING E-WASTE FOR SUSTAINABILITY

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Prospecting E-waste for Sustainability | 2 | 0 | 0 | 2 | 12 th Pass | NIL |

Learning Objectives

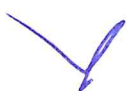
The Learning Objectives of this course are as follows:

- To provide in-depth knowledge on the effective mechanisms to regulate the generation, collection, and storage of e-waste
- To gain insights into the internationally/nationally acceptable methods of transport, import, and export of e-waste within and between countries
- To develop a holistic view on recycling, treatment, and disposal of e-waste and related legislative rules.

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to holistically analyze the environmental impacts of e-waste
- After studying this course, students will be able to apply the skills and various concepts for sustainable management of e-waste
- After studying this course, students will be able to decipher the role of various national and international regulations for e-waste management
- After studying this course, students will be able to provide specific recommendations for improved methods for handling e-waste at different stages such as generation, collection, storage, transport, and recycling



SYLLABUS

Practical/Hands-on Exercises

(15 weeks)

- Identification of e-waste and its types
- Composition of e-waste and segregation- from the material provided
- Dismantling of e-waste and handling process
- Visit a nearby e-waste handling facility
- Environmental protection laws and producer's responsibility for e-waste management
- Build an understanding of how regulatory mechanisms can be utilized in the management of e-waste in educational institutions.
- Discussion on plausible ways and implementation of e-waste reduction at the source
- Evaluation of the status of e-waste handling at your institution. Suggest potential solutions as per the existing norms of E-Waste (Management) Rules, 2016 and beyond.
- Estimate how recycling of e-waste in metro cities will go in sync with the circular economy
- Develop an understanding and itinerary of the process for procuring e-waste import permissions.
- Inventory of the e-waste disposal mechanisms.
- Study the evolution of e-waste management rules and its implementation- Hazardous Waste Rules, 2008, E-waste (Management and Handling) Rules, 2011; and E-Waste (Management) Rules, 2016
- Study the international laws on e-waste management- the international legislations: The Basel Convention; The Bamako Convention; The Rotterdam Convention;
- Waste Electrical and Electronic Equipment (WEEE) Directive in the European Union; Restrictions of Hazardous Substances (RoHS) Directive

Teaching and learning interface for practical skills:


To impart training on technical and analytical skills related to the course objectives, a wide range of learning methods will be used, including (a) laboratory practicals; (b) field-work exercises; (c) customized exercises based on available data; (d) survey analyses; and (e) developing case studies; (f) demonstration and critical analyses; and (h) experiential learning individually and collectively.

Prospective sector(s):

- Electric and electronic industries,
- E-waste Recycling Unites,
- Private entrepreneurs,
- Environmental consultancies,
- Pollution Boards, and
- Environmental NGOs

Suggested Readings:

- Hester, R.E. and Harrison, R.M., 2009. Electronic Waste Management: Design. Analysis and Application. Royal Society of Chemistry Publishing. Cambridge, UK.
- Fowler, B.A., 2017. Electronic Waste: Toxicology and Public Health Issues. Academic Press.

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- Gaidajis, G., Angelakoglou, K. and Aktsoglou, D., 2010. E-waste: environmental problems and current management. *Journal of Engineering Science and Technology Review*, 3(1), pp.193-199.
 - Janyasuthiwong, S., 2020. *Metal Removal and Recovery from Mining Wastewater and E-waste Leachate*. CRC Press.

Examination scheme and mode:

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.



Public Speaking in English Language and Leadership

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Public Speaking in English Language and Leadership | 2 | 0 | 0 | 2 | 12 th pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To impart leadership skills to students along with adequate communication skills to create strong leaders in the emerging social, political and corporate world.
- To create leaders with ethics and resilience in industry-based fields as well as social fields.
- To allow students to realise their leadership skills and curate them through a hand-on practical approach which will be helpful in generating employable skills for them.

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to learn effective communication through Public Speaking will instill leadership development among students.
- After studying this course, students will be able to lead in different fields at the undergraduate level, be responsible citizens and employ leadership skills in their future endeavours, too.
- After studying this course, students will be able to strengthen their critical mindset, help them being assertive and put forward constructive viewpoints employing the skills learnt in the practice sessions.

SYLLABUS

UNIT 1

(2 Weeks)

- Introduction to Effective Communication- Features, Advantages & Disadvantages
- Importance of Listening
- Oral communication- Meaning, Features & Importance
- Reading Public Speech- Reading documented speeches delivered in the past; Understanding the art of word play, vocabulary and putting thoughts into words

UNIT 2

(5 Weeks)

- Public Speaking-
 - ✓ What is Speech?, Overcoming Fear of Public Speaking, Language of Public Speech
 - ✓ Drafting a Public Speech (Reading, research, writing, Fact check, Re-writing, Delivery)
 - ✓ 3P's of Public Speaking (Preparation, Practice, Performance)
 - ✓ Rhetoric Skills, Art of Informative & Persuasive speaking, Concluding Speech with Power
- Types of Public Speaking-
 - ✓ Physical & Online
 - ✓ Political, Organisational, Educational & Motivational
 - ✓ Ted Talks, Public Speaking in Media
- Listening in groups and Discussion- Listening famous speeches (from history & everyday life); Analysis of its elements & classroom discussion
- Writing Public speech- Classroom Practice Sessions

UNIT 3

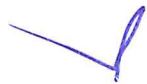
(5 Weeks)

- Leadership Skills- (2 hrs.)
 - ✓ Meaning, Features & Importance
 - ✓ Historical Overview
 - ✓ Leadership in Academic Life, Corporate Space, Public Life, Social Leadership and Political Leadership
- Leadership & Innovations- (2 hrs.)
 - ✓ Audience analysis
 - ✓ Audience Engagement & Leadership
 - ✓ Influencing through Leadership
- Execution & Delivery of Public Speech- Learning rhetorics through speeches in the form of Audio/ Video; Learning Body Language & Paralanguage through ICT
- Developing leadership competence through Public Speaking- Intra-class Speech Competitions; Extempore; Group Discussion

UNIT 4

(3 Weeks)

- Importance of Public Speaking in developing Leadership Skills
- Ethics in Public Speaking & Leadership
- Mock Parliament/MUNs
- Workshop



Suggested Readings:

- ✓ Beebe, S. A., & Beebe, S. J. (2012). Public speaking: An audience-centred approach. (8th ed.). Boston: Pearson.
- ✓ Cardon, P. (2014). Business communication: Developing leaders for a networked world. (international ed.). New York: McGraw-Hill.
- ✓ Jaffe, C. I. (2013). Public speaking: Concepts & skills for a diverse society. (7th ed.). Boston: Cengage Learning.

Examination scheme and mode:

Total Marks: 100


Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.



STATISTICAL SOFTWARE PACKAGE

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------------|---------|-----------------------------------|----------|------------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Statistical Software Package | 2 | 0 | 0 | 2 | 12 th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To familiarize students with data analysis using a statistical software package like SPSS or any other equivalent.
- To provide skills for research analysis and increase employability.
- To lay a foundation for advance data analysis work and higher education.

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to understand basic functions of statistical software package for managing variables and generate descriptive statistics to describe the data and analyze data through graphs and charts.
- After studying this course, students will be able to test differences in sample means.
- After studying this course, students will be able to identify relationships between variables and develop models for predicting dependent variables on the basis of independent variables.
- After studying this course, students will be able to understand data structures and identify clusters in data.
- After studying this course, students will be able to identify principal components that are relevant from a host of variables.

SYLLABUS

Unit 1: Getting started with the Software

(4 Weeks)

Introduction: Data Entry, Storing and Retrieving Files, Generating New Variables; Managing Data – Listing cases, replacing missing values, computing new variables, recoding variables, selecting cases, sorting cases, merging files, Graphs – Creating and editing graphs and charts; Descriptive Statistics Procedures: Frequencies, Descriptive, Explore, Cross Tabulation.

Unit 2: Hypothesis Testing for Means

(3 Weeks)

T-tests: One sample test, Independent samples and paired samples t-test; ANOVA – One-way analysis of variance with post hoc analysis, Two-way analysis of variance.

Unit 3: Testing for Association between Variables

(4 Weeks)

Chi-square Test of Independence; Bivariate Correlation Analysis: Simple Scatter Plot; Correlation Coefficient: Pearson, Spearman Rho and Kendall Tau Coefficient. Factor analysis.

Unit 4: Regression Analysis

(4 Weeks)

Linear Regression: Simple Linear Regression, Multiple regression analysis with matrix scatterplot. Multiple Regression: Standard (Enter) and Stepwise Method. Binary Logistic Regression.

Essential/recommended readings

- ☐ Performing Data Analysis using IBM SPSS, Lawrence S. Meyers, Glenn C. Gamst, A. J. Guarino, Wiley Publication
- ☐ SPSS for Windows Step by Step A Simple Guide and Reference, Darren George and Paul Malley
- ☐ SPSS in Simple Steps, Kiran Pandya, Smruti Bulsari, Sanjay Sinha, Dreamtech Press

Suggestive Readings

- Using SPSS in Research, Dr. Radha Mohan, Neelkamal.

Examination scheme and mode:

Total Marks: 100

Internal Assessment: 25 marks Practical

Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Statistics with R | 2 | 0 | 0 | 2 | 12 th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To enable students to handle data in the R software thereby helping them to understand meaningful statistical analysis performed on the data.
- To enable students to extract data, and perform basic statistical operations entailing
- Data analysis such as – data cleaning, data visualisation, data summarisation, and regression amongst others.

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to extract and Read data into R, manipulate, and analyse it
- After studying this course, students will be able Tto debug, organize, and commentR code
- After studying this course, students will be able to understand the R environment for downloading, installing, and using packages
- After studying this course, students will be able to do basic programming to write own functions
- After studying this course, students will be able to use loops
- After studying this course, students will be able to create standard and customizedgraphics
- After studying this course, students will be able to perform basic statisticaloperations and regression.

SYLLABUS

Unit 1: Data Extraction and Spread Sheet Exploration

(3 Weeks)

Extraction of economics and financial data from Prowessiq, RBI, IMF, World bank or an equivalent financial/economic database. The students should be able to save and export the data to 'R-environment' for further analysis.

Unit 2: Basics of R-language

(7 Weeks)

Overview of the R language: Installing R and R Studio : Using R studio, Scripts, Text editors for R, Graphical User Interfaces (GUIs) for R, Creating and storing R workspaces, installing packages and libraries, Mathematical operations.

Data Types in R – Numeric, Integer, Character, Logical, Complex and missing data. Data Structures in R

- Vectors – Creation, Arithmetic operations of Vectors, Vector Sub setting, Sorting and Sequencing functions.
- Matrix and Arrays – Creation, Arithmetic Operations of matrix, Sub setting, Use of Drop Function.
- Factors – Converting a vector into factor, assigning levels and labels, ordered Factor.
- List – Creating a list, accessing elements from a list, adding a new element and eliminating an existing element from the list, converting list to vectors.
- Data Frames – Creation of Data Frame, adding new columns, rows and removing columns, accessing column using the \$ sign, importing a data set (important file formats such as csv, txt and spreadsheet), aggregate function and subsetting of dataframes, tapply function, manipulation using dplyr package (select, filter, arrange, mutate and group by function, pipe operator).

Programming Fundamentals: Logical operators, conditional statements (if, else, else if statements in R), While loops, For loops, repeat loops. Creating functions in R.

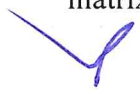
Reading data in R (file formats such as csv, txt, and xlsx), Writing data to external files (file formats such as csv, txt, and xlsx), writing a table to a file, print function.

Unit 3: Basic Statistics and Regression

(5 Weeks)

Summarizing and exploring data: Descriptive statistics (mean, median, mode, variance, skewness, five-point summary), dealing with missing data in R, Data cleaning (dplyr package, tidyr package and pipe operator), Exploratory Data Analysis; data visualization using inbuilt functions and ggplot2 package (pie chart, bar chart, line chart, histogram, box plot, scatter plot, Normal QQ plot).

Regression analysis using R: Regression vs Correlation, Simple and multiple regression, Ordinary least square, Assumptions of classical normal linear regression model (CNLRM), corrplot package, car package, lmtest package, scatter plot (using plot function and ggplot2 package) to understand the relationship between variables, lm, abline, predict, resid function, interpreting 'summary table' of the regression model, normality of residuals (qqnorm and qqPlot functions), multicollinearity (correlation matrix, corrplot and vif function), autocorrelation (acf plot and Durbin Watson test),



heteroscedasticity (graphically, bptest, ncvtTest), impact on estimates and inferences in case of violations of assumptions of CNLRM, methods to take care of violations.

Time series data, components of a time series data, additive and multiplicative time series model, ts function, diff function, plot of a time series data, time series data with linear trend; regression analysis using 'lm' function, stationarity in time series (concept only).

Essential/recommended readings

- Gardener, M. (2018), Beginning R: The Statistical Programming Language, Wiley & Sons.
- Sekhar, S.R.M., et al. (2017), Programming with R, Cengage Learning India.
- Wickham, H., et al. (2017), R for Data Science: Import, Tidy, Transform, Visualize, and Model Data, O'Reilly'.
- Field, A., Miles, J and Field (2012), Z. Discovering Statistics using R (Indian Reprint 2022), SAGE
- SimpleR - Using R for Introductory Statistics: John Verzani.
- The R Guide.
- Analysis of Epidemiological Data Using R and Epicalc: Virasakdi Chongsuvivatwong.
- Statistics Using R with Biological Examples: Kim Seefeld and Ernst Linder.
- An Introduction to R: Software for Statistical Modeling & Computing: Petra Kuhnert and Bill Venables.
- Gujarati, D.N. et al (2018), Basic Econometrics, McGraw Hill India, 5th Ed.
- CRAN website: <https://cran.r-project.org/>
- <https://prowessiq.cmie.com>,
- <https://data.worldbank.org/indicator>,
- [https://rstudio.com/products/rstudio/download/\(Rstudio\)](https://rstudio.com/products/rstudio/download/(Rstudio))
- <http://r-statistics.co>

Examination scheme and mode:

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

SUSTAINABLE ECOTOURISM AND ENTREPRENEURSHIP

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|----------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Sustainable Ecotourism and Entrepreneurship | 2 | 0 | 0 | 2 | 12th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To train students in concepts and principles of sustainable ecotourism leading to a new generation of entrepreneurs
- To inculcate field-based practical skills in translating ecological systems into wealth generation while conserving natural resources
- To transform local biological wealth into a hub of global attraction and generate a scientific basis of Indian traditional knowledge

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to develop next-generation ecological entrepreneurs
- After studying this course, students will be able to evolve eco-literate society by integrating market-based instruments with eco-cultural knowledge of traditional societies
- After studying this course, students will be able to practice ecological knowledge for wealth generation, environmental conservation, and popularization of Indian traditional knowledge



SYLLABUS


Practical/Hands-on Exercise

(15 weeks)

- Assess the current state of ecotourism in little-known/explored areas and examine ecotourism potential
- Field surveys to identify the existing locations having ecological, wildlife, scenic, and ethnic potential for ecotourism and analyze existing prevalent eco-practices having the potential to integrate with ecotourism programme
- Identify ten plant species having ecological, economic, and cultural significance as ecotourist attraction
- Develop stories on the selected wild habitats to attract ecotourists from within and outside the country
- Identify suitable track and prepare a checklist of birds and animals with their stories for a diverse group of ecotourists
- Examine the current state of natural resources and develop suitable messages and appropriate media for educating different target groups
- Survey and identify the target group for ecotourism based on their age, education, economic and other criteria and evaluate their psychological barriers to ecotourism
- Conduct inventory of facility and analyze a preliminary competitive advantage over ecological attractions in the nearby area
- Analyze tourist spending patterns and track preferences for ecotourism attractions in nearby areas and add value to ecological, wildlife, and cultural attractions
- Survey attitude and perception of residents regarding ecotourism plan and analyze costs and benefits of the sustainable ecotourism development programme using a demand-driven marketing approach
- Develop messages, stories, and pictures to attract tourists and promote ecotourism in the target area
- Analyze basic elements of ecotourism, the special needs of ecotourists, develop trips and travel packages offering an array of experiences and predict the market trends
- Develop ecotourist activities for individuals, families, and groups and craft social media campaigns for the proposed ecotourism business
- Develop a plan for strategic alliances and partnerships with other projects/groups /organizations for public- private partnership in the proposed ecotourism programme

Teaching and learning interface for practical skills:

To impart training on technical and analytical skills related to the course objectives, a wide range of learning methods will be used, including

- (a) laboratory practicals;
 - (b) field-work exercises;
 - (c) customized exercises based on available data;
 - (d) survey analyses;
 - (e) developing case studies;
 - (f) demonstration and critical analyses;
 - (h) experiential learning individually and collectively.
- 

Prospective sector(s):

- Forest Departments
- Tourism industry
- World Bank
- UNDP
- WWF
- Environmental NGOs

Suggested Reading:

- Ballantyne, R. and Packer, J., 2013. International Handbook on Ecotourism. Edward Elgar Publishing Limited, UK
- Blumstein, D.T., Geffroy, B., Samia, D.S. and Bessa, E., 2017. Ecotourism's promise and
- Peril. A Biological Evaluation. Springer Int. Publ. (Chapters 10–11)
- Fennell, D.A., 2014. Ecotourism. An Introduction. Routledge, London, UK.
- Fletcher, R., 2014. Romancing the wild. In Romancing the Wild. Duke University Press.
- Tanguay, G.A., and Rajaonson, J., (2015). Evaluating Sustainable Tourism Using Indicators:
- Problems and Solutions. In: Brophy, S.C., (Ed), Ecotourism: Practices, Benefits and
 - Environmental Impacts. Nova Science Publishers, pp. 119 – 134.
- Wearing, S. and Schweinsberg, S., 2019. Ecotourism: Transitioning to the 22nd century. Routledge

Examination scheme and mode:

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.



VISUAL COMMUNICATION AND PHOTOGRAPHY

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Visual Communication and Photography | 2 | 0 | 0 | 2 | 12th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To synthesize a comprehensive view of principles involved in Visual Communication.
- To appreciate and express the cultural significance of photography as visual art and understand its evolution and purposes.
- To develop an awareness of compositional and organizational strategies for the effective deployment of formal elements of visual art.
- To read visual texts with a deep knowledge of visual history and theory.
- To create an ability of situating the content and form of the visual representation of thematic context.

Learning outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to acquire knowledge of the cultural and historical importance of the visual medium.
- After studying this course, students will be able to explore the fundamentals and underlying theories of Visual Communication.
- After studying this course, students will be able to develop a thorough knowledge of concepts, and skills in creating photographs.
- After studying this course, students will be able to learn to identify and analyze semiotics in photographs.
- After studying this course, students will be able to develop a craftsmanship in creating aesthetically pleasing photographs

SYLLABUS

Unit 1: Historical Background and Basics of Visual Communication (3 Weeks)

Unit Description: The Unit I will give a brief history of the visual arts from the caveman to modern man. Skills of artistic schools of thought and Intertextuality in art in relation to culture.

Topics- Concept and History of Visual Communication, Human Eye and Visual Process, Visual culture and Information Education Communication, Theories of visual communication - Gestalt Theory of visual communication, Perceptual theory of Visual communication, Semiotics and cognitive approach in visuals

Unit II: Theories of Visual Communication (4 Weeks)

Unit Description: This unit will put emphasis on theories, semiotics and the study of signs. Through semiotic theories improve critical thinking skills, and learn to use semiotics to think logically and to analyze visual media in context of culture.

Topics: Fundamentals of Design: Definition. Approaches to Design, Centrality of Design, Elements of Design, Principles of Visual and other Sensory Perceptions. Colour psychology and theory (some aspects), Definition, Optical / Visual Illusions, etc., Various stages of design process, Learning skills to read signs and signifier in visuals for social messaging

Unit III: Photography as Visual Communication (4 Weeks)

Unit Description: This unit will provide skills to learn camera and lighting techniques.

Topics: Introduction to photography, Camera – structure and function of camera , Characteristics of light, Sources of Light – Nature, Artificial and Available, Lighting techniques – three-point lighting, Exposure – focusing, aperture, shutter speed, Depth of field. , Kinds of light indoor and outdoor – Electronic flash and artificial lights, Light meters

Unit IV: Camera Compositions and Accessories (4 Weeks)

Unit Description: This unit will provide skills about camera accessories and designing aesthetically rich compositions.

Topics: Camera lenses and accessories, Basic shots, angle, and view, Composition, Role of photographic image in visual communication, Basics of photojournalism, photo-features, photo - essays, writing captions, visual storytelling.

Essential Readings

- Barnes, Susan B. An Introduction to Visual Communication: From Cave Art to Second Life, Peter Lang Pub, 2011.
- Berger, Arthur Asa, Seeing is Believing: An Introduction to Visual Communication, McGraw-Hill Education, 2012.
- Lester, Paul Martin, Visual Communication: Images with Messages (6ed), Cengage Learning, 2013.
- Photography: A Critical Introduction - edited by Liz Wells London, Routledge, Oxon, 2015.
- Farrell, I. Complete Guide to Digital Photography, Quercus Publishing, UK, 2014.



Suggested Readings

- Mandav, Pradeep, Visual Media Communication, Authors Press, 2001.
- Williams, Rich, Visual Communication: Integrating Media, Art, and Science, Routledge, 2007

Examination scheme and mode:

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.



पटकथा लेखन

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| पटकथा लेखन | 2 | 0 | 0 | 2 | 12 th Pass | NIL |

Course Objective:

- पटकथा लेखन का परिचय कराना।
- विद्यार्थी की लेखन-क्षमता और भाषा-कौशल को बढ़ावा देना।
- विद्यार्थी को लेखन में रोजगार सम्बन्धी क्षेत्रों के लिए तैयार करना।

Course Learning Outcomes:

- पटकथा लेखन तथा उसके तकनीकी शब्दों से विद्यार्थी अवगत हो सकेगा।
- पटकथा लेखन की जानकारी मिलने के उपरान्त विद्यार्थी के लिए रोजगार की संभावनाएँ बनेंगी।
- विद्यार्थी भाषायी सम्प्रेषण को समझते हुए लेखन से सम्बन्धित विभिन्न पक्षों से अवगत हो सकेगा।
- विद्यार्थी में अभिव्यक्ति कौशल का विकास हो सकेगा।

SYLLABUS

यूनिट 1

(4 सप्ताह)

- पटकथा लेखन: परिचय
- पटकथा के तत्व
- पटकथा के प्रकार
- पटकथा की शब्दावली

यूनिट 2

(4 सप्ताह)

- पटकथा लेखन में शोध का महत्व
- चरित्र की निर्मिति और विकास
- एक दृश्य का लिखा जाना
- तीन अंक (थ्री एक्ट) और पाँच अंक (फाइव एक्ट) को समझना

यूनिट 3

(4 सप्ताह)

- वेबसीरीज के लिए पटकथा लेखन
- लघु फ़िल्म के लिए पटकथा लेखन
- वृत्तचित्र के लिए पटकथा लेखन
- विज्ञापन फ़िल्म के लिए पटकथा लेखन

यूनिट 4

(3 सप्ताह)

- पटकथा का पाठ और विश्लेषण
- किसी आईडिया को स्क्रीन प्ले के तौर पर विकसित करना

सन्दर्भ पुस्तकें:

- पटकथा कैसे लिखें: राजेंद्र पांडेय - वाणी प्रकाशन, दिल्ली, संस्करण 2015
- पटकथा लेखन : एक परिचय - मनोहर श्याम जोशी - राजकमल प्रकाशन, दिल्ली संस्करण 2000
- कथा-पटकथा: मन्नु भंडारी - वाणी प्रकाशन, दिल्ली, संस्करण 2014
- व्यावहारिक निर्देशिका: पटकथा लेखन: असगर वज़ाहत - राजकमल प्रकाशन, दिल्ली संस्करण 2011
- आईडिया से परदे तक: रामकुमार सिंह - राजकमल प्रकाशन, दिल्ली संस्करण 2021

Examination Scheme & Mode:

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

रंगमंच

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| रंगमंच | 2 | 0 | 0 | 2 | 12 th pass | NIL |

Course Objective:

- हिन्दी रंगमंच का सामान्य परिचय कराना ।
- नाट्य-प्रस्तुति की प्रक्रिया की जानकारी देना ।
- अभिनय के विभिन्न पक्षों से अवगत कराना ।
- रंगमंच के खेलों और गतिविधियों से अवगत कराना ।

Course Learning Outcomes:

- नाट्य-प्रस्तुति की प्रक्रिया से विद्यार्थी अवगत हो सकेगा ।
- रंगमंच की सामान्य जानकारी मिलने के उपरान्त इस क्षेत्र में विद्यार्थी के लिए रोजगार की संभावनाएँ बनेंगी ।
- रंगमंचीय गतिविधियों से विद्यार्थी के व्यक्तित्व का विकास हो सकेगा ।
- विद्यार्थी में अभिव्यक्ति कौशल का विकास हो सकेगा ।

SYLLABUS

यूनिट 1

(4 सप्ताह)

- भरत मुनि कृत नाट्यशास्त्र (संक्षिप्त परिचय)
- हिन्दी का पारंपरिक रंगमंच (संक्षिप्त परिचय)

यूनिट 2

(4 सप्ताह)

प्रस्तुति-प्रक्रिया: आलेख का चयन, अभिनेताओं का चयन, दृश्य-परिकल्पना (ध्वनि-संगीत-नृत्य-प्रकाश), पूर्वाभ्यास

यूनिट 3

(4 सप्ताह)

अभिनय की तैयारी: वाचिक, आंगिक, आहार्य, सात्विक

यूनिट 4

(2 सप्ताह)

आशु अभिनय, थिएटर गेम्स, संवाद-वाचन, शारीरिक अभ्यास, सीन वर्क

यूनिट 5

(1 सप्ताह)

मंच प्रबंधन: सेट, रंग-सामग्री, प्रचार-प्रसार, ब्रोशर-निर्माण

सन्दर्भ पुस्तकें:

- संक्षिप्त नाट्यशास्त्रम् - राधावल्लभ त्रिपाठी, वाणी प्रकाशन, दिल्ली, 2009
- रंग स्थापत्य: कुछ टिप्पणियाँ - एच. वी. शर्मा राष्ट्रीय नाट्य विद्यालय प्रकाशन, दिल्ली, 2004
- पारंपरिक भारतीय: रंगमंच अनंतधाराएँ - कपिला वात्स्यायन, अनुवाद - बदी उज़्ज्वला, नेशनल बुक ट्रस्ट, दिल्ली, 1995
- हिंदी रंगमंच का लोकपक्ष, सं. प्रो. रमेश गौतम, स्वराज प्रकाशन, दिल्ली 2020
- मंच आलोकन - जी. एन. दासगुप्ता, अनुवाद - अजय मलकानी, नेशनल बुक ट्रस्ट, दिल्ली, 2006
- रंगमंच के सिद्धांत - सं. महेश आनंद, देवेन्द्र राज अंकुर, राजकमल प्रकाशन, दिल्ली 2008

Examination Scheme & Mode:

Total Marks: 100

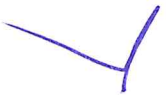
Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.



रचनात्मक लेखन

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| रचनात्मक लेखन | 2 | 0 | 0 | 2 | 12th Pass | NIL |

Learning Objectives

- विद्यार्थियों के मौखिक और लिखित अभिव्यक्ति कौशल को विकसित करना।
- उनमें कल्पनाशीलता और रचनात्मकता का विकास करना।
- साहित्य की विविध विधाओं और उनकी रचनात्मक शैली का परिचय कराते हुए लेखन की ओर प्रेरित करना।
- प्रिंट एवं इलेक्ट्रानिक माध्यमों के लिए लेखन की प्रवृत्ति को विकसित करना।

Learning outcomes

The Learning Outcomes of this course are as follows:



इस पाठ्यक्रम के अध्ययन के पश्चात् विद्यार्थियों में:

- मौखिक और लिखित अभिव्यक्ति कौशल को विकसित होने में मदद मिलेगी।
 - उसमें कल्पनाशीलता और रचनात्मकता का विकास हो सकेगा।
 - साहित्य की विविध विधाओं और उनकी रचनात्मकता शैली का परिचय होगा जिससे वे स्वयं भी इन विधाओं में लेखन की अग्रसर हो सकेंगे।
-
- प्रिंट एवं इलेक्ट्रानिक माध्यमों के लिए लेखन की ओर भी ये अग्रसर होंगे।

SYLLABUS

इकाई 1

(5 सप्ताह)

रचनात्मक लेखन: अवधारणा: स्वरूप आधार एवं विश्लेषण

- भाव एवं विचार की रचना में अभिव्यक्ति की प्रक्रिया
- अभिव्यक्ति के विविध क्षेत्र: साहित्य पत्रकारिता, विज्ञापन, भाषण
- लेखन के विविध रूप: मौखिक-लिखित, गद्य-पद्य, कथात्मक-कथेतर
- अर्थ निर्मिति के आधार: शब्द और अर्थ की मीमांसा शब्द के पुराने-नए प्रयोग, शब्द की व्याकरणिक कोटि

इकाई 2

भाषा भंगिमा और साहित्य लेखन

(5 सप्ताह)

- भाषा की भंगिमाएँ: औपचारिक-अनौपचारिक, मौखिक-लिखित, मानक भाषिक संदर्भ: क्षेत्रीय, वर्ग-सापेक्ष, समूह-सापेक्ष
- रचना-सौष्ठव: शब्दशक्ति, प्रतीक, बिम्ब, अलंकारवक्रता
- कविता: संवेदना, भाषिक सौष्ठव, छंदबद्ध-छंदमुक्त, लय, गति, तुक
- कथा-साहित्य: वस्तु, पात्र, परिवेश, कथ्य और भाषा

Unit III

(5 weeks)

विविध विधाओं एवं सूचना माध्यमों के लिए लेखन

- नाट्य-साहित्य: वस्तु, पात्र, परिवेश, कथ्य, रंगमंच और नाट्य-भाषा
- विविध गद्य विधाएँ: निबंध, संस्मरण, आत्मकथा, व्यंग्य, रिपोर्ताज, यात्रा-वृत्तांत
- प्रिंट माध्यम के लिए लेखन: फीचर, यात्रा-वृत्तांत, साक्षात्कार, विज्ञापन



- इलेक्ट्रानिक माध्यम के लिए लेखन: विज्ञापन, पटकथा, संवाद

Practical Exercises if any:

नोट: उपर्युक्त का परिचय देते हुए इनका अभ्यास भी करवाया जाए।

References and suggested Readings

1. साहित्य चिंतन: रचनात्मक आयाम: रघुवंश
2. शैली: रामचंद्र मिश्र
3. रचनात्मक लेखन: सं. रमेश गौतम
4. कविता क्या है: विश्वनाथ प्रसाद तिवारी
5. कथा-पटकथा: मन्नू भंडारी
6. पटकथा लेखन: मनोहर श्याम जोशी
7. कला की जरूरत: अर्नेस्ट किशर: अनुवादक: रमेश उपाध्याय
8. साहित्य का सौंदर्यशास्त्र: रवींद्रनाथ श्रीवास्तव
9. कविता: रचना-प्रक्रिया: कुमार विमल

Examination scheme and mode:

Total Marks: 100

Internal Assessment: 25 marks

Practical Exam (Internal): 25 marks

End Semester University Exam: 50 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

3. Amendment to Appendix -II-A to the Ordinance V (2-A) of the Ordinances of the University vide EC Resolution 18-1-2 dated 18.08.2022 regarding Syllabi of 1st Semester of Departments under Faculty of Social Sciences

Add the following:

Syllabi of Semester-I of the following departments under Faculty of Social Sciences based on Under Graduate Curriculum Framework -2022 to be implemented from the Academic Year 2022-23.

FACULTY OF SOCIAL SCIENCES

DEPARTMENT OF POLITICAL SCIENCES

BA (Hons.) Political Science
Category-I

DISCIPLINE SPECIFIC CORE COURSE -1 (DSC-1) – : Understanding Political Theory

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Understanding Political Theory DSC-1 | 4 | 3 | 1 | - | 12 th Pass | NA |

Learning Objectives

This course introduces the various ways of theorizing politics. The idea is to introduce and assess the conventional as well as contemporary approaches to understanding politics. The course familiarizes students with central debates in political theory. It investigates various traditions and critical perspectives on political theory. The core aim is develop critical and analytical skills among students and the development of their understanding to some of the

key concepts in political practices.

Learning outcomes

After completion of this course, students will

- Understand the various traditions and approaches of political theory and appreciate how they get reflected in organizing social living
- Understand multiple frames by which the idea of political community is debated
- Understand the significance of theorizing and relating theory to practice
- Acquire the critical analytical vocabulary to address political questions in a reflected and theoretically informed way.
- Know how political theory provides a normative framework to resolve various social and political problems and issues.

SYLLABUS OF DSC-1

UNIT – I (12 Hours)

What is Politics: Theorizing the ‘Political’

UNIT – II (12 Hours)

Approaches to Political Theory: Normative, Historical and Empirical

UNIT – III (12 Hours)

Traditions of Political Theory: Liberal, Marxist, Anarchist and Conservative

UNIT – IV (12 Hours)

Critical Perspectives in Political Theory: Feminist and Postmodern

UNIT – V (12 Hours)

The Idea of Political Community: Political Obligation

Essential/recommended readings

Unit 1

McKinnon, C. (2008) ‘Introduction’. *Issues in Political Theory*. New York: Oxford University Press.

Bhargava, R. (2008) ‘What is Political Theory’, in Bhargava, R. and Acharya, A. (eds), *Political Theory: An Introduction*. New Delhi: Pearson Longman, pp. 2-16.

Bhargava, R. (2008) ‘Why do we need Political Theory’, in Bhargava, R. and Acharya, A. (eds), *Political Theory: An Introduction*. New Delhi: Pearson Longman, pp. 17-36.

Unit 2

Glaser, D. (1995) ‘Normative Theory’, in Marsh, D. And Stoker, G. (eds), *Theory and Methods in Political Science*. London: Macmillan, pp. 21-40.

Sanders, D. (1995) ‘Behavioral Analysis’, in Marsh, D. And Stoker, G. (eds), *Theory and Methods in Political Science*. London: Macmillan, pp. 58-75.

Ball, T. (2004). ‘History and the Interpretation of Texts’, in Gerald F. Gaus and Chandran Kukathas (eds), *Handbook of Political Theory*. New Delhi: Sage Publications, pp. 18-30.

Unit 3 and 4

Heywood, A. (1992) *Political Ideologies*. Basingstoke: Macmillan
Turner, R. (1993) 'Anarchism: What is it?' *Politics Review* 3 (1): 28-32.

Chapman, J. (1995) 'The Feminist Perspective', in Marsh, D. And Stoker, G. (eds), *Theory and Methods in Political Science*. London: Macmillan, pp. 94-114.

Chambers, C. (2008) 'Gender', in McKinnon, C. (ed), *Issues in Political Theory*. New York: Oxford University Press, pp. 265-288.

Bennett, J. (2004) 'Postmodern Approach to Political Theory', in Kukathas, C. and Gaus G. F.(eds), *Handbook of Political Theory*. New Delhi: Sage, pp. 46-54.

Unit 5

Shorten, A. (2016). 'Political Community', in *Contemporary Political Theory*. Palgrave, pp. 18-45.

Brighouse, H. (2008) 'Citizenship', in McKinnon, C. (ed), *Issues in Political Theory*. New York: Oxford University Press, pp. 241-264.

Roy, A. (2008) 'Citizenship', in Bhargava, R. and Acharya, A. (eds), *Political Theory: An Introduction*. New Delhi: Pearson Longman, pp. 130-146.

Hyums, K. (2008) 'Political Authority and Obligation', in McKinnon, C. (ed), *Issues in Political Theory*. New York: Oxford University Press, pp. 9-26.

Martin, Rex. (2003) 'Political Obligation', in Bellamy, Richard and Mason, Andrew (eds), *Political Concepts*. Manchester: Manchester University Press, pp. 41-51.

Knowles, D. (2001). 'Political Obligation', in *Political Philosophy*. London: Routledge, pp. 239-298.

Suggestive readings

Bellamy, R. (1993) 'Introduction: The Demise and Rise of Political Theory', in Bellamy, R. (ed.), *Theory and Concepts of Politics*. New York: Manchester University Press, pp. 1-14.

Vincent, A. (2004) *The Nature of Political Theory*. New York: Oxford University Press.

Jaggar, A. (1983) *Feminist Politics and Human Nature*. Forbes Boulevard: Rowman and Littlefield.

Vattimo, Gianni, 1988 [1985], *The End of Modernity: Nihilism and Hermeneutics in Postmodern Culture*, Jon R. Snyder (trans.), Baltimore: Johns Hopkins University Press.

Klosko, G. (2005) *Political Obligations*. Oxford: Oxford University Press.

Readings in Hindi

भार्गव, राजीव और अशोक आचार्या (सं.), राजनीतिक सिद्धांत : एक परिचय, दिल्ली : पियर्सन, 2008.

कुमार, संजीव (सं.), राजनीति सिद्धांत की समझ, दिल्ली: ओरिएंट ब्लैकस्वान, 2019.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

**DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2): Ideas and Institutions
in Indian Political Thought**

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre- requisite of the course (if any) |
|---|----------|--------------------------------------|----------|------------------------|-----------------------------|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Ideas and Institutions in Indian Political Thought DSC-2 | 4 | 3 | 1 | - | 12th Pass | NA |

Learning Objectives

This paper introduces students to certain basic terms of ancient Indian thought. While drawing a historical trajectory of these concepts, students will also be familiarized with theories and philosophy of these ideas. Students will also get knowledge about the ancient institutions that were in place at that time, their functioning and their duties, broader norms, roles and responsibilities which guided the state and its important apparatuses. As it is difficult to bring in all the diverse traditions and institutions, attempts have been made to introduce those ones which have been most talked about. This paper seeks to challenge the hegemonic bias of euro-centric terms that had debunked ancient Indian thought as limiting. It thus aims to re-ignite the quest for learning for Indian political thought.

Learning outcomes

At the end of this course students would have acquired

- The knowledge of ideas of Indian political thought
- Acquaintance with institutions of Indian political thought
- Comprehensive understanding of Indian political thought
- Challenging the colonial mindset of underestimating India's rich historical past

SYLLABUS OF DSC- 2

UNIT – I (10 Hours)

Statecraft in Ancient India

UNIT – II (10 Hours)

Dharma, Dhamma, Danda

UNIT – III (10 Hours)

Nyaya, Niti

UNIT – IV (10 Hours)

Sabha, Samiti

UNIT – V (10 Hours)
Rajya, Rashtra

UNIT – VI (10 Hours)
Varna, Jati

Essential/recommended readings

Statecraft in Ancient India

Benoy Kumar Sarkar, "The Hindu Theory of the State", *Political Science Quarterly*, Vol. 36, No. 1 (March 1921), pp. 79-90 .

Beni Prasad, *The State in Ancient India: Study in the Structure and Practical Working of Political Institutions in North India in Ancient Times*, The Indian Press, Allahabad, 1928, pp. 1-16

Dharma, Dhamma, Danda

Rupert Gethin, "He who sees Dhamma sees Dhammas: Dhamma in Early Buddhism" in *Journal of Indian Philosophy*. Vol 32, No5/6 (December 2004) pp.513-542

Margaret Chatterjee, "The Concept of Dharma" in M.C.Doeser and J.N.Kraay (eds.) *Facts and Values. Philosophical reflections from Western and Non-Western Perspectives*, Martinus Nijhoff Publishers, Dordrecht. 1986, PP177-188

John Ross Carter, Traditional Definitions of the Term "Dhamma" *Philosophy East and West*, Vol. 26, No. 3 (Jul., 1976), pp. 329-337

Donald R. Davis Jr, "rectitude and rehabilitation (*danda*) in The Spirit of Hindu Law, Cambridge University Press, NY, 2010, PP.128-143

Radha Krishna Choudhry, "Theory of Punishment in Ancient India" in *Proceedings of the Indian History Congress*, Vol 10 1947, PP 166-171.

Nyaya, Niti

Amartya Sen, "Introduction" in *The Idea of Justice*, Harvard University Press. 2009

Sarkar, Benoy Kumar *Political Institutions, and theories of comparative Politics* - pp 158-162

Ghoshal U.N (1983) *A History of Hindu Political theory* OUP: London pp 213- 222, 247-259

Sabha, Samiti

Jagadish P. Sharma, "Non-Monarchical Governments in Vedic India" *Republics in Ancient India*. Brill, Leiden, 1968, pp.15-60

R.S.Sharma, "Sabha and Samiti" in *Aspects of Political Ideas and Institutions in Ancient India*. Motilal Banarsidass Publishers. Delhi 1999, *reprint*. Pp105-118

Rajya, Rashtra

A.S. Altekar, "Origin and Types of the State" in *State and Government in Ancient India*. Motilal Banarsidass, Banaras. 1949 pp. 12-23

Partha Chatterjee, "All Nations are Modern" in *The Truths and Lies of Nationalisms: As narrated by Charvak*. Permanent Black. 2021. Pp.5-25

Varna, Jati

Sudhakar Chattopadhyaya, "Varna-Jati (caste system)" in *Social Life in Ancient India*. Academic Publishers, Calcutta, 1965, Pp.7-29

Dipankar Gupta, "From Varna to Jati: The Indian Caste System, from the Asiatic to the Feudal Mode of Production", *Journal of Contemporary Asia*, Vol-10:3, 2008. pp.249-271

Nicholas B. Dirks, *Castes of Mind: Colonialism and the Making of Modern India*, Princeton, NJ: Princeton University Press, 2001, pp. 63-80.

Suggestive readings

Prasad, Beni (1927), *Theory of Government in Ancient India* (post Vedic), Abhijeet publications, New Delhi

Jayaswal, K.P. (2013), *Hindu Polity*, Vishvabharti Publications, New Delhi.

Sharma, R.S. (2005), *Aspects of Political Ideas and Institutions in Ancient India*, Motilal Banarsidass, New Delhi.

DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-3): Colonialism and Nationalism in India

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Colonialism and Nationalism in India DSC-3 | 4 | 3 | 1 | - | 12th Pass | NA |

Learning Objectives

The purpose of this course is to help students understand historically the advent of colonialism in India and the emergence of the discourse on nationalism as a response to it. The aim is to engage with theoretical explanations of colonialism and nationalism in India at the same time study the social, political and institutional practices that unfolded in that period, gradually paving way towards independence and democracy in India.

Learning outcomes

On successful completion of the course, students would be able to:

- Show an understanding of the nature of colonial rule in India and the various developments through which it consolidated itself.

- Demonstrate awareness of the specific impacts of colonialism on Indian economy
- Show knowledge of the gradual emergence of the nationalist movement in India in response to the colonial rule
- Demonstrate an understanding of the distinct periods of the nationalist movement and the nature of resistance politics adopted in different phases
- Show awareness of the various social movements, the kind of questions they raised and their contributions in the nationalist movement

SYLLABUS OF DSC-3

UNIT – I (12 Hours)

Colonialism and Nationalism:

- Main perspectives on colonialism: Liberalism, Marxism, Postcolonialism
- Approaches to the study of nationalism in India: Nationalist, Imperialist, Marxist, and Subaltern

UNIT – II (12 Hours)

Colonial Rule in India and its impact:

- Constitutional developments and the colonial state
- Colonial ideology of civilizing mission: Utilitarians and Missionaries
- Impact on agriculture, land relations, industry and ecology

UNIT – III (12 Hours)

Reform and Resistance:

- The 1857 war of Independence
- Major social and religious movements
- Education and the rise of the new middle class

UNIT – IV (12 Hours)

Nationalist Politics and Expansion of its Social Base:

- Phases of the Nationalist Movement: Liberal constitutionalist, Swadeshi and the Radicals, Formation of the Muslim League
- Gandhi and mass mobilisation: Non-cooperation, Civil Disobedience, and Quit India Movements
- Revolutionaries, Socialists and Communists
- Communalism in Indian Politics
- The two-nation theory, negotiations over partition

UNIT – V (12 Hours)

Social Movements:

Peasants, Tribals, Workers, Women and anti-caste movements

Essential/recommended readings

1. Colonialism and Nationalism:

- Chandra, B. (1999) *Essays on Colonialism*, Hyderabad. Orient Longman, pp.1-22.
- Chandra, B. (1988) *India's Struggle for Independence*, New Delhi. Penguin, pp.13-30.
- Fulcher, J. (2004) *Capitalism: A Very Short Introduction*. Oxford: Oxford University Press.
- Datta, G. Sobhanlal. (2007) 'Imperialism and Colonialism: Towards a Postcolonial Understanding', in Dasgupta, Jyoti Bhusan (ed.) *Science, Technology, Imperialism and War*. New Delhi: Centre for Studies in Civilization Publication and DK, pp 423-466.
- Guha, Ranajit. (1982). *Subaltern Studies, I*. Oxford University Press. Delhi. pp.1-8.
- Metcalf, T. (1995) 'Liberalism and Empire' in Metcalf, Thomas. *Ideologies of the Raj*. Cambridge: Cambridge University Press, pp.28-65.
- Young, R. (2003) *Postcolonialism: A Very Short Introduction*. Oxford: Oxford University Press, pp. 9-68.
- Thapar, R. (2000) 'Interpretations of Colonial History: Colonial, Nationalist, Post-colonial', in DeSouza, P.R. (ed.) *Contemporary India: Transitions*. New Delhi: Sage, pp. 25-36.

2. Colonial Rule in India and its impact:

- Bandopadhyay, S. (2015 revised edition) *From Plassey to Partition and After: A History of Modern India*. New Delhi: Orient Longman, pp. 37-65; 66-138.
- Chandra, B. (1999) *Essays on Colonialism*. Hyderabad: Orient Longman, pp. 58-78. Metcalf and Metcalf. (2002) *A Concise History of India*. Cambridge: Cambridge University Press, pp. 55-80.
- Sarkar, S. (1983) *Modern India (1885-1847)*. New Delhi: Macmillan.
- Sen, A.P. (2007), 'The idea of Social reform and its critique among Hindus of Nineteenth Century India', in Bhattacharya, Sabyasachi (ed.) *Development of Modern Indian Thought and the Social Sciences*. Vol X. New Delhi: Oxford University Press.
- Guha, R. and Gadgil, M. (1989) 'State Forestry and Social Conflict in British India', in Guha, R. and Gadgil, M. *Past and Present: A Journal of Historical Studies*. May: 123, pp. 141-177.
- Mann, M. (2004) 'Torchbearers Upon the Path of Progress: Britain's Ideology of a Moral and Material Progress in India', in Mann, M. and Fischer-Tine, H. (eds.) *Colonialism as Civilizing Mission: Cultural Ideology in British India*. London: Anthem, pp. 1-26.

3. Reform and Resistance:

- Bandopadhyay, S. (2015, revised edition) *From Plassey to Partition and After: A History of Modern India*. New Delhi: Orient Longman, pp. 139-169.
- Sen, A.P. (2007), 'The idea of Social reform and its critique among Hindus of Nineteenth Century India', in Bhattacharya, Sabyasachi (ed.) *Development of Modern Indian Thought and the Social Sciences*. Vol X. New Delhi: Oxford University Press.
- Bandopadhyay, S. (2008) Eighteen-Fifty-Seven and Its Many Histories, in *1857: Essays from Economic and Political Weekly*, Hyderabad: Orient Blackswan. pp.1-22.

4. Nationalist Politics and Expansion of its Social Base

- Bandopadhyay, S. (2015 revised edition) *From Plassey to Partition and After: A History of Modern India*. New Delhi: Orient Longman, pp. 227-323; 405-438.

Sarkar, S. (1983) *Modern India (1885-1847)*. New Delhi: Macmillan.

Jalal, A. and Bose, S. (1997) *Modern South Asia: History, Culture, and Political Economy*.

New Delhi: Oxford University Press, pp. 109-119; 128-134; 135-156.

5. Social Movements:

Bandopadhyaya, S. (2015 revised edition) *From Plassey to Partition and After: A History of Modern India*. New Delhi: Orient Longman, pp. 334-381.

Desai, A.R. (2019, reprint- 6th edition) *Crusade Against Caste System*, in *Social Background of Indian Nationalism*, Sage.

Desai, A.R. (2019, reprint- 6th edition) *Crusade Against Untouchability*, in *Social Background of Indian Nationalism*, Sage.

Desai, A.R. (2019, reprint- 6th edition) *Movement for the Emancipation of Women*, in *Social Background of Indian Nationalism*, Sage.

Suggestive readings

Chandra, B. (1988) *India's Struggle for Independence*, New Delhi. Penguin.

Chatterjee, P. (2010) 'A Brief History of *Subaltern Studies*', in Chatterjee, Partha *Empire & Nation: Essential Writings (1985-2005)*. New Delhi: Permanent Black.

Metcalf, T. (1995) *Ideologies of the Raj*. Cambridge: Cambridge University Press, pp. 132-148.

Islam, S. (2004) 'The Origins of Indian Nationalism', in *Religious Dimensions of Indian Nationalism*. New Delhi: Media House, pp. 71-103.

Islam, S. (2006) 'Rashtravaad: Ek Siddhanthik Pareepksha', in *Bharat Mein Algaavaadaur Dharm*. New Delhi: Vani Prakashan, pp. 33-51.

Pradhan, Ram Chandra. (2008) *Raj to Swaraj*. New Delhi: Macmillan.

Sangari, Kumkun and Vaid, S. (1989) *Recasting Woman: Essays in Colonial History*. New Delhi: Oxford University Press.

Mani, B.R. (2005) *Debrahmanising History, Dominance and Resistance in Indian Society*. New Delhi: Manohar Publishers.

BA (PROG) WITH POLITICAL SCIENCE AS MAJOR

Category-II

DISCIPLINE SPECIFIC CORE COURSE (DSC-1): Introduction to Political Theory

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction to Political Theory MDSC 1A | 4 | 3 | 1 | - | 12th Pass | NIL |

Learning Objectives

This course seeks to understand the unexamined explanation of what is political. It investigates various concepts like liberty, equality, justice that build the foundation of political theory. The core aim of the paper is to inculcate students to normatively and critically analyze the political arguments and debates. The course therefore develops understanding of the nature and significance of political theory through various perspectives and conceptual analysis.

Learning outcomes

After completing this course students will be able to:

- Understand the nature, scope and relevance of political theory
- Understand the different concepts of political theory such as liberty, equality justice, rights and fraternity
- Develop a broader historical, normative and empirical understanding of political theory
- Know and understand the ancient Greece and ancient Indian political theory
- Reflect upon the contemporary debates in political theory

SYLLABUS OF DSC-1

UNIT – I (16 Hours)

What is Political Theory and what is its relevance?

UNIT – II (28 Hours)

Concepts: Liberty, Equality, Justice, Rights

UNIT – III (16 Hours)

Debates in Political Theory:

- a. Protective discrimination and principles of fairness?
- b. The Public vs private debate: Feminist Perspective Censorship and its limits

Essential/recommended readings

Unit I

Bhargava, R. (2008) 'What is Political Theory', in Bhargava, R. and Acharya, A. (eds.) *Political Theory: An Introduction*. New Delhi: Pearson Longman, pp. 2-17.

Bhargava, R. (2008) 'Why Do We Need Political Theory', in Bhargava, R. and Acharya, A. (eds.) *Political Theory: An Introduction*. New Delhi: Pearson Longman, pp. 18-37.

Unit 2

Sriranjani, V. (2008) 'Liberty', in Bhargava, R. and Acharya, A. (eds.) *Political Theory: An Introduction*. New Delhi: Pearson Longman, pp. 40-57.

Acharya, A. (2008) 'Equality', in Bhargava, R. and Acharya, A. (eds.) *Political Theory: An Introduction*. New Delhi: Pearson Longman, pp. 58-73.

Menon, K. (2008) 'Justice', in Bhargava, R. and Acharya, A. (eds.) *Political Theory: An Introduction*. New Delhi: Pearson Longman, pp. 74-82.

Talukdar, P.S. (2008) 'Rights', in Bhargava, R. and Acharya, A. (eds.) *Political Theory: An Introduction*. New Delhi: Pearson Longman, pp. 88-105.

Unit 3

Acharya, A. (2008) 'Affirmative Action', in Bhargava, R. and Acharya, A. (eds.) *Political Theory: An Introduction*. New Delhi: Pearson Longman, pp. 298-307.

Frances E O. (1985) 'The Myth of State Intervention in the Family', *University of Michigan Journal of Law Reform*. 18 (4), pp. 835-64.

Sethi, A. (2008) 'Freedom of Speech and the Question of Censorship', in Bhargava, R. and Acharya, A. (eds.) *Political Theory: An Introduction*. New Delhi: Pearson Longman, pp. 308-319.

Suggestive readings

Berlin, I. "Two Concepts of Liberty"

Rawls, John, *A Theory of Justice*

Jaggar, Alison, "Introduction", *Feminist Politics and Human Nature*

Kukathas, Chandran, "The Demise and Rise of Political Theory"

Riley, J. (2008) 'Liberty', in McKinnon, C. (ed.) *Issues in Political Theory*, New York: Oxford University Press, pp. 103-125.

Casal, P. & William, A. (2008) 'Equality', in McKinnon, C. (ed.) *Issues in Political Theory*. New York: Oxford University Press, pp. 149- 165.

Wolf, J. (2008) 'Social Justice', in McKinnon, C. (ed.) Issues in Political Theory. New York: Oxford University Press, pp. 172-193.

Chambers, C. (2008) 'Gender', in McKinnon, C. (ed.) Issues in Political Theory. New York: Oxford University Press, pp. 241-288.

Swift, A. (2001) Political Philosophy: A Beginners Guide for Students and Politicians. Cambridge: Polity Press.

Jha, M. (2001) 'Ramabai: Gender and Caste', in Singh, M.P. and Roy, H. (eds.) Indian Political Thought: Themes and Thinkers, New Delhi: Pearson.

Menon, N. (2008) 'Gender', in Bhargava, R. and Acharya, A. (eds.) Political Theory: An Introduction. New Delhi: Pearson Longman, pp. 224-235.

Hindi Reading

भार्गव, राजीव और अशोक आचार्या) एड(., *राजनीतिक सिद्धांत: एक परिचय*, दिल्ली :पिएर्सन, 2008.

कुमार, संजीव, "राजनीति क्या है : "राजनीतिक" का सिद्धान्तीकरण", संजीव कुमार) एड(., *राजनीति सिद्धांत की समझ*, दिल्ली :ओरिएंट ब्लैकस्वान, 2019, pp. 1-26.

संजीव कुमार) एड(., *राजनीति सिद्धांत की समझ*, दिल्ली :ओरिएंट ब्लैकस्वान, 2019.

संजीव कुमार) एड(., *राजनीति सिद्धांत: अवधारणाएँ एवं विमर्श*, सेज भाषा, नई दिल्ली, 2021.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2): Public Administration in India

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Public Administration in India MDSC 1B | 4 | 3 | 1 | - | 12 th Pass | NIL |

Learning Objectives

The paper seeks to provide an introduction to the different dimensions of public administration in India. It seeks to acquaint the student with an analytical and critical understanding of the institution of Indian bureaucracy, with issues of decentralization,

financial management, public accountability, e-governance and some specific dimensions of citizens and social welfare policies.

Learning outcomes

After completion of this course, students will be able to:

- Have a clear picture of the complex institutional structure of Indian administration at present
- Understand the building blocks of local governance, in rural and urban areas
- Explain the processes by which different budgeting systems work for this structure
- Analyse the processes of implementation of different social welfare policies by the administrative institutions.

SYLLABUS OF DSC- 2

UNIT – I (10 Hours)

Indian Administration

- a. Structure of the Civil Services: Evolution
 - i. Colonial Legacy
 - ii. Civil Service in the Constitutional Framework; appointment training, promotion
 - iii. PMO, Cabinet Secretariat
 - iv. Major Initiatives in Administrative Reforms

UNIT – II (10 Hours)

Decentralization and Local Self Governance

- a. Meaning and Types: Rural and Urban
- b. PRIs and implementation of public policies

UNIT – III (10 Hours)

Budget

- a. Concept of Budget and Budget Cycle in India
- b. Types of Budget: Line Budget, Performance Planning Budget, Zero Based Budget
- c. Budget making: role of the Finance Ministry

UNIT – IV (10 Hours)

Technology and Public Administration in India

- a. E-Governance: The Journey of E-Governance in India
- b. Models of E-Governance: Case-Study of Digital India Mission

UNIT – V (10 Hours)

Social Welfare Policies

- a. Education: Right to Education
- b. Health: National Health Mission
- c. Food: Right to Food Security

- d. Employment: MGNREGA

UNIT – VI (10 Hours)

Issues and Debates in Indian Administration

- a. Ethics in Administration: Integrity vs. Corruption
- b. Accountability: RTI, Lokpal, Citizens' Charter
- c. Relationship between Political Executive and Permanent Executive
- d. Generalists and Specialists
- e. Gender sensitivity and gender participation

Essential/recommended readings

Unit 1. Indian Administration

Basic Readings

K.S. Chalam, 'Constitutional Status Of Civil Service In India' in K.S. Chalam [ed.], Governance in South Asia: State of The Civil Services, Sage Publishers, 2014.

Devesh Kapur and Pratap Bhanu Mehta, Public Institutions in India: Performance and Design, Oxford University Press, 2007.

Second ARC Report, Report X, Personnel Administration and Scaling New Heights, 2005 [https://darpg.gov.in/sites/default/files/personnel_administration10.pdf]

Swarup, Anil, Ethical Dilemmas of a Civil Servant, Unique Publishers, 2021

Second ARC Report, 2005, Report IV, Ethics in Governance, [<https://darpg.gov.in/sites/default/files/ethics4.pdf>]

Bhure Lal, 'Civil Service Values and Neutrality' in K.S. Chalam [ed.], Governance in South Asia: State of The Civil Services, Sage Publishers, 2014

Additional Readings

Mathur, K. Recasting Public Administration in India: Reform, Rhetoric and Neo- liberalism New Delhi, Oxford University Press, 2019.

Chakrabarty, Bidyut and Mohit Bhattacharya, The Governance Discourse- A Reader, New Delhi: Oxford University Press, 2008

Gupta, Deepak, The Steel Frame: A History of the IAS, Roli Books, 2019.

Caiden, Gerald E., 2009, Administrative Reforms, Aldine Transaction, Chicago, 2009.

N. Bhaskar. Rao, Good Governance: Delivering Corruption-Free Public Services, Sage Publishers, 2013.

R. K. Sapru, Indian Administration: A Foundation of Governance, Sage, 2018.

Unit 2. Decentralization and Local Self Governance

Basic Readings

Bardhan, Pranab and Dilip Mookherjee, 'The Rise of Local Governments: An Overview', in Pranab Bardhan, And Dilip Mookherjee [eds.] Decentralisation and Local Governance in Developing Countries: A Comparative Perspective, Oxford University Press, 2007

Amitabh Kundu, 'Urban System in India: Trends, Economic Base, Governance, and a Perspective of Growth under Globalization' in Waqar Ahmed, Amitabh Kundu, Richard Peet [eds.] , India's New Economic Policy: A Critical Analysis, Routledge, 2010.

B.P. Syam Roy, Democratic Decentralization in West Bengal, in E. Venkatesu, Democratic Decentralisation in India: Experiences, Issues and Challenges, Routledge [South Asia Edition], 2016

Bhagidari Scheme in Delhi; Partnership Between Local Government and Non-State Agencies/Actors; <https://egyankosh.ac.in/bitstream/123456789/25833/1/Unit-10.pdf>

Jawed Alam Khan, 'Issues in Devolution of Functions, Functionaries and Funds to PRIs: A Comparative Assessment of UP, Rajasthan and Kerala in 2016', in E. Venkatesu, Democratic Decentralisation In India: Experiences, Issues And Challenges, Routledge, 2016

Lalita Chandrashekhar, 'Caste, Party and Democratic Decentralisation in Karnataka' in B.S. Baviskar and George Mathew [eds.] Inclusion and Exclusion in Local Governance: Field Studies from Rural India, Sage Publishers, 2009

Additional Readings

Jayal, N.G., Amit Prakash and P.K.Sharma, Local Governance in India: Decentralization and Beyond, New Delhi: Oxford University Press, 2006.

Satyajit Singh, The Local in Governance: Politics, Decentralisation and Environment, Oxford University Press, New Delhi, 2016.

Satyajit Singh and Pradeep K. Sharma [eds.] Decentralisation: Institutions and Politics in Rural India, Oxford University Press, 2007.

D. A. Rondinelli and S. Cheema, Decentralisation and Development, Beverly Hills: Sage Publishers, 1983.

Chandni Singh and Andaleeb Rehman, Urbanising the Rural: Reflections on India's National Rurban Mission, Asia and Pacific Policy Studies, March 2018

Dreze, Jean and Amartya Sen, India: Development and Participation, Oxford University Press, New York, 2002

Mehra, Diya, What Has Urban Decentralization Meant: A Case Study of Delhi, Pacific Affairs, Volume 86, No. 4, December 2013

Mary John, 'Women in Power? Gender, Caste and The Politics of Local Urban Governance', in T.R. Raghunandan [ed.] Decentralization and Local Government: The Indian experience, Orient BlackSwan, 2013

Unit 3. Budget

Basic Readings

Karnam, Gayithri (ed.), Public Budgeting in India, Principles and Practices, Springer, 2018.

Nicholas Henry, Public Administration and Public Affairs. New Jersey: Prentice Hall, 2012.

Rumki Basu, Public Administration: Concepts and Theories, Sterling Publishers, 2013.

Additional Readings

Green Budgeting in Annual Budget 2022; <https://www.downtoearth.org.in/news/climate-change/how-green-is-union-budget-2022-23--81354>

Green Budgeting; <https://www.oecd.org/environment/green-budgeting/OECD-Green-Budgeting-Framework-Highlights.pdf>

Handbook on Gender Budgeting.; <https://wcd.nic.in/sites/default/files/GB%20-%20Handbook%20October%202015.pdf>

Caiden, N., 'Public Budgeting Amidst Uncertainty and Instability', in Shafritz, J.M. & Hyde, A.C. (eds.) Classics of Public Administration, Belmont: Wadsworth, 2004

Siuli Sarkar, Public Administration In India, PHI Publishers, 2010

Unit 4-6

Basic Readings

Shamshad Ahmad, Right to Information: Issues of Administrative Efficiency, Public Accountability and Good Governance in India, The Indian Journal of Public Administration, Vol LV, January- March, No. 3, 2009

Preeti D. Pohekar , A Study of Ombudsman System in India with Special Reference to Lokayukta in Maharashtra , Gyan Publishing House, 2010

Shivani Singh, Citizen's Charter, in Governance: Issues and Challenges, Sage Publishers, 2016

Dhal, Sangita, 2022, E-Governance and Citizen Engagement: New Directions in Public Administration, Sage Publishers

Dhal, Sangita, 'Situating Digital India Mission in Pursuit of Good Governance: A Study of Electronic Governance Initiatives', Indian Journal of Public Administration, Sage Publication, January-March (66.1), pp 110-126, 2020

Tillin, Louise Rajeshwari Deshpande and K. K. Kailash [eds.], Politics of Welfare: Comparisons Across Indian States. Oxford: Oxford University Press, 2015

Khera, Reetika,(ed.), 2011, The Battle For Employment Guarantee, Oxford University Press, New Delhi, 2011

Additional Readings

N.Vittal, 'Accountability in Public Service' in K.S. Chalam [ed.], Governance in South Asia: State of The Civil Services, Sage Publishers, 2014

Second ARC Report, Report 1, Right to Information, 2005, https://darpg.gov.in/sites/default/files/rti_masterkey1.pdf

Samuel Paul, India's Citizen's Charters: In Search of a Champion, Economic and Political Weekly, Vol. 43, No. 7, Feb. 16 - 22, 2008, pp. 67-73

Pippa Norris, Digital Divide: Civic Engagement, Information, Poverty and The Internet World Wide. Cambridge: Cambridge University Press, 2001

Chaudhuri, Bidisha, E-Governance In India-Interlocking, Politics, Technology and Culture, Routledge, New York, 2014

Dhal, Sangita, Enabling Social Rights through Proactive Public Policy: Auditing Education and Health Sectors in India, Indian Journal of Public Administration, Volume 52, No.1, New Delhi, 2016

Renu Srivastava, Impact of Central Sponsored Schemes on Women Empowerment with Special Reference to Health and Education, Kamlesh Gupta, State and Public Policy, Pentagon Press, 2018

Rukmini Banerji, 'Learning for All: Lessons from ASER and Pratham in India on the Role of Citizens and Communities in Improving Children's Learning' in Sungsup Ra, Shanti Jagannathan and Rupert Maclean, Powering a Learning Society During an Age of Disruption, Springer Publishers, 2021 [https://link.springer.com/chapter/10.1007/978-981-16-0983-1_13]

K. Lee and Mills, The Economic of Health in Developing Countries, Oxford: Oxford University Press, 1983

Vinod Kumar, Socio-Economic Impact of MGNREGA on Rural People: A Study in Mandi District of Himachal Pradesh, Indian Journal of Public Administration, Sage Publication, January-March (59.2), 2013 [<https://doi.org/10.1177/0019556120130213>]

Anjoo Sharan Upadhyaya, Ashild Kolas and Ruchita Beri, Food Governance in India: Rights, Security and Challenges in The Global Sphere, Routledge, 2022.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BA (PROG) WITH POLITICAL SCIENCE AS MINOR

Category-III

DISCIPLINE SPECIFIC CORE COURSE (DSC-1): Introduction to Political Theory

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction to Political Theory MDSC 1A | 4 | 3 | 1 | - | 12th Pass | NA |

Learning Objectives

This course seeks to understand the unexamined explanation of what is political. It investigates various concepts like liberty, equality, justice that build the foundation of political theory. The core aim of the paper is to inculcate students to normatively and critically analyze the political arguments and debates. The course therefore develops understanding of the nature and significance of political theory through various perspectives and conceptual analysis.

Learning outcomes

After completing this course students will be able to:

- Understand the nature, scope and relevance of political theory
- Understand the different concepts of political theory such as liberty, equality justice, rights and fraternity
- Develop a broader historical, normative and empirical understanding of political theory
- Know and understand the ancient Greece and ancient Indian political theory
- Reflect upon the contemporary debates in political theory

SYLLABUS OF DSC-1

UNIT – I (16 Hours)

What is Political Theory and what is its relevance?

UNIT – II (28 Hours)

Concepts: Liberty, Equality, Justice, Rights

UNIT – III (16 Hours)

Debates in Political Theory:

- a. Protective discrimination and principles of fairness?
- b. The Public vs private debate: Feminist Perspective Censorship and its limits

Essential/recommended readings

Unit I

Bhargava, R. (2008) 'What is Political Theory', in Bhargava, R. and Acharya, A. (eds.) *Political Theory: An Introduction*. New Delhi: Pearson Longman, pp. 2-17.

Bhargava, R. (2008) 'Why Do We Need Political Theory', in Bhargava, R. and Acharya, A. (eds.) *Political Theory: An Introduction*. New Delhi: Pearson Longman, pp. 18-37.

Unit 2

Sriranjani, V. (2008) 'Liberty', in Bhargava, R. and Acharya, A. (eds.) *Political Theory: An Introduction*. New Delhi: Pearson Longman, pp. 40-57.

Acharya, A. (2008) 'Equality', in Bhargava, R. and Acharya, A. (eds.) *Political Theory: An Introduction*. New Delhi: Pearson Longman, pp. 58-73.

Menon, K. (2008) 'Justice', in Bhargava, R. and Acharya, A. (eds.) *Political Theory: An Introduction*. New Delhi: Pearson Longman, pp. 74-82.

Talukdar, P.S. (2008) 'Rights', in Bhargava, R. and Acharya, A. (eds.) *Political Theory: An Introduction*. New Delhi: Pearson Longman, pp. 88-105.

Unit 3

Acharya, A. (2008) 'Affirmative Action', in Bhargava, R. and Acharya, A. (eds.) *Political Theory: An Introduction*. New Delhi: Pearson Longman, pp. 298-307.

Frances E O. (1985) 'The Myth of State Intervention in the Family', *University of Michigan Journal of Law Reform*. 18 (4), pp. 835-64.

Sethi, A. (2008) 'Freedom of Speech and the Question of Censorship', in Bhargava, R. and Acharya, A. (eds.) *Political Theory: An Introduction*. New Delhi: Pearson Longman, pp. 308-319.

Suggestive readings

Berlin, I. "Two Concepts of Liberty"

Rawls, John, *A Theory of Justice*

Jaggar, Alison, "Introduction", *Feminist Politics and Human Nature*

Kukathas, Chandran, "The Demise and Rise of Political Theory"

Riley, J. (2008) 'Liberty', in McKinnon, C. (ed.) *Issues in Political Theory*, New York: Oxford University Press, pp. 103-125.

Casal, P. & William, A. (2008) 'Equality', in McKinnon, C. (ed.) *Issues in Political Theory*. New York: Oxford University Press, pp. 149-165.

Wolf, J. (2008) 'Social Justice', in McKinnon, C. (ed.) *Issues in Political Theory*. New York: Oxford University Press, pp. 172-193.

Chambers, C. (2008) 'Gender', in McKinnon, C. (ed.) *Issues in Political Theory*. New York: Oxford University Press, pp. 241-288.

Swift, A. (2001) Political Philosophy: A Beginners Guide for Students and Politicians. Cambridge: Polity Press.

Jha, M. (2001) 'Ramabai: Gender and Caste', in Singh, M.P. and Roy, H. (eds.) Indian Political Thought: Themes and Thinkers, New Delhi: Pearson.

Menon, N. (2008) 'Gender', in Bhargava, R. and Acharya, A. (eds.) Political Theory: An Introduction. New Delhi: Pearson Longman, pp. 224-235.

Hindi Reading

भार्गव, राजीव और अशोक आचार्या) एड(., *राजनीतिक सिद्धांत: एक परिचय*, दिल्ली :पिएर्सन, 2008.

कुमार, संजीव, "राजनीति क्या है : "राजनीतिक" का सिद्धान्तीकरण", संजीव कुमार) एड(., *राजनीति सिद्धांत की समझ*, दिल्ली :ओरिएंट ब्लैकस्वान, 2019, pp. 1-26.

संजीव कुमार) एड(., *राजनीति सिद्धांत की समझ*, दिल्ली :ओरिएंट ब्लैकस्वान, 2019.

संजीव कुमार) एड(., *राजनीति सिद्धांत: अवधारणाएँ एवं विमर्श*, सेज भाषा, नई दिल्ली, 2021.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES

Offered by Department of Political Sciences

Category-IV

GENERIC ELECTIVES (GE-1): Ideas in Indian Political Thought

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Ideas in Indian Political Thought GE-1 | 4 | 3 | 1 | - | 12 th Pass | NA |

Learning Objectives

This paper is designed for students who are from other disciplines and wish to have a basic understanding of the various themes that has shaped Indian society and politics. It revolves around key concepts based on original texts which would help the students to critically engage with the ideas.

Learning outcomes

After completion of this course, students will be able to

- answer about the nature and form of statecraft that existed in Ancient India.
- explain how the texts in ancient India interpreted Dharma and Danda
- answer what were sources and mechanisms to practice Nyay in ancient India.
- make distinction between Rastra and Rajya.
- explain the meaning and foundations of Varna and how are they different from caste.

SYLLABUS OF GE-1

UNIT – I (8 Hours)

Dharma and Danda: Kautilya

UNIT – II (8 Hours)

Gender: Tarabai Shinde

UNIT – III (8 Hours)

Culture and Nationalism: Vivekananda

UNIT – IV (12 Hours)

Swaraj: Gandhi

UNIT – V (8 Hours)

Nyaya: Ambedkar

UNIT – VI (8 Hours)

Hindutva: Savarkar

UNIT – VII (8 Hours)

Integral Humanism: Deen Dayal Upadhyaya

Essential/recommended readings**1. Dharma and Danda: Kautilya**

Mehta, V.R. (1992) 'The Pragmatic Vision: Kautilya and His Successor', in *Foundations of Indian Political Thought*, Delhi: Manohar, pp. 88- 109.

Sharma, R S (2005), *Aspects of Political Ideas and Institutions in Ancient India*, Motilal Banarsidass, New Delhi pp 143-164

2. Gender: Tarabai Shinde

O' Hanlon, Rosalind (2002) *A comparison between women and men: Tarabai Shinde and the critique of Gender Relations in Colonial India*. New Delhi: Oxford University Press.

Lele, Jayant (1998) *Gender Consciousness in Mid-Nineteenth Century Maharashtra*, in Anne Feldhaus *Images of women in Maharashtra Society*. The University of New York Press: New York

3. Culture and Nationalism: Vivekananda

Sen, Amiya P. (2011), 'Vivekanand: Cultural Nationalism', in M. P. Singh and Himanshu Roy (ed.), *Indian Political Thought: Themes and Thinkers* Delhi. Pearson

Kiggley, Dermot (1990) 'Vivekananda's western message from the East' in William Radice (ed) *Swami Vivekananda and modernization of Hinduism*, New Delhi: Oxford University Press.

4. Swaraj: Gandhi

Parel, A. (ed.) (2002), 'Introduction', in *Gandhi, freedom and Self Rule*, Delhi: Vistaar Publication.

Dalton, Denis (1982) *Indian Idea of freedom*, Gurgaon: Academic Press, pp 154-190

5. Nyaya: Ambedkar

Pantham, Thomas and Kenneth Deutsch (ed) (1986) *Political Thought in Modern India*, New Delhi: Sage, pp 161-175

Rodrigues, Valerian (2002) *The Essential writings of B.R Ambedkar*, Delhi: Oxford University Press, pp 1-44

6. Hindutva: Savarkar

Savarkar, Vinayak Damodar (1922-23) Essentials of Hindutva, 1922, available at: http://savarkar.org/en/encyc/2017/5/23/2_12_12_04_essentials_of_hindutva.v001.pdf

Sampath, Vikram (2021) Savarkar: A Contested Legacy, 1924-1966, Gurugram: Penguin Random House India

7. Integral Humanism: Deen Dayal Upadhyaya

Upadhyaya, Deendayal. (1964), Integral Humanism, Delhi: Bharatiya Jan Sangh.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-3): Nationalism in India

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|------------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Nationalism in India GE-3 | 4 | 3 | 1 | - | 12 th Pass | NA |

Learning Objectives

The course aims to help students understand the national movement in India. It looks at the movement from different theoretical perspectives that highlight its varied dimensions. The course begins by looking at the Indian responses to colonial dominance in the nineteenth century, and traces the development of the anti-colonial struggle up to the mid-20th century. It successively focuses on the events leading to the Partition and the Independence in 1947. In the process, the course also tries to focus on the various tensions and debates within nationalism in India as it engaged with the questions of communalism, class struggle, caste and gender.

Learning outcomes

On successful completion of the course, students would:

- Gain an understanding of the different theoretical views on the emergence and development of nationalism in India and the tensions that existed between them
- Demonstrate knowledge of the historical trajectory of the development of the nationalist movement in India, with specific focus on its different phases
- Understand the contribution of various social movements in the anti-colonial struggle
- Demonstrate awareness of the history of partition and independence

SYLLABUS OF GE-3

UNIT – I (12 Hours)

Approaches to the Study of Nationalism in India: Nationalist, Imperialist, Marxist, and Subaltern

UNIT – II (12 Hours)

Reformism and Anti-Reformism in the Nineteenth Century: Major Social and Religious Movements in 19th century

UNIT – III (16 Hours)

Nationalist Politics and Expansion of its Social Base

- a. Phases of Nationalist Movement: Liberal Constitutionalists, Swadeshi and the Radicals; Beginning of Constitutionalism in India
- b. Gandhi and Mass Mobilisation: Non-Cooperation Movement, Civil Disobedience Movement, and Quit India Movement
- c. Revolutionaries, Socialists, and Communists

UNIT – IV (12 Hours)

Social Movements

Peasants, Tribals, Workers, Women and anti-caste movements

UNIT – V (8 Hours)

Partition, Independence and Integration of states

Communalism in Indian Politics, The Two-Nation Theory and Partition, Independence and Integration of Indian States

Essential/recommended readings

Approaches to the Study of Nationalism in India

S. Bandopadhyay (2004) *From Plassey to Partition: A History of Modern India*, New Delhi: Orient Longman, pp. 184-191.

R. Thapar (2000) 'Interpretations of Colonial History: Colonial, Nationalist, Post-colonial', in P. DeSouza (ed.) *Contemporary India: Transitions*, New Delhi: Sage Publications, pp. 25-36.

Reformism and Anti-Reformism in the Nineteenth Century

S. Bandopadhyay (2004) *From Plassey to Partition: A History of Modern India*, New Delhi: Orient Longman, pp. 139-158, 234-276.

A. Sen (2007) 'The idea of Social Reform and its Critique among Hindus of Nineteenth Century India', in S. Bhattacharya (ed.) *Development of Modern Indian Thought and the Social Sciences*, Vol. X. New Delhi: Oxford University Press.

Nationalist Politics and Expansion of its Social Base

S. Bandopadhyay (2004) *From Plassey to Partition: A History of Modern India*. New Delhi: Orient Longman, pp. 279-311.

S. Sarkar (1983) *Modern India (1885-1947)*, New Delhi: Macmillan,

P. Chatterjee (1993) 'The Nation and its Pasts', in P. Chatterjee, *The Nation and its Fragments: Colonial and Postcolonial Histories*. New Delhi: Oxford University Press, pp. 76-115.

Social Movements

S. Bandopadhyay (2004) *From Plassey to Partition: A history of Modern India*. New Delhi: Orient Longman, pp. 342-357, 369-381.

Desai, A.R. (2019, reprint- 6th edition) Crusade Against Caste System, in *Social Background of Indian Nationalism*, Sage.

Desai, A.R. (2019, reprint- 6th edition) Crusade Against Untouchability, in *Social Background of Indian Nationalism*, Sage.

Desai, A.R. (2019, reprint- 6th edition) Movement for the Emancipation of Women, in *Social Background of Indian Nationalism*, Sage.

G. Shah (2002) *Social Movements and the State*, New Delhi: Sage, pp. 13-31

Partition, Independence and Integration of States

A. Jalal, and S. Bose (1997) *Modern South Asia: History, Culture, and Political Economy*. New Delhi: Oxford University Press, pp. 135-156.

A. Nandy (2005) *Rashtravadbanam Deshbhakti* Translated by A. Dubey, New Delhi: Vani Prakashan. pp. 23-33. (The original essay in English is from A. Nandy (1994) New Delhi: Oxford University Press, pp. 1-8.)

V P Menon (1956), CH I- Setting the Stage and Ch XXV- The Cost of Integration, in *The Story of the Integration of the Indian States*, Orient Longman.

Suggestive readings

B.Chakrabarty and R. Pandey (2010) *Modern Indian Political Thought*, New Delhi: Sage Publications.

P. Chatterjee (1993) *The Nation and its Fragments: Colonial and Postcolonial Histories*, New Delhi: Oxford University Press.

R. Pradhan (2008) *Raj to Swaraj*, New Delhi: Macmillan (Available in Hindi).

S. Islam (2006) *Bharat Mein Algaovaadaur Dharm*, New Delhi: Vani Prakashan.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DEPARTMENT OF ECONOMICS

BA (Hons.) Economics

Category-I

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|----------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introductory Microeconomics ECON001 | 4 | 3 | 1 | 0 | Class XII pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To expose students to the basic principles of microeconomic theory
- To emphasis on the fundamental economic trade-offs and allocation problems due to scarcity of resources
- To use graphical methods to illustrate how microeconomic concepts can be applied to analyze real-life situations

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying the course, the students will understand economic trade-offs and opportunities.
- By studying the course, the students will understand the fundamentals of market mechanisms and government interventions.

SYLLABUS OF DSC-1

UNIT – I: Introduction to economic trade-offs (12 Hours)
Resources and opportunities, Gains from trade, Individual and society

UNIT – II: How market works (16 Hours)
Supply and demand, Price and resource allocation, Elasticity, Market, trade and welfare

UNIT – III: Role of government (16 Hours)
Taxation, Public good, Inequality and poverty

UNIT – IV: Individual decision and interaction (16 Hours)
Decision versus strategic interaction, How to think about strategic interactions, Real life examples

Practical component (if any) - NIL

Essential/recommended readings:

- Mankiw, N. G. (2018). *Principles of Microeconomics* 8th ed.
- Frank, R. H., & Cartwright, E. (2010). *Microeconomics and behavior*. New York: McGraw-Hill.
- Dixit, A. K., & Skeath, S. (2015). *Games of strategy*: Fourth international student edition. WW Norton & Company.
- Acemoglu, D., Laibson, D., & List, J. (2017). *Microeconomics*. Pearson.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2): INTRODUCTORY MATHEMATICAL METHODS FOR ECONOMICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PREREQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introductory Mathematical Methods for Economics ECON002 | 4 | 3 | 1 | 0 | Class XII pass with Mathematics | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To transmit the body of basic mathematics that enables the study of economic theory at the undergraduate level, specifically the courses on microeconomic theory, macroeconomic theory, statistics and econometrics set out in this syllabus
- Particular economic models are not the ends, but the means for illustrating the method of applying mathematical techniques to economic theory in general
- The sophistication would be maintained at a standard level to grow in the profession

Learning outcomes

The Learning Outcomes of this course are as follows:

- To hone and upgrade the mathematical skills acquired in school and paves the way for the second semester course Intermediate Mathematical Methods
- To apply the analytical tools introduced in this course wherever unconstrained optimisation techniques are used in economics and business decision-making

- To make the students more logical in making or refuting arguments

SYLLABUS OF DSC- 2

UNIT –I: Preliminaries (20 Hours)

Logic and proof techniques; sets and set operations; relations; functions and their properties; number systems.

UNIT – II: Functions of one real variable: (20 Hours)

Graphs; elementary types of functions: quadratic, polynomial, power, exponential, logarithmic; sequences and series: convergence, algebraic properties and applications; continuous functions: characterisation, properties with respect to various operations and applications; differentiable functions: characterisation, properties with respect to various operations and applications; second and higher order derivatives: properties and applications.

UNIT – III: Single-variable optimization (20 Hours)

Geometric properties of functions: convex functions, their characterisation and applications; local and global optima: geometric and calculus-based characterisation, applications

Practical component (if any) - NIL

Essential/recommended readings

- Sydsaeter, K., Hammond, P. (2002). *Mathematics for economic analysis*. Pearson Education.
- Hoy, M., Livernois, J., McKenna, C., Rees, R., Stengos, T. (2001). *Mathematics for Economics*, Prentice-Hall India.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-3): INTRODUCTORY STATISTICS FOR ECONOMICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introductory Statistics for Economics ECON003 | 4 | 3 | 1 | 0 | Class XII pass with Mathematics | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To familiarize students with methods of summarizing and describing important features of data. The course teaches students the basics of probability theory and sets a necessary foundation for Inferential Statistical Theory and the Econometrics courses. The familiarity with probability theory will also be valuable for courses in economic theory.

Learning outcomes

The Learning Outcomes of this course are as follows:

- The student would understand the concept of probability, random variables and their distributions and become familiar with some commonly used discrete and continuous distributions of random variables so that they would be able to analyse various real-life data.

SYLLABUS OF DSC-3

UNIT - 1: Introduction and overview (12 Hours)

The distinction between populations and samples and, between population parameters and sample statistics; Pictorial Methods in Descriptive Statistics; Measures of Location and Variability.

UNIT - 2: Elementary probability theory (12 Hours)

Sample spaces and events; probability axioms and properties; counting techniques; conditional probability and Bayes' rule; independence.

UNIT – 3: Random variables and probability distributions (12 Hours)

Defining random variables; discrete and continuous random variables, probability distributions; expected values and functions of random variables.

UNIT - 4: Sample Distributions (8 Hours)

Properties of commonly used discrete and continuous distributions (uniform, binomial, exponential, Poisson, hypergeometric and Normal random variables).

UNIT - 5: Random sampling and jointly distributed random variables (16 Hours)

Density and distribution functions for jointly distributed random variables; computing expected values of jointly distributed random variables; conditional distributions and expectations, covariance and correlation.

Practical component (if any) - NIL

Essential/recommended readings

- Devore, J. (2012). *Probability and Statistics for Engineers*, 8th ed. Cengage Learning.
- John A. Rice (2007). *Mathematical Statistics and Data Analysis*, 3rd ed. Thomson Brooks/Cole.
- Miller, I., Miller, M. (2017). *J. Freund's Mathematical Statistics with Applications*, 8th ed. Pearson.
- Hogg, R., Tanis, E., Zimmerman, D. (2021) *Probability and Statistical inference*, 10th Edition, Pearson

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BA (Prog.) with Economics as Major
Category-II

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|----------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introductory Microeconomics ECON001 | 4 | 3 | 1 | 0 | Class XII pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To expose students to the basic principles of microeconomic theory
- To emphasis on the fundamental economic trade-offs and allocation problems due to scarcity of resources
- To use graphical methods to illustrate how microeconomic concepts can be applied to analyze real-life situations

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying the course, the students will understand economic trade-offs and opportunities.
- By studying the course, the students will understand the fundamentals of market mechanisms and government interventions.

SYLLABUS OF DSC-1

UNIT – I: Introduction to economic trade-offs (12 Hours)

Resources and opportunities, Gains from trade, Individual and society

UNIT – II: How market works (16 Hours)

Supply and demand, Price and resource allocation, Elasticity, Market, trade and welfare

UNIT – III: Role of government (16 Hours)

Taxation, Public good, Inequality and poverty

UNIT – IV: Individual decision and interactions (16 Hours)

Decision versus strategic interaction, How to think about strategic interactions, Real life

examples

Practical component (if any) - NIL

Essential/recommended readings:

- Mankiw, N. G. (2018). *Principles of Microeconomics* 8th ed.
- Frank, R. H., & Cartwright, E. (2010). *Microeconomics and behavior*. New York: McGraw-Hill.
- Dixit, A. K., & Skeath, S. (2015). *Games of strategy*: Fourth international student edition. WW Norton & Company.
- Acemoglu, D., Laibson, D., & List, J. (2017). *Microeconomics*. Pearson.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2): BASIC MATHEMATICS FOR ECONOMIC ANALYSIS

CREDIT DISTRIBUTION, ELIGIBILITY AND PREREQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Mathematics for Economic Analysis ECON021 | 4 | 3 | 1 | 0 | Class XII pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- The objective of the course is train basic algebras that enables the study of economic theory at the undergraduate level, specifically the courses on microeconomics, macroeconomics, statistics and econometrics set out in this syllabus. In this course, particular economic models are not the ends, but the means for illustrating the method of applying mathematical techniques to economic theory in general. It contains understanding of basic functions, relations, real number systems, set operations, linear algebras and matrix operations used in economics.

Learning outcomes

The Learning Outcomes of this course are as follows:

- The course equips the students with exposition of economic problems with formal pre- situations algebraically and offers solution techniques to find equilibrium analysis. These tools are necessary for anyone seeking employment as an analyst in the corporate and policy framing world.

SYLLABUS OF DSC- 2

UNIT – I: Economic

Models (20 Hours)

Ingredients of mathematical models - variables, constants, parameters, equations, and identities; Real number system; Sets and functions; relations and their proper- ties; types of functions; functions of more than one variables; Limit, sequences and series: convergence, algebraic properties and applications; continuous functions: characterisation, properties with respect to various operations and applications; differentiable functions: characterisation, properties with respect to various operations and applications; second and higher order derivatives: properties and applications.

UNIT – II: Equilibrium Analysis in Economics (20 Hours)

Meaning of equilibrium; partial market equilibrium - linear and non-linear models; General market equilibrium

UNIT – III: Linear Models and Matrix Algebras and their Applications in Economics (20 Hours)

Matrix operations, Determinants and Cramer's Rule and their applications

Practical component (if any) - NIL

Essential/recommended readings

- Chiang, A and Wainwright, K. (2005). Fundamental methods of mathematical economics. Boston, Mass. McGraw-Hill/Irwin.
- Sydsaeter, K., Hammond, P. (2002). *Mathematics for economic analysis*. Pearson Educational.
- Hoy, M., Livernois, J., McKenna, C., Rees, R., Stengos, T. (2001). *Mathematics for Economics*, Prentice-Hall India.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BA (Prog.) with Economics as Minor
Category-III

DISCIPLINE SPECIFIC CORE COURSE (DSC-1): PRINCIPLES OF

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Principles of Microeconomics I ECON025 | 4 | 3 | 1 | 0 | Class XII pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- This course discusses the basic principles in Microeconomics and their applications. It includes consumer's problem, demand estimation, production function, cost functions and market analysis. It illustrates how the concepts of microeconomics can be applied to analyze real-life economic situations.

Learning outcomes

The Learning Outcomes of this course are as follows:

- The students learn some basic principles of microeconomics of consumer and producers, and interactions of supply and demand, characteristics of perfect competition, efficiency and welfare outcomes.

SYLLABUS OF DSC-1

UNIT – I: Introduction

(16 Hours)

Problem of scarcity and choice: scarcity, choice and opportunity cost; production possibility frontier; economic systems. Demand and supply: law of demand, determinants of demand, shifts of demand versus movements along a demand curve, market demand, law of supply, determinants of supply, shifts of supply versus movements along a supply curve, market supply, market equilibrium. Applications of demand and supply: price rationing, price floors,

consumer surplus, producer surplus. Elasticity: price elasticity of demand, calculating elasticity, determinants of price elasticity, other elasticities

UNIT – II: Consumer Theory

(12 Hours)

Budget constraint, concept of utility, diminishing marginal utility, Diamond-water paradox, income and substitution effects; consumer choice: indifference curves, derivation of demand curve from indifference curve and budget constraint

UNIT – III: Production and Costs

(16 Hours)

Production: behaviour of profit maximising firms, production process, production functions, law of variable proportions, choice of technology, isoquant and isocost lines, cost minimizing equilibrium condition

Costs: costs in the short run, costs in the long run, revenue and profit maximization, minimizing losses, short run industry supply curve, economies and diseconomies of scale, long run adjustments

UNIT – IV: Perfect Competition

(16 Hours)

Assumptions: theory of a firm under perfect competition, demand and revenue; equilibrium of the firm in the short run and long run; Long run industry supply curve: increasing, decreasing and constant cost industries.

Welfare: allocative efficiency under perfect competition.

Practical component (if any) - NIL

Essential/recommended readings

- Mankiw, N. G. (2018). *Principles of Microeconomics* 8th ed.
- Frank, R. H., & Cartwright, E. (2010). *Microeconomics and behavior*. New York: McGraw-Hill.
- Bernheim, B., Whinston, M. (2009). *Microeconomics*. Tata McGraw-Hill.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES

Offered by Department of Economics

Category-IV

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Principles of Microeconomics I ECON025 | 4 | 3 | 1 | 0 | Class XII pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- This course discusses the basic principles in Microeconomics and their applications. It includes consumer's problem, demand estimation, production function, cost functions and market analysis. It illustrates how the concepts of microeconomics can be applied to analyze real-life economic situations.

Learning outcomes

The Learning Outcomes of this course are as follows:

- The students learn some basic principles of microeconomics of consumer and producers, and interactions of supply and demand, characteristics of perfect competition, efficiency and welfare outcomes.

SYLLABUS OF GE-1

UNIT – I: Introduction

(16 Hours)

Problem of scarcity and choice: scarcity, choice and opportunity cost; production possibility frontier; economic systems. Demand and supply: law of demand, determinants of demand, shifts of demand versus movements along a demand curve, market demand, law of supply, determinants of supply, shifts of supply versus movements along a supply curve, market supply, market equilibrium. Applications of demand and supply: price rationing, price floors, consumer surplus, producer surplus. Elasticity: price elasticity of demand, calculating elasticity, determinants of price elasticity, other elasticities

UNIT – II: Consumer Theory

(12 Hours)

Budget constraint, concept of utility, diminishing marginal utility, Diamond-water paradox, income and substitution effects; consumer choice: indifference curves, derivation of demand curve from indifference curve and budget constraint

UNIT – III: Production and Costs (16 Hours)

Production: behaviour of profit maximising firms, production process, production functions, law of variable proportions, choice of technology, isoquant and isocost lines, cost minimizing equilibrium condition

Costs: costs in the short run, costs in the long run, revenue and profit maximization, minimizing losses, short run industry supply curve, economies and dis- economies of scale, long run adjustments

UNIT – IV: Perfect Competition (16 Hours)

Assumptions: theory of a firm under perfect competition, demand and revenue; equilibrium of the firm in the short run and long run; Long run industry supply curve: increasing, decreasing and constant cost industries.

Welfare: allocative efficiency under perfect competition.

Practical component (if any) - NIL

Essential/recommended readings

- Mankiw, N. G. (2018). *Principles of Microeconomics* 8th ed.
- Frank, R. H., & Cartwright, E. (2010). *Microeconomics and behavior*. New York: McGraw-Hill.
- Bernheim, B., Whinston, M. (2009). *Microeconomics*. Tata McGraw-Hill.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-2): BASIC DEVELOPMENT ECONOMICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|----------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Development Economics ECON029 | 4 | 3 | 1 | 0 | Class XII Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- This course exposes students to some of the key ideas and concepts in the areas of economic growth, human development and globalisation building on the concept of growth and further links it up with alternative conceptions of development.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Students will develop a critical understanding of the contemporary issues in economic growth and development and their paths. Students will thus be better prepared to face the professional world and can use this knowledge base in a variety of jobs, including in the corporate, civil service and NGO sectors.

SYLLABUS OF GE-2

UNIT – I: Development and underdevelopment

(16 Hours)

Growth vs Development; Classic Approaches of Development; Contemporary theories of Development and Underdevelopment

UNIT – II: Development goals and indicators, measures of underdevelopment

(16 Hours)

Various concepts and measures of poverty and inequality, poverty lines using various national and international criteria.

UNIT – III: Capabilities, human development and sustainable development

(16 Hours)

UNIT – IV: Globalisation and development

(12 Hours)

Practical component (if any) - NIL

Essential/recommended readings

- Debraj Ray, *Development Economics*, (DE), Princeton University Press, 1998.
- Robinson, J. A., & Acemoglu, D. (2012). *Why nations fail: The origins of power, prosperity and poverty* (pp. 45-47). London: Profile.
- Abhijit Banerjee, Roland Benabou and Dilip Mookerjee (eds), *Understanding Poverty* (UP), Oxford University Press, 2006.
- Angus Deaton, *The Great Escape: Health, Wealth and the Origins of Inequality*, Princeton University Press, 2013.
- Gustav Ranis et.al, Economic Growth and Human Development, *World Development* Vol. 28, No. 2, Elsevier Science Ltd., 2000
- Amartya Sen, *Development as Freedom*, OUP, 2000
- Thomas Piketty and Emmanuel Saez, 'Inequality in the Long Run', *Science*, 344 (838), 2014
- Piketty, Thomas, 2019, *Capital and Ideology*, Harvard University Press,
- Séverine Deneulin with Lila Shahani (ed.), *An Introduction to the Human Development and Capability Approach: Freedom and Agency*, Routledge, 2009

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-3): ESSENTIALS OF ECONOMICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Essentials of Economics ECON076 | 4 | 3 | 1 | 0 | Class XII pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- This course will introduce the fundamental concepts of economics, the study of how people manage resources. It contains basic principles of microeconomics (the behaviour of consumers, firms and companies), macroeconomics (national production, employment, inflation and interest rates) and international economics (balance of payment, exchange rate and trade) with graphical illustration and contemporary examples.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, the students will learn to think like an economist and understand how a modern market economy function. They will learn about the factors that determine long-run growth and short-term fluctuations and role of government and financial institutions, so they can better understand how economics applies to the everyday life.

SYLLABUS OF GE-3

UNIT – I: Microeconomic Foundations (20 Hours)

Foundations of economics, how market works, firms and market structures, markets for factor of production, role of government

UNIT – II: Macroeconomic Foundations (20 Hours)

GDP (measuring total production, income and economic growth), unemployment and inflation; aggregate demand and aggregate supply analysis; monetary and fiscal policies

UNIT – III: Foundation of International Economics (20 Hours)

Comparative advantage and the gains from trade, macroeconomics in an open economy

Practical component (if any) - NIL

Essential/recommended readings

- Hubbard, G., Garnett, A., & Lewis, P. (2019). Essentials of economics.- 5th edition, Pearson Higher Education AU.
- Sloman, J., & Garratt, D. (2016). Essentials of Economics, 7th edition, Pearson

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DEPARTMENT OF GEOGRAPHY

BA (Hons.) Geography *Category-I*

DISCIPLINE SPECIFIC CORE COURSE – 1 (DSC-1) –: PHYSICAL GEOGRAPHY

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------|----------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| PHYSICAL GEOGRAPHY | 4 | 3 | 1 | - | 12th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To explain the concept, definition and scope of earth systems.
- To recognize the structure of the Earth and describe its characteristic features.
- To understand the atmospheric composition and structure.

Learning outcomes

The Learning Outcomes of this course are as follows:

The students will be able:

- To classify earth into various domains according to its physical features.
- To differentiate between lithosphere, hydrosphere, atmosphere and biosphere, and to understand interrelationship between them.
- To explain the atmospheric composition and structure.
- To assess the impact of anthropogenic activities on earth systems.

SYLLABUS OF DSC-1

UNIT – I (4 Hours)

Physical Geography: Definition, Nature, Scope, Earth as a System and its Components

UNIT – II (16 Hours)

Atmosphere: Composition and Structure, Energy: Insolation and Temperature, Motion in the atmosphere: pressure and circulation

UNIT – III (16 Hours)

Lithosphere: Earth's Interior, Isostasy, Earth's movement: endogenic including folding and faulting and exogenic forces

UNIT – IV (12 Hours)

Hydrosphere: Hydrological Cycle, Ocean Water Movement – Currents and Tides

UNIT – V (12 Hours)

Biosphere: Soil and Vegetation – Factors and Distribution

Practical component (if any) - NIL**Essential/recommended readings**

1. Alan H. Strahler and Arthur Strahler (1992). Modern Physical Geography Fourth Edition, John Wiley & Sons, Canada.
2. Barry, R. G., and Chorley, R. J. (2009). Atmosphere, Weather and Climate (9th Edition). Routledge, New York, USA.
3. Christopherson, R. W. and Birkeland, G. H. (2012). Geosystems: An Introduction to Physical Geography (8th edition). Pearson Education, New Jersey, USA.
4. Gupta, L.S. (2000). JalvayuVigyan(Hindi). Hindi Madhyam Karyanvayan Nidishalya, Delhi.
5. Lal, D. S. (2006). JalvayuVigyan (Hindi). PrayagPustakBhavan, Allahabad, India.
6. Sharma, V.K. (2010). Introduction to Process Geomorphology. CRC Press Taylor & Francis Group.
7. Singh, S. (2009). Bhautik Bhugol ka Swaroop (Hindi). Prayag Pustak. Allahabad, India.
8. Tarbuck, E.J., Lutgens, F.K. and Tasa, D. (2012). Earth Science, Thirteenth Edition. Prentice Hall, Delhi
9. Trujillo, A.P., and Thruman, H.V. (2017). Essentials of Oceanography. PHI., New Delhi.

Suggestive readings (if any)**DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2): HUMAN GEOGRAPHY****Credit distribution, Eligibility and Prerequisites of the Course**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------|----------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| HUMAN GEOGRAPHY | 4 | 3 | 1 | - | 12th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand various dimensions of human geography and cultural landscape.
- To analyses the population growth and distribution.
- To understand the relationship between population and resource.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Detailed exposure of contemporary relevance of cultural landscape.
- In-depth knowledge of space and society of cultural regions.
- Understanding the settlement pattern and population resource relationship.

SYLLABUS OF DSC- 2

UNIT – I (8 Hours)

Human Geography: Definition, Scope and Major Themes; Contemporary Relevance, Understanding Cultural Landscape.

UNIT – II (16 Hours)

Population: World Population Growth – Trends and Patterns, Population Composition (Residence, Literacy and Age).

UNIT – III (12 Hours)

Space and Society: Cultural Regions, Tribes, Religion and Language.

UNIT – IV (12 Hours)

Settlements: Types of Rural Settlements; Classification of Urban Settlements; Trends and Patterns of World Urbanization.

UNIT – V (12 Hours)

Human Development – Measurements (HDI and IHDI), Regional Variations and Sustainable Development Goals.

Practical component (if any) - NIL

Essential/recommended readings

1. Chandna, R.C. (2017). Geography of Population. Kalyani Publishers, Ludhiana, India.
2. Hassan M.I. (2020). Population Geography-A Systematic Exposition. Routledge Taylor and Francis Group, New York.
3. Human Development Reports of United Nations Development Program.
4. Hussain Majid (2021). Human Geography. Rawat Publication.
5. Majid, Hussain (2012). Manav Bhugol. Rawat Publication.
6. Maurya, S.D. (2012). Manav Bhugol. Sharda Pustak Bhawan, Allahabad, India.
7. Patra, P. et. al.(2021). Perspectives of Human Geography. Concept Publications, New Delhi.
8. Rubenstein, J.M. (2008). An Introduction to Human Geography: The Cultural Landscape. Pearson Prentice Hall, NJ.
9. Saroha, J. (2021). Jansankhya Bhugol, Janankiki evam Jansankhya Adhayan. M.K. Books, New Delhi.
10. Singh, S and Saroha, J. (2021). Human and Economic Geography. Pearson Publication.

Suggestive readings (if any)

**DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-3): DIGITAL
CARTOGRAPHY (PRACTICAL)**

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course(if any) |
|--|----------|-----------------------------------|----------|---------------------|-----------------------------|-------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DIGITAL CARTOGRAPHY (PRACTICAL) | 4 | - | - | 4 | 12th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- Create professional and aesthetically pleasing maps through thoughtful application of cartographic conventions digitally.
- Develop an understanding of the concepts regarding scale, map projections to suit map purposes digitally.
- Better understand the techniques of interpretation of topographical and weather maps through digital cartographic techniques.

Learning outcomes

The Learning Outcomes of this course are as follows:

This is a practical hands-on course, when the students have completed this course, they are able:

- To explain how maps work, conceptually and technically and also will be able to understand the science and art of cartography through digital techniques.
- To recognize the benefits and limitations of some common map projections and their use.
- To understand and perform interpretation of topographical maps and weather maps.

SYLLABUS OF DSC-3

UNIT – I (12 Hours)

- 1.1. Maps: Concepts and classification, Coordinate system, Nature and Scope-Analogue and Digital cartography)
- 1.2. History and evolution of Cartography: Western and Indian perspectives
- 1.3. Digital Cartography: Basics of Raster and Vector Data

UNIT – II (12 Hours)

Scale: Plain, Comparative and Diagonal: Construction and Applications

UNIT – III (16 Hours)

Map Projections: Concept of Datum and Spheroid, Fundamentals of Projections- Classification, Properties, Uses and limitations of Polar Zenithal-Stereographic, Conical projection with two standard parallel and Mercator's Projections. Concept and Use of UTM.

UNIT – IV (12 Hours)

Interpretation of Topographic Maps, Conventional symbols, Cross and Longitudinal Profiles, Identification and Inter-relationships between physical and cultural features in the mountain regions.

UNIT – V (8 Hours)

Concept of Map elements in Digital Cartography

Practical components – Lab Exercises (30 Hours)

- 1.1. Using online maps for place look-ups, latitude and longitudes, time zones
- 1.2. Refer to the text for the history and evolution of cartography as listed in the reference list
- 1.3. Introduction to available GIS software, raster and vector data presentation
- 2.1. Construction and applications
- 3.1. Construction of Polar Zenithal Stereographic, Conical projection with two standard parallel and Mercator's Projections (manual)
- 3.2. Digital demonstration of projections
- 5.1. Map layout preparation with the provided data

Essential/recommended readings

1. Cuff J. D. and Mattson M. T. (1982). Thematic Maps: Their Design and Production. Methuen Young Books.
2. Dent B. D., Torguson J. S., and Holder T. W. (2008). Cartography: Thematic Map Design (6th Edition). Mcgraw-Hill Higher Education
3. Gupta K. K. and Tyagi V. C. (1992). Working with Maps. Survey of India, DST, New Delhi.
4. Kraak, M.J. (2010). Cartography: Visualization of Geospatial Data (3rd edition). Pearson Education Ltd., London. UK.
5. Mishra R. P. and Ramesh A. (1989). Fundamentals of Cartography. Concept Publication, New
6. Sharma J. P., 2010: Prayogic Bhugol. Rastogi Publishers, Meerut.
7. Misra, R.P. (2014). Fundamentals of Cartography (Second Revised and Enlarged Edition). Concept Publishing, New Delhi. India.
8. Monkhouse, F. J. and Wilkinson, H. R. (1973). Maps and Diagrams. Methuen.
9. Singh, R.L. and Dutta, P.K. (2012). Prayogatmak Bhugol (Hindi), Central Book Depot, Allahabad.
10. Sharma, J. P. (2010). Prayogic Bhugol (Hindi), Rastogi Publishers, Meerut.

Suggestive readings

BA (Prog.) with Geography as Major
Category-II

DISCIPLINE SPECIFIC CORE COURSE – 1 (DSC-1) –: PHYSICAL
CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE
COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------|----------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| PHYSICAL GEOGRAPHY | 4 | 3 | 1 | - | 12th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To explain the concept, definition and scope of earth systems.
- To recognize the structure of the Earth and describe its characteristic features.
- To understand the atmospheric composition and structure.

Learning outcomes

The Learning Outcomes of this course are as follows:

The students will be able:

- To classify earth into various domains according to its physical features.
- To differentiate between lithosphere, hydrosphere, atmosphere and biosphere, and to understand interrelationship between them.
- To explain the atmospheric composition and structure.
- To assess the impact of anthropogenic activities on earth systems.

SYLLABUS OF DSC-1

UNIT – I (4 Hours)

Physical Geography: Definition, Nature, Scope, Earth as a System and its Components

UNIT – II (16 Hours)

Atmosphere: Composition and Structure, Energy: Insolation and Temperature, Motion in the atmosphere: pressure and circulation

UNIT – III (16 Hours)

Lithosphere: Earth's Interior, Isostasy, Earth's movement: endogenic including folding and faulting and exogenic forces

UNIT – IV (12 Hours)

Hydrosphere: Hydrological Cycle, Ocean Water Movement – Currents and Tides

UNIT – V (12 Hours)

Biosphere: Soil and Vegetation – Factors and Distribution

Practical component (if any) - NIL**Essential/recommended readings**

1. Alan H. Strahler and Arthur Strahler (1992). Modern Physical Geography Fourth Edition, John Wiley & Sons, Canada.
2. Barry, R. G., and Chorley, R. J. (2009). Atmosphere, Weather and Climate (9th Edition). Routledge, New York, USA.
3. Christopherson, R. W. and Birkeland, G. H. (2012). Geosystems: An Introduction to Physical Geography (8th edition). Pearson Education, New Jersey, USA.
4. Gupta, L.S. (2000). JalvayuVigyan(Hindi). Hindi Madhyam Karyanvayan Nidishalya, Delhi.
5. Lal, D. S. (2006). JalvayuVigyan (Hindi). PrayagPustakBhavan, Allahabad, India.
6. Sharma, V.K. (2010). Introduction to Process Geomorphology. CRC Press Taylor & Francis Group.
7. Singh, S. (2009). Bhautik Bhugol ka Swaroop (Hindi). Prayag Pustak. Allahabad, India.
8. Tarbuck, E.J., Lutgens, F.K. and Tasa, D. (2012). Earth Science, Thirteenth Edition. Prentice Hall, Delhi
9. Trujillo, A.P., and Thruman, H.V. (2017). Essentials of Oceanography. PHI., New Delhi.

Suggestive readings (if any)**DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2): HUMAN****Credit distribution, Eligibility and Prerequisites of the Course**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------|----------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| HUMAN GEOGRAPHY | 4 | 3 | 1 | - | 12th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand various dimensions of human geography and cultural landscape.
- To analyses the population growth and distribution.
- To understand the relationship between population and resource.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Detailed exposure of contemporary relevance of cultural landscape.
- In-depth knowledge of space and society of cultural regions.
- Understanding the settlement pattern and population resource relationship.

SYLLABUS OF DSC- 2

UNIT – I (8 Hours)

Human Geography: Definition, Scope and Major Themes; Contemporary Relevance, Understanding Cultural Landscape.

UNIT – II (16 Hours)

Population: World Population Growth – Trends and Patterns, Population Composition (Residence, Literacy and Age).

UNIT – III (12 Hours)

Space and Society: Cultural Regions, Tribes, Religion and Language.

UNIT – IV (12 Hours)

Settlements: Types of Rural Settlements; Classification of Urban Settlements; Trends and Patterns of World Urbanization.

UNIT – V (12 Hours)

Human Development – Measurements (HDI and IHDI), Regional Variations and Sustainable Development Goals.

Practical component (if any) - NIL

Essential/recommended readings

1. Chandna, R.C. (2017). Geography of Population. Kalyani Publishers, Ludhiana, India.
2. Hassan M.I. (2020). Population Geography-A Systematic Exposition. Routledge Taylor and Francis Group, New York.
3. Human Development Reports of United Nations Development Program.
4. Hussain Majid (2021). Human Geography. Rawat Publication.
5. Majid, Hussain (2012). Manav Bhugol. Rawat Publication.
6. Maurya, S.D. (2012). Manav Bhugol. Sharda Pustak Bhawan, Allahabad, India.
7. Patra, P. et. al.(2021). Perspectives of Human Geography. Concept Publications, New Delhi.
8. Rubenstein, J.M. (2008). An Introduction to Human Geography: The Cultural Landscape. Pearson Prentice Hall, NJ.
9. Saroha, J. (2021). Jansankhya Bhugol, Janankiki evam Jansankhya Adhayan. M.K. Books, New Delhi.
10. Singh, S and Saroha, J. (2021). Human and Economic Geography. Pearson Publication.

Suggestive readings (if any)

BA (Prog.) with Geography as Minor
Category-III

DISCIPLINE SPECIFIC CORE COURSE – 1 (DSC-1) –: PHYSICAL

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------|----------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| PHYSICAL GEOGRAPHY | 4 | 3 | 1 | - | 12th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To explain the concept, definition and scope of earth systems.
- To recognize the structure of the Earth and describe its characteristic features.
- To understand the atmospheric composition and structure.

Learning outcomes

The Learning Outcomes of this course are as follows:

The students will be able:

- To classify earth into various domains according to its physical features.
- To differentiate between lithosphere, hydrosphere, atmosphere and biosphere, and to understand interrelationship between them.
- To explain the atmospheric composition and structure.
- To assess the impact of anthropogenic activities on earth systems.

SYLLABUS OF DSC-1

UNIT – I (4 Hours)

Physical Geography: Definition, Nature, Scope, Earth as a System and its Components

UNIT – II (16 Hours)

Atmosphere: Composition and Structure, Energy: Insolation and Temperature, Motion in the atmosphere: pressure and circulation

UNIT – III (16 Hours)

Lithosphere: Earth's Interior, Isostasy, Earth's movement: endogenic including folding and faulting and exogenic forces

UNIT – IV (12 Hours)

Hydrosphere: Hydrological Cycle, Ocean Water Movement – Currents and Tides

UNIT – V (12 Hours)

Biosphere: Soil and Vegetation – Factors and Distribution

Practical component (if any) - NIL

Essential/recommended readings

1. Alan H. Strahler and Arthur Strahler (1992). Modern Physical Geography Fourth Edition, John Wiley & Sons, Canada.
2. Barry, R. G., and Chorley, R. J. (2009). Atmosphere, Weather and Climate (9th Edition). Routledge, New York, USA.
3. Christopherson, R. W. and Birkeland, G. H. (2012). Geosystems: An Introduction to Physical Geography (8th edition). Pearson Education, New Jersey, USA.
4. Gupta, L.S. (2000). JalvayuVigyan(Hindi). Hindi Madhyam Karyanvayan Nidishalya, Delhi.
5. Lal, D. S. (2006). JalvayuVigyan (Hindi). PrayagPustakBhavan, Allahabad, India.
6. Sharma, V.K. (2010). Introduction to Process Geomorphology. CRC Press Taylor & Francis Group.
7. Singh, S. (2009). Bhautik Bhugol ka Swaroop (Hindi). Prayag Pustak. Allahabad, India.
8. Tarbuck, E.J., Lutgens, F.K. and Tasa, D. (2012). Earth Science, Thirteenth Edition. Prentice Hall, Delhi
9. Trujillo, A.P., and Thruman, H.V. (2017). Essentials of Oceanography. PHI., New Delhi.

Suggestive readings (if any)

COMMON POOL OF GENERIC ELECTIVE (GE) COURSES
Offered by Department of Geography
Category-IV

GENERIC ELECTIVES (GE-1): GEOGRAPHY OF INDIA

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------------|----------|-----------------------------------|----------|---------------------|-----------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GEOGRAPHY OF INDIA | 4 | 4 | - | - | 12th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- Various dimensions of the geographical features of India and their spatial distribution.
- Detailed analysis of economic resources of India.
- Understanding of regional divisions of India.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Detailed exposure to the human and physical features of India.
- In-depth knowledge of different resource base of India.
- Understanding social-cultural base of India.

SYLLABUS OF GE-1

UNIT – I (12 Hours)

Physical Setting – Location, Relief and Structure, Drainage and Climate.

UNIT – II (12 Hours)

Population – Growth, Distribution, Literacy, Sex Ratio and Migration.

UNIT – III (12 Hours)

Resource Base – Renewable Resources and Diversification of Agriculture.

UNIT – IV (12 Hours)

Economy - Information Technology and Automobile Industry, Modes of Transport.

UNIT – V (12 Hours)

Key Concerns – Unity in Diversity, Border Issues and Biodiversity Conservation

Practical component (if any) - NIL

Essential/recommended readings

1. Gopal Krishan (2017). The Vitality of India: A Regional Perspective. Rawat Publication, Jaipur. (Hindi Medium)
2. Khullar, D.R. (2020). India – A Comprehensive Geography. Kalyani Publishers, Ludhiana.
3. Majid, H. (2020). Geography of India. McGraw Hill Education (India) Private Ltd.
4. Mamoria, C. B. and Mishra, J. P. (2021). *Bharat ka Bhugol*. Sahitya Bhawan Publication, Agra.
5. Sharma, T.C. (2013). Economic Geography of India. Rawat Publication, Jaipur.
6. Singh, Gopal (2010). Geography of India. Atma Ram and Sons.
7. Singh, S. and Saroha, J. (2019). *Bharat ka Bhugol*. CL Media (P) Ltd, New Delhi.
8. Singh, S. and Saroha, J. (2019). Geography of India, CL Media (P) Ltd, New Delhi.
9. Tiwari, R. C. (2019). *Bharat ka Bhugol*. Pravalika Publication, Allahabad.
10. Tiwari, R. C. (2019). Geography of India. Pravalika Publication, Allahabad.

Suggestive readings**GENERIC ELECTIVES (GE-2): SPATIAL DIMENSIONS OF DEVELOPMENT**

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|----------|-----------------------------------|----------|---------------------|-----------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| SPATIAL DIMENSIONS OF DEVELOPMENT | 4 | 4 | - | - | 12th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- Understand the meaning and concept of Development.
- Understand the different theories of development.
- Understand global pattern of development.

Learning outcomes

The Learning Outcomes of this course are as follows:

The students will be able:

- To learn changing concept of development.
- To learn the human development index.
- To analyses the different theories of development.

SYLLABUS OF GE-2**UNIT – I (12 Hours)**

Concept of Development: Definition and Meaning of Development, Changing Concept of Development (Economic Growth, Modernization, Distributive Justice), Equity-Efficiency Debate, Alternative Development Paradigms.

UNIT – II (12 Hours)

Indicators of Development: Economic, Social and Environmental.

UNIT – III (12 Hours)

Theories of Development: Myrdal, Hirschman, Rostow, Friedman, Under Development and Dependent Development.

UNIT – IV (12 Hours)

Global Patterns of Development: Economic Groupings (United Nations, World Bank, IMF) and Inter Regional Cooperation (SAARC, ASEAN, European Union).

UNIT – V (12 Hours)

Human Development: Concept, Indicators, HDI (India and World).

Practical component (if any) - NIL

Essential/recommended readings

1. Friedmann J. (1966). Regional Development Policy: A Case Study of Venezuela. Cambridge, Mass., MIT.
2. Gore C. (1984). Regions in Question: Space, Development Theory and Regional Policy. London, Methuen.
3. Hirschman A. O. (1958). The Strategy of Economic Development. New Haven, Yale University Press.
4. Murray Warwick E. (2006). Geographies of Globalization. Routledge.
5. Myrdal K. G. (1957). Economic Theory and Underdeveloped Regions. London, Duckworth.
6. Peet R. (1999). Theories of Development. Guilford Press, New York.
7. Pieterse, J.N. (2010). Development Theory. Sage, Los Angeles.
8. Potter R., Conway D., Evans R. and Evans S.L. (2012). Key Concept in Development Geography. SAGE Publications Ltd.
9. Stohr W. B. and Taylor D. R. F. (1981). Development from Above or Below? The Dialectics of Regional Planning in Developing Countries. John Wiley, Chichester.
10. Willis Katie (2011). Theories and Practices of Development. Routledge.

Suggestive readings -

GENERIC ELECTIVES (GE-3): GEOGRAPHY OF HEALTH AND WELLBEING

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|----------|-----------------------------------|----------|---------------------|-----------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GEOGRAPHY OF HEALTH AND WELLBEING | 4 | 4 | - | - | 12th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand various dimensions of health geography and its linkages with environment.
- To familiarize the student with the theoretical foundations and conceptual grounding of unique geography of social well-being.
- To appreciate the roles of geographic factors in socio-cultural diversity and well-being.
- To analyse in details the social wellbeing, problems and welfare programmes and policies.

Learning outcomes

The Learning Outcomes of this course are as follows:

After studying, students will be able to:

1. Get detailed exposure of health and environment.
2. Get Knowledge of the geography of social well-being and social diversity.
3. Appraise the key concepts of social geography in regional context; geographic factors underlying patterns of social well-being and inclusive development.
4. Explain the social problems and the welfare programs and policies.

SYLLABUS OF GE-3

UNIT – I (12 Hours)

Introduction to the concept of Health Geography, Medical Geography, approaches, nature and scope.

UNIT – II (12 Hours)

Wellness and Wellbeing: Concept, Social wellbeing, indicators and approaches.

UNIT – III (12 Hours)

Environment and Health Interface: Pollution; Climate change and Health.

UNIT – IV (12 Hours)

Development and Health interface: Economic activities (Agriculture, Industry, work-place) and Health.

UNIT – V (12 Hours)

Contemporary health challenges and policy implications in India: Lifestyle diseases, communicable diseases, mental health.

Practical component (if any) - NIL

Essential/recommended readings

1. Akhtar Rais (Ed.), (1990). Environment and Health Themes in Medical Geography. Ashish Publishing House, New Delhi
2. Anthony C. Gatrell, Susan J. Elliott, (2014). Geographies of Health. Wiley Pub.

3. E. Banister, (1987). Contemporary Health Issues (Health Sciences). Jones and Bartlett Publishers
4. Helen Hazen, Peter Anthamatten, (2020). An Introduction to the Geography of Health. Routledge
5. Mahajan and Gupta (fourth edition) (2013). Text book of preventive and social medicine. Jaypee Brothers Medical Publishers (P) Ltd.
6. Michael Emch, Elisabeth Dowling Root, Margaret Carrel (2017). Health and Medical Geography,
7. National health Policy-India (2017)
[https://www.nhp.gov.in/nhpfiles/national_health_policy_2017.pdf]
8. Paul, L. Knox (1975). Social Well-being: A Spatial Perspective (Theory & Practice in Geography). Oxford University Press
9. Phillips, D. and Verhasselt, Y. (1994). Health and Development. Routledge, London.
10. हरीशकुमारखत्री, स्वास्थ्यभूगोल, कैलाशपुस्तकसदन, भोपाल, 9788189900731

Suggestive readings

DEPARTMENT OF SOCIAL WORK

BA (Hons.) Social work

Category-IV

DISCIPLINE SPECIFIC CORE COURSE -1 (DSC-1) – : FUNDAMENTALS OF

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|--|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| FUNDAMENTALS OF SOCIAL WORK DSC 1 SW101 | 4 | 3 | 0 | 1 | Class XII from any discipline as per University guidelines | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand basic concepts of social work
- To familiarize with history of social work profession
- To learn the fundamentals of social work practice and its relevance in field work settings

Learning outcomes

At the end of the semester the students will be able to

- Understand the basic concept and meaning of professional social work
- Learn and apply the principles, values and ethics of social work profession in the field
- Gain knowledge about the history of social work profession

SYLLABUS OF DSC-1

| | |
|--|-----------------|
| Unit I : Basic Concepts of Social Work Unit Description: This unit will provide a conceptual understanding of professional social work meaning , goals and its scope . This will also | 16 Hours |
|--|-----------------|

| | |
|---|-----------------|
| focus on other concepts related to social work. | |
| Subtopics: <ul style="list-style-type: none"> • Concept, definitions, scope and goals of social work • Interrelated concepts: Social Reform, Social Services, Social Welfare, Social Development • Social Justice and Human Rights | |
| Unit II: Fundamentals of Social Work Profession Unit Description: This unit will introduce the students to the basic fundamentals of social work for professional social work practice. This will enhance the skills of the students to learn about principals, values, roles and code of conduct. | 16 Hours |
| Subtopics: <ul style="list-style-type: none"> • Principles and Values of Social Work • Code of Ethics: Purpose, Ethical Principles, Ethical responsibilities • Skills and Role of professional social worker | |
| Unit III: Historical Development of Social Work Unit Description: This unit will help to know about the emergence of professional social work at international level as well as in India. This will give a background of social work as a profession worldwide. | 12 Hours |
| Subtopics: <ul style="list-style-type: none"> • Development of professional Social Work in UK & USA • Development of professional Social Work in Asia, Australia & Africa • Development of professional Social Work in India | |
| Unit IV: Application and Practice of professional social Work Unit Description: This unit will focus on the application and practice-based approach where students will learn to integrate theory and practice. | 16 Hours |
| Subtopics: <ul style="list-style-type: none"> • Social Work practice in field: Identifying issues & challenges and preparing action plans • Project Work in field setting: Integrating Values, Principles and Ethics • Case studies in field work settings | |

Practical component (if any) – Unit IV application based

Essential readings

- Adams, Robert et al. (2002): Social Work: Themes, Issues and Critical Debates. Second Ed. Sage London.
- Brill, N.I. & Levine, J. (2002). Working with People: The Helping Process. Boston: Allyn & Bacon.
- Chatterjee, Pranab (1996): Approaches to the Welfare State. National Association of Social Workers (NASW). Washington DC.
- Cox. E. Lisa et.al. (2021). Introduction to Social Work: An Advocacy-Based Profession, Third Edition, Thousand Oaks: SAGE Publishing.
- Desai, M. (2005): Ideologies and Social Work: Historical and Contemporary Analysis. Jaipur: Rawat Publication.
- Dubois, B. & Miley, K. K. (2002). Social work: An empowering profession. London: Allyn and Bacon.
- Miley, K. K., O'Melia, M., & DuBois, B. L. (1998). Generalist social work practice: An empowering approach. Boston: Allyn & Bacon.
- Neil, T. (2015). Understanding Social Work: Preparing for practice. London: Macmillan.
- Skidmore, A.A., Thackeray, M.G. & Farley O.W. (1997). Introduction to Social Work. Boston: Allyn & Bacon.

Suggested Readings

- Cox. E. Lisa et.al. (2019). Macro Social Work Practice: Advocacy in Action, First Edition, Thousand Oaks: SAGE Publishing.
- Payne, M. (2005). Modern social work theory. New York: Palgrave/ MacMillan.
- Dominelli, L. (2004). Social work: theory and practice for a changing profession. Cambridge: Polity Press.
- Sajid S. M., & Jain, R. (2018). Reflections on social work profession. New Delhi: Bloomsbury
- Bhatt, S., & Singh, A. P., (2015). Social work practice: The changing context. The Readers Paradise, New Delhi, ISBN: 978-93-82110-43-9
- Bhatt, S., & Pathare, S. (2014). Social work education and practice engagement. ISBN: 9788175417571(HB), 9788175417953(PB), Shipra Publications, New Delhi.
- Trevithick, P. (2000). Social Work Skills: A Practice Handbook. Philadelphia: Open University Press.

- Farley, W, Larry, L.S. and Scott, B.W. (2003): Introduction to Social Work. Boston, Allyn&Bacon.
- Higham, P. (2004): Social Work: Introducing Professional Practice. London: Sage.
- Morales, A.T., Sheafor, B.W. and Scott, M.E. (2010): Social Work: A Profession of Many Faces. London. Allyn and Bacon.
- National Association of Social Worker (NASW). (2017). Code of ethics. Retrieved on 14 May 2022, 2019 from <https://www.socialworkers.org/About/Ethics/Code-of-Ethics>

ASSESSMENT

Internal Assessment: 25 Marks

The internal assessment will comprise of assignments/project works/case studies/presentation in addition to class test and class attendance as per University norms.

Semester End Examination: 75 Marks as per University academic calendar

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2): UNDERSTANDING SOCIETY FOR SOCIAL WORK

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|--|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| UNDERSTANDING SOCIETY FOR SOCIAL WORK DSC 2 SW102 | 4 | 3 | 0 | 1 | Class XII from any discipline as per University guidelines | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand sociological concepts for professional social work practice
- To develop analytical thinking on social structure and social processes

- To integrate sociological concepts into field settings

Learning outcomes

At the end of the semester the students will be able to

- Integrate the knowledge of society in social work practice
- Reflect an in-depth understanding about the social structure and social systems
- Learn social processes and social stratification to work effectively in field work settings

SYLLABUS OF DSC- 2

| | |
|--|-----------------|
| Unit- I: Basic Concepts Unit Description: This unit will provide a conceptual understanding of society, social structure and institutions. This will also cover the components of culture and its interface with the society. | 16 Hours |
| Subtopics: <ul style="list-style-type: none"> • Society and social structure: meaning, characteristics and Approaches • Social Groups, Community, Association and Social Institutions • Culture: Meaning, components and interface with society | |
| Unit-2: Understanding Social Processes Unit Description: This unit will introduce the concept, structure, functions of family and changing dynamics. This unit will help students in gaining an insight into the concepts of social processes, social change and social control. | 16 Hours |
| Subtopics: <ul style="list-style-type: none"> • Family: concept, types, functions, dynamics, and socialization • Social stratification: theories and forms • Social processes, social change and social control. | |
| Unit-3: Understanding social problems and concerns Unit Description: This unit will provide a conceptual understanding of different social problems that prevail in Indian society. | 12 Hours |
| Subtopics: <ul style="list-style-type: none"> • Social problems and concerns: Concept, nature, types, causes • Theoretical perspectives on social problems- biological, psychological, socio-cultural • Environment degradation and climate change: impact on nature-human interface | |
| Unit-4: Social work practice and application in society Unit Description: This unit will focus on the practice and application of sociological concepts in field settings. Students will acquire knowledge | 16 Hours |

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|---|--|
| and skill to work with social association and institutions. | |
| <i>Subtopics:</i> <ul style="list-style-type: none"> • Socialization and human relationships- illustrations from field • Concern of Scheduled Caste, Scheduled Tribes, Other Backward Classes and Minorities • Concerns of Children, Women, Elderly and Persons With Disability(PWDs) | |

Practical component (if any) – Unit IV application based

Essential readings

- Balgopal, P.R and Bhatt, S. (2013). Social Work Response to Social Realities, New Royal Book Company, Lucknow.
- Berger, P.L. (1963): An Invitation to Sociology: An Humanistic Perspective. Harmondsworth. Penguin.
- Giddens, A. (1999): Sociology. Cambridge. Polity Press.
- Haralambos, M & Holborn, M. (2014). Sociology: Themes and Perspectives 8th edition. London, Harper Collins.
- MacIver & Page (1974): Society: An Introductory Analysis. Jaipur, Macmillan India Ltd.
- Menon, N. (1999). Gender and Politics in India, Oxford University Press, New Delhi
- Nagla. B.K. (2013). Indian Sociological Thought. Jaipur: Rawat Publication
- Prasad S.K. (2000). Social Problems in India, Mohit Publications Ltd., India.
- Ranjan, R. (2016). Social Problems in India, Academic Publication, Delhi.
- Shah, A. M. (2014): The Writings of A. M. Shah - The Household and family in India. Stanford University, Orient Blackswan.
- Srinivas, M.N. (2005), Social Change in India. New Delhi: Allied Publishers.
- Srinivas, M.N. (2005), Social Change in India. New Delhi: Allied Publishers. University Press, New Delhi.
- Zastrow, C. (1999). Social Issues and Solutions. Wadsworth Thomson Learning Publications. Canada.

Suggested readings

- Abraham, M. Francis (2010): Contemporary Sociology: An Introduction to Concepts & Theories. Oxford, Oxford University Press
- Bottomore. T.B. (1972). Sociology: A Guide to Problems and Literature, Bombay: George Allen & Unwin.
- Cohen, A.K. (1968). Deviance and Control, Prentice Hall India, New Delhi.
- Collins, D., Jordan, C. and Coleman, H. (2013) Empowerment series: An Introduction to Family Social Work 4th edition, Brooks/Cole Cengage Learning, USA.
- Gupta, D. (1993): Social Stratification. (Ed.). Delhi, Oxford University Press.
- Madan, G.R. (1973). Indian, Social Problems, Vol, 1 & 2, Mumbai: Allied Publications.
- Merton, R.K (1971). Contemporary Social Problems, New York: Harcourt brace Jovanovick and Nisbet.
- Rawat, H.K. (2013). Contemporary Sociology, Rawat Publication, New Delhi.
- Sharma K. L. (1994): Social Stratification and Mobility. Jaipur, Rawat Publications.

ASSESSMENT

Internal Assessment: 25 Marks

The internal assessment will comprise of assignments/project works/case studies/presentation in addition to class test and class attendance as per University norms.

Semester End Examination: 75 Marks as per University academic calendar

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-3): FIELD WORK PRACTICUM

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|---|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| FIELD WORK PRACTICUM-I DSC 3 SW103 | 4 | 0 | 0 | 4 | Class XII from any discipline as per University guidelines | NIL |

Learning Objectives

- To develop empathetic attitude towards the needs, problems and real life situations of individuals, families, groups and communities
- To understand fieldwork agency's philosophy, structure, functions, resources, and service delivery system
- To understand the essence of professional relationship and applications of skills to deal with human problems and concerns

Learning outcomes

At the end of the semester, students will be able to

- Understand the significance of field work in social work education
- Understand the programmes and projects of governmental and nongovernmental social welfare/developmental agencies/organizations
- Build the competencies to perform the role of professional social workers

SYLLABUS OF DSC-3

Tasks/Activities:

1. Attend orientation programme organized by the department at the commencement of the course of the semester.
2. Agency/community visits during orientation programme for learning agency/community structure, functioning, policies, programmes & activities, services, clients, networking with other organizations etc.
3. Establish contact and develop rapport with the agency personnel, volunteers and/or community people and perform the assigned tasks during concurrent field work.
4. Prepare and submit learning plan, agency/community profile in a timely and appropriate manner to both college and agency supervisor
5. Work with volunteers, para-professionals/outreach workers in the agency and/or community.

6. Regular reporting to all concerned persons (both at agency and college level) during scheduled meetings and supervisory/individual conferences in order to seek their guidance.
7. Complete and submit weekly records of concurrent field work in a prescribed manner.
8. Attend workshops on “perspectives building” and “social sensitization”, whenever organized as per the need.
9. Continuous self-assessment of field work experiences.

Field work Hours in a semester:

- A minimum of 12 hours which comprises of concurrent fieldwork (8 hrs), report writing (3 hrs) per week will be required for each student. An hour(1) of Field work mentoring per week (individual conference) may also be counted.
- Must strictly maintain the discipline as applicable for concurrent field work and related activities, such as - completing compulsory hours (Minimum 180 hours each semester) and percentage of attendance (Minimum 80% attendance in the concurrent field work), participating in regular and specific activities as instructed from time to time i.e. orientation programme, agency/community tasks, workshops/seminars/special sessions, etc.
- The field work agency of the students will remain the same for two consecutive semesters of an academic year.

Total time in fieldwork practicum in a week is 12 hours,

Thus 12 hours x 15 (approx. weeks in a semester) is 180 hours per semester.

Teaching learning process

- The teaching learning process of field work includes- observation visits, orientation programmes, task-based field visits, individual conferences/mentoring, group conference scientific or experienced based paper presentation, report writing, critical discussion of the reports, workshops, seminars and skill-oriented sessions. The field work agency of the students will remain the same for two consecutive semesters of an academic year. Every student will be assigned a supervisor for personalized learning and mentoring throughout the academic year.

Practical component (if any) – 100% Field work (15 weeks)

Essential readings

- Brown, S.C. & Gloyne, E.R. (1966).The Field Training of Social Workers: A Survey. London: George Allen and Unwin Ltd.
- Doel, M., Shardlow, S. M., & Johnson, P. G. (2011). Contemporary Field Social Work: Integrating Field and Classroom Experience. Thousand Oaks, CA: Sage publication.
- Garthwarf, E. (2005).The Social Work Practicum. Boston: Pearson Education.
- Singh, R. R. (1985).Field Work in Social Work Education. New Delhi: Concept Publishing Company.
- Singh, A.P. (2017). Strengthening Field Work in Social Work Education. Lucknow, India: Rapid Book Service.
- Subhedar, I.S. (2001). Field Work Training in Social Work.New Delhi: Rawat Publications.
- Tsui, Ming-sum. (2005).Social Work Supervision: Contexts and Concepts.New Delhi: Sage Publications.

Suggested readings

- Verma, R.B.S. and Singh, A.P. (2011).Handbook of Field Work Practice Learning in Social Work. Lucknow, India: New Royal Book Company.

Assessment Methods

- The field work assessment is a continuous process. The students will be required to submit their weekly report to the respective supervisors. Any delay in report submission will bring disadvantage to the students. Their learning will be monitored through weekly individual conferences (IC) with the assigned supervisors. At the end of the semester, students will be required to prepare a field work self-assessment report as per the guidelines in a prescribed form and submit the same to the respective college supervisors. The field work assessment will be done by both internal supervisor and external examiner. The distribution of internal and external marking scheme will be 75 and 25 respectively. The students will be required to appear in viva-voce before the external examiner on scheduled university examination day.

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES
Offered by Department of Social Work

GENERIC ELECTIVES (GE-1): SOCIAL WORK RESPONSE TO HEALTH CARE

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|----------|-----------------------------------|----------|---------------------|---|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| SOCIAL WORK RESPONSE TO HEALTH CARE GE 1 SW 111 | 4 | 3 | 1 | 0 | Class XII from any discipline as per University guidelines | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To build a basic understanding of the concept of health and well-being for all
- To develop orientation and understanding of the health policy and programs and related areas of social work practice in diverse health settings
- To develop an appropriate set of skills and approaches towards practicing social work intervention in everyday situations to foster well-being and healthy life for all

Learning outcomes

At the end of the semester, the student will be able to

- Develop understand about health concerns service delivery structure in India
- Learn about national health policies and programmes of Government of India for health promotion
- Gain knowledge about various life style disease and factors contributing to the same

SYLLABUS OF GE-1

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|---|---|
| Unit I: Understanding Health Unit Description: To introduce students to the basic concepts of health and well-being in the present social and economic scenario. | (No. of lectures) 15 Weeks: I-IV |
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|--|---|
| Subtopics: <ul style="list-style-type: none"> • Health and Well-Being: Basic concepts, components, determinants • Indicators of health status • Understanding diseases, introducing disease classification system | |
| Unit II: Understanding Health Care and Concerns Unit Description: To learn various public health concerns and health care service delivery and government measures. | (No. of lectures) 15 Weeks: V-VIII |
| Subtopics: <ul style="list-style-type: none"> • Physical Health and Mental Health needs and services • Structure of health care services in India: primary, secondary and tertiary levels • National health policy and national health programs | |
| Unit III: Health Care and Social Work Unit Description: To develop knowledge about health care, health education, and role of social work in health promotion. | (No. of lectures) 15 Weeks: IX-XI |
| Subtopics: <ul style="list-style-type: none"> • Public Health, Health education and Role of Media in Health Promotion • Social, economic and cultural changes and its implications for health • Social work interventions in diverse health care settings | |
| Unit IV: Environmental and Lifestyle concerns Unit Description: Gain insights into the factors contributing to lifestyle diseases and environmental concerns. | (No. of lectures) 15 Weeks: XII-XV |
| Subtopics: <ul style="list-style-type: none"> • Understanding Life style diseases: communicable and non- communicable (HIV/AIDS, Malnutrition, T.B., Cancer, diabetes, PCOS) • Reproductive and Child Health: Emerging Concerns • Environmental, Pollution and health concerns: water and airborne diseases. | |

Practical component (if any) - NIL

Essential readings

- Ashdown, M., Brown, S.C., (1953), Social service & mental health, Routeledge & Kegan Paul Ltd., London
- Berkman, B., (2006), Handbook of Social Work in Health and Aging, Oxford
- Chauhan, Devraj,(1997), Health care in India: A profile, Mumbai, Foundation for Research in Community Health, India
- Congress, E. (1999). Social work values and ethics: Identifying and resolving professional dilemmas. Chicago: Nelson-Hall Publishers.

- Das, Veena, (2000), Violence and subjectivity, Berkeley, University of California Press
- Dasgupta, R. (1993), Nutritional planning in India, Hyderabad, NIN
- Denner, Bruce; Price, Richard H., (1973), Community mental health: social action and reaction, Routledge & Kegan Paul Ltd., London
- Dhooper, S.S., (1997), Social work in Health Care in the 21st Century. Thousand Oaks, CA.: Sage Publications, Inc
- Fort Cowles, L. A., (2000), Social Work in the Health Field: A Care Perspective. Binghamton, NY: The Haworth Press, Inc
- Gehlert, S., (2012), Hand Book of health Social Work, John Wiley & Sons, New Jersey
- Ghosh, B.N., (1951). A Treatise on Hygiene and Public Health, 14th edition, Scientific Publishing Co., Calcutta
- Kawta, K. (1961). Environmental Sanitation in India, Lucknow Publishing House, Lucknow.
- Kerson, T.S. (1997). Social work in health settings: Practice in context (2nd ed.). New York: Haworth.
- Lankenster, T. (1992). A Setting Up Community Health Programme: A Practical Approach for Use in Development Countries, London, Macmillan
- Levy, C. (1973). The value base of social work. Journal of Education for Social Work 9, 34–42.
- Levy, C. (1976a). Social work ethics. New York: Human Sciences Press.
- Liu, C., Wang, D., Liu, C., Jiang, J., Wang, X., Chen, H., ... & Zhang, X. (2020). What is the meaning of health literacy? A systematic review and qualitative synthesis. Family medicine and community health, 8(2).
- Mahajan, Guppy, (1991), Preventive and Social Medicine, Jaypee Brothers, New Delhi.
- Park, K., (2006), Preventive and Social Medicine, Banarasidas Bhanot Publishers, Jabalpur
- Ramachandras, L. (1990), Health Education: A New Approach, Vikas Publishing House Pvt.Ltd., New Delhi
- Read, M., (1966), Culture, health and disease: Social and cultural, Tavistock, London
- Saltz, C.C. & Schaefer, T. (1996). Interdisciplinary teams in health care: Integration of family caregivers. Social Work in Health Care 22(3), 59–70.
- Stevenson, George S., (1956), Mental health planning for social action, McGraw Hill Book Company, U. S. A. University Press, U.S.A.
- Wallack, L., Media Advocacy and Public Health: Power for Prevention, sage Publications, New Delhi.
- Wolin, S. (1993). The resilient self: How survivors of troubled families rise above adversity. New York: Villard.

Suggested readings

- Price, S., Andrew T.,(2002). Health of Nations: Infectious disease environment, Cambridge, MIT Press
- Stern, S., Smith, C., & Jang, S. (1999). Urban families and adolescent mental health. Social Work 23(1), 15–27.
- Wharf, B. & McKenzie, B. (1998). Connecting policy to practice in the human services. Toronto: Oxford University Press.

ASSESSMENT

Internal Assessment: 25 Marks

The internal assessment will comprise of assignments/project works/case studies/presentation in addition to class test and class attendance as per University norms.

Semester End Examination: 75 Marks as per University academic calendar

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-2): UNDERSTANDING GENDER

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|---------|-----------------------------------|----------|---------------------|--|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| UNDERSTANDING GENDER GE 2 SW 112 | 4 | 3 | 1 | 0 | Class XII from any discipline as per University guidelines | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To develop understanding of the concept of gender and feminist approaches
- To understand women's movement, strategies and interventions
- To develop insights regarding various state and civil society initiatives

Learning outcomes

At the end of the semester the students will be able to

- The concept of gender and the concerns related to women
- The history of women's movement and feminist approaches
- Gender mainstreaming, policies and programmes, and case studies

SYLLABUS OF GE-2

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|--|--|
| Unit I: Conceptual understanding of Gender Unit Description: This unit explains the concepts of gender, sex and feminist approaches. Students will learn and analyze various discriminatory processes and concerns related to gender. | (No. of Lecture) 15 Weeks: I-IV |
| Subtopics: | |

| | |
|--|--|
| <ul style="list-style-type: none"> • Concept of gender and sex, feminist approaches • Types of gender, gender identities and disparities • Gender stereotyping, discrimination, violence in family and community | |
| Unit II: Gender perspectives in development Unit Description: This unit includes the historical overview of the women movement and various initiatives at national and international level. Students will critically analyze gender inequality and challenges faced at formal and informal set ups in the context of development. | (No. of Lecture) 15 Weeks: V-VIII |
| Subtopics: <ul style="list-style-type: none"> • Historical Overview of women's movement, world conferences and UN Conventions on women • Gender equality and empowerment • Gender Wage, Gaps and Glass Ceiling, Gender development index, Gender and unorganised sector | |
| Unit III: Gender Mainstreaming Unit Description: This unit covers the concept and importance of gender mainstreaming. Students will learn and develop a critical insight on state and civil society organizations in the process of gender mainstreaming. | (No. of Lecture) 15 Weeks: IX-XI |
| Subtopics: <ul style="list-style-type: none"> • Understanding gender vulnerability and Sexual minority • Gender mainstreaming • Case studies: SEWA, Vishakha, Shah Bano, Manorama, Nirbhaya | |
| Unit IV: Policy and Programmes Unit Description: This unit will briefly introduce the various provisions for women under constitutional and other legislative provisions. Students will learn about various policies, programmes and state mechanisms. | (No. of Lecture) 15 Weeks: XII-XV |
| Subtopics: <ul style="list-style-type: none"> • Constitution and legislative safeguards • National Policy and programmes • Institutional mechanisms: National and State Commissions, Rashtriya Mahila Kosh, Crime Against women Cell and Family Court | |

Practical component (if any) - NIL

Essential readings

- Aggarwal, B.(ed.) 1988 Structure of Patriarchy. New Delhi: Kali for Women.
- Butler, J. (2002). Gender trouble. London: Routledge.
- Fergusons, C. (ed) (2010) Violent Crime, clinical and implications. California: Sage publications.
- Holmes, M. (2007). What is Gender. New Delhi, Sage Publications, pp 43-62,71-90

- Joseph, S. (2005). Social Work Practice and Men Who Have Sex With Men. New Delhi: Sage Publication.
- Nayar, S. (2010) Violence against Women in South Asian Communities: Issues for Policy and Practice. Delhi: Navyug Books International.
- Prabhakar, V. (2011) Gender Violence: Women Victims in Man's World. New Delhi: Wisdom Press.
- Talwar, R. (1999). The third sex and Human Rights. New Delhi: Gyan Publishing House.
- Wykes, M. and Welsh, K. (2009). Violence, Gender and Justice. London: Sage.

Suggested readings

- Bansal, D. K. (2006) Gender Violence. New Delhi: Mahaveer and Sons.
- Basu, A. & Jefferey, P. 2004 Appropriating Gender. London: Routledge.
- Chaudri, M. (2003) Feminisms in India. New Delhi: Kali for Women.
- Dominelli L. (2002). Feminist social work: Theory and Practice , New York: Palgrave
- Momsen, J. 2009 Gender and Development, London & New York: Routledge
- Rege, S. (Ed.). (2003). Sociology of gender: The challenge of feminist sociological thought. SAGE Publications India.
- Wendt, S & Nicole M. 2016 Contemporary Feminisms in Social Work Practice, New York: Routledge.

ASSESSMENT

Internal Assessment: 25 Marks

The internal assessment will comprise of assignments/project works/case studies/presentation in addition to class test and class attendance as per University norms.

Semester End Examination: 75 Marks as per University academic calendar

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DEPARTMENT OF SOCIOLOGY

B.A. (Hons.) Sociology

Category I

DISCIPLINE SPECIFIC CORE COURSE -1 (DSC-01) – : Introduction to Sociology

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DSC 01 Introduction to Sociology | 4 | 3 | 1 | 0 | Nil | Nil |

Learning Objectives:

The mandate of the course is to introduce the discipline of Sociology to students who may come from diverse academic backgrounds, training and capabilities. The course intends to introduce the students to a sociological way of thinking and to apply sociological concepts to everyday life. Students by the end of the course learn that individual choices are impacted by the social structures of which they are a part. They develop reflexive thinking skills for both self and society. They develop a sense of how common sense is limited to those who share the same spatial-geographical, social and cultural locations.

The course also introduces the idea that the various aspects of society are interlinked with each other, thereby orienting them to the sociological relationship between individuals and groups. By understanding these relationships, the student develops a sense of how closely the lives of individuals are intertwined and impact each other. The course also introduces the students to the emergence of Sociology as a systematic and scientific field of study. The emergence of sociology as a discipline enables them to understand the changing conceptualization of what it means to be scientific.

Learning outcomes

1. Students learn to apply the sociological perspective in understanding how society shapes our individual lives.
2. This provides a foundation for the other more detailed and specialized courses in sociology.
3. Students learn how to read texts and to express thoughts and ideas effectively in writing. They also learn how to frame arguments cogently.

Syllabus of DSC-1

UNIT – I (16 hours)

Thinking Sociologically

UNIT – II (16 hours)

Emergence of Sociology and Social Anthropology

UNIT – III (28 hours)

Basic Sociological Concepts

- a. Social Groups
- b. Social Institutions
- c. Culture
- d. Social Change

Practical component (if any) - NIL Essential/Recommended Readings:

Unit 1: Thinking Sociologically

Mills, C. W. (1959). 'The Promise' in *The Sociological Imagination*. Oxford: Oxford University Press, 6th Edition (2000). Pp. 3-24.

Berger, Peter L. (1963). 'Sociology as Consciousness' in *Invitation to Sociology: A Humanistic Perspective*. Anchor Books: New York, Pp. 25- 53.

Béteille, André. (2009). 'Sociology and Common Sense' in *Sociology: Essays in Approach and Method*. Delhi: Oxford University Press, Chapter 1. Pp. 13-27.

Unit 2: Emergence of Sociology and Social Anthropology

Giddens, Anthony, & S. Griffiths, (2006). 'What is Sociology?' in *Sociology*. Cambridge: Polity (5th Edition). Pp. 2-29.

Béteille, André. (1985). 'Sociology and Social Anthropology' in *Six Essays in Comparative Sociology*. New Delhi: Oxford University Press, Chapter 1. Pp 1-20.

Unit 3: Basic Sociological Concepts

a. Social Groups

MacIver, Robert M., & C. H. Page, (1962). 'Types of Social Groups' in *Society: An Introductory Analysis*. New York: Holt, Rinehart and Winston, Chapter 10. Pp. 213- 237.

b. Social Institutions

Horton, Paul B., & Chester L. Hunt, (2004). 'Social Institutions' in *Sociology*. New Delhi: Tata McGraw Hill. Chapter 9, Pp. 210- 229.

Firth, Raymond. (1956). 'Work and Wealth of Primitive Communities' in *Human Types*. Thomas Nelson & Sons, Chapter 3, Pp. 71-97.

c. Culture

Neubeck, K. J., & D.S. Glasberg, (2005). 'Culture' in *Sociology: Diversity, Conflict, and Change*. McGraw-Hill, Chapter 5.

Rege, Sharmila. (2002). Conceptualising Popular Culture: 'Lavani' and 'Powada' in Maharashtra. *Economic and Political Weekly*, 37(11), 1038–1047.

d. Social Change

Horton, Paul B., & Chester L. Hunt, (2004). 'Social and Cultural Change' in *Sociology*. New Delhi: Tata McGraw Hill. Chapter 9, Pp. 510- 539.

Ritzer, G. (1993). *The McDonaldization of Society: An Investigation into the Changing Character of Contemporary Social life*. Chapter 1. Pine Forge Press. 5th Edition. Pp 1- 21.

Suggestive Readings:

Bottomore, T. B. (1971). *Sociology: A Guide to Problems and Literature*, London: Allen and Unwin. Chapter 4, 'The Social Sciences, History and Philosophy', Pp. 65-80

Garner, James Finn. (1994). *Politically Correct Bedtime Stories: Modern Tales for Our Life and Times*, New Jersey: John Wiley & Sons Inc., Chapters, Introduction, 'Little Red Riding Hood' & 'Rumpelstiltskin'.

Johnson, Allan G. (2008). *The Forest and the Trees: Sociology as Life Practice and Promise*. Philadelphia: Temple University Press, Introduction and Chapter 1, 'The Forest, the Trees and One Thing', Pp. 1-36.

Ritzer, George. (1996). *Classical Sociological Theory*, New York: McGraw Hill, Chapter 1, 'A Historical Sketch of Sociological Theory- The Early Years', Pp. 13-46.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2):**Sociology of India I****Credit distribution, Eligibility and Prerequisites of the Course**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DSC 02 Sociology of India I | 4 | 3 | 1 | 0 | Nil | Nil |

Learning Objectives:

Indian society is layered, complex and ever transforming. This course seeks to familiarize the students with this entity through a sociological lens by delineating its historical formations and the kaleidoscopic configuration of its various key elements. The aim here is to render the key sociological elements identified - Caste, Village, Classes, Gender, Family, Religions, Tribes, and Cities – as concrete and tactile. They are treated as relational and interlinked features of Indian society. The course presents structures and institutions of the society as dynamic and changing over a period; at the same time, it takes cognizance of the dynamism of the interactions between them. The objective is to help students to understand Indian society as a vivid reality even as they acquire elementary sociological categories to grasp it and develop an awareness of the key processes that engender it.

Learning outcomes

1. Familiarization with Indian society seen through a sociological lens.
2. Understanding of the interlinkages between various elements of Indian society.
3. Ability to enable critical examination of a shared social reality.

Syllabus of DSC-2**UNIT – I (24 hours)****Formations of Indian Society****UNIT – II (36 hours)****Indian Society: Configurations and Interconnections****a. Caste, Class, and Tribe**

- b. Gender, Family and Religion**
- c. Village, Cities and Urbanization**

Practical component (if any) - NIL

Essential/recommended readings:

Unit I: Formations of Indian Society

Stern, Robert W. (2003). *Changing India*. Cambridge: Cambridge University Press, Pp. 16-31.

Béteille, André. (2000). *Antinomies of Society: Essays on Ideologies and Institutions*. Delhi: OUP, Pp. 198-207.

Unit II: Indian Society: Configurations and Dynamics

a. Caste, Class and Tribe

Zelliot, Eleanor. (2004). 'Caste in Contemporary India', in Robin Rinehart ed. *Contemporary Hinduism: Ritual, Culture, and Practice*, Santa Barbara: ABC-Clio, Pp. 243 – 268.

Mayer, Adrian C. (1996) 'Caste in an Indian Village: Change and Continuity 1954-1992', in C. J. Fuller ed. *Caste Today*. Delhi: OUP, Pp. 32-63.

Alavi, Hamza, & John Harriss. (1989). *Sociology of "Developing Societies": South Asia*. London: Macmillan, Pp. 134 – 147 & 268 – 275.

Fernandes, Leela. (2016). 'India's Middle Classes in Contemporary India', in Knut A. Jacobsen ed. *Routledge Handbook of Contemporary India*. London: Routledge, Pp. 332-340.

Xaxa, Virginius. (2005). 'Politics of Language, Religion and Identity: Tribes in India',

Economic and Political Weekly, Vol. 40, No. 13, Pp. 1363-1370.

b. Gender, Family and Religion

Dube, Leela. (2001). 'Caste and Women', in *Anthropological Explorations in Gender: Intersecting Fields*. Delhi: Sage, Pp. 154-173.

Mines, Diane P. and Sarah Lamb (eds.) (2nd edition 2002). *Everyday Life in South Asia*, Indianapolis: Indiana University Press, Pp. 9-22.

Fruzzetti, Lina M. (1981). 'Muslim Rituals: Household Rites vs. Public Festivals in Rural India', in Imtiaz Ahmad. *Ritual and Religion among Muslims in India*. Delhi: Manohar, Pp. 91-112.

c. Village, Cities and Urbanization

Srinivas, M.N. (1998). 'The Changing Village', in *Indian Society through Personal Writings*. Delhi: OUP, Pp. 138-162.

Pendse, Sandeep. (2007). 'Toil, Sweat and the City', in Sujata Patel and Alice Thorner(eds.) *Bombay: Metaphor for Modern India*. Delhi: OUP, Pp. 2-25.

Gooptu, Nandini. (2016). 'Divided We Stand: Indian City after Economic Liberalization', in Knut A. Jacobsen ed. *Routledge Handbook of Contemporary India*. London: Routledge, Pp.216-2.

Suggestive Readings:

Blackburn, Stuart. (2012). 'The Formation of Tribal Identities', in Vasudha Dalmia and Sadana, Rashmi, (ed.) *The Cambridge Companion to Modern Indian Culture*, Cambridge: Cambridge University Press, Pp. 30-48.

Corbridge, Stuart, John Harriss and Craig Jeffrey. (2013). *India Today*, Ch.1: Making Sense of India Today. Cambridge: Polity Press, Pp. 1-19.

Jaffrelot, Christoph. 'The Politics of Caste Identities', in Vasudha Dalmia and Rashmi Sadana (ed.) *The Cambridge Companion to Modern Indian Culture*, Cambridge: Cambridge University Press, 2012, Pp. 80-98.

Jeffrey, Craig and John Harris. *Keywords for Modern India*, UK: Oxford University Press, 2014.

Kothari, Smitu. et. al.(2001). 'Social Movement Politics in India: Institutions, Interests and Identities' in Atul Kohli ed. *Success of Indian Democracy*, Cambridge: Cambridge University Press. Pp. 242-269.

Mencher, Joan P.(2008). 'Ecology and Social Structure: A Comparative Analysis', in Ramachandra Guha ed. *Social Ecology*, Delhi: OUP, Pp. 42-76.

Mines, Diane. (2009). *Caste in India*, Ch. 3: 'Personhood and Rank' (Pp.27-35) & Ch. 7: 'Some other things to know about Caste' (Pp.67-73).

Robb, Peter. (2002). *A History of India*, Ch.1: Introduction: Region and Civilization, New York: Palgrave, Pp. 1-26.

Robinson, Marguerite. (1988). *Local Politics: The Law of the Fishes*. Chapter 2. Caste, Politics and the Agrarian System. Pp. 19-46.

Searle-Chatterjee, Mary. (1994). 'Caste, Religion and other Identities'. *The Sociological Review*, Pp. 147-166.

Singh, K. S. (1982). Transformation of Tribal Society: Integration vs Assimilation, *Economic and Political Weekly*, Aug. 14, Vol. 17, No. 33 & 34. Pp. 1318-1325, 1376-1384.

Srinivas, M. N. (1976). *The Remembered Village*. Berkeley: University of California Press.

Voyce, Malcolm. (2007). 'Shopping Malls in India: New Social 'Dividing Practices'', *Economic and Political Weekly*, Jun. 2-8, Vol.42, No.22, Pp. 2055-20

DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-03):
Introduction to Sociological Research

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DSC 03 Introduction to Sociological Research | 4 | 3 | 1 | 0 | Nil | Nil |

Learning Objectives

The course is designed as a foundational introduction to sociological research. It will provide the student with an understanding of how the social sciences, mainly sociology and social anthropology comprehend the world. It will begin with basic explanation of the research process and move on to the components of research and enable students to learn best practices.

Learning outcomes

1. Students are introduced to sociological research both from a theoretical and methodological perspective.
2. The course enables students to read and critically evaluate a piece of research and move towards designing a simple research project.
3. Students would be able to identify the difference between quantitative and qualitative methods.
4. Students will learn about ethical and practical issues in research.
5. Students learn that research methods are universal and not bound by cultural location and that no one research method can adequately explain the world around them.

Syllabus of DSC-3

UNIT – I (8 hours)

The Promise of Sociological Research

UNIT – II (8 hours)

Unit 2. The link Between Theory and Research

UNIT – III (8 hours)

Concepts and Hypothesis

UNIT – IV (8 hours)

The Process of Social Research

UNIT – V (4 hours)

Plagiarism and Ethics in Social Research

UNIT – VI (12 hours)

Primary and Secondary Sources of Data

6.1 Types of primary data: Qualitative and Quantitative Data

6.2 Introduction to Big Data at National Level: Census and NSS data

6.3 Introduction to Digital Research

UNIT – VII (12 hours)

Unit 7. Basic Data Analysis

Practical component (if any) - NIL

Essential/recommended readings:

Unit 1. The Promise of Sociological Research

Mills, C. W. (1959). *The Sociological Imagination*, London: OUP, Chapter 1 Pp. 3-24.

Unit 2. The link between Theory and Research

Merton, R.K. (1972). *Social Theory and Social Structure*, Delhi: Arvind Publishing House, Chapters 4 & 5 The Bearing of Sociological Theory on Empirical Research & The Bearing of Empirical Research on Sociological Theory. Pp. 139-171.

Unit 3. Concepts and Hypothesis

Goode, W. E. and P. K. Hatt, (1952). *Methods in Social Research*. New York: McGraw Hill. Chapters 5 and 6, Pp. 41-73.

Unit 4. The Process of Social Research

Bailey, K. (1994). 'The Research Process', in *Methods of Social Research*. Simon and Schuster, 4th ed. The Free Press, New York, Pp. 3-19.

Bernard, Russell H., (2006). Research Methods in Anthropology: Qualitative and Quantitative Approaches, Alta Mira Press, Lanham, Ch.3 'Preparing for Research'; Ch.4 'The Literature Search' Pp. 69-108.

Unit 5. Plagiarism & Ethics in Social Research

Association of Social Anthropologists of the UK and Commonwealth, Ethical Guidelines for Good Research Practice, Pp.1-10. <http://www.theasa.org/>

Creswell, J W. (2009). Research Design: Qualitative, Quantitative and Mixed Methods Approaches, 3rd ed. Sage Publications, California, Pp. 87-93.

Unit 6. Primary and Secondary Sources of Data

Walliman, Nicholas. (2010). Research Methods: The Basics. Routledge: London, Ch. 4 'The Nature of Data', Pp. 65-77.

6.1 Types of primary data: Qualitative and Quantitative Data

Kim, Yeunchul, 2019, 'New Opportunities for Sociological Research', in Journal of Asian Sociology, Vol. 48, No.3 9, Pp. 343-358.

6.2 Introduction to Census and NSS data

History of the Census of India, Government of India Pp.1-10. Drop-in-Article No. 5 : Census of India 2011 .

Deshpande, S. (2003). Contemporary India: A Sociological View. New Delhi: Penguin Books, Pp.125-150.

6.3. Introduction to Digital Research

Pink, S., H. Horst, J. Postill, L. Hjorth, T. Lewis, & J. Tacchi, (2016). Digital Ethnography: Principles and Practice. SAGE Publications Ltd. Pp. 1-18.

Unit 7. Basic Data Analysis

Gupta, S. P. (2007). Elementary Statistical Methods. Sultan Chand & Sons Publishers, Chapter 7. Classification and Tabulation. Pp.65-100.

B.A. (Prog.) with Sociology as Major
Category II

DISCIPLINE SPECIFIC CORE COURSE (DSC-1):
An Invitation to Sociology

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------------|----------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| An Invitation to Sociology | 4 | 3 | 1 | 0 | Nil | Nil |

Learning Objectives

This course is a broad introduction to the discipline of sociology. It introduces students to understanding the 'social' in everyday life. It helps to link the social to the personal and to develop a sociological imagination. It interrogates the taken-for-granted structures in society and familiarises students with some of the fundamental concepts and concerns of the discipline.

Learning outcomes

1. After studying the paper, the students should be able to:
2. Appreciate and adopt a sociological perspective to the understanding of reality
3. Understand the basic concepts in Sociology and relate them to the micro and macro aspects of social life.
4. Develop a sociological way of thinking.

SYLLABUS OF DSC-1

UNIT – I (12 hours)

Introducing Sociology

UNIT – II (12 hours)

The emergence of Sociology

UNIT – III (36 hours)

Basic Concepts

a. Culture

- b. Social Interactions and Institutions**
- c. Social Change**
- d. Sociology and Personal Life Practical component (if any) – NIL**

Essential/recommended readings:

Unit I. Introducing Sociology

Mills, C. W. (1959). 'The Promise' in *The Sociological Imagination*. Oxford: Oxford University Press, 6th Edition (2000). Pp 1-24.

Giddens, A. & Philip Sutton, (2021), *Sociology*, 9th Edition. London: Polity Press, Chapter 1 'What is Sociology? Pp 1-30

Beteille, Andre. (2009), *Sociology: Essays in Approach and Method*, Delhi: Oxford University Press, Chapter 1, 'Sociology and Common Sense, Pp. 13-27

Unit II. The emergence of Sociology

Ritzer, George, (1996), *Classical Sociological Theory*, New York: McGraw Hill, Chapter1, 'A Historical Sketch of Sociological Theory- The Early Years', Pp. 13-46

Unit III. Basic Concepts

a. Culture (Week 6-8)

Macionis, John, J. (Adapted by Reema Bhatia). (2019). *Sociology*, 17 Edition. Chapter 3, Culture, Pp 70-95. Pearson. New Delhi.

Redfield, Robert (1956), Chapter 16, 'How Human Society Operates', in Harry L Shapiro(ed.) *Man, Culture and Society*. New York: Oxford University Press, Pp. 345-368.

b. Social Interactions and Institutions

Horton, Paul B., Chester L. Hunt. (2004), *Sociology*. New Delhi: Tata McGraw Hill. Chapter 9, Pp. 210- 229.

Das Veena. (1976). Masks and Faces: An Essay on Punjabi Kinship. Contributions to Indian Sociology. Vol.10. No.1 Pp 1-28

c. Social Change

Macionis, John, J. (Adapted by Reema Bhatia). (2019). *Sociology*, 17 Edition. Chapter 25. Social Change. Pearson. New Delhi. Pp. 742-768

Dillon, Michele. (2014). *Introduction to Sociological Theory: Theorists, Concepts, and Their Applicability to the Twenty-First Century*. Oxford: Wiley Blackwell. Chapter 15. Modernity's, Cosmopolitanism and Global Consumer Culture. Pp. 491-520.

d. Sociology and Personal Life

Morgan, David. (2019). 'Conceptualising the Personal', in V. May and Petra Nordqvist

(ed.)

Sociology of Personal Life. London: Red Globe Press. Chapter 2. Pp 16-29.

Allan, G., & Adams, R. G. (2006). *Sociology of Friendship*. In C. Bryant & D. Peck, *The Handbook of 21st Century Sociology*. Sage. Pp 1-29.

Suggestive Readings:

Beteille, Andre, (2009), *Sociology: Essays in Approach and Method*, Delhi: Oxford University Press, Chapter 1

Bottomore, T.B. (1971), *Sociology: A Guide to Problems and Literature*, London: Allen and Unwin, Chapter 4

Chakrabarty, D. (2000). *Provincializing Europe: Postcolonial Thoughts and Historical Difference*. New Jersey: Princeton University Press. Chapter-7. *Adda: A History of Sociality*. Pp 180-214.

May, Vanessa and Petra Nordqvist (ed.), (2019). *Sociology of Personal Life*. London: Red Globe Press.

Garner, James Finn, (1994), *Politically Correct Bedtime Stories: Modern Tales for Our Life and Times*, New Jersey: John Wiley & Sons Inc.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2):

Family and Marriage

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------------|----------------|--|-----------------|----------------------------|-----------------------------|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Family and Marriage | 4 | 3 | 1 | 0 | Nil | Nil |

Learning Objectives

1. To introduce various approaches, issues, and debates in the study of family and marriage.
2. To introduce different concepts and theoretical understanding of marriage and family in different societies.
3. To develop critical insights into the changing trends in family and marriage.

Learning outcomes

1. Understanding the multiple perspectives in the study of the family.
2. Familiarity with the concepts relevant to the study of marriage
3. Developing an understanding of the changing trends in family and marriage.

SYLLABUS OF DSC- 2

UNIT – I (16 hours)

An Introduction

UNIT – II (24 hours)

Studying the family

UNIT – III (20 hours)

Understanding Marriage

Practical component (if any) - NIL Essential/recommended readings: Unit I. An

Introduction

Goode, William J. (2009), 'The Theoretical Importance of the Family' in Arlene S. Skolnick and Jerome H. Skolnick (eds) *Family in Transition*. Boston: Pearson. (Seventeenth edition). Pp. 15-26.

Lévi-Strauss, Claude. (1956). 'The Family' in Harry L Shapiro (ed.) *Man, Culture and Society*. New York: Oxford University Press, pp. 261 – 285.

Shah A.M. (1964). 'Basic Terms and Concepts in the study of Family in India', *The Indian Economic and Social History Review*, Vol. 1(3), pp 1-36.

Unit II. Studying the family

Palriwala, R. (1999). "Negotiating Patriliney: Intrahousehold Consumption and Authority in Rajasthan (India)", in Rajni Palriwala and Carla Risseuw (eds.), *Shifting Circles of Support: Contextualising kinship and gender relations in South Asia and Sub-Saharan, Africa*. 190-220. Delhi: Sage Publications.

Nongbri, Tiplut. (1993). Gender and the Khasi Family Structure. In Patricia Uberoi. *Family, Marriage and Kinship in India*. Pp. 176- 186. New Delhi: Oxford University Press.

Weston, K, (1991). *Families We Choose: Lesbians, Gays, Kinship*, New York: Columbia University Press, 103-136.

Hochschild, A. (1989.) *The Second Shift*: New York: Penguin, 11-33.

Unit III. Understanding Marriage

Carsten. J. Hsiao-Chiao, Siobhan Magee, Eirini Papadaki & Koreen M. Reece. (2021). *Marriage in Past, Present and Future Tense*, London: UCL Press, 140-159.

Ramamurthy, Priti. 2014. Marriage, Labour circulation and smallholder Capitalism in Andhra Pradesh in R. Kaur and R. Palriwala (eds.) *Marrying in South Asia: Shifting Concepts, Changing Practices in a Globalizing World*. Pp. 161-181. Hyderabad: Orient Blackswan.

Chowdhry, P. (1998). 'Enforcing Cultural Codes: Gender and Violence in Northern India', in M. E. John and J. Nair (ed.), *A Question of Silence: The Sexual Economies of Modern India*, New Delhi: Kali for Women, 332-67.

Kaur, R, and Priti Dhanda. (2014). 'Surfing for Spouses: Marriage Websites and the 'New' Indian Marriage?' in Ravinder Kaur and Rajni Palriwala, (ed.). *Marrying in SouthAsia: Shifting Concepts, Changing Practices in a Globalising World*. New Delhi: Orient BlackSwan, 271-292.

Lemons, Katherine (2014) 'When Marriage Breaks Down How Do Contracts Matter? Contracts and Divorce in Contemporary North India, in Ravinder Kaur and Rajni Palriwala (ed.). *Marrying in South Asia: Shifting Concepts, Changing Practices in a Globalizing World*. Hyderabad: Orient Blackswan, 371-388

Suggested Readings:

Sen, S., Biswas, R., & Dhawan, N. (Eds.). (2011). *Intimate others: Marriage and sexualities in India*. Bhatkal and Sen.

Uberoi. Patricia. (1993). *Family, Marriage and Kinship in India*. New Delhi: Oxford University Press.

Parry Jonathan.(2001). Ankalu's Errant Wife: Sex, Marriage and Industry in Contemporary Chhattisgarh, *Modern Asian Studies*, Vol. 35(4), 783-820.

Parry Jonathan.(2001). Ankalu's Errant Wife: Sex, Marriage and Industry in Contemporary Chhattisgarh, *Modern Asian Studies*, Vol. 35(4), 783-820.

Leach, E.R., (1961). 'Polyandry, Inheritance and the Definition of Marriage with Particular Reference to Sinhalese Customary Law', in E. R. Leach (ed.), *Rethinking Anthropology*, London: The Athlone Press, 105-113

Pande A. (2010). Commercial Surrogacy in India: Manufacturing a Perfect Mother- Worker, *Signs*, Vol. 35(4), 969-992.

B.A. (Prog.) with Sociology as Minor

Category III

DISCIPLINE SPECIFIC CORE COURSE (DSC-1):

An Invitation to Sociology

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| An Invitation to Sociology | 4 | 3 | 1 | 0 | Nil | Nil |

Learning Objectives

This course is a broad introduction to the discipline of sociology. It introduces students to understanding the 'social' in everyday life. It helps to link the social to the personal and to develop a sociological imagination. It interrogates the taken-for-granted structures in society and familiarises students with some of the fundamental concepts and concerns of the discipline.

Learning outcomes

1. After studying the paper, the students should be able to:
2. Appreciate and adopt a sociological perspective to the understanding of reality
3. Understand the basic concepts in Sociology and relate them to the micro and macro aspects of social life.
4. Develop a sociological way of thinking.

SYLLABUS OF DSC-1

UNIT – I (12 hours)

Introducing Sociology

UNIT – II (12 hours)

The emergence of Sociology

UNIT – III (36 Hours)

Basic Concepts

- a. Culture
- b. Social Interactions and Institutions
- c. Social Change
- d. Sociology and Personal Life

Practical component (if any) - NIL Essential/recommended readings:

Unit I. Introducing Sociology

Mills, C. W. (1959). 'The Promise' in *The Sociological Imagination*. Oxford: Oxford University Press, 6th Edition (2000). Pp 1-24.

Giddens, A. & Philip Sutton, (2021), *Sociology*, 9th Edition. London: Polity Press, Chapter 1 'What is Sociology?' Pp 1-30

Beteille, Andre. (2009), *Sociology: Essays in Approach and Method*, Delhi: Oxford University Press, Chapter 1, 'Sociology and Common Sense, Pp. 13-27

Unit II. The emergence of Sociology

Ritzer, George, (1996), *Classical Sociological Theory*, New York: McGraw Hill, Chapter 1, 'A Historical Sketch of Sociological Theory- The Early Years', Pp. 13-46

Unit III. Basic Concepts

- a. Culture (Week 6-8)

Macionis, John, J. (Adapted by Reema Bhatia). (2019). *Sociology*, 17 Edition. Chapter 3, Culture, Pp 70-95. Pearson. New Delhi.

Redfield, Robert (1956), Chapter 16, 'How Human Society Operates', in Harry L Shapiro (ed.) *Man, Culture and Society*. New York: Oxford University Press, Pp. 345-368.

- b. Social Interactions and Institutions

Horton, Paul B., Chester L. Hunt. (2004), *Sociology*. New Delhi: Tata McGraw Hill. Chapter 9, Pp. 210- 229.

Das Veena. (1976). Masks and Faces: An Essay on Punjabi Kinship. Contributions to Indian Sociology. Vol.10. No.1 Pp 1-28

- c. Social Change

Macionis, John, J. (Adapted by Reema Bhatia). (2019). *Sociology*, 17 Edition. Chapter 25. Social Change. Pearson. New Delhi. Pp. 742-768

Dillon, Michele. (2014). *Introduction to Sociological Theory: Theorists, Concepts, and Their Applicability to the Twenty-First Century*. Oxford: Wiley Blackwell. Chapter 15. Modernity's, Cosmopolitanism and Global Consumer Culture. Pp. 491-520.

d. Sociology and Personal Life

Morgan, David. (2019). 'Conceptualising the Personal', in V. May and Petra Nordqvist (ed.) *Sociology of Personal Life*. London: Red Globe Press. Chapter 2. Pp 16-29.

Allan, G., & Adams, R. G. (2006). Sociology of Friendship. In C. Bryant & D. Peck, *The Handbook of 21st Century Sociology*. Sage. Pp 1-29.

Suggestive Readings:

Beteille, Andre, (2009), *Sociology: Essays in Approach and Method*, Delhi: Oxford University Press, Chapter 1

Bottomore, T.B. (1971), *Sociology: A Guide to Problems and Literature*, London: Allen and Unwin, Chapter 4

Chakrabarty, D. (2000). *Provincializing Europe: Postcolonial Thoughts and Historical Difference*. New Jersey: Princeton University Press. Chapter-7. *Adda: A History of Sociality*. Pp 180-214.

May, Vanessa and Petra Nordqvist (ed.), (2019). *Sociology of Personal Life*. London: Red Globe Press.

Garner, James Finn, (1994), *Politically Correct Bedtime Stories: Modern Tales for Our Life and Times*, New Jersey: John Wiley & Sons Inc.

Note: Examination scheme and mode shall be as prescribed

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES

Offered by Department of Sociology

Category-IV

GENERIC ELECTIVES (GE-1): Sociology and Everyday Life

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre- requisite of the course |
|------------------------------------|----------|-----------------------------------|----------|---------------------|----------------------|------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Sociology and Everyday Life | 4 | 3 | 1 | 0 | Nil | Nil |

Learning Objectives:

This course is an invitation to a sociological vision, imagination, and practice - for students who are pursuing disciplines other than sociology. The course seeks to render sociology alive by illuminating its perspective, concepts and practice through a series of interesting sociological studies of everyday life. The course attempts to introduce sociology in an accessible and engaging way.

The course begins with an introductory section that speaks of the spirit of sociology, followed by a substantive section where students are familiarized with key concerns and ideas of sociology using empirical studies of relatable aspects of everyday life. The course concludes with a small section that allows students to reflect on what they have learned in the course, and what they could do to put that learning into practice with a primer on the craft of doing sociology.

Learning outcomes

1. Inculcating a sociological imagination
2. Familiarity with basic concepts of sociology
3. Grasp social groups, institutions and processes that engender everyday life
4. Preparation for a more enduring engagement with sociology

SYLLABUS OF GE-1

UNIT – I (12 hours)

An Invitation to Sociological Imagination

UNIT – II (36 hours)

Journeys into Everyday Social Worlds

UNIT – III (12 hours)

Practicing Sociology

Practical component (if any) - NIL

Essential/recommended readings

Unit I. An Invitation to Sociological Imagination

Newman, David M. *Sociology: Exploring the Architecture of Everyday Life* 4th e. California: Pine Forge Press. Chapter 1. Taking a New Look at a Familiar World. Pp. 2-9

Henslin, James. M. 2005. 'What is Sociology? Comparing Sociology and Other Social Sciences'. In *Down to Earth Sociology: Introductory Readings*, edited by James M. Henslin, New York: Simon & Schuster. Pp 8-19.

Mills, C. Wright. 2000. 'The Promise'. In *The Sociological Imagination*, New York: OUP. Pp.1-13.

Gubbay J. and Chris Middleton. 1997. *The Student's Companion to Sociology*, Oxford: Blackwell. Pp. 254-260, 275-281

Unit II. Journeys into Everyday Social Worlds

John Curra. 2004. 'Groups, Societies, and Social Relationships'. In *The Human Experience Reader: Selections from Sociology*, Boston: Pearson. Pp. 23-30, 33-40

Johnson, Allan G. 2008. 'Culture: Symbols, Ideas, and the Stuff of Life' and 'The Structures of Social Life'. In *The Forest and the Trees: Sociology as Life, Practice, and Promise*. Philadelphia: Temple University Press. Pp 37-110.

Barnes, J. A. 1994. 'Cultural Diversity'. In *A Pack of Lies: Towards a Sociology of Lying*. Cambridge: Cambridge University Press. Pp. 65-78

Goffman, Erving. 1959. 'Introduction'. In *The Presentation of Self in Everyday Life*. New York: Anchor Books. Pp. 1-16

Sennett, Richard. 2012. 'Everyday Diplomacy: Reformation Conversations Put to Practical Use'. In *Together: The Rituals, Pleasures, and Politics of Cooperation*. New Haven: Yale University Press. Pp. 221- 246.

Collins, Randall. 1992. 'The Sociology of God'. In *Sociological Insight: An Introduction to Non-Obvious Sociology*. New York: OUP. Pp. 30-60.

Wharton, Amy S. 2005. 'Gender, Childhood, and Family Life'. In *The Sociology of Gender: An Introduction to Theory and Research*. Oxford: Blackwell. Pp. 122-161.

Hochschild, Arlie Russell. 2012. 'Paying Respects with Feeling: The Gift Exchange'. In *The Managed Heart: Commercialization of Human Feeling*, 1st Ed., University of California Press. Pp. 76–86.

Unit III. Practicing Sociology

Mills, C. Wright. 2000. 'On Intellectual Craftsmanship'. In *The Sociological Imagination*. New York: OUP. Pp. 195 – 226.

Suggested Readings:

Coser, Lewis A. 1980. *The Pleasures of Sociology*. New York: New American Library.

Curra, John. 2004. *The Human Experience Reader: Selections from Sociology*. Boston: Pearson.

Giddens, Anthony. 1987. 'What do Sociologists Do?'. In *Social Theory and Modern Sociology*. Stanford: Stanford University Press. Pp. 1-21.

GENERIC ELECTIVES (GE-2: Family and Intimacy)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre- requisite of the course |
|----------------------------|----------|-----------------------------------|----------|---------------------|----------------------|------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Family and Intimacy | 4 | 3 | 1 | 0 | Nil | Nil |

Learning Objectives

This course seeks to introduce students to a range of contemporary concerns pertaining to family as a social institution from a sociological viewpoint and with an interdisciplinary orientation. It situates family in its historical, cultural, social and comparative contexts. The course enables students to examine the commonsensical notions of family by making them aware of the diversity of family forms and reconstitute it as a possible arena of justice. It aims to familiarize students with different aspects of family and intimate life using ethnographic accounts from India. Its objective is to enable students to examine the institution of family and analyse intimacy in a sociological way.

Learning outcomes

1. An ability to examine the institution of family and realities of intimate experiences from a sociological perspective.
2. Knowledge of diverse forms of the family within their appropriate historical contexts and comparative appreciation of their features.
3. A disposition to constitute everyday spaces of family and intimacy as an arena of democracy, gender justice and empowerment.

4. Making students aware of the symbiotic relationship between conceptual, ethnographic and critical literature in social sciences and demonstrating how they work in close tandem.
5. To alert next-generation policymakers to take the questions of the intimacy with seriousness and make them integral to public reason and conversation

SYLLABUS OF GE-2

UNIT – I (16 hours)

What is Family?

UNIT – II (24 hours)

Family and Intimacy: Themes and Accounts

UNIT – III (20 hours)

Family and Intimacy: Critiques and Transformations

Practical component (if any) - NIL

Essential/recommended readings:

Unit 1. What is Family?

Collier, Jane, Michelle Z. Rosaldo and Sylvia Yanagisako. (1992), Is there a Family? New Anthropological views. in Barrie Thorne and Marilyn Yalom eds. *Rethinking the Family: Some Feminist Questions*, Boston: North-western University Press. Pp. 25 – 38.

Gittins, Diana. (1993) How have Families Changed? in *The Family in Question: Changing Households and Familiar Ideologies*. 2e London: Macmillan. Pp. 6-34

Okin, Susan Moller. (1989) *Justice, Gender, and the Family*. New York: Basic Books. Chapter 2. The Family: Beyond Justice? Pp. 25 – 40.

Weston, Kath. (1991) *Families We Choose*. New York: Columbia University Press. Chapter 2. Exiles from Kinship. Pp. 21 – 42.

Unit 2. Family and Intimacy: Themes and Accounts

Diane P. Mines and Sarah Lamb (Eds.) (2010), *Everyday Life in South Asia*, Indianapolis: Indiana University Press. Pp. 9-22

Uberoi, Patricia. (2003), The Family in India: Beyond the Nuclear Versus Joint Debate, From Veena Das Ed. *The Oxford Companion to Sociology and Social Anthropology*, Delhi: OUP. Pp. 1061-1092

Trawick, Margaret. (1993), *Notes on Love in a Tamil Family*. Delhi: Oxford University Press. Chapters. 3 The Ideology of Love. Pp. 89 – 116

Raheja, Gloria Goodwin, and Ann Grodzins Gold. (1996), *Listen To the Heron's Words: Reimagining Gender and Kinship in North India*. Delhi: Oxford University Press. Chapter 2. Sexuality, Fertility, and Erotic Imagination in Rajasthani Women's Songs. Pp. 30 – 72.

Lynch, Owen M. (Ed.) (1990) *Divine Passions: The Social Construction of Emotion in India*. Delhi: Oxford University Press. Chapter 3. "To be a Burden on Others": Dependency Anxiety among the Elderly in India. Pp. 64 –88.

Unit 3. Family and Intimacy: Critiques and Transformations

Barrett, Michèle, and Mary McIntosh. (1991), *The Anti-Social Family*. London: Verso. Chapter 2. The Anti-Social Family. Pp. 43 – 80.

Cartledge, Sue, and Joanna Ryan. (1983), *Sex & Love: New Thoughts on Old Contradictions*. London: Women's Press. Chapter 7 'Is a Feminist Heterosexuality Possible?' Pp. 105 – 123.

Anshen, Ruth Nanda. (1959), *The Family: Its Functions and Destiny*. New York: Harper and Brothers. Pp. 359- 374

Suggested Readings:

Ahmad, Imtiaz. (1976), *Family, Kinship, and Marriage among Muslims in India*. Delhi: Manohar Press.

Beck, Ulrich and Elisabeth Beck-Gernsheim. (1995), *The Normal Chaos of Love*. Oxford: Polity Press.

Becker, Gary (1993). *A Treatise on the Family*. Harvard: Harvard University Press. Coontz, Stephanie. (2005), *Marriage, A History*. New York: Viking.

Giddens, Anthony. (1992), *The Transformation of Intimacy: Sexuality, Love and Eroticism in Modern Societies*, Cambridge: Polity Press. Pp. 184-203.

Hochschild, Arlie Russell. (2013), *So, how's the Family? And other Essays*. Berkley: University of California Press.

Madan, T. N. (1989), *Family and Kinship: A Study of the Pandits of Rural Kashmir*. Delhi: Oxford University Press.

Mitterauer, Michael, and Reinhard Sieder. (1982), *The European Family*. Chicago: University of Chicago Press. Ross, Aileen D. (1967), *The Hindu Family in its Urban Setting*. Toronto: University of Toronto Press.

Uberoi, Patrica. (Ed.) (1996), *Social Reform, Sexuality and the State*. New Delhi: Sage Publications.

GENERIC ELECTIVES (GE-3) Understanding Indian Society**Credit distribution, Eligibility and Pre-requisites of the Course**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-------------------------------------|----------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Understanding Indian Society | 4 | 3 | 1 | 0 | Nil | Nil |

Learning Objectives

The Course is an interdisciplinary course on Indian society. The course throws light on different dimensions of Indian social life including institutional structures, processes and contemporary issues and challenges. The students will also engage with the historical processes and ideological tensions underlying the diversity and uniqueness of various social formations. Institutions and concepts like village, town, caste structure and politics, class dynamics, religion, tribes, family, gender and political economy in the context of India are also discussed. These building blocks and core processes of Indian Society are considered relationally and as intersecting fields. It will help students enable the capacity to invoke scientific and analytical attitude toward one's own society and its ongoing workings and evolution. It provides the cultural knowledge and research skills that would be necessary for problem-solving in the Indian context.

Learning outcomes

1. Develops a reflexive and nuanced understanding of Indian Society
2. Enables an understanding and sensitivity towards India's diversity and uniqueness.
3. Helps to analyze complex social phenomena, their arrangement and processes.
4. Provides an intersectional understanding of complex social processes.

SYLLABUS OF GE-3 UNIT – I (16 hours)**Indian Society: Historical and Social Foundations****UNIT – II (32 hours)****Foundational Institutions and emerging inter-sectional dynamics**

- a. Caste, Class, Religion and Scheduled Tribes
- b. Gender and Family
- c. Village and Cities
- d. Culture and Political Economy

UNIT – III (12 hours)

Emerging Issues and Challenges Practical component (if any) - NIL

Essential/recommended readings:

Unit I Indian Society: The Historical and Social Foundations

Stern, Robert W. (2003). *Changing India* (pp. 16-31). Cambridge University Press.

Beteille, Andre. (2000). *Antinomies of Society: Essays on Ideologies and Institutions* (pp. 198- 207). Oxford University Press.

Unit –II Foundational Institutions and Emerging Dynamics

a. Caste, Class, Religion and Scheduled Tribe

Zelliot, Eleanor. (2004). 'Caste in Contemporary India' (pp. 243 – 268). In Robin Rinehart (ed).

Contemporary Hinduism: Ritual, Culture, and Practice. ABC-Clio.

Fernandes, Leela. (2016). India's Middle Classes in Contemporary India (pp. 332-340). In Knut A. Jacobsen (ed). *Routledge Handbook of Contemporary India*. Routledge.

Xaxa, Virginius. (2005). Politics of Language, Religion and Identity: Tribes in India, *Economic and Political Weekly*, 40 (13), 1363-1370.

Madan T.N. (2001). Religions of India; Plurality and Pluralism (775-801). In Veena Das (ed.) *The Oxford India Companion to Sociology and Social Anthropology*. Oxford University Press.

b. Family and Gender

Diane P. Mines and Sarah Lamb (Eds.) *Everyday Life in South Asia* (pp. 9-25). Indiana University Press.

Dube, Leela. (1988). On the Construction of Gender: Hindu Girls in Patrilineal India, *Economic and Political Weekly*, 23 (18) April 30. WS11-WS19.

c. Village and City

Srinivas, M.N. (1998). The Changing Village (pp. 138-162). In *Indian Society through Personal Writings*. Oxford University Press.

Gooptu, Nandini. (2016). Divided We Stand: Indian City after Economic Liberalization (pp. 216-228). In Knut A. Jacobsen (ed). *Routledge Handbook of Contemporary India*. Routledge.

d. Political Economy

Stuart Corbridge and John Harriss. (2000). Sovereign, Democratic, Federal, Socialist, Secular': The Invention of Modern India (pp. 38-57). In Stuart Corbridge and John Harriss(ed.) *Reinventing India*. Polity Press.

Metcalf, Barbara D. and Thomas R. Metcalf. (2006). *A Concise History of Modern India*. (pp. 265– 295). Cambridge University Press.

Unit III. Emerging Issues and Challenges

Hamza Alavi and John Harriss. (1989). *Sociology of Developing Societies: South Asia*. (pp. 213-221). Macmillan.

Kumar, Radha. (1993). *The History of Doing: An Illustrated Account of Movements for Women's Rights and Feminism in India 1800-1990: Women's Movement in India*. Kali for Women. Pp. 1-6

Oommen, T.K. (1997). *Citizenship and National identity: From Colonialism to Globalism* (pp.143-172). Sage Publications.

Suggested Reading

Ambedkar, B.R., (1971 [1936]). *Annihilation of Caste* (pp. 1-29). Bheem Patrika. Baruah, Sanjib.(2001). 'Cultural Politics of Language, Subnationalism and Pan-Indiansim' (pp. 69-90). In *India Against Itself: Assam and the Politics of Nationalism*. Oxford University Press.

Chatterjee, Partha. (1997). *State and Politics in India* (pp. 1-39). Oxford University Press. Das, Veena.(1989). Difference and Division as Design for Life (pp. 45-56). In Veena Das, *Contemporary Indian Tradition: Voices on Culture, Nature, and the Challenge of Change*. Smithsonian Institute Press.

Gail Omvedt. (2001). Ambedkar and After: The Dalit Movement in India,(pp. 143–59). In Ghanshyam Shah (ed.), *Dalit Identity and Politics*. Sage Publications .

Oommen, T.K. (2019). Religious Pluralism (pp. 259-282). In T.K.Oomen and C.N.Venugopal (ed.) *Sociology*. Eastern Book Company.

Kothari, Smitu. et al. (2001). Social Movement Politics in India: Institutions, Interests and Identities (pp. 242-269). In Atul Kohli (ed.) *Success of Indian Democracy*. Cambridge University Press.

Mencher, Joan P. (2008). Ecology and Social Structure: A Comparative Analysis (pp. 42- 76). In Ramachandra Guha (ed). *Social Ecology*. Oxford University Press.

Mencher, J. (1991). The Caste System Upside Down (pp. 93-109). In D. Gupta (ed.), *Social Stratification*. Oxford University Press.

Menon, N. (ed.). (1999). *Gender and Politics in India* (pp. 342-369). Oxford University Press.

Robb, Peter. (2002). *A History of India* [Chapter.1: Introduction: Region and Civilization, (pp.1-26)]. Palgrave.

Singh, K. S. (1982). Transformation of Tribal Society: Integration vs Assimilation, *Economic and Political Weekly*, 17 (33 & 34) August.14 . 1318-1325, 1376-1384.

Stern, Robert W. (2003). *Changing India* (pp. 56--87). Cambridge University Press.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DEPARTMENT OF HISTORY

B. A. (Hons) History

Category I

DISCIPLINE SPECIFIC CORE COURSE -1 (DSC-1) – : History of India – I (From the beginning to fourth century BCE)

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| History of India I (From the beginning to fourth century BCE) – DSC 01 | 4 | 3 | 1 | 0 | 12 th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

The course intends to provide an extensive and deep understanding of early Indian history to students who will be introduced to the manner in which diverse aspects of ancient Indian history has been recovered from a rich variety of sources, archaeological, literary, numismatic, epigraphist. Students will become familiar with the tools required for studying history and explore the diverse histories and regional variations in the Indian subcontinent and also study various facets of ancient India- social, cultural, political, environmental concerns. The course, with an interdisciplinary approach, will help students trace elements of continuity and changes in processes spanning over several millennia, from pre-historic times up to the 400 BCE. The emphasis on historiography will allow students to understand how historians have approached ancient India and how our present knowledge and perceptions have played a role in interpreting the past.

Learning outcomes

The Learning Outcomes of this course are as follows:

After completing the course, the students will be able to appreciate the diverse histories of our past and the significant technological, social and cultural changes in the Indian Subcontinent from prehistoric times. The students will understand the significance of environment and ecology and have an understanding of the historical trajectory of the relationships between communities and their subsistence strategies, regions, landscapes and resources. They will be able to understand the transitions to early state formations, social complexity and emergence of religious and philosophical traditions. The students will learn about early artifacts, texts, coins and epigraphs, and recognise the

need to study and preserve the rich cultural heritage of our past while also realizing the possibilities and future potential of the study of ancient Indian history.

SYLLABUS OF DSC-1

Unit I: Introducing early Indian history: Sources (upto 750 CE) and historiographical trends. (12 hours)

Unit II: Prehistoric hunter-gatherers and early food producing societies (16 hours)

1. Paleolithic cultures: sequence and distribution; tool typology and technology, subsistence patterns.
2. Mesolithic Cultures: regional distribution, tool typology and subsistence patterns.
3. Early food producing communities: Regional and chronological distribution of the Neolithic and Chalcolithic cultures; subsistence; patterns of interaction and exchange.

Unit III: The Harappan civilization (16 hours)

Origins; settlement patterns and town planning; agrarian base; pyrotechnology and water management; craft production and trade; social and political organization; religious beliefs and practices; art; Late/ Post Harappan evidence.

Unit IV: Social and Cultural Transitions (up to 400 BCE) (16 hours)

1. Archeological cultures: PGW, NBPW, megalithic; metallic coins; role of iron technology.
2. Literary and textual traditions: Vedic and Brahmanical; Shramanic.
3. The Aryan Question.
4. Emergence of Social and political institutions; urbanization; social stratification and state formation.

Practical component (if any) - NIL

Essential/recommended readings

Unit I: This unit aims to familiarise students with the divergent landscapes, varied sources and the different approaches to the history of ancient India. (Teaching Time: 8 hours Approx.)
Relevant chapters from General readings

- Subbarao, B. (1958). The Personality of India. (Baroda: M. S. University). Chapter II.
- Chattopadhyaya, B. D. (2017). _The Concept of Bharatavarsha and Other Essays. (Ranikhet: Permanent Black). Chapter 1.
- Thapar, Romila. (2013). The Past Before Us; Historical Traditions of Early India, Del-hi: Permanent Black, Part 1, pp. 3-84.

Unit II: This unit aims to familiarize students with the distribution, economic and technological patterns in the Palaeolithic and Mesolithic cultures of the Indian subcontinent, and the beginnings of organized food production in pre-historic times in the Indian subcontinent. It also explains the impact on other aspects of the life of the Neolithic and Chalcolithic humans, their cultural practices, their art and funerary practices. (Teaching Time: 16 hours Approx.)

Relevant chapters from General readings:

- Chattopadhyaya, U. C. (1996). "Settlement Pattern and the Spatial Organization of Subsistence and Mortuary Practices in the Mesolithic Ganges Valley, North-Central India, *World Archaeology*, vol. 27(3), pp. 461-476
- Neumayer, E. (1993). *Lines on Stone: The Prehistoric Rock Art of India*. Delhi: Manohar.

Unit III: At the end of this unit, students shall be familiar with various aspects of Harappan Civilization, their technological expertise, as well as the varied ways in which the archaeological remains of Harappa and related sites have been interpreted and studied. (Teaching Time: 16 hours Approx.)

Relevant chapters from General readings

- Kenoyer, J. Mark. (1998). *Ancient Cities of the Indus Valley Civilization*. Karachi: Oxford University Press.
- Possehl, Gregory L. (2002). *The Indus Civilization: A Contemporary Perspective*. Delhi: Vistaar Publications.
- Ratnagar, Shereen. (2001). *Understanding Harappa: Civilization in the Greater Indus Valley*. Delhi: Tulika.
- Ratnagar, Shereen. (2015). *Harappan Archaeology: Early State Perspectives*, Delhi: Primus.
- Thaplyal, K. K. and Sankata Prasad Shukla. (2003). *Sindhu Sabhyata*. Lucknow: Uttar Pradesh Hindi Sansthan. (In Hindi)

Unit IV: This unit traces the archaeological and textual evidence for processes that led to the emergence of states, social complexity, intensive agriculture and urban patterns. The unit also covers debates around the origins and coming of the Aryans, the cosmogonies, cosmology and world view of Vedic, Brahmanical texts and religio-philosophical thought in Upanishads, Bud-dhist, Jaina and Shramanic traditions. (Teaching Time: 6 weeks)

Relevant chapters in General Readings (for archaeological cultures)

- Harvey, Peter (2017 edition). *Buddha in his Indian Context*, Chapter in *An Introduction to Buddhism*, p.8-31, Cambridge University Press, (first published in 1992)
- Moorti, U.S. (1994). *Megalithic Culture of South India: Socio-economic Perspectives*. Varanasi: Ganga Kaveri Publishing House.
- Sahu, B.P. (ed.). (2006). *Iron and Social Change in Early India*. Delhi: Oxford University Press. (Most relevant is the 'Introduction'.)
- Sharma, R.S. (1996). *Aspects of Political Ideas and Institutions in Ancient India*. Delhi: Motilal Banarsidas. (Chapters VII-XIV and XXII.) (Also available in Hindi)
- Sharma, R.S. (1983). *Material Culture and Social Formations in Ancient India*, Macmillan India, Delhi. (Chapters 2, 3, 4 and 5.) (Also available in Hindi)
- Staal, Frits (2017). *Discovering the Vedas, Origins, Mantras, Rituals, Insights, Part I and II*, Penguin.
- Thapar, Romila. (1984). *From Lineage to State: Social Formations in the Mid-First Millennium B. C. In the Ganga Valley*. Delhi: Oxford University Press. (Chapter 2, pp. 21-69.) (Also available in Hindi).
- Trautmann, T.R. (ed.) (2005). *The Aryan Debate*. New Delhi: Oxford University Press.
- श्रीमाली, कृष्ण मोहन. (2017). *आर्थिक संरचना और धर्म* (रिल्ली:आकार). पाठ, 3, 4, 5, 6, 7, 8, 9.

Suggestive readings

- Allchin, F.R. et al. (1995). *The Archaeology of Early Historic South Asia: The Emergence of Cities and States*. Cambridge: Cambridge University Press. (Chapter 6.)
- Chakrabarti, D. K. (1999). *India: An Archaeological History: Palaeolithic Beginnings to Early Historic Foundations*, Delhi: Oxford University Press.
- Chakrabarti, D. K. and Makkhan Lal, (2013). *History of Ancient India*, vol. 1, Delhi: Ary-an Books International. (Section III.2, pp. 301-346.)
- Dhavalikar, M. K. (ed.) (2013). *Prehistory of India: A Comprehensive History of India*, vol. 1, Part 1. Delhi: Manohar.
- Habib, Irfan & Faiz Habib. (2012). *Atlas of Ancient Indian History*. Delhi: Oxford University Press.
- Habib, Irfan. (2001). *Prehistory*, Delhi: Tulika. (Available in Hindi Also)
- Habib, Irfan. (2002). *The Indus Civilization*. Delhi: Tulika.
- Jain, V. K. (2006). *Prehistory and Protohistory of India: An Appraisal*. Delhi: Print-world. (in Hindi Also)
- Kosambi, D.D. (1956). *An Introduction to the Study of Indian History*. Bombay: Popular Prakashan.
- Lahiri, Nayanjot, ed. (2000). *The Decline and Fall of the Indus Civilization*, Delhi: Permanent Black. ('Introduction', pp.1-33.)
- Pathak, V. S. (1966). *Ancient Historians of India: A Study in Historical Biographies*. Bombay: Asia Publishing House.
- Subbarao, Bendapudi. (1958). *The Personality of India: Pre and Proto-Historic Foundations of India and Pakistan*. Baroda: University of Baroda.
- Thapar, Romila. (2000). *Cultural Pasts: Essays in Early Indian History*. Delhi: Oxford University Press. (Chapters 7, 8 and 16.)
- Wright, Rita P. (2010). *The Ancient Indus: Urbanism, Economy, and Society*. Cambridge: Cambridge University Press.
- Patrick Olivelle, (2017) *Introduction in The Early Upanisads*, Annotated Text and Translation, OUP, p3-28.
- Neelis, Jason. (2011). "Historical Contexts for the Emergence and Transmission of Buddhism Within South Asia" In *Early Buddhist Transmission and Trade Networks: Mobility and Exchange within and beyond the Northwestern Borderlands of South Asia*, 65–182. Brill. 2011. <http://www.jstor.org/stable/10.1163/j.ctt1w8h16r.8>. Stable URL: <https://www.jstor.org/stable/10.1163/j.ctt1w8h16r.8>, PP 65-78.
- Dundass, Paul. (2002 edition) Chapter One in *The Jainas* p.1-44, Routledge, (first published in 1992)

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2): Social Formations and Cultural Patterns of the Ancient World – I

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|----------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Social Formations and Cultural Patterns of the Ancient World-I – DSC 02 | 4 | 3 | 1 | 0 | 12th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

The Course aims to introduce students to significant developments in world history that have shaped the complexity of human existence. To begin with, it offers a historical survey of human evolution. It details the transition from the hunting-gathering subsistence pattern to more advanced adaptations to a sedentary farming economy. The course content is based on the premise that the pace and nature of change differed in different parts of the world. Further, changes in social formations that facilitated the emergence of socially stratified and state-ordered societies are explained through a study of some of the early Bronze Age Civilizations. The impact of specific ecological conditions on different trajectories of growth, higher population density and social complexity, the emergence of the city and newer crafts and trade and the unfolding of cultural patterns in the early civilizations are concerns that are central to this course. This therefore, provides a sound foundation in the historical discipline, and helps in engaging in a variety of subject matters of history – social relations, economics, political formations, religion, and culture from a global perspective. Understanding the dissimilar but inter-linked history of humanity is therefore the prime objective of this Course.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Trace long term changes in the relationship of humans to their landscapes, to resources and to social groups.
- Discuss that human history is the consequence of choices made in ecological and biological contexts, and that these choices are not only forced by external forces like environmental change but are also enabled by changes in technology and systems of cultural cognition.
- Delineate the significance of early food production and the beginning of social complexity.
- Analyze the process of state formation and urbanism in the early Bronze Age Civilizations.
- Correlate the ancient past and its connected histories, the ways in which it is reconstructed, and begin to understand the fundamentals of historical methods and approaches.

SYLLABUS OF DSC- 2

Unit-I: Evolution of Humans and Hunting-Gathering Cultures (12 hours)

1. Understanding Prehistory
2. Biological and Cultural Evolution of Humans: lithic and other technologies
3. Changing subsistence patterns; funerary practices and art

Unit-II: Transition to Food Production (16 hours)

1. Mesolithic Cultures: West Asia and Europe
2. Origins of Food Production: Debates
3. Features of the Neolithic based on sites from West Asia, Europe, Mesoamerica / China

Unit-III: The Bronze Age (16 hours)

Note: Rubrics b, and c are to be based on any one case study:

1. Ancient Mesopotamia (Sumerian and Akkadian period)/Egypt (Old Kingdom)/China (Shang dynasty).
2. Concepts: 'Bronze Age', 'Civilization', 'Urban Revolution' and 'State'
3. Ecological context of early civilizations
4. Kingship, religion and state; Social and economic complexity: Class, Gender

Unit IV: Nomadic Cultures in Transition (16 hours)

1. Nomadic Pastoralism in West Asia in the third and second millennium BCE
2. Iron technology and its spread

Practical component (if any) - NIL

Essential/recommended readings

Unit-I: This Unit introduces students to the basic aspects of world prehistory particularly with reference to the debate on the biological and cultural evolution of Humans (Teaching Time: 16 hours Approx.)

- Bogucki, P. (1999). The Origins of Human Society. Wiley-Blackwell 1999, Chapter 2, pp. 2977.
- V.G. Childe, What Happened in History? Great Britain: Pelican, 1942, reprint 1971, pp. 13-32.
- Fagan, B.M. and N. Durrani. eds. (2019). The People of the Earth: An Introduction to World Pre-history. (15th edn.). New York: Routledge, Chapters 2-5, pp. 22-134.
- Website: www.humanorigins.si.edu (website of the Smithsonian Museum)
- चाइल्ड, V. गॉडनर, ईतहास का ईतहास, राजकमल प्रकाशन, अध्याय 1.
- चाइल्ड, V. गॉडनर. (2019) औजारों का ईतहास (अनवु ाि सशीलु कु मार), र िल्ली: गागीर् प्रकाशन.
- फ़ारूकी, A. (2015). प्राचीन और मध्यकालीन सामार् जक संरचनाएँ और संस्कृ र तयाँ, र िल्ली: मानक प्रकाशन.
- मजूमार, D.N तथा गोपाल शरण, प्रार् र्गतहास, र िल्ली र वर्िवद्यालय, र हन्िी माध्यम कायान्विन र निशिलय.

Unit II. This Unit will familiarise students with the transition to food production when the advanced Hunter-Gatherer communities primarily of the Mesolithic cultures responded to environmental changes with greater sedentism and newer ways of exploiting plants and animals. The debates on the origins of food production will enable students to understand the complexity of the Neolithic cultures. The discussion on the Neolithic sites in different parts of the world will help in understanding the process of beginning of food production and variations in Neo-lithic Cultures. (Teaching Time: 16 hours Approx.)

- Bogucki, P. (1999). *The Origins of Human Society*. Massachusetts: Blackwell, pp. 127- 159.
- Price, T.D. (1991). "The Mesolithic of Northern Europe", *Annual Review of Anthropology*, Vol. 20, pp.211-233.
- Shea, J. J. and D.E. Lieberman. (2009). eds. *Transitions in Prehistory. Essays in Honour of Ofer Bar-Yosef*. Oxbow Books, pp. 185-222
- Zvelebil, M. (1989). "Economic Intensification and Postglacial Hunter-Gatherers in North Temperate Europe." in C. Bonsall, (Ed). *The Mesolithic in Europe*. Edinburgh: University of Edinburgh Press 1989, pp. 80-88.
- फ़ारूकी, A. (2015). *प्राचीन और मध्यकालीन सामार जक संरचनाएँ और संस्कृ र तयाँ, र िल्ली: मानक प्रकाशन*.
- Cohen M. (2009). 'Introduction. Rethinking the Origins of Agriculture'. October 2009, *Current Anthropology*. 50 (5), pp.591-595.
- Fagan, B.M. and N. Durrani. (2019). *The People of the Earth: An Introduction to World Prehistory*. New York: Routledge (15th Ed.), Chapters 8, 9, 10, 12, pp. 178-218, 228-245.
- Price, T.D. and O. Bar-Yosef. (2011). "The Origins of Agriculture: New Data, New Ide-as", *An Introduction to Supplement 4. Current Anthropology*, Vol. 52, No. S4, October 2011, pp. S163-S174.
- Wenke, R.J. and D. Olzewski. (2007). *Patterns in Prehistory: Humankind's First Three Million Years*. New York: Oxford University Press, pp. 228-268.
- फ़ारूकी, A. (2015). *प्राचीन और मध्यकालीन सामार जक संरचनाएँ और संस्कृ र तयाँ, र िल्ली: मानक प्रकाशन*.

Unit III. This Unit will enable students to contextualize the beginning of urban settlements, appearance of complex society and state with reference to some of the early civilisations of the world. (Teaching Time: 16 hours Approx.)

- Childe, G. (1950). "The Urban Revolution", *The Town Planning Review*, Vol. 21, No. 1, April 1950, pp. 3-17.
- Redman, C.L. (1978). *The Rise of Civilisations. From Early Farmers to Urban Society in the Ancient Near East*. San Francisco: W.H. Freeman, Chapter 2, 6, 7, pp. 16-49; 188-213; 214-243.
- Scarre, Christopher and Brian M. Fagan. (2008). *Ancient Civilizations (3rd edn.)*, New Jersey: Pearson/Prentice Hall, pp. 3-12, and pp. 26-47.
- Whitehouse, R. (1977). *The First Civilizations*. Oxford: Phaidon, Chapters 1 and 9, pp 7- 15 and 177-199.
- फ़ारूकी, A. (2015). *प्राचीन और मध्यकालीन सामार जक संरचनाएँ और संस्कृ र तयाँ, र िल्ली: मानक प्रकाशन*.

Mesopotamia

- Nissen, H.J. (2003). *The Early History of the Ancient Near East, 9000-2000 B.C.* Oxford and Victoria: Blackwell.
- Redman, C.L. (1978). *The Rise of Civilisations. From Early Farmers to Urban Society in the Ancient near East.* San Francisco: W.H. Freeman, Chapters 8, pp. 244-322.
- Roux, Georges (1992). *Ancient Iraq*, UK: Penguin, Chapters 1, 5, 6, 8, 9; pp. 1-16; pp. 66-103; 122-160.
- Whitehouse, R. (1977). *The First Civilizations*, Oxford: Phaidon, Chapters 3, 4, 5, pp 33-115.

OR

China

- Chang, K.C. (1987). *Shang Civilization*. New Haven, Conn: Yale University Press, pp. 263-288.
- Feng, Li. (2013). *Early China*, Cambridge: Cambridge University Press, pp. 1-111.
- Keightly, D.N. (1999). "The Shang. China's First Historical Dynasty" in Michael Loewe and Edward L. Shaughnessey. (Ed.). *The Cambridge History of Ancient China. From the origins of Civilization to 221 B.C.* Cambridge: Cambridge University Press, 1999.
- Thorp, R. L. (2006). *China in the Early Bronze Age. Shang Civilization*. Pennsylvania: University of Pennsylvania Press.

OR

Egypt

- Hawkes, J. (1973). "Egypt: the beginnings and the Old Kingdom" in *The First Great Civilisations: Life in Mesopotamia, the Indus Valley and Egypt*, New York: Knopf/Random House, pp. 285-299.
- Trigger, B.G., B.J. Kemp, D. O'Connor and A.B. Lloyd. (1983). *Ancient Egypt A Social History*. Cambridge: Cambridge University Press, Chapters 1 & 2, pp. 1-43.
- Wilkinson, T. (2010). *The Rise and Fall of Ancient Egypt: The History of a Civilisation from 30,000 BC to Cleopatra*. London: Bloomsbury Publishing, pp. 13-114.
- Silverman, D. P. (Ed.). (2003). *Ancient Egypt*. New York: Oxford University Press (Ed.) pp. 10 - 27.

Unit IV. This unit will discuss the Nomadic cultures in West Asia in the third and second Millennium BCE. The use and spread of iron technology will enable students to be familiar with the technological and other changes related to it. (Teaching Time: 16 hours Approx.)

- Schmidt, Conrad. (2018) "Pastoral Nomadism in Third Millenium BC Eastern Arabia,"
- *Paleorient*, Vol 44, No. 1, pp.105 -118.
- Lees, S. And D.G. Bates. (April 1974), "The Emergence of Specialised Nomadic Pastoralism: A Systemic model," *American Antiquity*, Vol. 39, No. 2, pp. 187-193.
- Sherratt, A. "Sedentary Agriculture and nomadic pastoral populations." in *History of Humanity: from the third millennium to the seventh century BCE*, vol. II, (Ed.) S.J. de Laet. London: Routledge, pp. 37-43.
- Villard, P. (1996). "The beginning of the Iron Age and its Consequences", in *History of Humanity (Scientific and Cultural Developments) Vol. II. From the Third Millennium to the Sev-enth Century B.C.* Paris, London: Routledge: UNESCO.

- Maddin, R., J.D. Muhly, T.S. Wheeler (1977). "How the Iron Age Began", *Scientific American*, Vol. 237, No. 4, Oct. 1977, pp. 122-131.
- Cotterell, A. (1985). "The Coming of Iron", in A. Cotterell, *Origins of European Civilization*, London: Michael Joseph/ Rainbird, pp. 118-140.
- ErbSatullo, Nathaniel L. (2019). "The Innovation and Adoption of Iron in the Ancient Near East," *Journal of Archaeological Research* 27:557-607 <https://doi.org/10.1007/s10814-01929-6>, pp.557 – 593.
- Snodgrass, A.M. (1980). "Iron and Early Metallurgy in the Mediterranean" in T.H. Wer-time and J.D. Muhly (eds.) *The Coming of the Age of Iron*. New Haven and London, pp.335 -374.

Suggestive readings (if any)

- Carr, E.H. (1961/1991). "The Historian and his facts", in E.H. Carr, *What is History?* Penguin Modern Classics (2ndEdn.), pp.7-30.
- कार, E.H.(1976). 'ईतहासकर और उसके तथ्य', E.H. कार, ईतहास क्या है? में अध्याय 1, मेर्कमलन पब्लिके शन (र हन्िी
- अनुवाि, 1976).
- Bar-Yosef, O, and F. Valla. (1990). "The Natufian culture and the origins of the Neolith-ic in the Levant", *Current Anthropology*, Vol. 31, No. 4, Aug-Oct, pp. 433-436
- Binford, L.R. (1968). 'Post-Pleistocene adaptations' in L. R. Binford and S. R. Binford, eds. *New perspectives in Archaeology*. Chicago: Aldine, pp. 313-342.
- Chang, K.C. (1986). *The Archaeology of Ancient China*, New Haven, Conn: Yale University Press, pp. 234-294.
- Clark, G. (1977). *World Prehistory in New Perspective*, Cambridge: Cambridge University Press (3rd edn.) pp. 1- 61.
- Darwin, C. (1859, 2003). *On the Origin of Species by Means of Natural Selection*, Joseph Carroll Ed. Canada: Broadview Press (2003 edn.) Chapters 1-5/
- Flannery, K.V. (1973). "Origins of Food Production", *Annual Review of Anthropology*, 2 (1973), pp.271- 310.
- Fried, M. (1978). "The State, the Chicken, and the Egg; or, What Came First" in R. Co-hen and E. Service Ed. *Origins of the State: The Anthropology of Political Evolution* (Institute for the Study of Human Issues, 1978), pp. 3-47.
- James, T.G.H. (1979, 2005). *The British Museum's Concise Introduction to Ancient Egypt*
- British Museum Publications, Michigan: University of Michigan Press.
- Johnson, A. W. and Timothy Earle (2000). *The Evolution of Human Societies: From Foraging Group to Agrarian State*, Stanford: Stanford University Press.
- Kemp, B. (1989). *Ancient Egypt. Anatomy of a Civilisation*. London: Routledge.
- Kumar, R. (2018). *Ancient and Medieval World: From Evolution of Humans to the Crisis of Feudalism*, New Delhi: Sage.
- Lamberg-Karlovsky, C.C. and J.A. Sabloff. (1979). *Ancient Civilizations, The Near East and Mesoamerica*. California: Benjamin-Cummings Publishing Company.
- Leakey, R. (1981). *The Making of Mankind*. London: Michael Joseph Limited, 1981, pp. 9183.
- Lerner, G. (1986). *The Creation of Patriarchy*. Oxford University Press, pp. 54-76.

- Lewin, R. (2005). *Evolution: An Illustrated Introduction*. (5th edn.) USA, UK, Australia: Blackwell Publishing, pp. 1-29, 39-55, 60-66, 95-127, 131-156, 159-175, 179-235.
- Lewis-Williams. D. (2002). *The Mind in the Cave: Consciousness and the Origins of Art*, London: Thames and Hudson.
- Maisels, C. K. (1987). "Models of Social Evolution: Trajectories from the Neolithic to the State", *Man, New Series*, Col. 22, No. 2, June, pp. 331-359.
- McAdams, Robert. (1966). *The Evolution of Urban Society: Early Mesopotamia and Prehispanic Mexico*. New Brunswick (USA) and London: Aldine Transaction (Second Reprint 2007).
- Postgate, J.N. (1992). *Early Mesopotamia. Society and Economy at the dawn of history*, London and New York: Routledge, pp. 1- 154.
- Service, E. (1973). *Origins of the State and Civilization. The Process of Cultural Evolutions*: W.W. Norton & Co.
- Sherratt, A. (1996) "Sedentary Agricultural and nomadic pastoral populations' in *History of Humanity: From the third millennium to the seventh century B.C. vol. II*, edited by S. J. de Laet, 37-43, Paris, London: Routledge, UNESCO, pp. 37– 43.
- Starr, H. (2005). "Subsistence Models and metaphors for the Transition to Agriculture in North western Europe", *MDIA*, Issue Title: Subsistence and Sustenance, Vol.15, no. 1,
- Arbor, Ann. (2005) Publishing, University of Michigan Library url: <http://hdl.handle.net/2027/spo.0522508.0015.103>. Website: www.bradshawfoundation.com
- Wright, G. A. (1992). "Origins of Food Production in Southwestern Asia: A Survey of Ideas", *Current Anthropology, Supplement: Inquiry and Debate in Human Sciences: Contributions from Current Anthropology, 1960-1990*, Vol.33, No. 1, Feb., 1992, pp. 109-139.
- Yoffee, Norman. (2004). *Myths of the Archaic State: Evolution of the Earliest Cities, States and Civilisation*, New York: Cambridge University Press, Chapter 3, pp. 44-90.
- कोरोवकन, फ्योिीर. (2019). *प्राचीन र् वि ईतहास का र्परचय*, Delhi: Medha Pub-lishing House.
- राय, U.N. (2017). *र् वि सभ्यता का ईतहास, र् िल्ली: राजकमल प्रकाशन*

**DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-3): History of the USA:
Independence to Civil War – DSC 03**

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite the course any) |
|---|----------|-----------------------------------|----------|---------------------|-----------------------------|-------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| History of the USA: Independence to Civil War – DSC 03 | 4 | 3 | 1 | 0 | 12th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

The course initiates the process of comprehending the rise of the 'New World' that eventually came to be known as the United States of America (USA) after the American Revolution, came at the cost of marginalization of the Indigenous Tribes and enslavement of Black labourers. The focus is to study both Indigenous tribes and Black Slaves in a detailed manner to understand the limits of American democracy that pushed the country towards the Civil War. The course also concentrates on the process of the evolution of America's foreign policy in the aftermath of the War of 1812.

Learning outcomes

Upon the completion of this course the student shall be able to:

- Explain the emergence of a new independent nation in the Western Hemisphere (USA) at the cost of placing Indigenous tribes behind reserves and introduction of the institution of slavery and racism
- Examine the limits of American democracy in its formative stages along with the foundation of the U.S foreign policy
- Describe the economics of slavery in the USA along with details of slave culture and forms of resistance
- Trace the main issues related to the Civil War and its critical evaluation

SYLLABUS OF DSC-3

Unit I: A New World: (12 hours)

1. Contribution of Indigenous Tribes, Indentured Servants and Slave labour in the growth and expansion of American colonies
2. American Revolution: Sources, Historiography

Unit II: Limits of American Democracy: (16 hours)

1. Marginalization and Displacement of Indigenous tribes (Shawnee and Cherokee)
2. Policies of Thomas Jefferson and Andrew Jackson that placed the original peoples (Indigenous tribes) behind 'reserves'

Unit III: United States Quest for Dominance: Imperialism and Changing Diplomacy: (16 hours)

1. Manifest Destiny
2. War of 1812
3. Monroe Doctrine

Unit IV: Slavery and the Civil War: (16 hours)

1. The Economics of Slavery: South vs. North Debate
2. Slave Culture and Slave resistances (including the nature of female slavery and resistance)
3. Issues of the Civil War and the Interpretations

Practical component (if any) - NIL

Essential/recommended readings

Unit I: This Unit importance is given to the usage of varied types of labour force for the colonization of the New World with special emphasis on the Indigenous tribes and Slave labour. The factors that led to the rise of the American Revolution along with historiographical debates is being emphasized. (Teaching Time: 16 hours Approx.)

- Boyer, P.S., H. Sitkoff et al. The Enduring Vision: A History of the American People. Vol. 5th edition. Massachusetts: Houghton Mifflin Company, 2003.
- Carnes, M.C. & J.A. Garraty. The American Nation, A History of the United States. 12th edn. New York: Pearson Longman, 2006.
- Datar, K. America Ka Itihas. University of Delhi: Directorate of Hindi Medium Implementation Board, 1997 (Hindi medium students)
- Foner, E. Give Me Liberty! An American History. Vol. I. New York: W.W. Norton & Co. 2nd edn. 2007.
- Grob, G.N. and G.A. Billias. Interpretations of American History: Patterns and Perspectives. Vol. I. New York: The Free Press, 2000.

Unit II: This unit examines how Jeffersonian and Jacksonian Democracies displaced, marginalized and decimated the original peoples, the Indigenous tribes by taking up the case studies of Shawnee and Cherokee tribes who both suffered yet resisted white advance on their ancestral lands. (Teaching Time: 16 hours Approx.)

- Balleck, B.J. 'When the Ends Justify the Means: Thomas Jefferson and the Louisiana Purchase'. Presidential Studies Quarterly, 22, Fall 1992.
- Berkhofer, R. Jr. 'The White Advance Upon Native Lands'. Paterson, T.G., Major Problems in American Foreign Policy: Documents and Essays. Lexington, Massachusetts: D.C. Heath, 1989.
- Edmunds, R.D. 'Tecumseh, The Shawnee Prophet and American History'. Western Historical Quarterly, Vol. 14, No. 3, July, 1983.
- Foner, E. Give Me Liberty! An American History. Vol. I. New York: W.W. Norton & Co. 2nd edn. 2007.
- Wallace, A.F.C. and E. Foner. The Long, Bitter Trail: Andrew Jackson and the Indians. New York: Hill and Wang, 1996.
- Young, M. 'The Cherokee Nation: Mirror of the Republic'. American Quarterly Special Issue: American Culture and the American Frontier. Vol. 33, No. 5, Winter 1981.

Unit III: This unit explores how the United States of America learnt some difficult lessons from the War of 1812 and how it led to the formulation of both internal and external policies that became the foundation of American imperialism and the maintenance of diplomatic relations. (Teaching Time: 16 hours Approx.)

- Boyer, P.S., H. Sitkoff et al. The Enduring Vision: A History of the American People. Vol. 5th edition. Massachusetts: Houghton Mifflin Company, 2003.
- Carnes, M.C. & J.A. Garraty. The American Nation, A History of the United States. 12th edn. New York: Pearson Longman, 2006.
- Grob, G.N. and G.A. Billias. Interpretations of American History: Patterns and Perspectives. Vol. I. New York: The Free Press, 2000.

- Fitz, C.A. 'The Hemispheric Dimensions of Early U.S. Nationalism: The War of 1812, its Aftermath and Spanish American Independence'. *The Journal of American History*, Vol. 102, Issue 2, September 2015.
- Goodman, W. 'The Origins of the War of 1812: A Survey of Changing Interpretations'. Sheehan, D. (ed.), *The Making of American History: The Emergence of a Nation*. Vol. I. New York: Holt, Rinehart & Winston, 1963.
- Merk, F. *Manifest Destiny and Mission in American History*. Massachusetts: Harvard University Press, 1995.
- Perkins, D. 'The First Challenge: Monroe Hurls Defiance at Europe'. Sheehan, D. (ed.), *The Making of American History: The Emergence of a Nation*. Vol. I. New York: Holt, Rinehart & Winston, 1963.

Unit IV: This Unit critically examines the economic foundations of the institution of slavery in the southern states and how historians began to unravel slave culture that assisted them to survive the brutality of this inhuman institution with particular emphasis on the female slavery and how they offered resistance against this bondage system. The unit also delves into the various causes of the Civil War and historiographical debates that have evolved over a period of time (Teaching Time: 16 hours Approx.)

- Bracey, J.H., A. Meier, E. Rudwick (ed.). *American Slavery: The Question of Resistance*. California: Wadsworth Publishing Co. Inc., 1971.
- Datar, K. *America Ka Itihas*. University of Delhi: Directorate of Hindi Medium Implementation Board, 1997 (Hindi Medium)
- Faragher, J.M., M.J. Buhle et al. *Out of Many: A History of the American People*. Vol. I. New Jersey: Prentice Hall, 1995.
- Foner, E. *Give Me Liberty! An American History*. Vol. I. New York: W.W. Norton & Co. 2nd edn. 2007.
- Genovese, E.D. *Roll, Jordan, Roll: The World the Slaves Made*. 9th edition. New York: Knopf Doubleday Publishing Group, 2011.
- Genovese, E.D. *The Political Economy of Slavery: Studies in the Economy and Society of the Slave South*. Connecticut: Wesleyan University Press. 2nd edn. Paperback, 1989.
- Grob, G.N. and G.A. Billias. *Interpretations of American History: Patterns and Perspectives*. Vol. I. New York: The Free Press, 2000.
- Kailyn, B., D. Wood, J. L. Thomas et.al. *The Great Republic, A History of the American People*. Massachusetts: D.C. Heath & Company, 2000.
- Stamp, K. *The Peculiar Institution: Slavery in the Ante-Bellum South*. New York: Vintage, 1989.
- White, D.B. 'The Nature of Female Slavery'. in *Aren't I a Woman? Female Slaves in the Plantation South*. New York: W.W. Norton, 1985.
- Barrington, M. Jr. 'The American Civil War: The Last Capitalist Revolution'. Barrington, M. Jr. *Social Origins of Dictatorship and Democracy, Lord and Peasant in the Making of the Modern World*. Boston: Beacon Press, 2015.
- Foner, E. *Politics and Ideology in the Age of the Civil War*. New York: Oxford University Press, 1981.

Suggested Readings:

- Bailyn, B., D. Wood, J.L. Thomas et.al. The Great Republic, A History of the American People, Massachusetts: D.C. Heath and Company, 2000.
- Boyer, P.S., H. Sitkoff et al. The Enduring Vision: A History of the American People. Vol. II. 5th edn. Massachusetts: Houghton Mifflin Company, 2003.
- Carnes, M.C. & J.A. Garraty. The American Nation, A History of the United States. 12th edn. New York: Pearson Longman, 2006.
- Datar K. America Ka Itihas. University of Delhi: Directorate of Hindi Medium Implementation Board, 1997.
- Faragher, J.M., M.J. Buhle et al. Out of Many: A History of the American People. Vol. New Jersey: Prentice Hall, 1995.
- Foner, E. Give Me Liberty! An American History. Vol. II. New York: W.W. Norton & Co. 2nd edn. 2007.
- Grob, G.N. and G.A. Billias. Interpretations of American History: Patterns and Perspectives. Vol. II. New York: The Free Press, 2000.
- Zinn, H. A People's History of the United States, 1492-Present. New York: Harper Collins, 2003.

Selected Films:

- 'Lincoln' Directed and Co-produced by Steven Spielberg, 2012.
- 'The Birth of a Nation' (based on slave Nat Turner, who led a rebellion in Southampton, Virginia in 1831) Directed and Co-produced by D.W. Griffith, 2016.
- 'The Birth of a Nation' (showcases assassination of Lincoln; originally based on 'The Clansman' and 'The Leopard's Spots' by T.F. Dixon Jr.) Directed and Co-produced by D.W. Griffith, 1915.
- 'Glory' (set during the Civil War) Directed by Edward Zwick, Produced by Freddie Fields, 1989.
- '12 Years a Slave' Directed and Co-produced by Steve McQueen, 2013.
- 'Django Unchained' (set in Old West and Ante-Bellum South) Directed by Quentin Tarantino, Produced by Stacey Sher & Others, 2012.
- 'Amistad' (based on events in 1839 aboard the slave ship Le Amistad) Directed and Produced by Steven Spielberg, 1997.
- 'Gone with the Wind' (set in the Civil War era) Directed by Victor Fleming and Produced by David Selznick, 1939.
- 'Uncle Tom's Cabin' (set in 1856) Directed by Stan Lathan and Produced by Jeffrey A. Nelson and Others, 1987.
- 'Roots' (based on Alex Haley, 'Roots: The Saga of American Family, 1976) Directed by Bruce Beresford and Produced by Ann Kindberg and others, 2016.

BA (Prog.) with History as Major
Category II

DISCIPLINE SPECIFIC CORE COURSE (DSC-1): History of India from earliest times up to c. 300 CE

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| History of India from earliest times up to c. 300 CE | 4 | 3 | 1 | 0 | 12th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

This course explores various historical phases and processes of Indian history from prehistoric period to early historic centuries through the lens of archaeological and literary evidence. An overview of various transformations, cultural shifts, developments in all aspects from the earliest times up to the phase of Empire building is provided to the learner. Alongside the pan-Indian historical changes, it also focuses on regional diversities.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Explain the importance of various sources for study of prehistory and proto-history
- Distinguish between civilization and culture, particularly in the context of the Harappan civilization
- Locate the developments related to the introduction of Iron in early societies leading to urbanism and state formation
- Outline the key features of the Mauryan period.
- Locate the shift of historical focus from Gangetic belt to newer areas alongside the process of assimilation.

SYLLABUS OF DSC-1

Unit I: Sources for interpreting early Indian history (4 hours)

Unit II: Survey of Prehistoric Cultures: Palaeolithic, Mesolithic, Neolithic. (8 hours)

Unit III: Harappan Civilization: early urbanism, town planning, economy, cultural patterns and decline. (8 hours)

Unit IV: Vedic and Megalithic cultures: an overview (8 hours)

Unit V: Second urbanization, material and social changes, Buddhism and Jainism. (8 hours)

Unit VI: The Mauryan Empire: administration, economy, Ashoka's Dhamma, pillars and rock edicts (8 hours)

Unit VII: Early Tamilkam: Survey of Sangam literature, polity, economy and society (8 hours)

Unit VIII: Post Mauryan age: polity economy, society and culture with special reference to Satvahanas and Kushanas (8 hours)

Practical component (if any) - NIL

Essential/recommended readings

Unit I: In this Unit the students shall be introduced to the varied sources, their scope and limitations, for reconstructing the early history of India. (Teaching Time: 4 hours approx.)

- Chakrabarti, D.K. (1990). India: An Archaeological History. New Delhi: OUP (Chapter 7)
- Goyal, S.R. (1995). The Coinage of Ancient India. Jodhpur: Kusumanjali Prakashan.
- झा. डी. एन. एवं के. एम. श्रीमाली. (2000) प्राचीन भारत का इतिहास. दिल्ली : हिन्दी माध्यम कार्यान्वय निदेशालय, दिल्ली विश्वविद्यालय. पुनर्मुद्रन. (अध्याय 2)
- Salomon, Richard. (1998). Indian Epigraphy. Delhi: OUP.
- Sharma, R.S. (1995). Perspectives in Social and Economic History of Early India. New Delhi: Munshiram Manoharlal. (Chapter 2)
- शर्मा, आर. एस. (2000). प्रारम्भिक भारत का सामाजिक और आर्थिक इतिहास. दिल्ली : हिन्दी माध्यम कार्यान्वय निदेशालय, दिल्ली विश्वविद्यालय. (अध्याय 2)
- Singh, Upinder. (2013). A History of Ancient and Early Medieval India: From the Stone Age to the 12th century. New Delhi: Pearson. (Chapter 1)
- सिंह, उपिंदर. (2016). प्राचीन एवं पूर्व मध्यकालीन भारत का इतिहास: पाषाण काल से 12वीं शताब्दी तक. नई दिल्ली. पियरसन. (अध्याय 1)
- Thapar, Romila. (2002). Early India from the Origins to AD 1300. New Delhi: Penguin. (Chapter 1)
- थापर, रोमिला. (2008). पूर्वकालीन भारत : प्रारम्भ से 1300 ई.तक. दिल्ली: हिन्दी माध्यम कार्यान्वय निदेशालय, दिल्ली विश्वविद्यालय. (अध्याय 1)

Unit II: This Unit delineates the transition from hunting gathering to food producing societies, familiarizing the students with their subsistence patterns and material cultures. (Teaching Time: 2weeks approx.)

- Agrawal, D.P. (1982) The Archaeology of India: London and Malmo: Curzon Press (All chapters)
- Allchin, Bridget and Raymond Allchin. (1997). Origin of a Civilization: The Prehistory and Early Archaeology of South Asia. New Delhi: Viking. (Chapter 3-5)
- Jain, V. K. (2006). Pre and Protohistory of India. New Delhi: D.K. Printworld. (Chapter 3-5)
- जैन. वी. के. (2008) भारत का प्रागैतिहास और आद्य इतिहास. एक अवलोकन. नई दिल्ली. D.K. Print-world. (अध्याय 3-5)
- जयसवाल विदुला (1987) भारतीय इतिहास के आदि चरण की रूपरेखा. दिल्ली: स्वाति पब्लिकेशन

- Singh, Upinder. (2013). A History of Ancient and Early Medieval India: From the Stone Age to the 12th century. New Delhi: Pearson. (Chapters 2 and 3)
- सिंह, उपिंदर. (2016). प्राचीन एवं पूर्व मध्यकालीन भारत का इतिहास: पाषाण काल से 12वीं शताब्दी तक. नई दिल्ली. पियरसन. (अध्याय 2 और 3)

Unit III: This Unit will enable students to gain an understanding of the various facets of early urbanism as witnessed during the Harappan civilization. (Teaching Time: 12 hours approx.)

- Allchin, Bridget and Raymond Allchin. (1997). Origin of a Civilization: The Prehistory and Early Archaeology of South Asia. New Delhi: Viking. (Chapters 6-9)
- Ratnagar, Shereen. (2001). Understanding Harappa: Civilization in the Greater Indus Valley. New Delhi: Tulika. (All Chapters)
- Singh, Upinder. (2013). A History of Ancient and Early Medieval India: From the Stone Age to the 12th century. New Delhi: Pearson. (Chapter 4)
- सिंह, उपिंदर. (2016). प्राचीन एवं पूर्वा मध्यकालीन भारत का इतिहास: पाषाण काल से 12वीं शताब्दी तक. नई दिल्ली. पियरसन. (अध्याय 4)
- थपलियाल. के. के. और संकटा प्रसाद शुक्ल (2003) सिंधु सभ्यता. लखनऊ: उत्तर प्रदेश हिन्दी संस्थान संशोधित एवं संस्करण. (सभी अध्याय)

Unit IV: The Unit shall discuss the advent of material cultures and communities that developed the use of iron technology in the northern and southern parts of the subcontinent. (Teaching Time: 8 hours approx.)

- Chakravarti, Ranabir. (2010). Exploring Early India Up to C. AD 1300. New Delhi: MacMillan. (Chapter 2)
- चक्रवर्ती. रणबीर. (2012) भारतीय इतिहास. आदिकाल. नई दिल्ली. ओरिएंटल ब्लैकस्वेन. (अध्याय 2)
- Jain, V. K. (2006). Pre and Protohistory of India. New Delhi: D.K. Printworld. (Appendix I)
- जैन. वी. के. (2008) भारत का प्रागैतिहास और आद्य इतिहास. एक अवलोकन. नई दिल्ली. D.K. Print-world (परिशिष्ट I)
- Jha, D. N. (2004). Early India: A Concise History. Delhi: Manohar. (Chapter 3)
- Majumdar, R.C. and Pusalkar A.D., (ed.): The History and Culture of Indian People. Vol. I: Vedic Age.
- Moorti, Udayaravi S. (1994). Megalithic Culture of South India. Varanasi: Ganga Kaveri.
- Sharma, R.S. (1995). Perspectives in Social and Economic History of Early India. New Delhi: Munshiram Manoharlal. (Chapter 11)
- शर्मा, आर. एस. (2000). प्रारम्भिक भारत का आर्थिक और सामाजिक इतिहास. दिल्ली : हिन्दी माध्यम कार्यान्वय निदेशालय, दिल्ली विश्वविद्यालय. (अध्याय 11)
- Karashima, Noborou (Ed.). (2014). A Concise History of South India. New Delhi: Oxford Uni-versity Press (Chapter 1)

Unit V: This unit shall familiarize the students with major political and social transformations alongside religious ferment that unfolded from roughly c. 600 BCE to c. 300 BCE. (Teaching Time: 12 hours approx.)

- Chakravarti, Ranabir. (2010). Exploring Early India Up to C. AD 1300. New Delhi: MacMillan. (Chapter 3)
- चक्रवर्ती. रणबीर. (2012) भारतीय इतिहास. आदिकाल. नई दिल्ली. ओरिएंटल ब्लैकस्वेन. (अध्याय 3)
- झा. डी. एन. एवं के. एम. श्रीमाली. (2000) प्राचीन भारत का इतिहास. दिल्ली : हिन्दी माध्यम कार्यान्वय निदेशालय, दिल्ली विश्वविद्यालय. पुनर्वर्द्धन. (अध्याय 6 and 7)
- Jha, D. N. (2004). Early India: A Concise History. Delhi: Manohar. (Chapter 4)
- Sahu, B.P. (ed.) (2006), Iron and Social Change in Early India, OUP, Delhi (Introduction)
- Sharma, R.S. (1983). Material Culture and Social Formations in Ancient India. New Delhi: Macmillan. (Chapters 6 and 7)
- शर्मा. आर . एस. (2008) प्राचीन भारत में भौतिक संस्कृति एवं सामाजिक संरचनाएँ. राजकमल प्रकाशन. (अध्याय 6 और 7)
- Thapar, Romila. (2002). Early India from the Origins to AD 1300. New Delhi: Penguin. (Chapter 5)
- थापर, रोमिला. (2008). पूर्व कालीन भारत: प्रारम्भ से 1300 ई. तक. दिल्ली : हिन्दी माध्यम कार्यान्वय निदेशालय, दिल्ली विश्वविद्यालय. (अध्याय 5)

Unit VI: This Unit shall introduce students to the evolving administrative framework, economy and concept of Dhamma during the Mauryan Empire. (Teaching Time: 12 hours approx.)

- Chakravarti, Ranabir. (2010). Exploring Early India Up to C. AD 1300. New Delhi: MacMillan. (Chapter 4)
- चक्रवर्ती. रणबीर. (2012) भारतीय इतिहास. आदिकाल. नई दिल्ली. ओरिएंटल ब्लैकस्वेन. (अध्याय 4)
- Lahiri, Nayanjot (2015) Ashoka in Ancient India. New Delhi: Oriental Blackswan
- Raychaudhary, H.C. (rev edn 1997). Political History of Ancient India. New Delh: OUP
- Singh, Upinder. (2013). A History of Ancient and Early Medieval India: From the Stone Age to the 12th century. New Delhi: Pearson. (chapter 7)
- सिंह, उपिंदर. (2016). प्राचीन एवं पूर्व मध्यकालीन भारत का इतिहास: पाषाण काल से 12वीं शताब्दी तक. नई दिल्ली. पियरसन. (अध्याय 7)
- Thapar, Romila. (2012). Ashoka and the Decline of the Mauryas, third edition, New Del-hi: Oxford University Press. (All Chapters)
- थापर, रोमिला. (2005). अशोक और मौर्य साम्राज्य का पतन. दिल्ली. ग्रंथ शिल्पी. (सभी अध्याय)

Unit VII: This Unit shall familiarize the students with important political, economic and social developments that took place in the Tamilakam area of the Indian subcontinent. (Teaching Time: 4 hours approx.)

- Karashima, Noborou (Ed.). (2014). A Concise History of South India. New Delhi: Oxford Uni-versity Press. (Chapter 2)

- Sastri, K. A. Nilakantha. (1955) A History of South India from Prehistoric Times to the fall of Vijayanagar. New Delhi: OUP (also available in Hindi)
- Singh, Upinder. (2013). A History of Ancient and Early Medieval India: From the Stone Age to the 12th century. New Delhi: Pearson (chapter 8)
- सिंह, उपिंदर. (2016). प्राचीन एवं पूर्व मध्यकालीन भारत का इतिहास: पाषाण काल से 12वीं शताब्दी तक. नई दिल्ली. पियरसन. (अध्याय 8)

Unit VIII: This Unit will provide the students with an understanding about the key developments that took place in North and western India under the post – Mauryan dynasties, especially the Kushanas and Satvahanas.(Teaching Time: 8 hours approx.)

- Chakravarti, Ranabir. (2010). Exploring Early India Up to C. AD 1300. New Delhi: MacMillan. (Chapter 5)
- चक्रवर्ती. रणबीर. (2012) भारतीय इतिहास. आदिकाल. नई दिल्ली. ओरिएंटल ब्लैकस्वेन (अध्याय 5)
- Sahu, B.P. (2015) Society and Culture in Post-Mauryan India c.200 BC to AD 300. A People's History of India series. New Delhi: Tulika Books. (also available in Hindi)
- Sharma, R.S. (2015). Aspects of Political Ideas and Institutions in Ancient India. Delhi: Motilal Banarasisdas. (Chapters 18 and 19)
- शर्मा, आर. एस. (2000). प्राचीन भारत में राजनीतिक विचार एवं संस्थाएं. दिल्ली: राजकमल प्रकाशन. दूसरा संस्करण. (अध्याय 18 एवं 19)

Suggestive readings

- Basham, A.L. (1967). The Wonder That Was India. New Delhi: Rupa & Co.
- Thapar, Romila. (2013) Cultural Pasts: Essays in Early Indian History. New Delhi: Oxford University Press.
- Kosambi, D. D. (1975). An Introduction to the Study of Indian History. New Delhi: Popular Prakashan.
- Ray, H. P. (1986). Monastery and Guild: Commerce under the Satavahanas. New Delhi: Oxford University Press.
- Chakrabarti, Dilip K. (2006). The Oxford Companion to Indian Archaeology: The Archaeological Foundations of Ancient India, Stone Age to AD 13th Century. New Delhi: Oxford University Press.
- Lahiri, Nayanjot. (2002). The Decline and Fall of the Indus Civilization. New Delhi: Permanent Black.
- Gurukkal, Rajan. (1995). "The Beginnings of the Historic Period: The Tamil South" in Romila Thapar (Ed.), Recent Perspectives of Early Indian History. Bombay: Popular Prakashan.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE (DSC-2): Ancient Societies

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite the course (if any) |
|--------------------------|----------|-----------------------------------|----------|---------------------|-----------------------------|-----------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Ancient Societies | 4 | 3 | 1 | 0 | 12th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

The course aims towards enabling students to have a broad understanding of various Ancient Civilizations with special focus on complexities in State Formation, society, economy, religion and culture. An overview of the ecological impact on their emergence, craft and trade, emerging cultural patterns, art and architecture and religion will be discussed related to the Indian, Mesopotamian, Egyptian, Greek and Chinese Civilizations. Students will get to familiarize themselves with fundamental concepts like 'Bronze Age', 'Civilization', 'Culture', 'Urban Revolution', and 'State'. Various craft technology especially metal technology and debates around it will also be introduced to them. The course strives to generate interest in students to learn about metal technology and its contribution to the emergence and growth of Ancient Civilizations.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Define and explain concepts like Urban Revolution, Bronze Age and Civilization.
- Discuss the debate around metal technology.
- Describe ecological and other reasons for emergence of the various civilizations.
- Understand social complexities of different civilizations.
- Explain trends in the economy of these civilizations.
- Gain an understanding of cultural patterns and religious developments.

SYLLABUS OF DSC-1

Unit I: Defining Civilization, Sources and Historiography, Urban Revolution and Bronze Age, Debating Metal Technology (12 hours)

Unit II: Bronze Age Civilizations- India / China (Shang Dynasty) (16 hours)

Unit III: Bronze Age Civilizations- Mesopotamia (Sumerian and Akkadian Period)/Egypt (Old Kingdom) Ecological Context, Kingship and State, Social Pattern and Economy. Art, Religion and Culture (16 hours)

Unit IV: Bronze Age Civilizations- Minoan/ Mycenaean, Ecological Context, Kingship and State, Social Pattern and Economy Art, Religion and Culture (16 hours)

Practical component (if any) - NIL

Essential/recommended readings

Unit I: This Unit will help students understand the concept of Civilization. The important milestones in the growth and spread of civilizations viz. urban revolution, Bronze Age and advent of metal technology will also be dealt with. (Teaching period: 8 hours approx.)

- Childe, G. (1950). "The Urban Revolution," *The Town Planning Review*, Vol. 21, No. 1, April 1950, pp. 3-17.
- Redman, C.L. (1978). *The Rise of Civilisations. From Early Farmers to Urban Society in the Ancient Near East*. San Francisco: W.H. Freeman, Chapter 2, 6, 7, pp. 16-49; 188-213; 214-243.
- Scarre, Christopher and Brian M. Fagan. (2008). *Ancient Civilizations* (3rd edn.), New Jersey: Pearson/Prentice Hall, pp. 3-12, and pp. 26-47.
- Whitehouse, R. (1977). *The First Civilizations*. Oxford: Phaidon, Chapters 1 and 9, pp 7-15 and 177-199.
- Childe, V.G. 1930. *The Bronze Age*. Cambridge: Cambridge University Press.
- Childe, V. Gordon. 1957. 'The Bronze Age'. *Past and Present*. 12 (November): 2-15

Unit II: This unit will deal with the idea of civilizations and the evolution of complex societies associated with the Bronze Age Civilizations in India / China during the Shang Dynasty. As such it will delve into factors leading to the use of metallurgy, its function in socio-religious complex and political structures thereof. (Teaching period: 16 hours approx.):

India:

- Allchin, B., and R. Allchin. (1997). *Origins of a Civilization: The Prehistory and Early Archaeology of South Asia*. New Delhi: Viking. (Chapters 6,7,8,9 & 10, pp. 113- 222).
- Chakrabarti, D.K. (1999). *India: An Archaeological History*. Delhi: Oxford University Press. (Chapters V and VI. pp.151-261).
- Ratnagar, Shereen. (2001). *Understanding Harappa: Civilization in the Greater Indus Valley*. Delhi: Tulika, Pp. 6-42, 103-115, 122-152.
- Ratnagar, Shereen. *Approaches to the Study of Ancient Technology*.
- Ratnagar, Shereen. (2007). *Makers and Shapers: Early Indian Technology in the Home, Village and Urban Workshop*, Delhi, pp. 156, 196, 218 n. 12.
- Singh, Upinder. (2008). *A History of Ancient and Early Medieval India: From the Stone Age to the 12th Century*. Delhi: Pearson Longman. (Chapter 4, pp. 132- 181.) (Available in Hindi).
- Thaplyal, K. K. and Sankata Prasad Shukla. (2003). *Sindhu Sabhyata (त संधु सभ्यता)*. Lucknow: Uttar Pradesh Hindi Sansthan. (In Hindi) PP. 25-107, 157- 226, 262-276, 292- 315, 354-363.

China

- Chang, K.C. (1987). *Shang Civilization*. New Haven, Conn: Yale University Press, pp. 263-288.
- Feng, Li. (2013). *Early China*, Cambridge: Cambridge University Press, pp. 1-111.
- Keightly, D.N. (1999). "The Shang. China's First Historical Dynasty" in Michael Loewe and Edward L. Shaughnessey. (Ed.). *The Cambridge History of Ancient China. From the origins of Civilization to 221 B.C*. Cambridge: Cambridge University Press, 1999.

- Thorp, R. L. (2006). China in the Early Bronze Age. Shang Civilization. Pennsylvania: University of Pennsylvania Press.

Unit III: (Teaching period: 16 hours)

Mesopotamia is considered to be the cradle of civilization and this unit will trace the evolution of complex societies, especially in relation to civilizational trait markers such as religion, urbanization, social stratification ranging from early farming in Zagros to mature urbanization in Southern Mesopotamia. The unit will also deal with Egypt that presented another model of civilizational development with the Pharaonic model of kingship, development of writing, distinct geography and monumental art and architecture.

- Nissen, H.J. (2003). The Early History of the Ancient Near East, 9000-2000 B.C. Oxford and Victoria: Blackwell.
- Redman, C.L. (1978). The Rise of Civilisations. From Early Farmers to Urban Society in the Ancient Near East. San Francisco: W.H. Freeman, Chapters 8, pp. 244-322.
- Roux, Georges (1992). Ancient Iraq, UK: Penguin, Chapters 1, 5, 6, 8, 9; pp. 1-16; pp. 66-103; 122-160.
- Whitehouse, R. (1977). The First Civilizations, Oxford: Phaidon, Chapters 3, 4, 5, pp. 33-115.
- Trigger, Bruce G. 2003. Understanding Early Civilizations: A Comparative Study. Cambridge: Cambridge University Press.
- फारूकी, A. (2015). प्राचीन और मध्यकालीन साम्राज्यिक संरचनाएँ और संस्कृत तत्वाँ, तिल्ली: मानक प्रकाशन (Ch. 4)

Egypt:

- Hawkes, J. (1973). "Egypt: the beginnings and the Old Kingdom" in The First Great Civilisations: Life in Mesopotamia, the Indus Valley and Egypt, New York: Knopf/Random House.
- Trigger, B.G., B.J. Kemp, D. O'Connor and A.B. Lloyd. (1983). Ancient Egypt A Social History. Cambridge: Cambridge University Press, Chapters 1 & 2, pp. 1-43.
- Silverman, D. P. (Ed.). (2003). Ancient Egypt. New York: Oxford University Press (Ed.) pp. 10 - 27.
- Warden, L. A. 2014. Pottery and Economy in the Old Kingdom. Leiden: Brill.
- Teeter, Emily. 2011. Religion and Ritual in Ancient Egypt. New York: Cambridge University Press.
- Wolinski, Arelene. 1987. 'Egyptian Masks: The Priest and His Role', Archaeology, 40 (1): 22.
- Morenz, S. 1960. Egyptian Religion. (A. E. Keep, trans.) New York: Cornell University Press.
- फारूकी, A. (2015). प्राचीन और मध्यकालीन साम्राज्यिक संरचनाएँ और संस्कृत तत्वाँ, तिल्ली: मानक प्रकाशन (Ch. 5).

Unit IV: This unit will deal with another model of Bronze Age Civilizations in the Greek archipelago that has been termed Minoan/ Mycenaean within their Ecological Context. It will look at the manner in which Kingship was intertwined with the evolution of State, Social Patterns

and Economy. Further it will delve into Art, Religion and Culture especially in context of Greek my-thology and pantheon. (Teaching Period: 16 hours)

- M. I. Finley, The Ancient Greeks, 1963.
- M. I. Finley, Early Greece: The Bronze and Archaic Ages, 1970.
- Sarah Pomeroy, Goddesses, whores, wives and Slaves, 1995 reprint, pp.16-31
- Bridenthal and Koonz (Ed). Becoming Visible: Women in European History, 1977, pp.36-59.
- Renfrew, Colin. (1999). The Emergence of Civilisation. The Cyclades and the Aegean in the Third Millennium B.C. London: Methuen, 1972.
- Bintliff, John L. "Settlement and Territory." In Companion Encyclopedia of Archaeology. Edited by Graeme Barker, Vol. 1. London: Routledge, 1999, pp. 505–545.
- फारूकी, A. (2015). प्राचीन और मध्यकालीन सामाजिक संरचनाएँ और संस्कृति तत्वाँ, दिल्ली: मानक प्रकाशन (Ch. 6).

Suggested Readings:

- Burns, Edward McNall, and Philip Lee Ralph. (1982). World Civilizations: Their History and Their Culture. Norton, New York.
- Fagan, Brian M. People of the Earth. (1977). Little, Brown.
- Farooqui, Amar. (2001). Early Social Formation, New Delhi.
- UNESCO Series: History of Mankind, Vols. I – III / or New ed. History of Humanity.
- Cambridge History of Africa, Vol I. CUP, Cambridge, 1975.
- Childe, Vere Gordon. (1946). What happened in history. Baltimore, MD. (Available in Hindi also).
- Roux, Georges. (1992). Ancient Iraq. Penguin.
- Childe, Vere Gordon. (1951). Social Evolution. London: Watts.
- Curtin, P. D. 1984. Cross-Cultural Trade in World History. Melbourne: Cambridge University Press.
- Frankfort, Henri. 1978. Kingship and God: A Study of Ancient Near Eastern Religion as the integration of Society and Nature. Chicago: Chicago University Press.
- Bogucki, P. & Pam J. Crabtree, (2004). Ancient Europe (8000 B.C -A.D. 1000). An Encyclopedia of the Barbarian World, Charles Scribner's Sons, New York.

Video Recommendations

- How Ancient Chinese Bronzes were created: <https://www.youtube.com/watch>
- Oracle Bone, Shang Dynasty: <https://www.youtube.com/watch>
- <https://egyankosh.ac.in/handle/>

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BA (Prog.) with History as Minor
Category III

DISCIPLINE SPECIFIC CORE COURSE (DSC-1): History of India from earliest times up to c. 300 CE

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| History of India from earliest times up to c. 300 CE | 4 | 3 | 1 | 0 | 12 th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

This course explores various historical phases and processes of Indian history from prehistoric period to early historic centuries through the lens of archaeological and literary evidence. An overview of various transformations, cultural shifts, developments in all aspects from the earliest times up to the phase of Empire building is provided to the learner. Alongside the pan-Indian historical changes, it also focuses on regional diversities.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Explain the importance of various sources for study of prehistory and proto-history
- Distinguish between civilization and culture, particularly in the context of the Harappan civilization
- Locate the developments related to the introduction of Iron in early societies leading to urbanism and state formation
- Outline the key features of the Mauryan period.
- Locate the shift of historical focus from Gangetic belt to newer areas alongside the process of assimilation.

SYLLABUS OF DSC-1

Unit I: Sources for interpreting early Indian history (4 hours)

Unit II: Survey of Prehistoric Cultures: Paleolithic, Mesolithic, Neolithic. (8 hours)

Unit III: Harappan Civilization: early urbanism, town planning, economy, cultural patterns and decline. (8 hours)

Unit IV: Vedic and Megalithic cultures: an overview (8 hours)

Unit V: Second urbanization, material and social changes, Buddhism and Jainism. (8 hours)

Unit VI: The Mauryan Empire: administration, economy, Ashoka's Dhamma, pillars and rock edicts (8 hours)

Unit VII: Early Tamilkam: Survey of Sangam literature, polity, economy and society (8 hours)

Unit VIII: Post Mauryan age: polity economy, society and culture with special reference to Satvahanas and Kushanas (8 hours)

Practical component (if any) - NIL

Essential/recommended readings

Unit I: In this Unit the students shall be introduced to the varied sources, their scope and limitations, for reconstructing the early history of India. (Teaching Time: 4 hours approx.)

- Chakrabarti, D.K. (1990). India: An Archaeological History. New Delhi: OUP (Chapter 7)
- Goyal, S.R. (1995). The Coinage of Ancient India. Jodhpur: Kusumanjali Prakashan.
- झा. डी. एन. एवं के. एम. श्रीमाली. (2000) प्राचीन भारत का इतिहास. दिल्ली : हिन्दी माध्यम कार्यान्वय निदेशालय, दिल्ली विश्वविद्यालय. पुनर्मुद्रन. (अध्याय 2)
- Salomon, Richard. (1998). Indian Epigraphy. Delhi: OUP.
- Sharma, R.S. (1995). Perspectives in Social and Economic History of Early India. New Delhi: Mun-shiram Manoharlal. (Chapter 2)
- शर्मा, आर. एस. (2000). प्रारम्भिक भारत का सामाजिक और आर्थिक इतिहास. दिल्ली : हिन्दी माध्यम कार्यान्वय निदेशालय, दिल्ली विश्वविद्यालय. (अध्याय 2)
- Singh, Upinder. (2013). A History of Ancient and Early Medieval India: From the Stone Age to the 12th century. New Delhi: Pearson. (Chapter 1)
- सिंह, उपिंदर. (2016). प्राचीन एवं पूर्व मध्यकालीन भारत का इतिहास: पाषाण काल से 12वीं शताब्दी तक. नई दिल्ली. पियरसन. (अध्याय 1)
- Thapar, Romila. (2002). Early India from the Origins to AD 1300. New Delhi: Penguin. (Chapter 1)
- थापर, रोमिला. (2008). पूर्वकालीन भारत : प्रारम्भ से 1300 ई. तक. दिल्ली: हिन्दी माध्यम कार्यान्वय निदेशालय, दिल्ली विश्वविद्यालय. (अध्याय 1)

Unit II: This Unit delineates the transition from hunting gathering to food producing societies, familiarizing the students with their subsistence patterns and material cultures. (Teaching Time: 8 hours approx.)

- Agrawal, D.P. (1982) The Archaeology of India. London and Malmo: Curzon Press (All chapters)
- Allchin, Bridget and Raymond Allchin. (1997). Origin of a Civilization: The Prehistory and Early Archaeology of South Asia. New Delhi: Viking. (Chapter 3-5)
- Jain, V. K. (2006). Pre and Protohistory of India. New Delhi: D.K. Printworld. (Chapter 3-5)
- जैन. वी. के. (2008) भारत का प्रागैतिहास और आद्य इतिहास. एक अवलोकन. नई दिल्ली. D.K. Printworld. (अध्याय 3-5)
- जयसवाल विदुला (1987) भारतीय इतिहास के आदि चरण की रूपरेखा. दिल्ली: स्वाति पब्लिकेशन

- Singh, Upinder. (2013). A History of Ancient and Early Medieval India: From the Stone Age to the 12th century. New Delhi: Pearson. (Chapters 2 and 3)
- सिंह, उपिंदर. (2016). प्राचीन एवं पूर्व मध्यकालीन भारत का इतिहास: पाषाण काल से 12वीं शताब्दी तक. नई दिल्ली. पियरसन. (अध्याय 2 और 3)

Unit III: This Unit will enable students to gain an understanding of the various facets of early urbanism as witnessed during the Harappan civilization. (Teaching Time: 12 hours approx.)

- Allchin, Bridget and Raymond Allchin. (1997). Origin of a Civilization: The Prehistory and Early Archaeology of South Asia. New Delhi: Viking. (Chapters 6-9)
- Ratnagar, Shereen. (2001). Understanding Harappa: Civilization in the Greater Indus Valley. New Delhi: Tulika. (All Chapters)
- Singh, Upinder. (2013). A History of Ancient and Early Medieval India: From the Stone Age to the 12th century. New Delhi: Pearson. (Chapter 4)
- सिंह, उपिंदर. (2016). प्राचीन एवं पूर्वा मध्यकालीन भारत का इतिहास: पाषाण काल से 12वीं शताब्दी तक. नई दिल्ली. पियरसन. (अध्याय 4)
- थपलियाल. के. के. और संकटा प्रसाद शुक्ल (2003) सिंधु सभ्यता. लखनऊ: उत्तर प्रदेश हिन्दी संस्थान संशोधित एवं संस्करण. (सभी अध्याय)

Unit IV: The Unit shall discuss the advent of material cultures and communities that developed the use of iron technology in the northern and southern parts of the subcontinent. (Teaching Time: 8 hours approx.)

- Chakravarti, Ranabir. (2010). Exploring Early India Up to C. AD 1300. New Delhi: MacMillan. (Chapter 2)
- चक्रवर्ती. रणबीर. (2012) भारतीय इतिहास. आदिकाल. नई दिल्ली. ओरिएंटल ब्लैकस्वेन. (अध्याय 2)
- Jain, V. K. (2006). Pre and Protohistory of India. New Delhi: D.K. Printworld. (Appendix I)
- जैन. वी. के. (2008) भारत का प्रागैतिहास और आद्य इतिहास. एक अवलोकन. नई दिल्ली. D.K. Printworld (परिशिष्ट I)
- Jha, D. N. (2004). Early India: A Concise History. Delhi: Manohar. (Chapter 3)
- Majumdar, R.C. and Pusalkar A.D., (ed.): The History and Culture of Indian People. Vol. I: Vedic Age.
- Moorti, Udayaravi S. (1994). Megalithic Culture of South India. Varanasi: Ganga Kaveri.
- Sharma, R.S. (1995). Perspectives in Social and Economic History of Early India. New Delhi: Mun-shiram Manoharlal. (Chapter 11)
- शर्मा, आर. एस. (2000). प्रारम्भिक भारत का आर्थिक और सामाजिक इतिहास. दिल्ली : हिन्दी माध्यम कार्यान्वयन निदेशालय, दिल्ली विश्वविद्यालय. (अध्याय 11)
- Karashima, Noborou (Ed.). (2014). A Concise History of South India. New Delhi: Oxford University Press (Chapter 1)

Unit V: This unit shall familiarize the students with major political and social transformations alongside religious ferment that unfolded from roughly c. 600 BCE to c. 300 BCE. (Teaching Time: 12 hours approx.)

- Chakravarti, Ranabir. (2010). Exploring Early India Up to C. AD 1300. New Delhi: MacMillan. (Chapter 3)
- चक्रवर्ती. रणबीर. (2012) भारतीय इतिहास. आदिकाल. नई दिल्ली. ओरिएंटल ब्लैकस्वेन. (अध्याय 3)
- झा. डी. एन. एवं के. एम. श्रीमाली. (2000) प्राचीन भारत का इतिहास. दिल्ली : हिन्दी माध्यम कार्यान्वय निदेशालय, दिल्ली विश्वविद्यालय. पुनर्वर्द्धन. (अध्याय 6 and 7)
- Jha, D. N. (2004). Early India: A Concise History. Delhi: Manohar. (Chapter 4)
- Sahu, B.P. (ed.) (2006), Iron and Social Change in Early India, OUP, Delhi (Introduction)
- Sharma, R.S. (1983). Material Culture and Social Formations in Ancient India. New Delhi: Mac-millan. (Chapters 6 and 7)
- शर्मा. आर . एस. (2008) प्राचीन भारत में भौतिक संस्कृति एवं सामाजिक संरचनाएँ. राजकमल प्रकाशन. (अध्याय 6 और 7)
- Thapar, Romila. (2002). Early India from the Origins to AD 1300. New Delhi: Penguin. (Chapter 5)
- थापर, रोमिला. (2008). पूर्व कालीन भारत: प्रारम्भ से 1300 ई. तक. दिल्ली : हिन्दी माध्यम कार्यान्वय निदेशालय, दिल्ली विश्वविद्यालय. (अध्याय 5)

Unit VI: This Unit shall introduce students to the evolving administrative framework, economy and concept of Dhamma during the Mauryan Empire. (Teaching Time: 12 hours approx.)

- Chakravarti, Ranabir. (2010). Exploring Early India Up to C. AD 1300. New Delhi: MacMillan. (Chapter 4)
- चक्रवर्ती. रणबीर. (2012) भारतीय इतिहास. आदिकाल. नई दिल्ली. ओरिएंटल ब्लैकस्वेन. (अध्याय 4)
- Lahiri, Nayanjot (2015) Ashoka in Ancient India. New Delhi: Oriental Blackswan
- Raychaudhary, H.C. (rev edn 1997). Political History of Ancient India. New Delh: OUP
- Singh, Upinder. (2013). A History of Ancient and Early Medieval India: From the Stone Age to the 12th century. New Delhi: Pearson. (chapter 7)
- सिंह, उपिंदर. (2016). प्राचीन एवं पूर्व मध्यकालीन भारत का इतिहास: पाषाण काल से 12वीं शताब्दी तक. नई दिल्ली. पियरसन. (अध्याय 7)
- Thapar, Romila. (2012). Ashoka and the Decline of the Mauryas, third edition, New Delhi: Ox-ford University Press. (All Chapters)
- थापर, रोमिला. (2005). अशोक और मौर्य साम्राज्य का पतन. दिल्ली. ग्रंथ शिल्पी. (सभी अध्याय)

Unit VII: This Unit shall familiarize the students with important political, economic and social developments that took place in the Tamilakam area of the Indian subcontinent. (Teaching Time: 4 hours approx.)

- Karashima, Noborou (Ed.). (2014). A Concise History of South India. New Delhi: Oxford University Press. (Chapter 2)

- Sastri, K. A. Nilakantha. (1955) A History of South India from Prehistoric Times to the fall of Vija-yanagar. New Delhi: OUP (also available in Hindi)
- Singh, Upinder. (2013). A History of Ancient and Early Medieval India: From the Stone Age to the 12th century. New Delhi: Pearson (chapter 8)
- सिंह, उपिंदर. (2016). प्राचीन एवं पूर्व मध्यकालीन भारत का इतिहास: पाषाण काल से 12वीं शताब्दी तक. नई दिल्ली. पियरसन. (अध्याय 8)

Unit VIII: This Unit will provide the students with an understanding about the key developments that took place in North and western India under the post – Mauryan dynasties, especially the Kushanas and Satvahanas. (Teaching Time: 8 hours approx.)

- Chakravarti, Ranabir. (2010). Exploring Early India Up to C. AD 1300. New Delhi: MacMillan. (Chapter 5)
- चक्रवर्ती. रणबीर. (2012) भारतीय इतिहास. आदिकाल. नई दिल्ली. ओरिएंटल ब्लैकस्वेन (अध्याय 5)
- Sahu, B.P. (2015) Society and Culture in Post-Mauryan India c.200 BC to AD 300. A People's History of India series. New Delhi: Tulika Books. (also available in Hindi)
- Sharma, R.S. (2015). Aspects of Political Ideas and Institutions in Ancient India. Delhi: Motilal Banarasidas. (Chapters 18 and 19)
- शर्मा, आर. एस. (2000). प्राचीन भारत में राजनीतिक विचार एवं संस्थाएं. दिल्ली: राजकमल प्रकाशन. दूसरा संस्करण. (अध्याय 18 एवं 19)

Suggestive readings

- Basham, A.L. (1967). The Wonder That Was India. New Delhi: Rupa & Co.
- Thapar, Romila. (2013) Cultural Pasts: Essays in Early Indian History. New Delhi: Oxford University Press.
- Kosambi, D. D. (1975). An Introduction to the Study of Indian History. New Delhi: Popular Prakashan.
- Ray, H. P. (1986). Monastery and Guild: Commerce under the Satavahanas. New Delhi: Oxford University Press.
- Chakrabarti, Dilip K. (2006). The Oxford Companion to Indian Archaeology: The Archaeological Foundations of Ancient India, Stone Age to AD 13th Century. New Delhi: Oxford University Press.
- Lahiri, Nayanjot. (2002). The Decline and Fall of the Indus Civilization. New Delhi: Permanent Black.
- Gurukkal, Rajan. (1995). "The Beginnings of the Historic Period: The Tamil South" in Romila Thapar (Ed.), Recent Perspectives of Early Indian History. Bombay: Popular Prakashan.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES
Offered By Department Of History
Category-IV

GENERIC ELECTIVES (GE-1): Delhi Through the Ages: The making of its early Modern History

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|----------|-----------------------------------|----------|---------------------|-----------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Delhi Through the Ages: The making of its early Modern History | 4 | 3 | 1 | 0 | 12th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

The objective of the paper is to explore the city of Delhi from its early history to the eighteenth century. The city grew into one of the largest cities in the world and was the capital of some of the great empires. As capital Delhi profited from continuous immigration, state patronage and vibrant cultural life. The city was not merely dependent upon its rulers for cultural and political sustenance. The course also focuses on Sufis, litterateurs and merchants who also gave the city its unique character and resilience in the face of political turbulence.

Learning outcomes

Upon completion of this course the student shall be able to:

- To acquaint students with the history of Delhi till the early modern period.
- Analyse the processes of urbanization as shaped by political, economic and social changes

SYLLABUS OF GE-1

Unit I: Ancient Delhi and adjoining sites: (12 hours)

1. Indraprastha- Hastinapur, Panipat, Tilpat
2. Ashokan Edicts
3. Mehrauli Iron Pillar
4. Lalkot

Unit II: From Settlements to Cityscape - Understanding the 10th and 14th Century Cities of Delhi. Case Study Any Two: (16 hours)

1. Anangpur Fort
2. Dehli-i Kuhna's Masjid-i Jami
3. Siri
4. Ghiyaspur-Kilukhari
5. Tughulqabad
6. Firuzabad

Unit III: 16th to 17th Century Delhi: (16 hours)

1. Humayun's Garden Tomb
2. Morphology of Shahjahanabad

Unit IV: 18th Century Delhi - Understanding political and social changes (16 hours)

Essential/recommended readings

Unit 1: This unit will introduce students to the early history of Delhi, focusing on Indraprastha, ancient edicts and pillars and the Tomar and Chauhan constructions. (Teaching Time: 12 hours)

- Richard J. Cohen, "An Early Attestation of the Toponym Dhillī", *Journal of the American Oriental Society*, Vol. 109 (1989), pp. 513-519.
- Singh, Upinder. (2006). *Ancient Delhi*, Delhi: Oxford University Press
- Mani, B.R. (1997). *Delhi: Threshold of the Orient*; (Studies in Archaeological Investigations), Aryan Books International

Unit 2: This unit will study the cities of Sultanate Delhi in the 10th to 14th centuries. It will discuss the various reasons for the shift of capitals and the changing character of the city. Case studies of any two of these cities will be undertaken. Students will be encouraged to plan field trips related to the themes and readings. (Teaching Time: 16 hours)

- B.R. Mani and I.D. Dwivedi (2006). 'Anangpur Fort: The Earliest Tomar Settlements Near Delhi', in Upinder Singh, ed., *Delhi: Ancient History*, Social Science Press, New Delhi, pp 200-204.
- Ali, Athar. (1985). "Capital of the Sultans: Delhi through the 13th and 14th Centuries", in
- R.E. Frykenberg, ed., *Delhi Through the Age: Essays in Urban History, Culture and Society*, Delhi: Oxford University Press, pp. 34-44
- Kumar, Sunil. (2019) "The Tyranny of Meta-Narratives; Re-reading a History of Sultanate Delhi", in Kumkum Roy and Naina Dayal. (Ed.). *Questioning Paradigms, Constructing Histories: A Festschrift for Romila Thapar*, Aleph Book Company, pp 222-235.
- Kumar, Sunil. (2011). "Courts, Capitals and Kingship: Delhi and its Sultans in the Thirteenth and Fourteenth Centuries CE" in Albrecht Fuess and Jan Peter Hartung. (eds.). *Court Cultures in the Muslim World: Seventh to Nineteenth Centuries*, London: Routledge, pp. 123-148
- Kumar, Sunil. (2009) 'Qutb in Modern Memory'. In: Kaul, Suvir, (ed.), *Partitions of Memory*. Delhi: Permanent Black, pp. 140-182.
- Jackson, Peter. (1986). 'Delhi: The Problem of a Vast Military Encampment', in: R.E. Frykenberg (ed.). *Delhi Through the Ages: Essays in Urban History, Culture, and Society*, New Delhi: Oxford University Press, 1986), pp.18-33.

- Haidar, Najaf. (2014). 'Persian Histories and a Lost City of Delhi', *Studies in People's History*, vol. 1, pp. 163–171
- Aquil, R. (2008). "Hazrat-i-Dehli: The Making of the Chishti Sufi Centre and the Stronghold of Islam." *South Asia Research* 28: 23–48.
- Welch, Anthony and Howard Crane. (1983). "The Tughluqs: Master Builders of the Delhi Sultanate". *Muqarnas*, vol. 1 pp. 123-166.
- Welch, Anthony. (1993). *Architectural Patronage and the Past: The Tughluq Sultans of India*: *Muqarnas*, Vol. 10, *Essays in Honor of Oleg Graber*, pp. 311-322, Published by Brill. <https://www.jstore.org/stable/1523196>

Unit 3: This unit will explore the structure and meanings of Humayun's Garden Tomb and morphology of the imperial city of Shahjahanabad, in the 16th and 17th centuries (Teaching time: 16 hours)

- Chandra, Satish. (1991). "Cultural and Political Role of Delhi, 1675-1725", in R.E. Frykenberg, *Delhi through the Ages: Essays in Urban History, Culture and Society*, Delhi: Oxford University Press, pp. 106-116.
- Blake, Stephen, (1985). "Cityscape of an Imperial City: Shahjahanabad in 1739", in R.E. Frykenberg, *Delhi Through the Ages: Essays in Urban History, Culture and Society*, Oxford University Press, pp. 66-99.
- Hasan, Nurul, S. (1991). "The Morphology of a Medieval Indian City: A Case Study of Shahjahanabad", In Indu Banga (ed.). *The City in Indian History*, Delhi: Manohar, pp. 87-98.
- Gupta. Narayani. (1993). "The Indomitable City," in Eckart Ehlers and Thomas Krafft, eds., *Shahjahanabad / Old Delhi: Tradition and Change*. Delhi: Manohar, pp. 29-44.
- Koch, Ebba. (1994). "Diwan-i' Amm and Chihil Sutun: The Audience Halls of Shah Jahan". *Muqarnas*, vol. 11, pp. 143-165.
- Lowry, Glenn D. (1987). *Humayun's Tomb: Form Function, and Meaning in Early Mughal Architecture*. *Muqarnas*, Vol. 4, pp. 133-148
- Dickie, James (Zaki, Yakub), (1985). *The Mughal Garden: Gateway to Paradise*, *Muqarnas*, Vol. 3, pp. 128-137.
- Koch, Ebba. (1997). 'Mughal Palace Gardens from Babur to Shahjahan (1526-1648)', *Muqarnas*, pp. 143-165.
- Rezavi, Syed Ali Nadeem, (2010). "The Mighty Defensive Fort': Red Fort at Delhi Under Shahjahan -- Its Plan and Structures as Described by Muhammad Waris." *Proceedings of the Indian History Congress* 71, pp. 1108–1121.

Unit 4: This unit will discuss the developments in Shahjahanabad in the 18th century. The 'decline' in the authority meant turbulence in the city, but it also empowered new groups of people and created a cultural and social dynamism that was embraced by some and seen as a challenge by others. (Teaching Time: 16 hours)

- Alam, Muzaffar. (2013) "Introduction to the second edition: Revisiting the Mughal Eighteenth Century" in *The Crisis of Empire in Mughal North India: Awadh and the Punjab 1707-1748*, Delhi: Oxford University Press, pp. xiii-ixiv
- Ataullah. (2006-2007). "Mapping 18th Century Delhi: the cityscape of a pre-Modern sovereign city" *Proceedings of the Indian History Congress*, vol. 67 pp. 1042-1057.

- Chenoy, Shama Mitra. (1998). *Shahjahanabad, a City of Delhi, 1638-1857*. New Delhi: Munshiram Manohar Lal Publishers.
- Raziuddin Aquil, (2017) "Violating Norms of Conduct" in *The Muslim Question: understanding Islam and Indian History*, Delhi: Penguin Random House, pp. 133-156.

Suggested readings

- Anthony Welch, 'A Medieval Centre of Learning in India: The Hauz Khas Madrasa in Delhi', *Muqarnas*, 13 (1996): 165-90;
- Anthony Welch, 'The Shrine of the Holy Footprint in Delhi', *Muqarnas*, 14 (1997): 116-178;
- Asher, Catherine B. (2000). "Delhi Walled: Changing Boundaries" in James D. Tracy, *City Walls: The Urban Enceinte in Global Perspective*, Cambridge: Cambridge University Press, pp. 247-281.
- Bayly, Christopher Alan. (1986). "Delhi and Other Cities of North India during the 'Twilight'", in *Delhi through the Ages: Essays in Urban History, Culture, and Society*, edited by Robert Eric Frykenberg, Delhi: Oxford University Press, pp. 221-36.
- Blake, Stephen P. (1991). *Shahjahanabad: The Sovereign City in Mughal India, 1639-1739*. Cambridge; New York: Cambridge University Press.
- Chandra, Satish. (1991). "Cultural and Political Role of Delhi, 1675-1725", in R.E. Frykenberg, *Delhi through the Ages: Essays in Urban History, Culture and Society*, Delhi: Oxford University Press, pp. 106-116.
- Hasan, Zafar. (1922). *A Guide to Nizamu-d Din*. New Delhi: Memoirs of the Archaeological Survey of India #10
- Habib, Irfan. (1978). 'Economic History of the Delhi Sultanate -- an Essay in Interpretation', *Indian Historical Review* vol. 4, pp. 287-303.
- Flood, Finbarr B. (2008). "Introduction" in Finbarr B. Flood, *Piety and Politics in the Early Indian Mosque*, Delhi: Oxford University Press, pp. xi-lxxviii
- Matsuo, Ara. (1982). "The Lodi Rulers and the Construction of Tomb-Buildings in Delhi". *Acta Asiatica*, vol. 43, pp. 61-80.
- Moosvi, Shireen. (1985) "Expenditure on Buildings under Shahjahan--A Chapter of Imperial Financial History." *Proceedings of the Indian History Congress*, vol. 46 pp. 285-99.
- Page, J.A. (1926). *An Historical Memoir on the Qutb*. New Delhi: Memoirs of the Archaeological Survey of India #22
- Page, J.A. (1937). *A Memoir on Kotla Firoz Shah, Delhi*. New Delhi: Memoirs of the Archaeological Survey of India #52
- Shamsur Rahman Faruqi, (2001). "A True Beginning in the North" and "A Phenomenon called 'Vali'" in *Early Urdu Literary Culture and History*, Delhi: Oxford University Press, pp. 109-126, 129-142.
- Shokoohy, Mehrdad. (2007). *Tughluqabad: a paradigm for Indo-Islamic Urban planning and its architectural components*. London: Araxus Books.
- Singh, Upinder. ed., (2006) *Delhi: Ancient History*, Delhi: Social Science Press
- Flood, Finbarr B. (2003). "Pillars, Palimpsests, and Princely Practices: Translating the past in Sultanate Delhi" *RES: Anthropology and Aesthetics*, No. 43, Islamic Arts, pp. 95-116.

- Anand Taneja, 'Saintly Visions: Other histories and history's others in the medieval ruins of Delhi' IESHR, 49 (2012).
- Pinto, Desiderios. J. (1989). "The Mystery of the Nizamuddin Dargah: the Account of Pilgrims", in Christian W. Troll, ed., Muslim Shrines in India, Delhi: Oxford University Press, pp. 112-124.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-2): Science, Technologies and Humans: Contested Histories

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|----------|-----------------------------------|----------|---------------------|-----------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Science, Technologies and Humans: Contested Histories | 4 | 3 | 1 | 0 | 12th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

This course proposes to examine the history of science and technology with respect to social acceptance, economic viability and politics associated with it. While dealing with the history of science and technology this paper challenges the notion of 'modern origins of science in west-ern societies. Human instinct to understand the unknown and the need to predict the future which often ventures into providence has been explored through case studies of astronomy and astrology. The paper analyses the impact of hegemony of colonial science on traditional knowledge systems. It proposes a case study to highlight the highly contested heritage of science. The thin line between military and peaceful use of technology in the capitalist economy also constitutes an important component of this paper. A brief discussion on science and nation making has been introduced to highlight the role of important figures and women in sciences that shaped the nature of scientific development in India.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Critique the prevalent dominant understanding of science and technology.
- Discuss the complex relations between science, technology and society.
- Examine the role of politics associated with scientific and technological developments and its economics in the capitalist economy
- Examine the character of 'dual use' technologies.
- Define various initiatives taken by the government for promotion of science and technology.

SYLLABUS OF GE-2

Unit 1: Science, Technology and Society (12 hours)

1. Revisiting 'Scientific Revolution'
2. Colonialism and Science

Unit 2: Science: Contestation and Exchanges (16 hours)

1. Decimal and Zero
2. Hegemony of documentation

Unit 3: Economics of Technologies: Questions of Ethics (16 hours)

1. Generic Medicines
2. Industrial Disasters

Unit 4: Science and nation making (16 hours)

1. Atomic Power
2. Policies and Institutions
3. Homi Jehangir Bhabha, Meghnad Shaha, E. K. Janaki Ammal

Practical component (if any) - NIL

Essential/recommended readings

Unit-1: Science and technology have a very complex relationship with society. Populating of 'Science' and 'Technology' will be unpacked to convey the role of colonial power in establishing the hegemony of western knowledge systems. (Teaching Time: 16 hours Approx.)

- Pati, Biswamoy & Harrison, Mark. (2001). Introduction in Biswamoy Pati & Mark Harrison, eds., Health, Medicine and Empire: Perspectives on Colonial India. New Delhi: Orient Longman. pp. 1-24/36.
- मले, गुणाकर. (२००५). भारतीय इतिहास में वैज्ञानिक और विज्ञान. दिल्ली: यात्री प्रकाशन. (अध्याय: वैज्ञानिक और समाज; पृष्ठ ११-२९, ज्योतिष का आरम्भ और विकास; पृष्ठ ४१-४९, वैज्ञानिकीकरण की समीक्षा; पृष्ठ ५०-६६).
- Bernal, J D. (1969). Science in History Vol, I: The Emergence of Science. Middlesex: Penguin Books, pp. 27-57.
- Raj, Kapil. (2017). 'Thinking Without the Scientific Revolution: Global Interactions and the Construction of Knowledge'. Journal of Early Modern History, Vol. 21 (No.5), pp. 445-458.
- Habib, S Irfan and Raina, Dhruv. (2007). 'Introduction', in S Irfan Habib & Dhruv Raina. (Eds.). Social History of Science in Colonial India. Delhi: Oxford University Press. pp. XII-XL.
- (Revised version published as S Irfan Habib & Dhruv Raina, 'Introduction' in Social History of Science in Colonial India, New Delhi: Oxford University Press, 2007, pp. XII- XL.)
- Kumar, Deepak, Science and the Raj, OUP, 1998 (Introduction).

Unit-2: Students will understand the politics associated with appropriation of 'Scientific' heritage through the case study of the decimal and zero. It will also teach them about the politics of

documentation and its importance during early modern times. (Teaching Time: 16 hours Approx.)

- Nanda, Meera. (2016). 'Nothing that is: Zero's Fleeting Footsteps', in Science in Saffron: Skeptical Essays on History of Science. Delhi: Three Essays Collective. pp. 49-92.
- Grove, Richard. (1996). 'Indigenous Knowledge and the Significance of South-West India for Portuguese and Dutch Constructions of Tropical Nature'. Modern Asian Studies, Vol. 30 (No. 1), pp. 121-143.
- Joseph, George V., A Passage to Infinity: Medieval Indian Mathematics from Kerala and Its Impact, Sage Publication, 2009 (Introduction).

Unit-3: This unit will make an attempt to convey that science and technology need to be care-fully historicized in the context of the prevalent political-economy. It will also problematise associated questions of ethics in science. (Teaching Time: 12 hours Approx.)

- Mazumdar, Pradip. (2017). 'The Generic manoeuvre'. Economic and Political Weekly, Vol. LII (No.35), pp. 22-26.
- Nagaraj, Vijay K. and Raman, Nithya V. (2007). 'Are we prepared for another Bhopal?' in Mahesh Rangarajan, ed., Environmental Issues in India: A Reader. Delhi: Pearson. pp. 530-43. (Also available in Hindi)
- Banerjee, Madhulika, Power, Knowledge, Medicine: Ayurvedic Pharmaceuticals at Home and in the World', Hyderabad: Orient Blackswan, 2009 (Introduction).

Unit-4: This unit will highlight the role of science in 'nation-making'. It will also examine the role of a few scientists and women; associated institutions and their contribution in nation making. (Teaching Time: 12 hours Approx.)

- Kosambi, D. D. (2016). 'Atomic Energy for India', in Ram Ramaswamy, ed., D.D.Kosambi:Adventures into the unknown: Gurgaon: Three Essays Collective. pp. 59-70.
- Marshal, Eliot. (2007). 'Is the Friendly Atom Poised for a Comeback?' in Mahesh Rangarajan, ed., Environmental Issues in India: A Reader. Delhi: Pearson. pp.544-49. (Also available in Hindi)
- Banerjee, Somaditya. (2016). 'Meghnad Shaha: Physicist and Nationalists'. Physics To-day, Vol.69 (No.8), pp. 39-44.
- Wadia, Spenta R. (2009). 'Homi Jehangir Bhaba and the Tata Institute of Fundamental Research'. Current Science, Vol.96 (No.5), pp. 725-33.
- Krishna, V.V. (2013). 'Science, Technology and Innovation Policy 2013: High on Goals, Low on Commitment'. Economic and Political Weekly, Vol. 48 (No.16), pp. 15-19.
- Damodaran, Vinita. (2013). 'Gender, Race and Science in Twentieth-Century India: E.K. Janaki Ammal and the History of Science.' History of Science, Vol. 51 (No. 3), pp. 283- 307.
- Chattopadhyay, Anjana. (2018). 'Janaki Ammal, Edavaleth Kakkat (1897-1984)', in Women Scientists in India: Lives, Struggles and Achievements, New Delhi: National Book Trust, pp. 170-172.

Suggestive readings -

- Bhattacharya, Nandini. (2018). Interrogating the Hegemony of Biomedicine. Economic and Political Weekly, Vol. LIII (No.9), pp. 45-47.
- Chaterjee, Santimay. (1994). 'Meghnad Shaha: The Scientist and the Institution maker.' Indian Journal of History of Science, Vol.29 (No.1), pp. 99-110.

- Habib, Irfan. (2008). Technology in Medieval India. c. 650-1750. New Delhi: Tulika (Also available in Hindi).
- Qaisar, A J. (1982). Indian Response to European Technology and Culture AD 1498-1707, Bombay: Oxford University Press.
- Rahman, Abdur. (1984). Science and Technology in Indian Culture: A Historical Perspective. Delhi: National Institute of Science, Technology & Development Studies Science, Technology and Innovation Policy 2013, Government of India, India. (<http://www.dst.gov.in/sites/default/files/STI%20Policy%202013-English.pdf>) Available in Hindi Al-so :(<http://www.dst.gov.in/sites/default/files/STI%20Policy%202013%20Hindi.pdf>).
- Zimmerman, F. (1987). 'Monsoon in Traditional Culture', in Jay S. Fein and Pamela L. Stephens, eds., Monsoon. New York, Chichester, Brisbane, Toronto, Singapore: John Willey & Sons. pp. 51-76.

FILMS:

- The Fugitive A movie featuring Harrison Ford.
- The Effects of the Atomic Bomb on Hiroshima and Nagasaki (<https://www.youtube.com/watch?v=3wxWNAM8Cso> and <https://www.youtube.com/watch?v=n7fT6Mur6Gg&list=PLD7F1A06CE1780AD5&index=5>)

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-3): Culture and Everyday Life in India

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite the course |
|---|----------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Culture and Everyday Life in India | 4 | 3 | 1 | 0 | 12th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

Our everyday lives are filled with activities so routine and mundane that it hardly seems worth talking about them—getting up, doing daily ablutions, drinking a cup of tea or coffee, performing daily prayers and rituals, getting dressed for workplace, boarding the metro to work, returning home, finding leisure in watching TV, shopping and even planning a holiday. All these sorts of activities are part of our everyday lives, and most people have the same sorts of everyday experiences. At the same time, however, different people across the world have different sorts of every-day lives that are defined by their society. Further, the society itself is defined by peoples' ideas, values, customs, beliefs, and ways of thinking. All these things may be explained as 'culture'. While there are several

definitions of culture, in this module we will take culture to mean the ‘whole way of life’ of a given group of people who form the urban populace in India. This course explores everyday life in India through mundane aspects like food, beverage, and masticatory habits; manner of conduct in the domestic and public sphere; responses to globalization in localized spheres; and defining leisure in cinema, recreational outings or seeking guidance for well-being. In reading these themes we hope to stimulate discussion about particularities of cultural forms that have evolved and continue to change in response to historical circumstances.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Identify some of the basic components of culture that determine our everyday existence
- The complex nature of the relationship between everyday life and society in urban India.
- Appreciate that culture is multifaceted and evolves in response to historical circumstance and that culture cannot be essentialized.
- Appreciate an interdisciplinary approach that is indispensable for reading culture in any given society.
- Analyse cultural behaviour through multiple frames of reference.

SYLLABUS OF GE-3

Unit I: Culture and everyday life (12 hours)

Unit II: Sustenance and beyond: Chai, Coffee & Paan (16 hours)

Unit III: Religion everyday - at the threshold, shrine, and online (16 hours)

Unit IV: The everyday global in g/local: Metro, malls, and pilgrimage online (16 hours)

Practical component (if any) - NIL

Essential/recommended readings

Unit I: This Unit tries to initiate discussion about the emergence of culture as a specific field of sociological analysis and draw attention to the relationship between ‘culture’ and ‘everyday life’. Further, these readings discuss if there is something peculiar about Indian culture. (Teaching time: 12 hours)

- David Inglis, “Introduction” in *Culture and Everyday Life*, London & New York: Routledge, Taylor & Francis Group, 2005, pp. 1-14.
- S. Radhakrishnan, “Culture of India” in *The Annals of the American Academy of Political and Social Science*, Vol. 233, *India Speaking* (May 1944), pp. 18-21.
- K. Ramanujan, “Is There an Indian Way of Thinking? An Informal Essay” in Vinay Dharwarkar ed., *The Collected Essays of A.K. Ramanujan*, New Delhi: OUP, 1999, pp. 34-51.
- Kathryn Hansen, “Who wants to be a cosmopolitan? Readings from the composite culture”, *The Indian Economic and Social History Review*, Vol. 47, No. 3 (2010), pp. 291–308.

Unit II: In the opinion of some scholars India, traditionally, most discourses on food have centered on social and religious rituals. The following articles discuss how historical circumstances has redefined culinary patterns in India by introducing new foods and beverages like tea and coffee. (Teaching time: 12 hours)

- Ashis Nandy, "The Changing Popular Culture of Indian Food: Preliminary Notes", *South Asia Research*, Vol. 24, No. 1 (May 2004), pp. 9–19
- Philip Lutgendorf, "Making tea in India: Chai, capitalism, culture", *Thesis Eleven*, vol. 113(1), pp. 11-31
- R. Venkatachalapathy, "'In those days there was no coffee': Coffee-drinking and middle-class culture in colonial Tamilnadu", *The Indian Economic & Social History Review*, vol. 39 (2–3), pp. 301–316.
- M. Gowda, "The Story of Pan Chewing in India", *Botanical Museum Leaflets, Harvard University*, Vol. 14, No. 8 (January 15, 1951), pp. 181-214.

Unit III. Religion is a significant aspect of everyday life. Rituals define the boundary between the private and public lives. Ritual observance in the public sphere invites community participation and defines religiosity in a wider cultural context. (Teaching time: 12 hours)

- Jyotsna S. Kilambi, "Toward an Understanding of the Muggu: Threshold Drawings in Hyderabad", *RES: Anthropology and Aesthetics*, No. 10 (Autumn, 1985), pp. 71-102.
- Harjot Singh Oberoi, "The Worship of Pir Sakhi Sarvar: Illness, Healing and Popular Culture in the Punjab", *Studies in History*, vol. 3/1 (February 1987), pp. 29–55.
- Heinz Scheifinger, "The Jagannath Temple and Online Darshan", *Journal of Contemporary Religion*, vol. 24:3, pp. 277-290.

Unit IV: Life in a metropolitan is largely regulated by means of commutation, access to utilities and convenience of rendering the everyday business of living. This theme identifies cinema, modern holy cum entertaining urban spaces as significant for creating leisure in city life. The four essays discuss our changing response to everyday existence in a globalized world. (Teaching time: 8 hours approx.)

- Rashmi Sadana, "On the Delhi Metro: An Ethnographic View", *Economic and Political Weekly*, Vol. 45, No. 46 (November 13-19, 2010), pp. 77-83.
- Malcolm Voyce, "Shopping Malls in India: New Social 'Dividing Practices'", *Economic and Political Weekly*, Vol. 42, No. 22 (Jun. 2-8, 2007), pp. 2055-2062.
- Philip Lutgendorf, "Is There an Indian Way of Filmmaking?", *International Journal of Hindu Studies*, Vol. 10, No. 3 (December 2006), pp. 227-256.
- Joanne Punzo Waghorne, "Engineering an Artful Practice: On Jaggi Vasudev's Isha Yoga and Sri Sri Ravishankar's Art of Living" in *Gurus of Modern Yoga*, eds., Mark Singleton & Ellen Goldberg, New York: OUP (2014), pp. 283-307.

Suggestive readings

- David Inglis, *Culture and Everyday Life*, London & New York: Routledge, Taylor & Francis Group, 2005.
- Maya Warriar, "Online Bhakti in a Modern Guru Organization", Chapter 14 in *Gurus in Modern Yoga*, eds., Mark Singleton and Ellen Goldberg, New York: OUP, 2013, pp. 308-327.

- K.N. Panikkar, "Culture as a Site of Struggle", in *Social Scientist*, Vol. 37, No. 5/6 (May-June 2009), pp. 21-37.
- Pushpesh Pant, "INDIA: Food and the Making of the Nation", in *India International Centre Quarterly*, Vol. 40, No. 2 (AUTUMN 2013), pp. 1-34.
- R. S. Khare, "Anna", in Sushil Mittal and Gene Thursby, eds., *The Hindu World*, New York: Routledge, 2004
- Samta P. Pandya, "'Guru' Culture in South Asia: The Case of Chinmaya Mission in India", in *Society and Culture in South Asia*, 2016, Vol. 2(2), pp. 204-232.
- Darshana Sreedhar Mini, "Attukal 'Pongala': The 'Everydayness' in a Religious Space", *Journal of Ritual Studies*, Vol. 30, No. 1, Special Issue: Transformations in Contemporary South Asian Ritual: From Sacred Action to Public Performance (2016), pp. 63-73.
- Yousuf Saeed, "Jannat ki Rail: Images of Paradise in India's Muslim Popular Culture", in Mumtaz Currim (ed.), *Jannat: Paradise in Islamic Art*, Mumbai: Marg Foundation, 2012.
- Sanjay Srivastava, "Shop Talk: Shopping Malls and Their Publics", in *Consumer Culture, Modernity and Identity*, edited by Nita Mathur, Sage, 2014, pp. 45-70.
- Sanjay Srivastava, "Urban Spaces, Disney-Divinity and Moral Middle Classes in Delhi," *Economic and Political Weekly*, Vol. 44, No. 26/27 (June 27 - Jul. 10, 2009), pp. 338-345.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-4): Understanding History

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite the course |
|------------------------------|----------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Understanding History | 4 | 3 | 1 | 0 | 12th pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

This course aims to familiarize students with what it means to historicize human activities, and to think historically. It seeks to equip students with an understanding of what historians do, i.e., explore causation; contingency; explain factors that influence individuals and human society; and how historians build on generalizations to construct consistent narratives from historical facts and credible sources. It also familiarizes students with broad kinds of histories written, and the relationship shared between history and other disciplines.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Outline / illustrate the need for historical perspective.

- Explain the historical nature of all human activities and social sphere.
- Distinguish essential features of historical inquiry.
- Identify the essential skills of a historian, and explain the key aspects of the historian's work.
- Delineate sources that can be used to describe and interpret a social issue, an event, a given time period, or a wider social development.
- Differentiate between various kinds of histories.
- Situate history among other disciplines and distinguish the key aspects of their interface.

SYLLABUS OF GE-3

Unit I: What History Can Tell Us (12 hours)

Unit II: The Historian at Work (16 hours)

Unit III: Issues in History Writing (16 hours)

Unit IV: History and Other Disciplines (16 hours)

Practical component (if any) - NIL

Essential/recommended readings

Unit-1: This Unit shall explore the meaning of history and historical thinking. The students will be equipped to distinguish the historical perspective from other ways of understanding our individual and collective pasts. (Teaching time: 12 hours approx.)

- Schlabach, Gerald. A Sense of History: Some Components <http://www.geraldschlabach.net/about/relationships/benedictine/courses/handouts/sense-of-history/>
- Tosh, J. (2002). In Pursuit of History. Revised third edition. London, N.Y., New Delhi: Long-man (Ch.1 and Ch. 2).
- Marwick, Arthur. (1989). The Nature of History. Third edition, Hampshire and London: MacMillan (pp. 14-25 - "The Necessity of History" and "Stories and Dialogues").
- Daniels, Robert V. (1981). Studying History: How and Why, third edition, Englewood Cliffs, N.J.: Prentice-Hall, pp.11-13 and 25-39.
- Hobsbawm, Eric J. (1998). On History, UK: Abacus (Ch.2, "A Sense of the Past", and Ch.3, "What Can History Tell Us About Contemporary Society").
- आधार मारतवक, इततहास का स्वरूप । ग्रंथ तशल्पी, 2008 (अनुवांि)

Unit-2: This Unit shall explore how the historian establishes historical facts, traces historical contexts from the facts, and how the historian evaluates and uses different kinds of sources for history writing. It will familiarize the students with different varieties and frameworks in history writing (social, economic, local, global, etc.). (Teaching time: 16 hours approx.)

- Carr, E.H. (1991). What is History. Penguin. Reprint. (Ch.1, "The Historian and His Facts").
- Marwick, Arthur. (1989). The Nature of History. Third edition, Hampshire and London: MacMillan (Ch. 5, The Historian at Work: Historical Facts and Historical Sources).
- Daniels, Robert V. (1981), Studying History: How and Why, third edition, Englewood Cliffs, N.J.: Prentice-Hall (pp. 47-61).
- Tosh, J. (2002). In Pursuit of History. Revised third edition. London, N.Y., New Delhi: Long-man (Ch. 3, "Mapping the Field", Ch. 4, "The Raw Materials" and Ch. 5, "Using the Sources").

- अशोक चक्रधर (अनुवाङ्मिक), इततहास क्या है – ई.एच. कार। Macmillan, 2000. (Chapter-1)
- आथार मारतवक, इततहास का स्वरूप । ग्रंथ तशल्पी, 2008 (अनुवाङ्मिक) (Chapter-5)

Unit-3: This Unit will familiarise the students about how historians understand, describe and explain the past. The student will be introduced to some of key aspects of history writing, i.e., cau-sation, narrative building, explanation and generalization. (Teaching time: 16 hours approx.)

- Carr, E.H. (1991). What is History. Penguin. Reprint. (Ch.4, “Causation in History”).
- Marwick, Arthur. (1989) The Nature of History. Third edition, Hampshire and London: Mac-Millan (Ch. 6, pp. 242-255).
- Tosh, J. (2002). In Pursuit of History. Revised third edition. London, N.Y., New Delhi: Long-man (Ch.6, “Writing and Interpretation”).
- अशोक चक्रधर (अनुवाङ्मिक), इततहास क्या है – ई.एच. कार। Macmillan, 2000.
- एररक हॉब्सबॉम, इततहासकार की तचंता । ग्रंथ तशल्पी, 2007 (अनुवाङ्मिक) ।

Unit-4: This Unit will familiarize the students with the relationship between history and other disciplines, and how the interface enriches history writing, as well as their understanding of other disci-plines. (Teaching time: 12 hours approx.)

- Carr, E.H. (1991). What is History. Penguin. Reprint. (Ch.3, “History, Science and Morali-ty”).
- Jordonova, Ludmilla. (2000). History in Practice, London/New York: Arnold and Oxford Uni-versity Press Inc. (Ch. 3, “History and Other Disciplines”).
- Sreedharan, E. (2007). A Manual of Historical Research Methodology. Centre for South Indi-an Studies: Trivandrum [Ch.2-Part II: History and Social Science; Ch.2-Part III: History and the Humanities; Ch.5; Ch.7]. [Also available in Hindi].
- अशोक चक्रधर (अनुवाङ्मिक), इततहास क्या है – ई.एच. कार। Macmillan, 2000.

Suggestive readings

- Ambedkar, B.R. (1948). 'Preface' in The Untouchables: Who were They and Why did They Become Untouchables?. Reproduced in Dr. Babasaheb Ambedkar: Writings and Speeches, vol. 7, New Delhi: Ministry of Social Justice and Empowerment, 1990, pp. 239-245.
- Arnold, J.H. (2000). History: A Very Short Introduction. Oxford: Oxford University Press (Ch.3. & Ch.7)
- Becker, Carl. (1931). American Historical Review 37 (January), pp. 221-36, reprinted in Ad-am Budd (Ed.). (2009). The Modern Historiography Reader. London and N.Y: Routledge (“Everyman His Own Historian”, Presidential Address).
- Bloch, Marc. (1992). The Historian’s Craft, Manchester: Manchester University Press, re-print, pp. 190-197; 60-69 and 138-144.
- Budd, Adam. (Ed.). (2009). The Modern Historiography Reader: Western Sources. London and N.Y: Routledge, pp. 70-79, 81-87, 89-91 (“What is a Historian?”).
- Hobsbawm, Eric J. (1998). On History. UK: Abacus (Ch. 21, “Identity History is Not Enough”).

- Jordonova, Ludmilla. (2000). History in Practice. London/New York: Arnold and Oxford Uni-versity Press Inc., pp. 163-171 and 173-183 (Ch.6, “Public History” and “Ch.7, “Historians’ Skills”).
- Smith, Bonnie G. (1998). The Gender of History: Men, Women and Historical Practice. Cam-bridge, M.A.: Harvard University Press. (Relevant chapters).
- Tosh, John. (2002). In Pursuit of History. Revised third edition. London, N.Y., New Delhi: Longman (Ch.5, “The Themes of Mainstream History”).
- लाल बहादुर वमाा, इततहास के बारे में । 1984
- माका ब्लॉक, इततहासकार का तशलप । मेधा पम्भलतशंग हाउस, 2013 (अनुवाि)

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

4. Amendment to Appendix -II-A to the Ordinance V (2-A) of the Ordinances of the University vide EC Resolution 18-1-1 dated 18.08.2022 regarding Syllabi of 1st Semester of Departments under Faculty of Arts

Add the following:

Syllabi of Semester-I of the following departments under Faculty of Arts based on Under Graduate Curriculum Framework -2022 to be implemented from the Academic Year 2022-23.

FACULTY OF ARTS

DEPARTMENT OF ARABIC

B.A (H) ARABIC:
Category-I

DISCIPLINE SPECIFIC CORE COURSE – 1
ARABIC READING & WRITING FOR BEGINNERS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Arabic Reading & Writing For Beginners | 4 | 3 | 1 | 0 | Class XII Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

1. To make the learners familiar with the Arabic language skills.
2. To make them aware with correct pronunciation of consonants and vowels.
3. To make them acquainted with basic Arabic vocabulary.

Learning outcomes

The Learning Outcomes of this course are as follows:

By studying this course the student will be able to:

1. Recognise, read and write Arabic alphabet.
2. Read short and simple sentences in Arabic.
3. Use basic interrogative sentences in Arabic.
4. Use the basic vocabulary of the things around him/her in Arabic.
5. Use the Arabic numerals from 1-10.

SYLLABUS OF DSC-1 (CATEGORY-I)

Unit 1 (20 hours)

Arabic Reading & Writing

- Arabic Alphabet with different shapes
- Moon & Sun letters
- Vowel signs (short & long)
- Joining of letters
- Words with different vowels

Basic Vocabulary

- Frequently used Urdu words of Arabic Origin (100).
- Frequently used vocabulary of the following heads (300):
House, Kitchen, Office, Classroom, College, Human Body, Vegetables, Fruits, Name of Days, Name of Months, Numbers (1-10)

Unit 2 (20 hours)

- Reading and Comprehension

Lessons: 1 to 5

Prescribed Book: “Madina Arabic Reader-1 by Dr. V. Abdur Rahim”

Unit 3 (20 hours)

- Reading and Comprehension

Lessons: 6 to 10

Prescribed Book: “Madina Arabic Reader-1 by Dr. V. Abdur Rahim”

Practical component (if any) - NIL

Essential/recommended readings

1. Prof. W. A. Nadwi: A Practical Approach to the Arabic Language Vol.-1, New Delhi.
2. Reading material prepared by the Department of Arabic, ZHDC, D.U.

Suggestive readings

1. Prof. S. A. Rahman: Teach Yourself Arabic, New Delhi.
2. Prof. R.I. Faynan: Essential Arabic, New Delhi.
3. Dr. Amir Jamal: Arabic Learn the Easy Way, New Delhi.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2 ARABIC GRAMMAR FOR BEGINNERS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Arabic Grammar For Beginners | 4 | 3 | 1 | 0 | Class XII Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

1. To make the learners well versed in Syntax and Morphology.
2. To enable them to translate the text.
3. To develop speaking, reading and writing skills in them.

Learning outcomes

The Learning Outcomes of this course are as follows:

By studying this course the student will be able to:

1. Conjugate the given verbs and use them as per their requirement.
2. Use them in their writings and conversation as per the need.
3. Learn elementary grammar of the Arabic syntax.
4. Make simple nominal sentences.

SYLLABUS OF DSC-2 (CATEGORY-I)

Unit 1 (20 hours)

- نكرة – أداة النكرة & معرفة – أداة المعرفة
- Nouns: Masculine & Feminine and Symbols of feminineness.
- Complete chart of أسماء الإشارة
- Nominal Sentence (المبتدأ والخبر)
- 14 Mood Conjugation of the following:

- فَعَلَ – يَفْعَلُ
- فَعِلَ – يُفْعَلُ
- مَا فَعَلَ – لَا يَفْعَلُ
- مَا فَعِلَ – لَا يُفْعَلُ

Unit 2 (20 hours)

- Complete chart of الضمائر المنفصلة & الضمائر المتصلة
- Formation of المركب الإضافي & المركب الإشاري
- 6 Mood Conjugation of the following:

- إِفْعَلْ
- لَا تَفْعَلْ
- فَاعِلْ
- مَفْعُولْ

Unit 3 (20 hours)

- Formation of المركب الوصفي
- Frequently used prepositions:

| | | | | | |
|----|----|-----|-----|---|---|
| من | في | إلى | على | ل | ب |
|----|----|-----|-----|---|---|

- Conjugation of the أبواب الفعل الثلاثي المجرد:

| | | | | | |
|------------|------------|------------|------------|------------|------------|
| فتح - يفتح | ضرب - يضرب | نصر - ينصر | سمع - يسمع | كرم - يكرم | حسب - يحسب |
|------------|------------|------------|------------|------------|------------|

Practical component (if any) - NIL

Essential/recommended readings

1. Dr. W. A. Nadwi: A Practical Approach to the Arabic Language Vol.1, New Delhi.
2. Dr. Amir Jamal: Arabic Learn the Easy Way, New Delhi.
3. علي جارم ومصطفى أمين: النحو الواضح، القاهرة
4. مولانا عبد الرحمن امرتسري: كتاب النحو، پانی پت

Suggestive readings

1. J. A. Haywood & H. M.: A New Arabic Grammar, New Delhi.
2. Prof. R.I. Faynan: Essential Arabic, New Delhi.
3. مولانا عبد الماجد الندوي: معلم الإنشاء، لکنؤ
4. عبد الستار خان: عربی کا معلم، دہلی

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 3 ARABIC TRANSLATION FOR BEGINNERS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Arabic Translation For Beginners | 4 | 3 | 1 | 0 | Class XII Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

To enable learners to translate simple sentences from English into Arabic.

To enable learners to translate simple sentences from Arabic into English.

Learning outcomes

The Learning Outcomes of this course are as follows:

The student will acquire skills of translating simple sentences English into Arabic.

The student will acquire skills of translating simple sentences English into Arabic.

SYLLABUS OF DSC-3 (CATEGORY-I)

Unit 1 (5 Weeks)

Translation based on two-word nominative sentences using the following as subject (المبتدأ):

| | | |
|---------------|-----------------|------------------|
| أسماء الإشارة | الضمائر المتصلة | الضمائر المنفصلة |
| المعرف باللام | العلم | |

Unit 2 (20 hours)

Translation based on الجملة الفعلية on the following pattern:

Verb + Doer

Verb + Doer + Object

Unit 3 (20 hours)

Translation based on the following phrases:

Possessive Phrase (المركب الإضافي)

Adjectival Phrase (المركب الوصفي)

Demonstrative Phrase (المركب الإشاري)

Practical component (if any) - NIL

Essential/recommended readings

Dr. W. A. Nadwi: A Practical Approach to the Arabic Language Vol.1, New Delhi.

Prof. V. Abdur Rahim: Madina Arabic, Vol. 1, New Delhi.

Dr. Amir Jamal: Arabic Learn the Easy Way, New Delhi.

النحو، پانی پت کتاب: امرتسری الرحمن عبد مولانا

Suggestive readings

J. A. Haywood & H. M. : A New Arabic Grammar, New Delhi.

Prof. R.I. Faynan: Essential Arabic, New Delhi.

الإنشاء، لکنؤ معلم: الندوی الماجد عبد مولانا

معلم، دہلی کا عربی: خان الستار عبد

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BA (PROG) with ARABIC as Major
Category-II

DISCIPLINE SPECIFIC CORE COURSE – 1
INTRODUCTORY ARABIC-1

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introductory Arabic-1 | 4 | 3 | 1 | - | Class XII Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

1. To make them learn Arabic script and its sound systems
2. To enable them to read and write basic Arabic.

Learning outcomes

The Learning Outcomes of this course are as follows:

After completing this course the learner will be able to:

1. Develop skills of reading and writing.
2. Read simple Arabic text correctly.

SYLLABUS OF DSC-1 (CATOGORY-II)

Unit 1 (20 hours)

Arabic Text-1

Lessons: 1 to 8

Prescribed Book:

القراءة الواضحة (الجزء الأول)
مولانا وحيد الزمان قاسمي كيرانوي

Unit 2 (20 hours)

Arabic Text-2

Lessons: 9 to 16

Prescribed Book:

القراءة الواضحة (الجزء الأول)

مولانا وحيد الزمان قاسمي كيرانوي

Unit 3 (20 hours)

Comprehension & Applied Grammar

Lessons: 1 to 16

Prescribed Book:

القراءة الواضحة (الجزء الأول)

مولانا وحيد الزمان قاسمي كيرانوي

Practical component (if any) - NIL

Essential/recommended readings

1. Prof. W. A. Nadwi: A Practical Approach to the Arabic Language Vol.-1, New Delhi.
2. Reading material prepared by the Department of Arabic, ZHDC, D.U.

Suggestive readings

4. Prof. S. A. Rahman: Teach Yourself Arabic, New Delhi.
5. Prof. R.I. Faynan: Essential Arabic, New Delhi.
6. Dr. Amir Jamal: Arabic Learn the Easy Way, New Delhi.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2
ARABIC: TEXT GRAMMAR & TRANSLATION -I

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Arabic: Text, Grammar & Translation-I | 4 | 3 | 1 | - | Class XII Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

1. To make the learners familiar with the Arabic language skills.
2. To make them familiar with basic grammar rules required at the first stage of learning Arabic
3. To enhance their vocabulary through the given text and understand the different structures of sentences.

Learning outcomes

The Learning Outcomes of this course are as follows:

After completing this course the learner will be able to:

1. Recognize, read and write Arabic alphabet.
2. Read short and simple sentences in Arabic.
3. Translate simple sentences from English into Arabic & Vice Versa.

SYLLABUS OF DSC-2 (CATEGORY-II)

Unit 1 (20 hours)

Arabic Text

Lessons: 1 to 12
(Semester-One)

Prescribed Book:

My Arabic Reader
Elementary Level
Dr. Wali Akhtar Nadwi

Unit 2 (20 hours)

Grammar:

- Arabic Alphabet
- Shapes of Arabic Letters
- Vowel Signs

- Other Signs
- Sun Letters & Moon Letters
- Masculine & Feminine
- Demonstrative Pronouns
- Detached Pronouns
- Definite & Indefinite
- Nominal Sentence
- Preposition
- Past Tense
- Future Tense
- Attached Pronouns
- Al-Idafa (Mudaaf & Mudaaf Ilaih)
- Quality & the Noun Qualified

Unit 3 (20 hours)

Translation:

Translation English-Arabic-English based upon the Vocabulary of Daily Use.

Practical component (if any) - NIL

Essential/recommended readings

1. Prof. W. A. Nadwi: A Practical Approach to the Arabic Language Vol.-1, New Delhi.
2. عبد الستار خان: عربی کا معلم، دہلی

Suggestive readings

1. Prof. S.A. Rahman: Teach Yourself Arabic, New Delhi.
2. Prof. R.I. Faynan: Essential Arabic, New Delhi.
3. Dr. Amir Jamal: Arabic Learn the Easy Way, New Delhi.
4. V. Abdur Rahim: Madinah Arabic Reader-1, New Delhi

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BA (Prog.) with Arabic as Minor
Category-III

DISCIPLINE SPECIFIC CORE COURSE – 1
ARABIC LANGUAGE-1

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------|---------|-----------------------------------|----------|------------------------|-------------------------|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Arabic Language-1 | 4 | 3 | 1 | 0 | Class XII Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

1. Learners will become more accurate and efficient in using a language.
2. Improves the fluency in the language.
3. Able to speak, read and write the language more efficiently.

Learning outcomes

The Learning Outcomes of this course are as follows:

After completing this course the learner will be able to:

1. Recognise, read and write Arabic alphabet.
2. Read short and simple sentences in Arabic.
3. Use basic interrogative sentences in Arabic.
4. Utter the basic vocabulary of the things around him/her in Arabic.
5. Write the Arabic numerals from 1 to 10.

SYLLABUS OF DSC-1 (CATOGORY-III)

Unit 1 (20 hours)

Basics

- Alphabets with different shapes
- Moon & Sun letters
- Vowel signs (short & long)
- Joining of letters
- Words with different vowels

- Reading text with vowels
- Practicing Arabic alphabets in isolated shapes, two, three, four & five letters
- Copying text
- Taking dictation

Unit 2 (20 hours)

Basic Vocabulary:

Frequently used Urdu words of Arabic origin. (100)

Frequently used vocabulary of the following heads: (300)

- House
- Kitchen
- Office
- Class Room
- College
- Human Body
- Vegetables
- Fruits
- Name of Days
- Name of Months
- Numbers (1-10)

Unit 3 (20 hours)

Conversation:

To learn how to make sentences using the following Particles:

| | | | | | | | |
|----------------------|----|-----|-----|-------|-----|-------|-----------------|
| أسماء الإشارة (مفرد) | لِ | لدى | عند | همزة | هل | لا | نعم |
| عدد وصفي (10-1) | كم | أين | متى | لماذا | كيف | من ما | أسماء الاستفهام |

Practical component (if any) - NIL

Essential/recommended readings

1. V. Abdur Rahim : Madinah Arabic, Vol. 1, New Delhi.
2. Prof. W. A.Nadwi: A Practical Approach to the Arabic Language Vol.1, New Delhi.
3. Reading material prepared by the Department of Arabic, ZHDC, D.U.

4. د. إحسان الرحمان: الجديد في العربية، نيودلهي

Suggestive readings

1. Prof.S.A.Rahman: Teach Yourself Arabic, New Delhi.
2. Prof.R.I. Faynan: Essential Arabic, New Delhi.
3. Dr. Amir Jamal: Arabic Learn the Easy Way, New Delhi.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Common Pool of Generic Electives (GE) Courses
Offered by Department of Arabic
Category - IV

GENERIC ELECTIVE- 1
BASIC ARABIC READING & WRITING

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Arabic Reading & Writing | 4 | 3 | 1 | 0 | Class XII Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

1. To make them familiar with the basic Arabic language.
2. To improve their grip on the language.
3. To acquaint them with Arabic Alphabet and Arabic vocabulary.
4. Learners will practice sentences based on the prescribed grammatical points.
5. Learners will be able to read and write simple sentences based on basic applied grammar.

Learning outcomes

The Learning Outcomes of this course are as follows:

By studying this course the student will be able to:

1. Recognize, read and write Arabic Alphabet.
2. Read short and simple sentences in Arabic.
3. Use basic interrogative sentences in Arabic.
4. Utter the basic vocabulary of the things around them in Arabic.
5. Read short and simple sentences correctly.
6. Form simple sentences based on basic grammar
7. Identify the errors and make sentences corrected.

SYLLABUS OF G.E.-1

Unit 1 (20 hours)

Reading & Writing Arabic

1. Alphabet with different shapes
2. Moon & Sun letters
3. Vowel signs (short & long)
4. Joining of letters
5. Words with different vowels
6. Reading text with vowels
7. Copying text
8. Taking dictation

Unit 2 (20 hours)

Basic Vocabulary

| | |
|--|--|
| Frequently used Urdu words of Arabic origin, (100). Frequently used vocabulary of the following heads:(300) 1. House 2. Kitchen 3. Office 4. Class Room | 5. College 6. Human Body 7. Vegetables 8. Fruits 9. Name of Days 10. Name of Months 11. Numbers (1-10) |
|--|--|

Unit 3 (20 hours)

- Basic Grammar

| | |
|---|--|
| 1. Singular demonstrative pronouns 2. Dual demonstrative pronouns 3. Plural demonstrative pronouns 4. Singular, dual and plural nouns 5. The indefinite noun 6. The definite noun with الـ | 7. Detached singular pronouns 8. Detached dual pronouns 9. Detached plural pronouns 10. Masculine & feminine 11. Noun Qualified & Adjective 12. Cardinal Numbers (1-10) |
|---|--|

Practical component (if any) - NIL

Essential/recommended readings

1. Prof. W. A. Nadwi: A Practical Approach to the Arabic Language Vol. 1, New Delhi.
2. Reading material prepared by the Department of Arabic, ZHDC, D.U.

Suggestive readings

1. Prof. S.A. Rahman: Teach Yourself Arabic, New Delhi.
2. Prof. R.I. Faynan: Essential Arabic, New Delhi.
3. Dr. Amir Jamal: Arabic Learn the Easy Way, New Delhi

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVE– 2 BASIC ARABIC TRANSLATION

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Arabic Translation | 4 | 3 | 1 | 0 | Class XII Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

1. To make the Learners familiar with basic rules of Arabic translation.
2. To teach them the art of translation.
3. To enable them to translate simple sentences.

Learning outcomes

The Learning Outcomes of this course are as follows:

By studying this course the student will be able to:

1. Know the rules of Arabic translation.
2. Know about the art and the scope of Arabic translation.
3. Translate simple sentences based on the prescribed grammatical rules.

SYLLABUS OF G.E.-2

Unit 1 (20 hours)

Basic Arabic Vocabulary required for Translation:

- Things Around You
- Education
- Human Body
- Food Items
- Birds & Animals
- Name of Days & Months
- Counting 1 to 10

Unit 2 (20 hours)

Translation of simple sentences based on the following grammatical heads:

- Demonstrative pronouns
- Singular, dual and plural nouns
- The definite and indefinite nouns
- Detached pronouns

Unit 3 (20 hours)

Translation of simple sentences based on the following grammatical heads:

- Masculine & feminine
- Noun Qualified & Adjective
- Nominal sentences
- Prepositions

Practical component (if any) - NIL

Essential/recommended readings

1. Prof. W. A.Nadwi: A Practical Approach to the Arabic Language Vol.1, New Delhi.
2. Prof. S.A. Rahman: Teach Yourself Arabic, New Delhi.
3. Prof. R.I. Faynan: Essential Arabic, New Delhi.
4. Dr. Amir Jamal: Arabic Learn the Easy Way, New Delhi.

Suggestive readings

1. Abdus Sattar Khan: Arabi Ka Muallim, Delhi
2. Muhammad Sajid Qasmi: Taysirul Insha', Deoband
3. Dr. Md. Quamruddin: Translation Made Easy, U.P.
4. Dr. Syed Ali: Arabic For Beginners, UBS Publishers, New Delhi
5. Maulana Abdur Rahman Amritsari: Kitabun Nahw, Delhi

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVE– 3

CONVERSATION AND COMMUNICATION IN ARABIC

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Conversation and Communication in Arabic | 4 | 3 | 1 | 0 | Class XII Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

1. To enable them to converse in Arabic.
2. To teach them how to greet people in Arabic.
3. To teach how to introduce oneself
4. The enable them to communicate in Arabic.

Learning outcomes

The Learning Outcomes of this course are as follows:

By studying this course the student will be able to:

1. Converse in Arabic.
2. Greet in Arabic.
3. Introduce themselves.
4. Communicate in Arabic

SYLLABUS OF G.E.-3

Unit 1 (20 hours)

Vocabulary, simple sentences/structures based on the following topics:

- Formal and informal greetings
- Greetings on special days/occasions
- Common Arabic expressions

Unit 2 (20 hours)

Vocabulary, simple sentences/structures based on the following topics:

- Self-Introduction
- Introducing someone else
- Asking for direction/guidance.

Unit 3 (20 hours)

Conversation based on the vocabulary related to:

- Self-introduction
- Introduction of someone else
- Acquaintance
- Asking for direction/guidance.

Practical component (if any) - NIL

Essential/recommended readings

1. V. Abdur Rahim: Madinah Arabic, Vol. 1, New Delhi.
2. Prof. W. A. Nadwi: A Practical Approach to the Arabic Language Vol.1, New Delhi.
3. Reading material prepared by the Department of Arabic, ZHDC, D.U.
4. Mohd. Haroon Rashid & Khalid Parwez: Arabic Conversation Book, New Delhi.

Suggestive readings

1. Prof. S.A. Rahman: Let Us Speak Arabic, New Delhi.
2. Prof. R.I. Faynan: Essential Arabic, New Delhi.
3. Dr. Amir Jamal: Arabic Learn the Easy Way, New Delhi.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DEPARTMENT OF GERMANIC & ROMANCE STUDIES

BA (Hons) French

Category-I

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------------|--|-----------------|----------------------------|-----------------------------|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Language in Context: Developing Reading and Writing Skills (1) | 4 | 3 | 1 | 0 | Passed XII Class | NIL |

Learning Objectives

In semester 1, students will learn

- about France and French speaking countries.
- to read and understand an email.
- To write an email on simple subjects (introduce oneself, describe one's city, one's town, one's family)
- To read and understand a simple poster. (announcing an event, a film,)
- To prepare a poster.
- To read and understand a blog.
- To write a short blog (about oneself, about one's family, expressing one's likes and dislikes.etc.)/ to reply to a blog.
- To describe a town/city.
- To describe the locality in which one lives.
- To describe one's daily routine.
- To read and understand a notice.
- To read and understand an extract from a comic book.
- To describe a person (physical and qualitatively)
- To describe one's family.
- To read, understand and reply to short messages.

Course Learning Outcomes

At the end of Semester 1, students will be able to

- read simple texts and answer questions on them.
- write on subjects pertaining to themselves and their immediate environment.
- attain Level A 1.1 of reading and writing skills.

SYLLABUS OF DSC-1¹

Unité 0: (4 hours)

Comprehension: of a variety of visual documents on France and francophone countries (photos of monuments, tourist attractions, flags of countries.)

Writing: completing the profile of well known artists and writers from the French speaking world.

Vocabulary: Greetings (*salut, bonjour, au revoir* etc), thanking someone (*merci*). Days of the week and months of the year.

Intercultural: The French speaking world; Introduction to well known artists and writers from French speaking countries in Europe, Asia, Africa and Canada

Unité 1 (Lessons 1-4 + Project): (16 hours)

Reading comprehension: Short dialogues. Emails, posters, visiting cards and simple contracts and answering questions on them. Understanding the highway code. Arranging a simple text in order.

Writing: Creating a visiting card, writing about one's ideal profession, writing and answering an email filling in a form.

Grammar: Adjectives of nationality, masculine and feminine of adjectives, verb *être* (Present tense), indefinite articles (*un, une, des*), Structures *Venir de + name of a country, habiter en/au + name of a country*, Ask questions with "*est-ce que c'est + nom?*". Variety of exercises on different grammatical points covered.

Vocabulary: Countries and nationalities, professions, opening and closing structures of an email.

Sociocultural: Difference between *tu* and *vous* and how to use them. Titles of address (*Monsieur, madame..*)

Unité 2 (Lessons 1-4 + Project): (12 hours)

Reading Comprehension: Short texts, instagram posts and posters and answering simple questions on them.

¹A text book contains 6-8 modules/units called *unité*. Each unite with the exception of *unité 0* which is the introductory unit comprises 4 lessons. Therefore the syllabus is given in terms of the text book unit being covered along with the content of the 4 lessons with a total duration of the number of weeks needed to cover a *unité* of 4 lessons.

Writing: Write a short text to present well known French or francophone fashion designers, to describe one's typical day, write short dialogues corresponding to a given situation.

Grammar: Present of the verb "*avoir*" and verbs in "-ER", definite articles (*le, la, l', les*), plural of nouns, emphatic pronouns (*moi, toi...*). Variety of exercises on different grammatical points covered.

Vocabulary: World of work – the cinema, animals, fashion, the weather, numbers (1-100), typical structures to be used in a telephone conversation.

Intercultural: Describe one's day, the telephone alphabet.

Unité 3 (Lessons 1-4 + Project): (12 hours)

Reading Comprehension: Simple texts, a message on a blog and answer questions on them. Associate a picture and a text. Associate a logo and a place.

Writing: Prepare a poster with photos and a short text on a francophone town/city of your choice. Write a "Slam" on a francophone town/city of your choice. Write a small advertisement to rent out your apartment. Write a blog.

Grammar: Sentence structure using *Il ya*, how to form a negative sentence (*ne...pas*), asking questions with "*qu'est-ce que c'est?*" Present tense of irregular verbs like "*faire, aller, prendre*" Prepositions to situate an object or a place. Giving orders/instructions: the imperative tense.

Vocabulary: Important and useful places in a town (monuments, museum...) Important and useful places in a locality (grocery store, market, bus stops) daily activities, means of transport.

Intercultural: Francophone cities.

Unité 4 (Lessons 1-4 + Project): (12 hours)

Reading Comprehension: Understanding a family tree and answering questions on it. Read and understand a comic strip and answer questions on it. Read a short text, a short biography, description of a birthday celebration and answer questions on it.

Written: Prepare your family tree, write a short text on your family, describe briefly a member of your family, accept or refuse an invitation.

Grammar: Asking the identity of an unknown person with the question "qui est-ce?", Possessive adjectives, le passé récent, feminine and plural of adjectives, placement of the adjective, conjunctions of coordination *mais* and *et* and their use.

Vocabulary: The family, relations between different members of the family (mother father, brother sister...) physical description of a person, family events, (birthday, marriage..) clothing, furniture.

Intercultural: The family.

Practical component (if any) - NIL

Essential/recommended readings

Any of the textbooks given below may be prescribed.

1. Abi Mansour D, Anthony S, Soucé A, Fenoglio P, Papin K. Vergues M :“*Odysée A1, Méthode de français*”, CLÉ International, France, 2021, Unités 0-4.
2. Jegou D, Vial C : « *La Classe A 1, Méthode de français* »,CLÉ International, 2019, Unités 0-3.
3. Cocton Marie-Noëlle, Pommier Emilie, Ripaud Delphine, Rabin Marie : « *L’Atelier A1, Méthode de français* », Les Éditions DIDIER, France, 2019, Unités 1-4.
4. Chahi Fatiha, Denyer Monique, Gloaneac Audrey, Briet Geneviève, Collige-Neunschwander Valérie (capsules de phonétique), Fouillet Raphaëlle (précis de grammaire) : « *Défi – 1 Méthode de français* », Éditions Maison des Langues, 2018, Unités 0-4.
5. Alcaraz Marion, Braud Céline, Calvez Aurélien, Cornuau Guillaume, Jacob Anne, Vidal Sandrine : « *Edito- A 1 Méthode de français (2^e édition)* », Editions DIDIER FLE, 2022, Unités 0-5.
6. Rio Lénia : “*Odysée A1, Cahier d’activités*”, CLÉ International, France, 2021, Unités 0-4.
7. Chanéac-Knight Laetitia : « *La Classe A 1, Cahier d’activités* », CLÉ International, 2019, Unités 0-3.
8. Cocton Marie-Noëlle (coordination pédagogique), Pommier Émilie, Ripaud Delphine, Rabin Marie : « *L’Atelier A1, Cahier d’activités* », Les Éditions DIDIER, France, 2019, Unités 1-4.
9. Chahi Fatiha, Denyer Monique, Gloaneac Audrey, Briet Geneviève, de Rongé Camille (phonétique), Verhulst Nancy (phonétique), Horquin Alexandrin (DELFI) : « *Défi – 1 Cahier d’activités*», Éditions Maison des Langues, 2018, Unités 0-4

Additional material may be provided by the Department.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2)
Language in Context: Developing Listening and Speaking Skills (1)

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|----------|-----------------------------------|----------|---------------------|-------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Language in Context: Developing Listening and Speaking Skills (1) | 4 | 3 | 1 | 0 | Passed Class XII | NIL |

Learning Objectives

In Semester 1, students will learn to

- greet in different situations.
- introduce themselves.
- ask for information about others and introduce them.
- communicate orally in formal and informal situations.
- describe a person.
- express their likes and dislikes.
- speak about one's preferences.
- Carry out a basic telephone conversation.
- speak about different professions.
- present a town/city.
- present a locality.
- present their family.
- talk about their daily routine.
- narrate a recent event.

Course Learning Outcomes:

At the end of Semester 1, students will be able to

- listen to and understand simple texts and answer questions on them.
- talk on subjects pertaining to his/her immediate environment.
- interact in simple everyday situations.
- attain Level A1.1 of listening and speaking skills as described in the Common European framework.

SYLLABUS OF DSC- 2²

Unité 0: (4 hours)

Comprehension: Listening to short every day phrases to familiarise students with French. Listening and understanding short dialogues/songs to be able to identify the words /phrases already learnt or known.

Listening to and understanding phrases used in classroom interaction.

Speaking: Repeating short phrases, letters of the alphabet. Spelling out one's name and those of one's classmates.

Vocabulary: Greetings (*salut, bonjour, au revoir* etc), thanking someone, (*merci*). Days of the week and months of the year.

Intercultural: The French speaking world; Introduction to well known artists and writers from French speaking countries in Europe, Asia, Africa and Canada

Unité 1 (Lessons 1-4 + Project): (16 hours)

Listening Comprehension: Watch a short video clip and answer simple questions on it, listen to a short dialogue and answer simple questions on it.

Speaking: Introduce oneself, get information about another person, present a third person, role plays in formal and informal situations, give one's email address, ask questions and answer them, organise and participate in a "speed-meeting"

Phonetics: Minimal pairs (distinguish between words which are different by a single sound), liaisons.

Vocabulary: Countries and nationalities, professions, opening and closing structures of an email.

Sociocultural: Difference between *tu* and *vous* and how to use them.

Unité 2 (Lessons 1-4 + Project): (12 hours)

Listening Comprehension: Listen to a short interview and answer simple questions on it, listen to a message on the answering machine and complete it and/or answer simple questions on it, listen to a short conversation and answer questions on it, listen to a text and arrange the given sentences in order, watch a video clip and associate the image with a spoken sentence, listen to short telephonic conversations.

² A text book contains 6-8 modules/units called *unité*. Each unite with the exception of unite 0 which is the introductory unit comprises 4 lessons. Therefore the syllabus is given in terms of the text book unit being covered along with the content of the 4 lessons with a total duration of the number of weeks needed to cover a *unité* of 4 lessons.

Speaking: Ask for and give personal information, make polite requests, present a person, conduct a simple interview, role play (an audition for a film role),telephone conversations, express one's preferences, count from 1-100, ask for explanations, ask for and/ or confirm a meeting, spell one's name using the telephone alphabet talk about one's daily routine.

Phonetics: *Oral vowels, “ enchaînements.”*

Vocabulary: World of work – the cinema, animals, fashion, the weather, numbers (1-100), typical structures to be used in a telephone conversation.

Intercultural: Describe one's day, the telephone alphabet.

Unité 3 (Lessons 1-4 + Project): (12 hours)

Listening Comprehension: Listen to simple texts, messages and answer questions on them. Listen to and understand simple instructions given in public transport (bus, metro..) watch a video clip and answer questions on it.

Speaking: Describe a town/city, the pros and cons of the locality you live in, speak of one's likes and dislikes, describe the locality in which you live, ask /answer questions about a town/city/ locality, describe available means of transport speak about a transport problem. Give instructions, speak about one's preferences

Phonetics: Mute (un pronounced) letters, oral vowels.

Vocabulary: Important and useful places in a town (monuments, museum...) Important and useful places in a locality (grocery store, market, bus stops) daily activities, means of transport.

Intercultural: Francophone cities.

Unité 4 (Lessons 1-4 + Project): (12 hours)

Listening Comprehension: Listen to a short text and answer questions on the same. Watch a video clip and answer questions on the same.

Speaking: Present your family to the class with the help of photos. Narrate a recent event describe a person. Congratulate, wish or compliment someone. Express one's agreement or disagreement. Describe clothes and accessories a person is wearing. Present a furniture designer from your country to the class. Describe a gift you are offering to a friend for his/her birthday.

Phonetics: Markers of “Feminine” in oral (petit – petite); Oral vowels.

Vocabulary: The family, relations between different members of the family (mother father, brother sister...) physical description of a person, family events, (birthday, marriage..) clothing, furniture.

Intercultural: The family.

Practical component (if any) - NIL

Essential/recommended readings

Any of the textbooks given below may be prescribed.

1. Abi Mansour D, Anthony S, Soucé A, Fenoglio P, Papin K. Vergues M :“*Odysée A1, Méthode de français*”, CLÉ International, France, 2021, Unités 0-4.
2. Jegou D, Vial C : « *La Classe A 1, Méthode de français* »,CLÉ International, 2019, Unités 0-3.
3. Cocton Marie-Noëlle, Pommier Emilie, Ripaud Delphine, Rabin Marie : « *L’Atelier A1, Méthode de français* », Les Éditions DIDIER, France, 2019, Unités 1-4.
4. Chahi Fatiha, Denyer Monique, Gloaneac Audrey, Briet Geneviève, Collige-Neunschwander Valérie (capsules de phonétique), Fouillet Raphaëlle (précis de grammaire) : « *Défi – 1 Méthode de français* », Éditions Maison des Langues, 2018, Unités 0-4.
5. Alcaraz Marion, Braud Céline, Calvez Aurélien, Cornuau Guillaume, Jacob Anne, Vidal Sandrine : « *Edito- A 1 Méthode de français (2^e édition)* », Editions DIDIER FLE, 2022, Unités 0-5.
6. Rio Lénia : “*Odysée A1, Cahier d’activités*”, CLÉ International, France, 2021, Unités 0-4.
7. Chanéac-Knight Laetitia : « *La Classe A 1, Cahier d’activités* », CLÉ International, 2019, Unités 0-3.
8. Cocton Marie-Noëlle (coordination pédagogique), Pommier Émilie, Ripaud Delphine, Rabin Marie : « *L’Atelier A1, Cahier d’activités* », Les Éditions DIDIER, France, 2019, Unités 1-4.
9. Chahi Fatiha, Denyer Monique, Gloaneac Audrey, Briet Geneviève, de Rongé Camille (phonétique), Verhulst Nancy (phonétique), Horquin Alexandrin (DELF) : « *Défi – 1 Cahier d’activités*», Éditions Maison des Langues, 2018, Unités 0-4

Additional material may be provided by the Department.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-3)

Language Through Texts (1)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course(if any) |
|----------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|-------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Language Through Texts (1) | 4 | 3 | 1 | | 12 th Pass | NIL |

Learning Objectives

- Introduction to extracts from contemporary literary texts of both French and francophone writers.
- Introduction to varied cultural themes of France and francophone countries to develop vocabulary and written expression.
- Creating awareness of present day France through short journalistic texts.
- Development of language competence (reading skills, comprehension and vocabulary)

Learning outcomes

At the end of semester 1, a student will be able to

- read and understand a short literary text adapted for students of level A1 and to answer questions on the same.
- Read and understand a short culture based text adapted for students of level A1 and to answer questions on the same.
- read and understand a short journalistic text adapted for students of level A1 and to answer questions on the same.

SYLLABUS OF DSC-3

Unit 1: Literary texts³ (20 hours)

1. Proust, Marcel : « *A la recherché du temps perdu* »
2. Camus, Albert : « *Le malentendu* »
3. Prévert, Jacques : « *Familiale* »
4. Bâ, Mariama : « Une si longue lettre »
5. Bégag, Azouz : « *Le Gone du Chaâba* »
6. Ernaux, Annie : « *Une femme* »

³ The titles cited above are examples of texts. The teacher can bring in other literary texts adapted to the level of students.

Unit 2: Texts on culture and civilisation⁴ (20 hours)

1. Une vie d'étudiant
2. Les medias
3. Les Vacances
4. Familles
5. La France Multiculturelle
6. La Francophonie.

Unit 3: Short texts from newspapers. (20 hours)

Material will be made available by the Department as journalistic texts have to refer to events in real time.

Practical component (if any) - NIL

Essential/recommended readings

To be compiled and provided by the Department.

1. Blondeau Nicole, Allouache Ferroudja, Né Marie-Françoise « *Littérature progressive du français, A1-A2 niveau débutant* » (2^e édition avec 600 activités), CLÉ, International, 2019.
2. Carlo Catherine, Causa Marielle : « *Civilisation Progressive du français, A1, niveau débutant* » (3^e édition avec 450 activités), CLÉ International, 2019.
3. “ *Le plaisir de lire en français* ” Level A1 romans illustrés, Les Éditions DIDIER
4. *Le Journal des Enfants*: A weekly newspaper for young learners.

Additional material may be provided by the Department.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

⁴ The teacher can introduce themes and material adapted to the level of the students.

BA (Prog.) French
Category-III

Courses for Undergraduate Programme of study with discipline as one of the Core Disciplines

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

DISCIPLINE SPECIFIC CORE COURSE (DSC-1): French in Context: Basic Level – 1

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|-------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| French in Context: Basic Level-1 | 4 | 3 | 1 | Nil | Passed Class XII | None |

Learning Objectives: (Reading, Writing, Listening and Speaking):

In Semester 1, the student will learn

- about France and French speaking countries.
- to greet in different situations, introduce themselves, ask for information about others and introduce them, learn to communicate orally in formal and informal situations.
- to express their likes and dislikes, speak about their preferences.
- to read, understand a simple poster (announcing an event, a film) and to prepare a poster.
- to read, understand a blog and to write a short blog (about oneself, about one's family, expressing one's likes and dislikes. etc.)/ to reply to a blog.
- to read and understand a notice, an extract from a comic book.
- to describe a town/city, the locality in which one lives.
- to describe one's daily routine.
- to describe a person (physical and qualitatively)
- to describe one's family.
- to read, understand and reply to short messages.
- to read and understand an email.
- to write an email on simple subjects (introduce oneself, describe one's city, one's town, one's family)
- to carry out a basic telephone conversation.
- To narrate a recent event.

Learning outcomes: (Reading, Writing, Listening and Speaking):

At the end of Semester 1, students will be able to

- read , listen to and understand simple texts and answer questions on them.
- write and talk about subjects pertaining to his/her immediate environment.
- interact in simple everyday situations.
- attain Level A 1.1 of reading , writing, listening and speaking skills as described in the Common European Framework.

SYLLABUS OF DSC-1⁵

Dossier 0 (4 hours)

Reading Comprehension: Short simple texts (extract of a comic book, academic calendar, classroom instructions) and posters (situations) and answer questions based on them.

Writing: Make a poster with two class instructions.

Grammar: Verb *s'appeler* (present tense), subject pronouns (*je, tu, il/elle...*) accents in French, gender of countries, definite article (*le, la, l' les*).

Listening Comprehension: Dialogues, short songs and answer questions on them. Associate the letter of the alphabet and its pronunciation. Write down numbers from 1-69.

Speaking: Introduce oneself, spell out one's name, the seasons in one's country, practice useful classroom phrases.

Phonetics: French alphabet.

Vocabulary: Greetings, names of people, countries, numbers, months of the year and days of the week.

Dossier 1 Lessons 1-6 + Project (16 hours)

Reading Comprehension: Associating photos and short texts, posters (invitation to an event, a film) and answering questions on it, read a blog, a website, SMS and answer questions on it, putting a short dialogue in order.

Writing: Fill in personal information on a document (a badge, a form, an enrollment form) write a tweet to introduce oneself, prepare a poster giving six photos and 6 arguments in favor of learning a foreign language.

Grammar: Difference between *tu* and *vous* and their use, indefinite articles (*un, une des*), question words (*où, qui, quand quoi?*), verb *être* (present tense), verbs in ER (present tense), difference between *il est*, *c'est*, interrogative adjectives (*quel, quelle...*), use of *parce que* (to give a reason) and *pour* (objective).

⁵ A text book contains 6-8 modules/units called *dossier* Each dossier with the exception of unite 0 which is the introductory unit comprises 6 lessons. Therefore, the syllabus is given in terms of the text book unit being covered along with the content of the 6 lessons with a total duration of the number of weeks needed to cover a dossier of 6 lessons.

Listening comprehension: Listen to short texts (dialogues, conversations interviews) and answer questions on them.

Speaking: Greetings, introduce oneself, take leave, ask for and give information/personal details, to introduce another person (ex. classmates) , ask the identity of an unknown person, give reasons for learning a foreign language.

Phonetics: Different French sounds (y, z), emphasis on the last syllable, different types of intonation (rising , descending) and their use, mute (un pronounced) letters, Liaison.

Vocabulary: Phrases to greet one another, polite phrases (merci, s'il vous plait), nationalities, professions

Cultural: French names, importance of French as an international language.

Dossier 2 Lessons 1-6 + Project (16 hours)

Reading Comprehension: Read a travel diary, symbols used in tourism, town map, forum, short texts on types of lodging, and answer questions based on them.

Writing: Write a travel diary, draw a map of your town or locality, write a message on a travel forum, explain one's choice of mode of transport, write a short introduction for a documentary on travelling, write a testimonial for a "couch surfer", prepare an advertisement to rent out a lodging.

Grammar: Prepositions used for countries and cities, prepositions to situate an object contracted articles with *à* and *de*, verbs *aller*, *venir* and *prendre* (present tense), make a negative sentence, ask questions.

Listening comprehension: Listen to an audioguide, information on a tourist place, conversation, report and answer questions on them.

Speaking: Name and situate places on a town map, talk about means of transport, get to know another person, talk about different types of lodging.

Phonetics: Different French sounds, l'elision, differentiate between masculine and feminine and singular and plural words.

Vocabulary: Names of countries and cities, important places in a town, means of transport, structures to get to know another person, lodging.

Cultural: French living abroad.

Dossier 3 Lessons 1-6 + Project (12 hours)

Reading Comprehension: Read content of websites, posters, advertisements and forums, testimonials family tree, instagram posts and answer questions based on them.

Writing: Describe a person, write a testimonial for 3 french tourists visiting your Country, prepare a poster for sporting activities, prepare and explain a medical survival kit.

Grammar: Masculine and feminine, singular and plural of qualifying adjectives, express one's likes and dislikes, the structure *faire* + a sport, emphatic pronouns, expression *avoir mal à* + a part of the body.

Listening Comprehension: Listen to recorded testimonials, conversations, short interviews and telephone conversations and answer questions on them.

Speaking: Describe/ introduce the family, describe a person, talk about preferences, activities, explain a health problem, ask and answer questions.

Phonetics: Differentiate between two close sounds, nasal vowels.

Vocabulary: Family, physical description and qualities of a person, verbs and expressions to present one's likes and dislikes, professions, activities (sports related and artistic), parts of the body.

Cultural: Interviews with people related to tourism. Origin of tourists who visit Paris.

Dossier 4 Lessons 1-6 + Project (12 hours)

Reading comprehension: Read a short article, an email, a website or forum, facebook post, and invitation and answer questions based on them.

Writing: Describe your typical day, prepare an ideal work schedule, prepare a questionnaire to identify the preferred outings of the class, write an email, write an invitation, accept/reject an invitation.

Grammar: Different ways to tell the time, tell the time, reflexive verbs, verbs lire, écrire, devoir, vouloir, pouvoir, sortir (Present tense), present tense of IR verbs, imperative mode.

Listening Comprehension: Listen to messages on telephone, interviews, telephone conversations radio programs and answer questions on them.

Speaking: Ask for and tell the time, describe one's typical work day, describe one's daily activities, propose and give information on different types of outings.

Phonetics: Different types of intonation, typical french sounds (semi vowels)

Vocabulary: Time, everyday activities, work schedule, outings.

Cultural: A day in the life of a Frenchman.

Practical component (if any) - NIL

Essential/recommended readings: Any of the text books given below may be prescribed:

1. Hirschsprung Nathalie, Tricot Tony avec la collaboration de d'Abreu Sophie et Veillon Anne (sons du français), Pardo Emilie (s'exercer), Mous Nelly (DELF) : « *Cosmopolite A1 Méthode de français* », Hachette Français langue étrangère, 2017 Dossiers 0-4.
2. Cocton Marie-Noëlle, Pommier Emilie, Ripaud Delphine, Rabin Marie : « *L'Atelier A1, Méthode de français* », Les Éditions DIDIER, France, 2019, Unités 1-4.
3. Chahi Fatiha, Denyer Monique, Gloaneac Audrey, Briet Geneviève, Collige-Neunschwander Valerie (capsules de phonétique), Fouillet Raphaëlle (précis de grammaire) : « *Défi – 1 Méthode de français* », Éditions Maison des Langues, 2018, Unités 0-4.
4. Abi Mansour D, Anthony S, Soucé A, Fenoglio P, Papin K. Vergues M: « *Odysée A1, Méthode de français* », CLÉ International, France, 2021, Unités 0-4.

5. Alcaraz Marion, Braud Céline, Calvez Aurélien, Cornuau Guillaume, Jacob Anne, Vidal Sandrine : « *Edito- A 1 Méthode de français (2^e édition)* », Editions DIDIER FLE, 2022, Unités 0-5.
6. Hirschsprung Nathalie, Mater Anais, Mathieu-Benoit Emilie, Mous Nelly, Tricot Tony : « *Cosmopolite A1 Cahier d'activites* » , Hachette Français langue étrangère, 2017 Dossiers 0-4.
7. Cocton Marie-Noëlle (coordination pédagogique), Pommier Émilie, Ripaud Delphine, Rabin Marie : « *L'Atelier A1, Cahier d'activités* », Les Éditions DIDIER, France, 2019, Unités 1-4.
8. Chahi Fatima, Denyer Monique, Gloaneac Audrey, Briet Geneviève, de Rongé Camille (phonétique), Verhulst Nancy (phonétique), Horquin Alexandrin (DELFF) : « *Défi – 1 Cahier d'activités* », Éditions Maison des Langues, 2018, Unités 0-4.
9. Rio Lénia : « *Odysée A1, Cahier d'activités* », CLÉ International, France, 2021, Unités 0-4.
10. Baylocq Marie-Pierre, Brémaud Stéphanie, Campopiano Stefano, Cheilan Clara : « *Edito A1 Cahier d'activités* », Les Éditions DIDIER FLE, 2022, Unités 0-5.

Additional material may be used.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BA (Hons.) German
Category-I

DISCIPLINE SPECIFIC CORE COURSE -1 (DSC-1)
Language in Context: Developing Reading and Writing Skills (1)

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Language in Context: Developing Reading and Writing Skills (1) | 4 | 3 | 1 | 0 | Passed Class XII | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

At the end of Semester 1, a student will

- be able to read simple texts and answer questions on them;
- be able to write short texts, about subjects pertaining to his/her immediate environment;
- attain Level A 1.1 of the Common European Framework (CEF).

Learning Outcomes

The Learning Outcomes of this course are as follows:

- Enable students to partially attain A1 Level of reading and writing skills in the concerned language.
- Reading simple texts and answering questions on them.
- Equip students to write about subjects pertaining to his/her immediate environment.

SYLLABUS OF DSC-1

Content:

Reading: Read and understand simple documents, texts, emails containing personal information, describing a person, a place, daily activities, means of transport, family and members of the family, invitations, messages, greeting cards etc.

Writing: Guided writing activities. A few sentences, short text or email describing oneself, others, a place, daily activities, the family, means of transport, writing and replying to invitations, messages, greeting cards for a birthday, a festival etc.

Morphosyntax and Vocabulary: Simple grammatical structures and vocabulary used to introduce oneself, introduce others, describe oneself and others, describe one's residential area, city, greetings, professions etc.

Intercultural and cocultural: Introduction to German-speaking regions/countries, celebrities from German, fashion, cinema, comic strips etc.

UNIT I

12 Hours

Recognise the alphabets and learn the spellings.

Read texts which introduce the various forms of greetings.

Give a brief written introduction.

Learn to spell names and some simple objects.

Learn to recognise country names and their languages.

- Wh-questions
- Personal pronouns (I)
- Some basic verbs

Read short biographical texts and do written exercises based on that.

- Spellings of numbers 1 to 20.
- Different definite articles

UNIT II

12 Hours

Read job advertisements and note down the relevant information.

- Vocabulary for the days of the week
- Plural forms

Interrogative questions

Learn how to fill a form for job interviews.

- Counting 20 onwards
- Personal pronouns (II)

Conjugation of 'haben' and 'sein'

Read brochures about cities and write about your favourite city.

- Learn to name places and buildings
- Vocabulary pertaining to means of transport

Indefinite article 'ein/-'

UNIT III

12 Hours

Read maps and use the given information to guide someone.

- Negative article 'kein/-'

Irregular verbs

Read texts about food habits related to German speaking countries.

- Introduce the accusative case.

Vocabulary related to meals and food items

Interpret a survey pertaining to individual food habits.

Write about one's own countries' food habits.

- Express likes and dislikes.

Modal verb in a sentence.

UNIT IV

12 Hours

Read texts related to day-to-day activities and write about one's own daily routine.

- Temporal prepositions

More modal verbs (müssen, wollen, können).

Read an email asking for planning something together and respond to it.

Possessive pronouns

Write a text about your family members / friends.

- Ordinal numbers

Introduction to separable verbs.

UNIT V

12 Hours

Read a statistic about most preferred leisure activities and express your opinion about them.

- Learn how to tell the date using the preposition 'am'.

Different uses of the preposition 'für'

Learn to write an invitation (for example birthday).

- Accusative personal pronouns
- More separable verbs

Write down a short text describing one's city in the past and at present.

- Imperfekt / Präteritum form of 'haben' and 'sein'

Suggestive readings

Learning/Teaching Material: Any of the textbooks given below may be prescribed.

1. Dengler, S., Rusch, P., Schmitz, H. (2013). *Netzwerk A1.1: Deutsch als Fremdsprache. Kurs- und Arbeitsbuch mit DVD und 2 Audio--CDs*. Klett Verlag.
2. Dengler, Stefanie; Tanja Mayr-Sieber, Paul Rusch, Helen Schmitz. *Netzwerk neu A1.1: Deutsch als Fremdsprache. Kurs- und Übungsbuch mit Audios und Videos*. Klett Verlag
3. Evans, S., Pude, A., Specht, F. (2021). *Momente A1.1. Kurs- und Arbeitsbuch*. Hueber Verlag.
4. Evans, S., Pude, A., Specht, F. (2020). *Menschen A 1. Kurs- und Arbeitsbuch*. Max Hueber Verlag
5. Höldrich, B. (2010). – *Lesen & Schreiben A1: Buch (Deutsch üben) Taschenbuch*. München: Hueber Verlag.
6. Rusch, P., Schmitz, H. *Einfach Grammatik Deutsch A1 Bis B1*. Berlin: Langenscheidt.

7. Sander, I., Braun, B., Fügert, N., Kotas, O. (2016). *DaF kompakt neu A1: Deutsch als Fremdsprache für Erwachsene. Kurs- und Übungsbuch*. Klett Verlag.
8. Von, Rosa-Maria Dallapiazza, et al. (2011). *Tangram aktuell A1. Kurs- und Arbeitsbuch*. Hueber Verlag.

Additional material may be provided by the Department.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2)

Language in Context: Developing Listening and Speaking Skills (1)

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Language in Context: Developing Listening and Speaking Skills (1) | 4 | 3 | 1 | 0 | Passed Class XII | Nil |

Learning Objectives

At the end of Semester 1, a student will

- be able to listen to and understand simple texts so as to answer questions on them;
- be able to talk on subjects pertaining to his/her immediate environment;
- attain Level A 1.1 of the Common European Framework (CEF).

The Learning Outcomes of this course are as follows:

- Enable students to partially attain A1 Level of listening and speaking skills in the concerned language.
- Listening to simple texts and answering questions on them.
- Equip students to speak about subjects pertaining to his/her immediate environment.

SYLLABUS OF DSC- 2

Content:

Listening: Listen and understand basic phrases/ dialogues concerning himself, of his family, and immediate surroundings, brief announcements in public spaces and instructions when speakers are speaking at a slower pace.

Speaking: which includes

Monologue: Introduce oneself and others, describe oneself, a person, one's family or an object, describe one's immediate environment (class or professional), residential area, city etc.

Dialogue: Participate in a basic conversation by exchanging simple greetings, asking and replying to simple questions, give instructions etc.

Morphosyntax, Vocabulary, Pronunciation: Simple grammatical structures and vocabulary used to introduce oneself, introduce others, describe oneself and others, describe one's residential area, city, greetings, professions etc.

Basic rules of pronunciation.

Intercultural and Co-cultural: Knowledge and practice of structures relevant to formal and informal situations.

UNIT I

12 Hours

Practice the phonetics of alphabets.

Exchange greetings with each other.

Listen to a text related to the given topic.

Introduce oneself to others.

Learn to ask each other questions related to one's state and its languages.

Listen to a text related to the given topic.

Exchange telephone numbers with each other.

Listen to a text and note down information like phone numbers, names, places and languages.

UNIT II

12 Hours

Exchange information about one's age, languages, telephone numbers, e-mail addresses (both in formal as well as informal manner).

Listen to a text related to the given topic.

Talk about hobbies, different seasons and months.

Listen to a text related to the given topic.

Listen to interviews about different professions and their working hours.

Conduct interviews to find out about professions and working hours.

UNIT III

12 Hours

Ask questions related to basic directions and explain as to how to reach specific places.

Narrate a story with the help of pictures.

Talk about one's eating habits and preferred food items.

Listen to a text related to the given topic.

Simulate the situation of shopping.

Listen to a text related to the given topic.

UNIT IV

12 Hours

Talk about one's daily routine.

Listen to a text related to the given topic.

Talk about one's family.

Listen to a text related to the given topic.

Plan leisure activities with friends.

Listen to a text related to the given topic.

UNIT V

12 Hours

Formulate invitations and learn how to react to them.

Listen to a text related to the given topic.

Simulate the situation of eating out and how to pay for the same.

Listen to a text related to the given topic.

Talk to each other about one's likes, dislikes, hobbies, family, daily routine, working hours, habits, friends, going out etc.

Listen to texts related to the given topics.

Suggestive readings (if any)

Learning / Teaching Material: Any of the textbooks given below may be prescribed.

1. Dengler, S., Rusch, P., Schmitz, H. (2013). *Netzwerk A1.1: Deutsch als Fremdsprache. Kurs- und Arbeitsbuch mit DVD und 2 Audio--CDs*. Klett Verlag.
2. Dengler, Stefanie; Tanja Mayr-Sieber, Paul Rusch, Helen Schmitz. *Netzwerk neu A1.1: Deutsch als Fremdsprache. Kurs- und Übungsbuch mit Audios und Videos*. Klett Verlag
3. Evans, S., Pude, A., Specht, F. (2021). *Momente A1.1. Kurs- und Arbeitsbuch*. Hueber Verlag.
4. Evans, S., Pude, A., Specht, F. (2020). *Menschen A 1. Kurs- und Arbeitsbuch*. Max Hueber Verlag
5. Höldrich, B. (2010). – *Lesen & Schreiben A1: Buch (Deutsch üben) Taschenbuch*. München: Hueber Verlag.
6. Rusch, P., Schmitz, H. *Einfach Grammatik Deutsch A1 Bis B1*. Berlin: Langenscheidt.
7. Sander, I., Braun, B., Fügert, N., Kotas, O. (2016). *DaF kompakt neu A1: Deutsch als Fremdsprache für Erwachsene. Kurs- und Übungsbuch*. Klett Verlag.
8. Von, Rosa-Maria Dallapiazza, et al. (2011). *Tangram aktuell A1. Kurs- und Arbeitsbuch*. Hueber Verlag.

Additional material may be provided by the Department.

DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-3)

Language Through Texts (1)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Language Through Texts (1) | 4 | 3 | 1 | 0 | Passed Class XII | Nil |

Learning Objectives

Objective: At the end of semester 1, a student will be able to read and understand a short literary/journalistic/ad/song text adapted for students of level A1 and to answer questions on the same.

SYLLABUS OF DSC-3

UNIT I

12 Hours

Practice of recognizing and speaking of alphabets and numbers through short advertisements, telephone directories and announcements (e.g., lottery announcements).
Listening and singing of simple alphabet and number songs.
Recognizing country and city names on political maps and in tour guides.
Recognizing wh-questions, personal pronouns, definite articles and verb conjugations in simple written and audio texts.

UNIT II

12 Hours

Reading newspaper job advertisements, road-maps, brochures, short biographical texts from social media, and watching/listening to short and simple biographical videos and audios.
Students can start constructing simple texts of their own on the above-mentioned topics.

UNIT III

12 Hours

Reading restaurant menus, and supermarket brochures and pamphlets to identify and use vocabulary learnt in other courses to construct short dialogues.
Reading simple stories and using pictures to write their own stories.

UNIT IV

12 Hours

Reading and listening to short stories about family and friends. Constructing your own texts on friends, family and hobbies. Reading and writing diary entries.
Reading and writing of simple “konkrete Poesie”. Listening to simple popular German songs.

UNIT V

12 Hours

Reading and writing invitations to birthdays, weddings, anniversaries etc. Reading and writing postcards. By now students can start constructing short stories and films with the vocabulary learnt.

Suggestive readings

Learning / Teaching Material: To be compiled and provided by the Department.

1. Burger, E., Fleer, S. (2017). *Schreiben: Intensivtrainer Neu A1/A2*. Stuttgart: Ernst Klett Sprachen GmbH.
2. Klein, A. (2013, 13 September). *Learn German with Stories: Cafe in Berlin – 10 Short Stories for Beginners (German)*. Retrieved from <https://www.youtube.com/watch?v=vUXcYTjINtI>.
3. Klein, Andre (2015). *Learn German with Stories: Dino lernt Deutsch Collector's Edition - German Short Stories for Beginners: Explore German Cities and Boost Your Vocabulary (German Edition)*. ASIN: B00W9L9F9A.
4. Gomringer, Eugen (1972). *Anthologie. Konkrete Poesie. Deutschsprachige Autoren*. Stuttgart: Reclam.
5. *Kurzgeschichten für Deutschlerner! A 1 with Hindi translation* by Puneet Kaur
6. *Spaß mit Eli und Esi* by Richa Jain Jindal
7. *Endlich Urlaub, Der Osterhase war da* by Nikola Asif
8. *Deutsche Welle*
9. Pictures, keywords and titles from various German newspapers and magazines like *Die Zeit*, *FAZ*, *Bild* etc.
10. *Das Lied vom Kindsein* by Peter Handke
11. *Ich liebe dich* by Else-Lasker Schöler
12. Konkrete Poesie like *Schweigen*, *Wolke-Blitz* etc.
13. *Da Da Da* by Trio
14. *Komm gib mir deine Hand* by The Beatles
15. *Der, die, das* from Sesamstraße
16. *Du hast* by Rammstein
17. *Guten Morgen, Sonnenschein* by Nana Mouskouri
18. Advertisements
19. “Vater und Sohn” picture stories
20. „Easy German“ Youtube channel

Additional material may be provided by the Department.

BA (Prog) German
Category-III

**Courses for Undergraduate Programme of study with discipline as one of the
Core Disciplines**

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|------------------------|-------------------------|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| German in Context: Basic Level – 1 | 4 | 3 | 1 | nil | Class XII pass | none |

Learning Objectives

The Learning Objectives of this course are as follows:

At the end of semester 1, a student will

- be able to read simple texts and answer questions on them.
- be able to write short texts about subjects pertaining to his/her immediate environment.
- attain Level A 1.1 of the Common European Framework (CEF).

Learning outcomes

The Learning Outcomes of this course are as follows:

- Enable students to partially attain A1 Level of listening, speaking, reading and writing skills in the concerned language.
- Reading simple texts and answering questions on them.
- Equip students to write about subjects pertaining to his/her immediate environment.

SYLLABUS OF DSC-1

Content

Listening: Understanding familiar words and very basic phrases about oneself, one's family, and immediate concrete surroundings such as very brief announcements in public spaces, short, simple formal/informal conversation, questions and instructions when speakers are speaking at a slower pace.

Speaking:

Monologue: Describing and presenting oneself, one's immediate environment and the people s/he knows using simple phrases and sentences.

Dialogue: Taking part in a conversation and interaction in a simple way provided the other person is prepared to repeat or to rephrase more slowly and help formulate what s/he is trying to say.

Asking simple questions on familiar topics or matters related to oneself. Making simple purchases in shops or obtaining services that one requires.

Reading: Reading simple texts related to one's immediate environment such as notices, posters, fliers, personal messages or emails and answering questions on them.

Writing: Guided writing will include activities such as, filling a form, writing simple phrases (postcards, messages, invitations etc.) on everyday topics.

Morphosyntax and Vocabulary: Simple grammatical structures and vocabulary used to introduce oneself, introduce others, describe oneself and others, describe one's residential area, city, greetings, professions etc.

UNIT I

12 Hours

Recognise alphabets, learn spellings, practice phonetics of alphabets.

Learn various forms of greetings, and learn to introduce oneself to others.

Learn country names and their languages.

Wh-questions, personal pronouns (I), some basic verbs, different definite articles.

Read and listen to short texts on a given topic.

Spellings of numbers 1 to 20. Exchange telephone numbers with each other.

Learn to ask each other questions related to one's state and its languages.

Listen to a text and note down information like phone numbers, names, places and languages.

UNIT II

12 Hours

Read job advertisements and note down the relevant information.

Learn vocabulary for the days of the week, plural forms and interrogative questions

Learn how to fill a form for job interviews.

Learn counting 20 onwards

Conjugation of 'haben' and 'sein', personal pronouns (II) and indefinite article 'ein/-'

Exchange information about one's age, languages, telephone numbers, e-mail addresses (both in formal as well as informal manner). Talk about hobbies, different seasons and months.

UNIT III

12 Hours

Read maps and use the given information to guide someone.

Negative article 'kein/-', irregular verbs, the accusative case, modal verb.

Vocabulary related to meals and food items, food habits and information about food habits related to German speaking countries. Express likes and dislikes.

Ask questions related to basic directions and explain as to how to reach specific places.

Simulate the situation of shopping.

UNIT IV

12 Hours

Read texts related to day-to-day activities and write about one's own daily routine.

Temporal prepositions, more modal verbs, possessive pronouns, introduction to separable verbs.
Vocabulary related to one's family, friends and leisure activities.
Ordinal numbers

UNIT V

12 Hours

Read statistics about most preferred leisure activities and express your opinion about them.

Learn how to tell the date using the preposition 'am'. Different uses of the preposition 'für'.

Learn to write an invitation (for example birthday).

Accusative personal pronouns. more separable verbs, imperfekt / Präteritum form of 'haben' and 'sein'.

Vocabulary related to describing one's city in the past and at present, to the situation of eating out and how to pay for the same, and to talk to each other about one's likes, dislikes, hobbies, family, daily routine, working hours, habits, friends, going out etc.

Practical component (if any) - NIL

Essential/recommended readings

Any of the following textbooks may be prescribed and will be partially completed.

1. Dengler, S., Rusch, P., Schmitz, H. (2013). *Netzwerk A1.1: Deutsch als Fremdsprache. Kurs- und Arbeitsbuch mit DVD und 2 Audio--CDs*. Klett Verlag.
2. Dengler, Stefanie; Tanja Mayr-Sieber, Paul Rusch, Helen Schmitz. *Netzwerk neu A1.1: Deutsch als Fremdsprache. Kurs- und Übungsbuch mit Audios und Videos*. Klett Verlag
3. Evans, S., Pude, A., Specht, F. (2021). *Momente A1.1. Kurs- und Arbeitsbuch*. Hueber Verlag.
4. Evans, S., Pude, A., Specht, F. (2020). *Menschen A 1. Kurs- und Arbeitsbuch*. Max Hueber Verlag
5. Höldrich, B. (2010). – *Lesen & Schreiben A1: Buch (Deutsch üben) Taschenbuch*. München: Hueber Verlag.
6. Rusch, P., Schmitz, H. *Einfach Grammatik Deutsch A1 Bis B1*. Berlin: Langenscheidt.
7. Sander, I., Braun, B., Fügert, N., Kotas, O. (2016). *DaF kompakt neu A1: Deutsch als Fremdsprache für Erwachsene. Kurs- und Übungsbuch*. Klett Verlag.
8. Von, Rosa-Maria Dallapiazza, et al. (2011). *Tangram aktuell A1. Kurs- und Arbeitsbuch*. Hueber Verlag.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BA (Hons.) Spanish

Category-I

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Language in Context: Developing Reading and Writing Skills (1) | 4 | 3 | 1 | 0 | Passed XII Class | Nil |

Learning Objectives

Enable student to

- read simple texts and answer questions on them;
- be able to write short texts, about subjects pertaining to his/her immediate environment;
- attain Level A 1.1 of the Common European Framework (CEF).

Learning Outcomes

- Enable students to partially attain A1 Level of reading and writing skills in the concerned language.
- Reading simple texts and answering questions on them.
- Equip students to write about subjects pertaining to his/her immediate environment.

SYLLABUS OF DSC-1

Content:

Reading: Read and understand simple documents, texts, emails containing personal information, describing a person, a place, daily activities, means of transport, family and members of the family, invitations, messages, greeting cards etc.

Writing: Guided writing activities. A few sentences, short text or email describing oneself, others, a place, daily activities, the family, means of transport, writing and replying to invitations, messages, greeting cards for a birthday, a festival etc.

Morphosyntax and Vocabulary: Simple grammatical structures and vocabulary used to introduce oneself, introduce others, describe oneself and others, describe one's residential area, city, greetings, professions etc.

Intercultural and cocultural: Introduction to Hispanic regions/countries, celebrities from Spain and Latin America fashion, cinema, comic strips etc.

UNIT I

12 Hours

Learn and express greetings

Write a brief personal information

Learn the alphabets and learn and write the spellings.

Write a brief introduction,

Learn to recognize country names and their nationalities, different professions and different languages

- Make simple questions.
- Some basic regular verbs.

Read short biographical texts and do written exercises based on that.

- Spellings of the numbers 1-20, age, family members
- Definite articles.

UNIT II

12 Hours

Read a text on why do you want to learn Spanish and what do you want to do in the course.

Simple present tense, use of 'a', 'con', 'de', 'por', 'para', 'porque' 'también' and 'pero'

- Personal pronoun
- Counting 20 onwards

Family relations and social relations

Read texts on the description of the person and his/her character

- Possessive pronoun
- Adjective, adverbs

Leisure time Activities

UNIT III

12 Hours

Read maps and know about Spanish speaking countries

Read texts about a locality

- Use of Ser, Estar, Hay
- Learn interrogatory words Cuál, Qué, Cuáles, Dónde, Cómo, Cuánto
- Superlative degree
- Indefinite articles
- Quantifiers

Describe climate

Write about one's own country's places to visit, people and climate.

Describe your locality and parts of the house

Write an email to your friend describing which places to visit in your city and when to travel.

Design a project of a new locality

- What's your ideal locality?

UNIT IV

12 Hours

Read a text on daily routine and relate it to the time.

- Different regular and irregular verbs
- Reflexive verbs
- Learn to describe time
- Cardinal numbers

Read a text related to day to-day activities and write an email to your dear one expressing the sequence of the activities you do on a daily basis, sometimes, and never.

Learn about some famous personalities in the Hispanic world.

UNIT V

12 Hours

Read a text on sports.

- Vocabulary in the different sports.
- Different sports.
- Famous personalities in sports.

Read a text on how to express likes and dislikes.

- The verbs 'Gustar' 'Encantar', 'Interesar'.

Write a text on what do you like and dislike in your family.

Read texts on reality shows on television.

- Tener + que + infinitivo

- Es + Adjetivo +infinitivo

Read a text on activities one can do in a hispanic city.

- Write about the entertaining activities in your city.

Essential/recommended readings

Suggestive readings

Learning/Teaching Material: Any of the textbooks given below may be prescribed.

1. Alondo, Elcina. Corpas, Jaime. (2018). Diverso A1 Libro de alumno. Madrid, Madrid: SGEL.
2. Alvarez Martinez, María Angeles. Canales, Ana Blanco. et al. (2017). Sueña 1 Libro de alumno. Salamanca. Salamanca: Grupo Anaya.
3. Baulenas, Neus Sans. Peris, Ernesto Martín. et al. (2016). Bítacora 1 Libro de alumno. Barcelona, Barcelona: Editorial Difusión.
4. Campo, Cristina, Cuadrado, Charo et.al. (2017) Protagonistas A1- Libro de alumno. Madrid, Madrid: Ediciones SM.
5. Sanz, N. (2016). Aula Internacional 1. Barcelona. Barcelona: Editorial Difusión
6. Martí Peris, E., Sans, N. (2016). Gente 1 Libro del alumno. Barcelona: Editorial Difusión.

Additional material may be provided by the Department. Additional material may be provided by the Department.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2)
Language in Context: Developing Listening and Speaking Skills (1)

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Language in Context: Developing Listening and Speaking Skills (1) | 4 | 3 | 1 | | 12 th Pass | NIL |

Learning Objectives

Objectives: At the end of Semester 1, a student will

- be able to listen to and understand simple texts so as to answer questions on them;
- be able to talk on subjects pertaining to his/her immediate environment;
- attain Level A 1.1 of the Common European Framework (CEF).

SYLLABUS OF DSC- 2

Listening: Listen and understand basic phrases/ dialogues concerning himself, of his family, and immediate surroundings, brief announcements in public spaces and instructions when speakers are speaking at a slower pace.

Speaking: which includes

Monologue: Introduce oneself and others, describe oneself, a person, one's family or an object, describe one's immediate environment (class or professional), residential area, city...

Dialogue: participate in a basic conversation by exchanging simple greetings, asking and replying to simple questions, give instructions etc.

Morphosyntax, Vocabulary, Pronunciation: Simple grammatical structures and vocabulary used to introduce oneself, introduce others, describe oneself and others, describe one's residential area, city, greetings, professions etc.

Basic rules of pronunciation.

Intercultural and Co-cultural: Knowledge and practice of structures relevant to formal and informal situations.

UNIT I

12 Hours

Listen and express greetings
Exchange greetings with each other
Listen the alphabets and learn and pronounce the spellings.
Listen a text related to the given topic
Learn to ask each other questions related to one's State and its languages.
Listen to a text and note down information like phone numbers, names, age, family members, places and languages.
Exchange telephone numbers with each other.
Give your introduction in the class.

UNIT II

12 Hours

Listen to a text on why do you want to learn Spanish and what do you want to do in the course.
Talk about your motives and what do you want to do.
Listen a text on the description of the person and his/her character
Talk about your family members and what they want to do in their life.
Listen to a text related to the lesiure time activities.
Talk about Leisure time Activities.

UNIT III

12 Hours

Listen to a text related to the topic and respond to the questions.
Talk about your locality with the help of picures.
Listen to a text related to the given topic.
Talk about your family members, their physical description and their character.
Listen to a text related to the given activity.
Talk to your friend about your favourite place and its climate.
Present a dialogue activity in a group related to the topic.

UNIT IV

12 Hours

Listen to a text related to the given topic.
Talk about one's daily routine.
Listen to a text on a given topic.
Simulate the situation of leisure activities with family members
Listen to a text related to a given topic

UNIT V

12 Hours

Listen to a text on a given topic.
Talk about your sports activities.
Simulate the situation of healthy living and how to live for 100 years.

Listen to a text on the given topic.
Express your likes and dislikes.

Essential/recommended readings

Suggestive readings (if any)

Learning / Teaching Material: Any of the textbooks given below may be prescribed.

1. Alondo, Elcina. Corpas, Jaime. (2018). Diverso A1 Libro de alumno. Madrid, Madrid: SGEL.
2. Alvarez Martinez, María Angeles. Canales, Ana Blanco. et al. (2017). Sueña 1 Libro de alumno. Salamanca. Salamanca: Grupo Anaya.
3. Baulenas, Neus Sans. Peris, Ernesto Martín. et al. (2016). Bítacora 1 Libro de alumno. Barcelona, Barcelona: Editorial Difusión.
4. Campo, Cristina, Cuadrado, Charo et.al. (2017) Protagonistas A1- Libro de alumno. Madrid, Madrid: Ediciones SM.
5. Sanz, N. (2016). Aula Internacional 1. Barcelona. Barcelona: Editorial Difusión
6. Martí Peris, E., Sans, N. (2016). Gente 1 Libro del alumno. Barcelona: Editorial Difusión.

DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-3)

Language Through Texts (1)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Language Through Texts (1) | 4 | 3 | 1 | 0 | Passed XII Class | Nil |

Learning Objectives

Objective: Enable students to read and understand a short literary/journalistic/ad/song text adapted for students of level A1 and to answer questions on the same.

SYLLABUS OF DSC-3

UNIT I Literary Texts

12 Hours

(A selection will be made from the list below)

Sin Noticias, Lola Lago Detective de N. Sans y L. Miquel
Vacaciones al sol, Lola Lago Detective de N. Sans y L. Miquel
Por amor al arte Lola Lago Detective de N. Sans y L. Miquel
Rinconete y Cortadillo, Miguel de Cervantes, adaptado por Raquel García Prieto
Todas las voces. Curso de cultura y civilización de N. Murillo

UNIT II Journalistic Texts

12 Hours

(A selection will be made from the list below)

Hoy en clase de Campus Difusión
Los espejuelos de Lennon -- Cuba de Dolores Soler-Espiauba
Con Frida en el altiplano -- Bolivia de Dolores Soler-Espiauba
Guantanamo -- Cuba de Dolores Soler-Espiauba
Ojalá que te vaya bonito -- México de Dolores Soler-Espiauba
Los espejuelos de Lennon -- Cuba de Dolores Soler-Espiauba
Dos semanas con los ticos -- Costa Rica de Dolores Soler-Espiauba

UNIT III Simple poems

12 Hours

(A selection will be made from the list below)

El gallodespertador de Gloria Fuertes
Yo no soy yo de Juan Ramón Jiménez
Caricia de Gabriela Mistral
¡Buen Viaje! de Amado Nervo
Mariposa del aire de Federico García Lorca
Las seiscuerdas de Federico García Lorca
Oda a la cebolla de Pablo Neruda
Oda a las cosas de Pablo Neruda
Sol de invierno de Antonio Machado
Síndrome de Mario Benedetti
Contigo de Luis Cernuda

UNIT IV Simple Audio / Visual Texts Songs

12 Hours

(A selection will be made from the list below)

Songs (A1)

Querido Tommy, de Tommy Torres (2013)
La reina del pop, La oreja de Van Gogh (2000)
Limón y Sal, de Julieta Venegas (2006)

Me quedo contigo, de Los Chunguitos (1981), de Rocío Márquez (2019), de Manu Chao
El viajero, de Seguridad Social (2011)
Inmortal, La oreja de Van Gogh (2009)

Documentaries

Aldea Latinoamericana – Por la Geografía de América Latina
Historia del Arte en 10 minutos
Historia de el imperio romano en 10 minutos

UNIT V Advertisements

12 Hours

Suggestive readings

Learning / Teaching Material: To be compiled and provided by the Department.

1. Murillo, N. (2010). Todas las voces. Curso de cultura y civilización. Barcelona: Editorial
2. Difusión (cap. 4 Literatura: novelas, cuentos y leyendas, poesía, leer)
3. Sans, N., Miquel, L. Lola Lago (2003). Sin noticias (A1). Barcelona: Editorial Difusión.
4. Sans, N., Miquel, L. Lola Lago (2003). Por amor al arte (A1). Barcelona: Editorial
5. Difusión.
6. Soler-Espiauba, D. (2002). Con Frida en el altiplano (A1-A2). España: Editorial
7. Difusión.
8. Soler-Espiauba, D. (2008). Dos semanas con los ticos (A1-A2). Costa Rica: CEGAL.
9. Soler-Espiauba, D. (2014). Los espejuelos de Lennon (A1). Cuba: CEGAL.
10. Soler-Espiauba, D. (2012). Guantanameras (A1-A2). Cuba: Editorial Difusión.
11. Soler-Espiauba, D. (2015). Ojalá que te vaya bonito(A1-A2). México: Editorial Difusión.
12. Hoy en clase. Campus Difusión. <https://campus.difusion.com/dashboard>
13. AldeaLatinoamericana – Por la Geografía de América Latina
<https://www.youtube.com/watch?v=2jN3kP-gM2o>
14. Historia del Arte en 10 Minutos, <https://www.youtube.com/watch?v=rUHxLrZwSIY>
15. Historia del imperioromanoen 10 minutos,
<https://www.youtube.com/watch?v=N4Ljm78end4>

Additional material may be provided by the Department.

BA (Prog.) Spanish

Category-III

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|----------------|--|-----------------|----------------------------|-----------------------------|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Spanish in Context: Basic Level – 1 | 4 | 3 | 1 | nil | Class XII pass | none |

Learning Objectives

The Learning Objectives of this course are as follows:

At the end of semester 1, a student will

- be able to read simple texts and answer questions on them.
- be able to write short texts about subjects pertaining to his/her immediate environment.
- attain Level A 1.1 of the Common European Framework (CEF).

Learning outcomes

The Learning Outcomes of this course are as follows:

- Enable students to partially attain A1 Level of listening, speaking, reading and writing skills in the concerned language.
- Reading simple texts and answering questions on them.
- Equip students to write about subjects pertaining to his/her immediate environment.

SYLLABUS OF DSC-1

Content

Listening: Understanding familiar words and very basic phrases about oneself, one's family, and immediate concrete surroundings such as very brief announcements in public spaces, short, simple formal/informal conversations, questions and instructions when speakers are speaking at a slower pace.

Speaking:

Monologue: Describing and presenting oneself, one's immediate environment and the people s/he knows using simple phrases and sentences.

Dialogue: Taking part in a conversation and interaction in a simple way provided the other person is prepared to repeat or to rephrase more slowly and help formulate what s/he is trying to say.

Asking simple questions on familiar topics or matters related to oneself. Making simple purchases in shops or obtaining services that one requires.

Reading: Reading simple texts related to one's immediate environment such as notices, posters, fliers, personal messages or emails and answering questions on them.

Writing: Guided writing will include activities such as, filling a form, writing simple phrases (postcards, messages, invitations etc.) on everyday topics.

Morphosyntax and Vocabulary: Simple grammatical structures and vocabulary used to introduce oneself, introduce others, describe oneself and others, describe one's residential area, city, greetings, professions etc.

Intercultural and cocultural: Introduction to Spanish-speaking regions/countries, celebrities from Spanish speaking countries, fashion, cinema, comic strips etc.

UNIT – I

12 Hours

Learn and exchange greetings. Write brief personal information. Learn the alphabets and speak some random words to practice pronunciation. Write a brief introduction. Learn to recognize country names and nationalities, different professions and different languages. Make simple questions. Learn some basic regular verbs, numbers 1-20, age, family members.

UNIT – II

12 Hours

Read a text on different motives for learning Spanish and what one wants to do in the course. Introduction of simple present tense. Use of 'a', 'con', 'de', 'por', 'para', 'porque' 'también', 'pero' etc. Personal pronouns. Learn to count numbers from 20 onwards. Learn about family relations and social relations. Talk to each other on this topic. Describe people and their character. Read texts on the description of a person and his/her character and talk about it with each other. Learn Possessive pronouns, Adjectives, Adverbs etc. Listen to texts on different topics. Express Leisure time Activities.

UNIT III

12 Hours

Read maps and know about Spanish speaking countries. Read texts about a locality. Use of Ser, Estar, Hay. Learn interrogatory words Cuál, Qué, Cuáles, Dónde, Cómo, Cuánto. Ask questions

to each other. Talk about one's locality. Superlative degree. Indefinite articles. Quantifiers. Describe climate. Write about one's own country, about places to visit, people and climate. Make a presentation on your locality. Learn about parts of a house. Listen to texts related to this topic. Write an email to your friend about your city and where to travel. Design a project of a new locality and present it.

UNIT – IV

12 Hours

Read a text on daily routine and talk about the time when these activities are done. Different regular and irregular verbs. Reflexive verbs. Learn to tell the time. Cardinal numbers. Listen to a text related to day-to-day activities. Talk to your classmates about your daily routine. Make a questionnaire on the sequence of activities one does on a daily basis or one does sometimes or frequently or never and find out about the person in the class who is the most active. Learn about some famous personalities in the Hispanic world.

UNIT V

12 Hours

Read a text on sports. Vocabulary in the different sports. Learn about different sports. Famous hispanic personalities in sports. Listen to a text related to the topic. The verbs 'Gustar' 'Encantar', 'Interesar'. Have a group discussion on what you like and what you dislike. Write a text on what you like and dislike in your family. Read texts on reality shows on television. Tener + que + infinitivo. Es + Adjetivo + infinitivo. Read a text on activities one can do in a hispanic city. Write about the entertaining activities for a traveller in your city.

Practical component (if any) - NIL

Essential/recommended readings

Any of the following textbooks may be prescribed and will be partially completed.

1. Alonso, Encina, et al, (2018), *Diverso A1-A2*, Libro de alumno, Madrid: SGEL.
2. Sans, N., et al. (2016). *Aula Internacional 1*. Barcelona. Barcelona: Editorial Difusión
3. Campo C., et al. (2017). *Protagonistas A1*, Libro de alumno, Madrid: SM.

4. Baulenas, Neus Sans, et al. (2016). *Bítacora 1*, Libro de alumno, Barcelona: Editorial Difusión.
5. Alvarez Martinez, María Angeles. Canales, Ana Blanco. et al., (2017). *Sueña 1* Libro de Alumno, Salamanca: Grupo Anaya.
6. Martín Peris, E., Sans, N. (2016). *Gente 1* Libro del alumno. Barcelona: Editorial Difusión.

Additional material can be also used.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BA (H) ITALIAN

Category-I

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Language in Context: Developing Reading and Writing Skills (1) | 4 | 3 | 1 | 0 | Passed XII Class | Nil |

| DSC-1 | |
|---|-----------------|
| Language in Context: Developing Reading and Writing Skills (1) | |
| Learning Objectives: At the end of Semester 1, a student will <ul style="list-style-type: none"> • be able to read and understand simple texts and answer questions on them; • be able to write short texts, about subjects pertaining to his/her immediate environment; • attain Level A 1.1 of the Common European Framework (CEF). | |
| Learning Outcomes: The Learning Outcomes of this course are as follows: <ul style="list-style-type: none"> • Enable students to partially attain A1 Level of reading and writing skills in the concerned language. • Reading and understanding simple texts and answering questions on them. • Equip students to write about subjects pertaining to his/her immediate environment. | |
| Syllabus: | |
| CONTENT Reading: Read and understand simple documents, texts, emails containing personal information, describing a person, a place, daily activities, means of transport, family and members of the family, invitations, messages, greeting cards etc. Writing: Guided writing activities. A few sentences, short text or email describing oneself, others, a place, daily activities, the family, means of transport, writing and replying to invitations, messages, greeting cards for a birthday, a festival etc. Morphosyntax and Vocabulary: Simple grammatical structures and vocabulary used to introduce oneself, introduce others, describe oneself and others, describe one's one's residential area, city, greetings, professions etc. Intercultural and cocultural: Introduction to Italophone regions/countries, celebrities from Italy fashion, cinema, comic strips etc. Practical component (if any) - NIL | |
| UNIT I | 12 Hours |
| Recognise the alphabets and learn the spellings. | |

| | |
|---|-----------------|
| <p>Read texts which introduce the various forms of greetings. Give a brief written introduction. Learn to spell names and some simple objects. Learn to recognise country names and their languages.</p> <ul style="list-style-type: none"> • Wh-questions • Personal pronouns (I) • Some basic verbs <p>Read short biographical texts and do written exercises based on that.</p> <ul style="list-style-type: none"> • Spellings of numbers 1 to 20. • Introduction to Indefinite and definite articles | |
| UNIT II | 12 Hours |
| <p>Read job advertisements and note down the relevant information.</p> <ul style="list-style-type: none"> • Vocabulary for the days of the week • Plural forms <p>Interrogative questions Learn how to fill a form for job interviews.</p> <ul style="list-style-type: none"> • Counting 20 onwards • Personal pronouns (II) <p>Conjugation of 'essere' and 'avere' Read brochures about cities and write about your favourite city.</p> <ul style="list-style-type: none"> • Learn to name places and buildings • Vocabulary pertaining to means of transport • Indefinite articles 'un / una / uno etc.' | |
| UNIT III | 3 Weeks |
| <p>Read maps and use the given information to guide someone.</p> <ul style="list-style-type: none"> • Definite articles 'il / la / lo etc.' <p>Irregular verbs Read texts about food habits in Italy.</p> <ul style="list-style-type: none"> • Introduce the accusative case. <p>Vocabulary related to meals and food items Interpret a survey pertaining to individual food habits. Write about one's own countries' food habits.</p> <ul style="list-style-type: none"> • Express likes and dislikes. <p>Modal verb in a sentence.</p> | |
| UNIT IV | 12 Hours |
| <p>Read texts related to day-to-day activities and write about one's own daily routine.</p> <ul style="list-style-type: none"> • Prepositions <p>Modal verbs (volere, dovere, potere). Read an email asking for planning something together and respond to it. Possessive pronouns Write a text about your family members / friends.</p> <ul style="list-style-type: none"> • Ordinal numbers <p>Introduction to regular / irregular verbs.</p> | |
| UNIT V | 12 Hours |
| Read a statistic about most preferred leisure activities and express your | |

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| <p>opinion about them.</p> <ul style="list-style-type: none"> Learn how to tell the date using the preposition 'il'. <p>Different uses of the prepositions 'a / da / su / per'</p> <p>Learn to write an invitation (for example birthday).</p> <ul style="list-style-type: none"> Accusative personal pronouns More irregular verbs <p>Write down a short text describing one's city in the past and at present.</p> <ul style="list-style-type: none"> Imperfetto / Passato Prossimo form of various verbs. | |
| <p>Learning / Teaching Material: Any of the textbooks given below may be prescribed:</p> <p>10. Balboni, Paolo E.. (2009). <i>Nuovo Rete! A1</i>: Guerra Edizioni, Perugia.</p> <p>11. Frattegiani, M. Teresa. Baldelli, Rosella. (2009). <i>Arrivo in Italia</i>: Corso di lingua italiana per studenti stranieri di livello A1-A2. Guerra Edizioni, Perugia.</p> <p>12. Guastalla, Carlo. Naddeo, Ciro Massimo. (2010). <i>Domani 1</i>. Alma Edizioni, Firenze.</p> <p>13. Mezzadri, Marco, (2008). <i>Grammatica essenziale della lingua italiana con esercizi</i>: Guerra edizione, Perugia.</p> <p>14. Nocchi, Susanna. (2014). <i>Grammatica pratica della lingua italiana</i>. Alma Edizioni, Firenze.</p> <p>15. Ziglio, Luciana. Rizzo, Giovanna. (2012). <i>Espresso 1</i>. Alma Edizioni, Firenze and Goyal Saab Publishers and Distributors Pvt. Ltd. Delhi.</p> | |
| <p>Additional material may be provided by the Department.</p> <p>Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.</p> | |

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2)
Language in Context: Developing Listening and Speaking Skills (1)

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Language in Context: Developing Listening and Speaking Skills (1) | 4 | 3 | 1 | 0 | Passed XII Class | Nil |

| DSC-2 Language in Context: Developing Listening and Speaking Skills (1) | |
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| <p>Learning Objectives:</p> <p>At the end of Semester 1, a student will</p> <ul style="list-style-type: none"> be able to listen to and understand simple texts so as to answer questions on them; | |

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| <ul style="list-style-type: none"> • be able to talk on subjects pertaining to his/her immediate environment; • attain Level A 1.1 of the Common European Framework (CEF). | |
| Learning Outcomes: The Learning Outcomes of this course are as follows: <ul style="list-style-type: none"> • Enable students to partially attain A1 Level of listening and speaking skills in the concerned language. • Listening and understanding simple audio texts and answering questions on them. • Equip students to talk about subjects pertaining to his/her immediate environment. | |
| Syllabus: | |
| CONTENT Listening: Listen and understand basic phrases/ dialogues concerning himself, of his family, and immediate surroundings, brief announcements in public spaces and instructions when speakers are speaking at a slower pace. Speaking: which includes Monologue: Introduce oneself and others, describe oneself, a person, one's family or an object, describe one's immediate environment (class or professional), residential area, city... Dialogue: participate in a basic conversation by exchanging simple greetings, asking and replying to simple questions, give instructions etc. Morphosyntax, Vocabulary, Pronunciation: Simple grammatical structures and vocabulary used to introduce oneself, introduce others, describe oneself and others, describe one's residential area, city, greetings, professions etc. Basic rules of pronunciation. Intercultural and Co-cultural: Knowledge and practice of structures relevant to formal and informal situations. Practical component (if any) - NIL | |
| UNIT I | 12 Hours |
| Practice the phonetics of alphabets. Exchange greetings with each other. Listen to a text related to the given topic. Introduce oneself to others. Learn to ask each other questions related to one's state and its languages. Exchange telephone numbers with each other. Listen to a text and note down information like phone numbers, names, places and languages. | |
| UNIT II | 12 Hours |
| Exchange information about one's age, languages, telephone numbers, e-mail addresses (both in formal as well as informal manner). Listen to a text related to the given topic. Talk about hobbies, different seasons and months. Listen to interviews about different professions and their working hours. Conduct interviews to find out about professions and working hours. | |
| UNIT III | 12 Hours |
| Ask questions related to basic directions and explain as to how to reach specific places. Narrate a story with the help of pictures. Talk about one's eating habits and preferred food items. | |

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| Listen to a text related to the given topic. Simulate the situation of shopping. | |
| UNIT IV | 12 Hours |
| Talk about one's daily routine. Listen to a text related to the given topic. Talk about one's family. Plan leisure activities with friends. | |
| UNIT V | 12 Hours |
| Formulate invitations and learn how to react to them. Listen to a text related to the given topic. Simulate the situation of eating out and how to pay for the same. Talk to each other about one's likes, dislikes, hobbies, family, daily routine, working hours, habits, friends, going out etc. | |
| Learning / Teaching Material: Any of the textbooks given below may be prescribed: <ul style="list-style-type: none"> Bailini, Sonia. Consonno, Silvia. (2002). <i>Ricette per parlare</i>. Alma edizioni, Firenze. Balboni, Paolo E.. (2009). <i>Nuovo Rete! A1</i>. Guerra Edizioni, Perugia. Frattegnani, M.Teresa. Baldelli, Rosella. (2009). <i>Arrivo in Italia. Corso di lingua italiana per studenti stranieri di livello A1-A2</i>. Guerra Edizioni, Perugia. Mezzadri, Marco, (2008). <i>Grammatica essenziale della lingua italiana con esercizi</i> : Guerra edizione, Perugia. Guastalla, Carlo. Naddeo, Ciro Massimo. (2010). <i>Domani 1</i>. Alma Edizioni, Firenze. Ziglio, Luciana. Rizzo, Giovanna. (2012). <i>Espresso 1</i>. Alma Edizioni, Firenze : and Goyal Saab Publishers and Distributors Pvt. Ltd., Delhi. | |
| Additional material may be provided by the Department. | |
| Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time. | |

DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-3)

Language Through Texts (1)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Language Through Texts (1) | 4 | 3 | 1 | 0 | Passed XII Class | Nil |
| DSC-3 | | | | | | |
| Language Through Texts (1) | | | | | | |
| Learning Objectives: At the end of Semester 1, a student will <ul style="list-style-type: none"> be able to read and understand simple texts (literary/semi-literary/audio- | | | | | | |

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| visual/advertisements etc.) adapted for the students of level A1, and answer questions on them; <ul style="list-style-type: none"> • be able to analyse, express their underlying meaning and answer questions based on them; • attain Level A 1.1 of the Common European Framework (CEF). | |
| Learning Outcomes: The Learning Outcomes of this course are as follows: <ul style="list-style-type: none"> • Enable students to partially attain A1 Level of reading, understanding, analysing and writing skills in the concerned language. • Reading and understanding simple texts and answering questions on them. • Equip students to analyse, express their underlying meaning and answer questions based on them; | |
| Syllabus: | |
| UNIT I | 12 Hours |
| Literary Texts (Prose) | |
| A selection will be made from the following list: | |
| Il cacciatore sfortunato, Favole al telefono di Gianni Rodari Il palazzo di gelato, Favole al telefono di Gianni Roadari La passeggiata di un distratto, Favole al telefono di Gianni Roadari Il palazzo da rompere, Favole al telefono di Gianni Roadari La donnina che contava gli starnuti, Favole al telefono di Gianni Roadari | |
| UNIT II | 12 Hours |
| Literary Texts (Poetry) | |
| A selection will be made from the following list: | |
| La casa di Mara – Aldo Palazzeschi Sereno – Giuseppe Ungaretti La fontana malata – Aldo Palazzeschi Il male di vivere – Eugenio Montale | |
| UNIT III | 12 Hours |
| Semi-literary / Journalistic Texts | |
| A selection will be made from the following list: | |
| Nonni e nipotini contro le buche di Perugia Prima di partire per le vacanze La legge contro il fumo Gli alberi in città Pensiamo alla salute | |
| UNIT IV | 12 Hours |
| Audio / Visual Texts – Songs / Music Videos | |
| A selection will be made from the following list: | |
| Non è Francesca La gatta Alla fiera dell'est Sapore di sale La vasca | |
| UNIT V | 12 Hours |

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|--|-----------------|
| Audio / Visual Texts – Films / Video Clips | |
| A selection will be made from the following list: | |
| La vita è bella La terra trema Johnny Stecchino Tre uomini e una gamba Così è a vita | |
| UNIT VI | 12 Hours |
| Advertisements – Print / Electronic | |
| A selection will be made from the following list: | |
| Various ads from newspapers, social media, YouTube etc. | |
| Practical component (if any) - NIL | |
| Learning / Teaching Material: Any of the textbooks given below may be prescribed: <ul style="list-style-type: none"> • Guastalla, Carlo. (2004). <i>Giocare con la scrittura</i>. Alma Edizioni, Firenze. • Guastalla, Carlo. Naddeo, Ciro Massimo. (2010). <i>Domani 1</i>. Alma Edizioni, Firenze. • Guastalla, Carlo. Naddeo, Ciro Massimo. (2011). <i>Domani 2</i>. Alma Edizioni, Firenze. • Bailini, Sonia. Consonno, Silvia. (2002). <i>Ricette per parlare</i>. Alma Edizioni, Firenze. • Corno, Dario. (2002). <i>Scrivere e comunicare</i>. Bruno Mondadori, Milano. | |
| Additional material may be provided by the Department. | |
| Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time. | |

COMMON POOL OF GENERIC ELECTIVES COURSES

Offered by Department of GRS

Category-IV

GENERIC ELECTIVE-1

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department offering the course |
|--------------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|--------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| Basic Communicative French (1) | 4 | 3 | 1 | 0 | 12 th Pass | NIL | Germanic and Romance Studies |

Learning Objectives: Reading and Writing:

In Semester 1, the student will learn to

- about France and French speaking countries.
- to read and understand an email.
- To write an email on simple subjects (introduce oneself, describe one's city, one's town, one's family)
- To read and understand a simple poster. (announcing an event, a film,)
- To prepare a poster.
- To read and understand a blog.
- To write a short blog (about oneself, about one's family, expressing one's likes and dislikes.etc.)/ to reply to a blog.
- To describe a town/city.
- To describe the locality in which one lives.
- To describe one's daily routine.
- To read and understand a notice.
- To read and understand an extract from a comic book.
- To describe a person (physical and qualitatively)
- To describe one's family.
- To read, understand and reply to short messages.

Course Learning Outcomes (Reading and Writing)

At the end of Semester 1, students will be able to

- Read simple texts and answer questions on them.
- Write about subjects pertaining to his/her immediate environment.

- Attain Level A 1.1 of reading and writing skills as described in the Common European Framework.

Learning Objectives (Listening and Speaking)

In Semester 1, students will learn to

- greet in different situations.
- introduce themselves.
- ask for information about others and introduce them.
- communicate orally in formal and informal situations.
- describe a person.
- express their likes and dislikes.
- speak about one's preferences.
- Carry out a basic telephone conversation.
- speak about different professions.
- present a town/city.
- present a locality.
- present their family.
- talk about their daily routine.
- narrate a recent event.

Course Learning Outcomes (Listening and Speaking)

At the end of Semester 1, students will be able to

- listen to and understand simple texts and answer questions on them.
- talk on subjects pertaining to his/her immediate environment.
- interact in simple everyday situations.
- attain Level A1.1 of listening and speaking skills as described in the Common European framework.

SYLLABUS OF GE 1 (FRENCH)⁶

Dossier 0: (4 hours)

Reading Comprehension : Short simple texts (extract of a comic book, academic calendar, classroom instructions) and posters (situations) and answer questions on them.

Writing: Make a poster with two class instructions.

Grammar: Verb *s'appeler* (present tense), subject pronouns (*je, tu, il/elle...*) accents in French, gender of countries, definite article (*le, la, l' les*).

⁶ A text book contains 6-8 modules/units called *dossier* Each dossier with the exception of unite 0 which is the introductory unit comprises 6 lessons. Therefore the syllabus is given in terms of the text book unit being covered along with the content of the 6 lessons with a total duration of the number of weeks needed to cover a dossier of 6 lessons.

Listening Comprehension: Dialogues, short songs and answer questions on them. Associate the letter of the alphabet and its pronunciation. Write down numbers from 1-69.

Speaking: Introduce oneself, spell out one's name, the seasons in one's country, practice useful classroom phrases.

Phonetics: French alphabet.

Vocabulary: greetings, names of people, countries, numbers, months of the year and days of the week.

Dossier 1 Lessons 1-6 + Project (16 hours)

Reading Comprehension: Associating photos and short texts, posters (invitation to an event, a film), and answering questions on it, read a blog, a website, SMS and answer questions on it, putting a short dialogue in order.

Writing: Fill in personal information on a document (a badge, a form, an enrollment form,) write a tweet to introduce oneself, prepare a poster giving six photos and 6 arguments in favor of learning a foreign language

Grammar: Difference between tu and vous and their use, Indefinite articles (*un, une des*), question words (*où, qui, quand quoi?*), verb *être* (present tense), verbs in ER (present tense), difference between *il est, c'est*, Interrogative adjectives (*quel, quelle...*), Use of *parce que* (to give a reason) and *pour* (objective).

Listening comprehension: Listen to short texts (dialogues, conversations interviews) and answer questions on them.

Speaking: Greetings, introduce oneself, take leave, ask for and give information/personal details, to introduce another person (ex classmates) , ask the identity of an unknown person, give reasons to learn a foreign language.

Phonetics: Different French sounds (y, z), emphasis on the last syllable, different types of intonation (rising , descending) and their use, mute (un pronounced) letters, Liaison.

Vocabulary: phrases to greet one another, polite phrases (merci, s'il vous plait), nationalities, professions

Cultural: French names, importance of French as an international language.

Dossier 2 Lessons 1-6 + Project (16 hours)

Reading Comprehension: Read a travel diary, symbols used in tourism, town map, forum, short texts on types of lodging, and answer questions on them.

Writing: write a travel diary, draw a map of your town or locality, write a message on a travel forum, explain one's choice of mode of transport, write a short introduction for a documentary on travelling, write a testimonial for a "couch surfer", prepare an advertisement to rent out a lodging.

Grammar: Prepositions used for countries and cities, Prepositions to situate an object Contracted articles with *à* and *de*, Verbs *aller, venir and prendre* (present tense), make a sentence negative, ask questions.

Listening comprehension: Listen to an audioguide, information on a tourist place, conversation, report and answer questions on them.

Speaking: Name and situate places on a town map, talk about means of transport, get to know another person, talk about different types of lodging.

Phonetics: Different French sounds, l'elision,, differentiate between masculine and feminine and singular and plural words.

Vocabulary: Names of countries and cities, important places in a town, means of transport, structures to get to know another person, lodging.

Cultural: French living abroad.

Dossier 3 Lessons 1-6 + Project (12 hours)

Reading Comprehension: Read content of websites, posters, advertisements and forums, testimonials family tree, instagram posts and answer questions on them.

Writing: Describe a person, write a testimonial for 3 french tourists visiting your Country, prepare a poster for sporting activities, prepare and explain a medical survival kit.

Grammar: Masculine and feminine, singular and plural of qualifying adjectives, express one's likes and dislikes, the structure faire + a sport, emphatic pronouns, expression avoir mal à + a part of the body.

Listening Comprehension: Listen to recorded testimonials, conversations, short interviews and telephone conversations and answer questions on them.

Speaking: Describe/ introduce the family, describe a person, talk about preferences, activities, explain a health problem, ask and answer questions.

Phonetics: Differentiate between two close sounds, nasal vowels.

Vocabulary: Family, physical description and qualities of a person, verbs and expressions to present one's likes and dislikes, professions, activities (sportive and artistic), parts of the body.

Cultural: Interviews with people related to tourism. Origin of tourists who visit Paris.

Dossier 4 Lessons 1-6 + Project (12 hours)

Reading comprehension: Read a short article, an email, a website or forum, facebook post, and invitation and answer questions on them.

Writing: Describe your typical day, prepare an ideal work schedule, prepare a questionnaire to identify the preferred outings of the class. Write an email. Write an invitation. Accept/reject an invitation.

Grammar: Different ways to tell the time, tell the time, reflexive verbs, Verbs lire, écrire, devoir, vouloir, pouvoir sortir (Present tense). Present tense of IR verbs, Imperative.

Listening Comprehension: Listen to messages on telephone, interviews, telephone conversations radio programs and answer questions on them.

Speaking: Ask for and tell the time, describe one's typical work day, describe one's daily activities, Propose and give information on different types of outings.

Phonetics: different types of intonation, typical french sounds (semi vowels)

Vocabulary: Time, everyday activities, work schedule, outings.

Cultural: A day in the life of a Frenchman.

Practical component (if any) - NIL

Essential/recommended readings Any of the text books given below may be prescribed by the Departement.

1. Hirschsprung Nathalie, Tricot Tony avec la collaboration de d'Abreu Sophie et Veillon Anne (sons du français), Pardo Emilie (s'exercer), Mous Nelly (DELF) : "*Cosmopolite A1 Méthode de français*", Hachette Français langue étrangère, 2017 Dossiers 0-4.

2. Cocton Marie-Noelle (coordination pedagogique), Heu Elodie, Houssa Catherine, Kasazain Emilie, Dupleix Dorothée (DELF), Ripaud Delphine (phonétique) : « *Saison 1 A1+ Méthode de français* », Les Editions Didier, 2015, Unités 0-5.
3. Cocton Marie-Noelle (coordination pedagogique), Dauda P, Giachino L, Baracco C : « *Generation A1 Méthode de français* » (livre + cahier), Didier Français Langue Etrangere, 2015, Unités 0-3.
4. Hirschsprung Nathalie, Mater Anais, Mathieu-Benoit Emilie, Mous Nelly, Tricot Tony : « *Cosmopolite A1 Cahier d'activites* », Hachette Français langue etrangere, 2017 Dossiers 0-4
5. Alcaez Marion, Escoufier Dorothee, Gomy Camille, Landier Mathilde, Quémener Francine, Ripaud Delphine : « *Saison 1 A1+Cahiers d'activites* », Les Editions Didier, 2015, Unités 0-5.

Additional material may be provided by the Department.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVE – 2

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Communicative German (1) | 4 | 3 | 1 | 0 | Passed Class XII | Nil |

Learning Objectives

Reading and Writing:

Objectives: At the end of Semester 1, a student will be able to

- read simple texts and answer questions on them;
- write short texts, about subjects pertaining to his/her immediate environment;
- attain Level A1.1 of the Common European Framework (CEF).

Content

Reading: Read and understand simple documents, texts, emails containing personal information, describing a person, a place, daily activities, means of transport, family and members of the family, invitations, messages, greeting cards etc.

Writing: Guided writing activities. A few sentences, short text or email describing oneself, others, a place, daily activities, the family, means of transport, writing and replying to invitations, messages, greeting cards for a birthday, a festival etc.

Morphosyntax and Vocabulary: Simple grammatical structures and vocabulary used to introduce oneself, introduce others, describe oneself and others, describe one's residential area, city, greetings, professions etc.

Intercultural and Co-cultural: Introduction to German-speaking countries, celebrities from German-speaking countries, fashion, cinema, comic strips etc.

Listening and Speaking:

Objectives: At the end of Semester 1, a student will be able to

- listen to and understand simple texts so as to answer questions on them;
- talk on subjects pertaining to his/her immediate environment;
- attain Level A 1.1 of the Common European Framework (CEF).

Content

Listening: Listen and understand basic phrases/ dialogues concerning himself, of his family, and immediate surroundings, brief announcements in public spaces and instructions when speakers are speaking at a slower pace.

Speaking which includes

Monologue: Introduce oneself and others, describe oneself, a person, one's family or an object, describe one's immediate environment (class or professional), residential area, city etc.

Dialogue: Participate in a basic conversation by exchanging simple greetings, asking and replying to simple questions, give instructions etc.

Morphosyntax, Vocabulary, Pronunciation: Simple grammatical structures and vocabulary used to introduce oneself, introduce others, describe oneself and others, describe one's residential area, city, greetings, professions etc.

Basic rules of pronunciation.

Intercultural and Co-cultural: Knowledge and practice of structures relevant to formal and informal situations.

UNIT I

12 Hours

Recognise alphabets, learn spellings, practice phonetics of alphabets.

Learn various forms of greetings, and learn to introduce oneself to others.

Learn country names and their languages.

Wh-questions, personal pronouns (I), some basic verbs, different definite articles.

Read and listen to short texts on a given topic.

Spellings of numbers 1 to 20. Exchange telephone numbers with each other.

Learn to ask each other questions related to one's state and its languages.

Listen to a text and note down information like phone numbers, names, places and languages.

UNIT II

12 Hours

Read job advertisements and note down the relevant information.

Learn vocabulary for the days of the week, plural forms and interrogative questions

Learn how to fill a form for job interviews.

Learn counting 20 onwards

Conjugation of 'haben' and 'sein', personal pronouns (II) and indefinite article 'ein/-'

Exchange information about one's age, languages, telephone numbers, e-mail addresses (both in formal as well as informal manner). Talk about hobbies, different seasons and months.

UNIT III

12 Hours

Read maps and use the given information to guide someone.

Negative article 'kein/-', irregular verbs, the accusative case, modal verb.

Vocabulary related to meals and food items, food habits and information about food habits related to German speaking countries. Express likes and dislikes.

Ask questions related to basic directions and explain as to how to reach specific places.

Simulate the situation of shopping.

UNIT IV

12 Hours

Read texts related to day-to-day activities and write about one's own daily routine.

Temporal prepositions, more modal verbs, possessive pronouns, introduction to separable verbs.

Vocabulary related to one's family, friends and leisure activities.

Ordinal numbers

UNIT V

12 Hours

Read statistics about most preferred leisure activities and express your opinion about them.

Learn how to tell the date using the preposition 'am'. Different uses of the preposition 'für'.

Learn to write an invitation (for example birthday).

Accusative personal pronouns. more separable verbs, imperfekt / Präteritum form of 'haben' and 'sein'.

Vocabulary related to describing one's city in the past and at present, to the situation of eating out and how to pay for the same, and to talk to each other about one's likes, dislikes, hobbies, family, daily routine, working hours, habits, friends, going out etc.

Learning / Teaching Material: Any of the textbooks given below may be prescribed.

1. Dengler, S., Rusch, P., Schmitz, H. (2013). *Netzwerk A1.1: Deutsch als Fremdsprache. Kurs- und Arbeitsbuch mit DVD und 2 Audio--CDs*. Klett Verlag.
2. Dengler, Stefanie; Tanja Mayr-Sieber, Paul Rusch, Helen Schmitz. *Netzwerk neu A1.1: Deutsch als Fremdsprache. Kurs- und Übungsbuch mit Audios und Videos*. Klett Verlag
3. Evans, S., Pude, A., Specht, F. (2021). *Momente A1.1. Kurs- und Arbeitsbuch*. Hueber Verlag.
4. Evans, S., Pude, A., Specht, F. (2020). *Menschen A 1. Kurs- und Arbeitsbuch*. Max Hueber Verlag
5. Höldrich, B. (2010). – *Lesen & Schreiben A1: Buch (Deutsch üben) Taschenbuch*. München: Hueber Verlag.
6. Rusch, P., Schmitz, H. *Einfach Grammatik Deutsch A1 Bis B1*. Berlin: Langenscheidt.
7. Sander, I., Braun, B., Fügert, N., Kotas, O. (2016). *DaF kompakt neu A1: Deutsch als Fremdsprache für Erwachsene. Kurs- und Übungsbuch*. Klett Verlag.
8. Von, Rosa-Maria Dallapiazza, et al. (2011). *Tangram aktuell A1. Kurs- und Arbeitsbuch*. Hueber Verlag.

Additional material may be provided by the Department.

GENERIC ELECTIVE -3

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Communicative Spanish (1) | | | | | | |

Learning Objectives

Reading and Writing:

Objectives: At the end of Semester 1, a student will be able to

- read simple texts and answer questions on them;
- write short texts, about subjects pertaining to his/her immediate environment;
- attain Level A1.1 of the Common European Framework (CEF).

Content

Reading: Read and understand simple documents, texts, emails containing personal information, describing a person, a place, daily activities, means of transport, family and members of the family, invitations, messages, greeting cards etc.

Writing: Guided writing activities. A few sentences, short text or email describing oneself, others, a place, daily activities, the family, means of transport, writing and replying to invitations, messages, greeting cards for a birthday, a festival etc.

Morphosyntax and Vocabulary: Simple grammatical structures and vocabulary used to introduce oneself, introduce others, describe oneself and others, describe one's residential area, city, greetings, professions etc.

Intercultural and Co-cultural: Introduction to German-speaking countries, celebrities from German-speaking countries, fashion, cinema, comic strips etc.

Listening and Speaking:

Objectives: At the end of Semester 1, a student will be able to

- listen to and understand simple texts so as to answer questions on them;
- talk on subjects pertaining to his/her immediate environment;
- attain Level A 1.1 of the Common European Framework (CEF).

Content

Listening: Listen and understand basic phrases/ dialogues concerning himself, of his family, and immediate surroundings, brief announcements in public spaces and instructions when speakers are speaking at a slower pace.

Speaking which includes

Monologue: Introduce oneself and others, describe oneself, a person, one's family or an object, describe one's immediate environment (class or professional), residential area, city etc.

Dialogue: Participate in a basic conversation by exchanging simple greetings, asking and replying to simple questions, give instructions etc.

Morphosyntax, Vocabulary, Pronunciation: Simple grammatical structures and vocabulary used to introduce oneself, introduce others, describe oneself and others, describe one's residential area, city, greetings, professions etc.

Basic rules of pronunciation.

Intercultural and Co-cultural: Knowledge and practice of structures relevant to formal and informal situations.

SYLLABUS OF GE

UNIT – I

12 Hours

Learn and produce greetings. Write a brief personal information. Learning the alphabets and speak some random words to practice pronunciation. Writing a brief introduction, learning to recognize country names and their nationalities, different professions and different languages, making simple questions. Learning some basic regular verbs, numbers 1-20, age, family members, express greetings.

UNIT – II

12 Hours

Read a text on different motives for learning Spanish and what do you want to do in the course. Introduction of simple present tense, use of 'a', 'con', 'de', 'por', 'para', 'porque' 'también' and 'pero' etc. Personal pronoun. Counting numbers 20 onwards. Family relations and social relations. Talk to each other, describe people and their character. Read texts on the description of the person and his/her character and express with each other. Learn Possessive pronoun, Adjective, Adverbs etc. Listen to a text on a related topic, Express Leisure time Activities.

UNIT III

12 Hours

Read maps and know about Spanish speaking countries. Read texts about a locality. Use of Ser, Estar, Hay. Learn interrogatory words Cuál, Qué, Cuáles, Dónde, Cómo, Cuánto. Express with each other, talk about one's locality. Superlative degree. Indefinite articles. Quantifiers. Describe climate. Write about one's own country's places to visit, people and climate. Make a presentation on your locality and parts of the house. Listen to a text related to the topic. Write an email to your friend on your city and travel. Design a project of a new locality and present.

UNIT – IV

12 Hours

Read a text on daily routine and relate it to the time. Different regular and irregular verbs. Reflexive verbs. Learn to describe time. Cardinal numbers. Listen to a text related to day-to-day activities. Talk to your classmates about your daily routine. Make a questionnaire on the

sequence of the activities one does on a daily basis, sometimes, frequently and never and find out the most active person in the class. Learn about some famous personalities in the Hispanic world.

UNIT V

12 Hours

Read a text on sports. Vocabulary in the different sports. Learn about different sports. Famous hispanic personalities in sports. Listen to a text related to the topic. The verbs ‘Gustar’ ‘Encantar’, ‘Interesar’ Express with the group what do you like and dislike. Write a text on what do you like and dislike in your family. Read texts on reality shows on television. Tener + que + infinitivo. Es + Adjetivo + infinitivo. Read a text on activities one can do in a hispanic city. Write about the entertaining activities for a traveller in your city.

Essential/recommended readings

Suggestive readings

Learning / Teaching Material: Any of the textbooks given below may be prescribed.

1. Alondo, Elcina. Corpas, Jaime. (2018). Diverso A1 Libro de alumno. Madrid, Madrid: SGEL.
2. Alvarez Martinez, María Angeles. Canales, Ana Blanco. et al. (2017). Sueña 1 Libro de alumno. Salamanca. Salamanca: Grupo Anaya.
3. Baulenas, Neus Sans. Peris, Ernesto Martín. et al. (2016). Bítacora 1 Libro de alumno. Barcelona, Barcelona: Editorial Difusión.
4. Campo, Cristina, Cuadrado, Charo et.al. (2017) Protagonistas A1- Libro de alumno. Madrid, Madrid: Ediciones SM.
5. Sanz, N. (2016). Aula Internacional 1. Barcelona. Barcelona: Editorial Difusión
6. Martí Peris, E., Sans, N. (2016). Gente 1 Libro del alumno. Barcelona: Editorial Difusión.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVE – 4

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|----------|-----------------------------------|----------|---------------------|-------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Communicative Italian (1) | 4 | 3 | 1 | 0 | Passed Class XII | Nil |

| GE-3 Basic Communicative Italian (1) | |
|---|--|
| Learning Objectives: Reading and Writing Objectives: At the end of Semester 1, a student will be able to <ul style="list-style-type: none"> • read simple texts and answer questions on them; • write short texts, about subjects pertaining to his/her immediate environment; • attain Level A1.1 of the Common European Framework (CEF). Listening and Speaking Objectives: At the end of Semester 1, a student will be able to <ul style="list-style-type: none"> • listen to and understand simple texts so as to answer questions on them; • talk on subjects pertaining to his/her immediate environment; • attain Level A 1.1 of the Common European Framework (CEF). | |
| Learning Outcomes: Reading and Writing: The Learning Outcomes of this course are as follows: <ul style="list-style-type: none"> • Enable students to partially attain A1 Level of reading and writing skills in the concerned language. • Reading and understanding simple texts and answering questions on them. • Equip students to write about subjects pertaining to his/her immediate environment. Listening and Speaking: The Learning Outcomes of this course are as follows: <ul style="list-style-type: none"> • Enable students to partially attain A1 Level of listening and speaking skills in the concerned language. • Listening and understanding simple audio texts and answering questions on them. • Equip students to talk about subjects pertaining to his/her immediate environment. | |
| Syllabus: | |
| CONTENT Reading and Writing: Reading: Read and understand simple documents, texts, emails containing personal information, describing a person, a place, daily activities, means of transport, family and members of the family, invitations, messages, greeting cards etc. Writing: Guided writing activities. A few sentences, short text or email describing oneself, others, a place, daily activities, the family, means of transport, writing and replying to | |

| | |
|---|-----------------|
| <p>invitations, messages, greeting cards for a birthday, a festival etc.</p> <p>Morphosyntax and Vocabulary: Simple grammatical structures and vocabulary used to introduce oneself, introduce others, describe oneself and others, describe one's residential area, city, greetings, professions etc.</p> <p>Intercultural and Co-cultural: Introduction to Italophone countries, celebrities from Italophone countries, fashion, cinema, comic strips etc.</p> <p>Listening and Speaking:</p> <p>Listening: Listen and understand basic phrases/ dialogues concerning himself, of his family, and immediate surroundings, brief announcements in public spaces and instructions when speakers are speaking at a slower pace.</p> <p>Speaking which includes</p> <p>Monologue: Introduce oneself and others, describe oneself, a person, one's family or an object, describe one's immediate environment (class or professional), residential area, city etc.</p> <p>Dialogue: Participate in a basic conversation by exchanging simple greetings, asking and replying to simple questions, give instructions etc.</p> <p>Morphosyntax, Vocabulary, Pronunciation: Simple grammatical structures and vocabulary used to introduce oneself, introduce others, describe oneself and others, describe one's residential area, city, greetings, professions etc.</p> <p>Basic rules of pronunciation.</p> <p>Intercultural and Co-cultural: Knowledge and practice of structures relevant to formal and informal situations.</p> <p>Practical component (if any) - NIL</p> | |
| UNIT I | 12 Hours |
| <p>Recognise alphabets, learn spellings, practice phonetics of alphabets.</p> <p>Learn various forms of greetings, and learn to introduce oneself to others.</p> <p>Learn country names and their languages.</p> <p>Wh-questions, personal pronouns (I), some basic verbs, introduction to indefinite and definite articles.</p> <p>Read and listen to short texts on a given topic.</p> <p>Spellings of numbers 1 to 20. Exchange telephone numbers with each other.</p> <p>Learn to ask each other questions related to one's state and its languages.</p> <p>Listen to a text and note down information like phone numbers, names, places and languages.</p> | |
| UNIT II | 12 Hours |
| <p>Read job advertisements and note down the relevant information.</p> <p>Learn vocabulary for the days of the week, plural forms and interrogative questions</p> <p>Learn how to fill a form for job interviews.</p> <p>Learn counting 20 onwards</p> <p>Conjugation of 'essere' and 'avere', personal pronouns (II) and indefinite articles 'un / una / uno etc.'</p> <p>Exchange information about one's age, languages, telephone numbers, e-mail addresses (both in formal as well as informal manner). Talk about hobbies, different seasons and months.</p> | |
| UNIT III | 12 Hours |
| Read maps and use the given information to guide someone. | |

| | |
|---|-----------------|
| <p>Definite articles ‘il / la / lo etc.’, irregular verbs, the accusative case, modal verbs.</p> <p>Vocabulary related to meals and food items, food habits and information about food habits in Italy. Express likes and dislikes.</p> <p>Ask questions related to basic directions and explain as to how to reach specific places.</p> <p>Simulate the situation of shopping.</p> | |
| UNIT IV | 12 Hours |
| <p>Read texts related to day-to-day activities and write about one’s own daily routine.</p> <p>Prepositions, modal verbs, possessive pronouns, introduction to regular and irregular verbs.</p> <p>Vocabulary related to one’s family, friends and leisure activities.</p> <p>Ordinal numbers</p> | |
| UNIT V | 12 Hours |
| <p>Read statistics about most preferred leisure activities and express your opinion about them.</p> <p>Learn how to tell time and dates. Different prepositions.</p> <p>Learn to write an invitation (for example birthday).</p> <p>Accusative personal pronouns. more irregular verbs, imperfetto / Passato prossimo form of various verbs.</p> <p>Vocabulary related to describing one’s city in the past and at present, to the situation of eating out and how to pay for the same, and to talk to each other about one’s likes, dislikes, hobbies, family, daily routine, working hours, habits, friends, going out etc.</p> | |
| <p>Learning/Teaching Material: Any of the textbooks given below may be prescribed:</p> <ol style="list-style-type: none"> 6. Carlo Guastalla, Ciro Massimo Naddeo, <i>Domani 1</i>, Alma Edizioni, Firenze (2010). 7. Luciana Ziglio, Giovanna Rizzo, <i>Espresso 1</i>, Alma Edizioni, Firenze and Goyal Publishers and Distributors Pvt. Ltd., Delhi, 2012. 8. Mariateresa Serafini, <i>Nuovo l’italiano: grammatica e scrittura</i>, Fabbri, Milano, 2009. 9. Susanna Nocchi, <i>Grammatica pratica della lingua italiana</i>, Alma edizioni, Firenze. | |
| <p>Additional material may be provided by the Department.</p> <p>Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.</p> | |

DEPARTMENT OF PHILOSOPHY

BA (Hons.) Philosophy

Category-I

DISCIPLINE SPECIFIC CORE COURSE -1 (DSC-1) – : Introduction to Philosophy

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction to Philosophy DSC 1 | 4 | 3 | 1 | 0 | Passed Class XII | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

- This course introduces the basic areas of philosophy, like metaphysics, epistemology, ethics, aesthetics, social and political philosophy etc.
- Questions like What is reality?, what is good and what is bad?, what is beautiful ? What is justice? What is science and scientific temper? Etc will be raised/discussed in the course
- The course aims at comprehensive view of philosophy and its branches

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying the course, the student will be able to comprehend nature and scope of the course
- Apart from the subject matter of ethics, aesthetics, and social political philosophy, the student will also learn about the relation between philosophy and science and about the inculcation of the scientific temper for doing further research in philosophy.
- The student will be well prepared to tackle questions of philosophy after taking this course.

SYLLABUS OF DSC-1

UNIT I What is Philosophy?

(16 Hours)

1. Philosophy, *Darsana*, *Anviksiki*, *Tattva*

2. Classifications of Philosophy

“What is Philosophy” (pp. 1-5), “Divisions of Philosophy”, (pp. 13-15, in Moore, Brooke Noel and Bruder, Kenneth (2010). *Philosophy: The Power of Ideas*. McGraw-Hill
“Introduction” (pp. 1-10) by Bertrand Russell,. *History of Western Philosophy*, RKP,
“General Introduction” (1-12) in Ramakrishna Puligandla’s *Fundamentals of Indian Philosophy*, D K Printworld, 2008
Kauṭilya. (2003). *Arthaśāstra*, Book 1, section 1-3, *The Kauṭilya Arthaśāstra*-, trans. R. P. Kangle, (Bombay University : 1972), reprint, Delhi: 2003, Motilal Banarasi Das Publishers.

UNIT II Metaphysics and Epistemology

(16 Hours)

1. The Question of Existence
2. Different views of reality
3. Knowledge and Belief

Kristie Miller: What is Metaphysics? (193-209)

Duncan Pritchard: What is Knowledge? (123-133)

Prescribed Text: Duncan Pritchard : What is this thing called Philosophy? (RKP, 2015)

UNIT III Ethics and Aesthetics

(16 Hours)

1. The basis of right and wrong
2. Aesthetics: art and its objects

Michael Brady: What is Ethics? (3- 6)

Kathleen Stock: What is Art? (81-93)

Prescribed Text: Duncan Pritchard: What is this thing called Philosophy? (RKP, 2015)

UNIT IV Social and Political Philosophy and Philosophy of Science

(16 Hours)

1. Social Contract
2. Justice
3. Scientific Temper

Thom Brooks “What is Justice” (52-65)

Chattopadhyaya, D. P. (1990). Defending the Scientific Temper. *India International Centre Quarterly*, 17(3/4), 42–57. <http://www.jstor.org/stable/23002452>

Prescribed Text: Duncan Pritchard : What is this thing called Philosophy? (RKP, 2015)

Essential Readings/Recommended Readings

Pritchard, Duncan (ed.) (2015). *What is This Thing Called Philosophy?*. Routledge.

Appiah, Anthony (2003). *Thinking It Through: An Introduction to Contemporary Philosophy*. Oxford University Press.

Blackburn, Simon (1999). *Think: A Compelling Introduction to Philosophy*. Oxford University Press.

Moore, Brooke Noel and Bruder, Kenneth (2010). *Philosophy: The Power of Ideas*. McGraw-Hill.

Suggestive readings

Perry, John ;Bratman, Michael & Fischer, John Martin (2009). *Introduction to Philosophy: Classical and Contemporary Readings, Fourth Edition, International Edition*. OUP USA.

Pojman, Louis P. &Fieser, James (eds.) (2007). *Introduction to Philosophy: Classical and Contemporary Readings*. Oxford University Press.

Strawson, Peter (1992). *Analysis and Metaphysics: An Introduction to Philosophy*. Oxford University Press.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2): Logic

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Logic DSC 2 | 4 | 3 | 1 | 0 | Passed Class XII | Nil |

Learning Objectives

- This course primarily helps in developing one's skill in correct reasoning or argumentation.
- It trains the student to construct good and sound arguments rejecting the vague and unsound ones at any point of time and situation.

Learning Outcomes:

- Helps in sharpening the reasoning and argumentation skills of a learner and simultaneously helps in identifying the flaws.
- Enhances the analytical skills, so that one can resolve the difficult issues and finally arrives at a reasonable solution.
- Helps in good scoring for a better rank in form of result.

Unit I **Basic Concepts in Logic**

12 Hours

1. Proposition and Sentence
2. Arguments: Deductive and Inductive
3. Truth, Validity and Soundness

1. Copi, Irving M., Carl Cohen, and Kenneth McMahon. *Introduction to Logic*. 14th ed. Delhi: Pearson, 2016. pp. 1-33.

Unit II **Traditional Logic**

24 Hours

1. Categorical Propositions: Quality, Quantity and Distribution of Terms
2. The Traditional Square of Opposition, Existential Import
3. Immediate Inferences- Conversion, Obversion and Contraposition
4. Translating Ordinary Language Sentences into Standard Logical Form

1. Copi, Irving M., Carl Cohen, and Kenneth McMahon. *Introduction to Logic*. 14th ed. Delhi: Pearson, 2016. pp. 167-250.

Unit III **Categorical Syllogisms**

24 Hours

1. Moods and Figures
2. Rules of Syllogism and Syllogistic Fallacies
3. Determining Validity/Invalidity using rules of Syllogism
4. Determining Validity/Invalidity using Venn Diagrams

1. Copi, Irving M., Carl Cohen, and Kenneth McMahon. *Introduction to Logic*. 14th ed. Delhi: Pearson, 2016. pp. 211-254.

Essential/Recommended Readings

Copi, Irving M., Carl Cohen, and Kenneth McMahon. *Introduction to Logic*. 14th ed. Delhi: Pearson, 2016.

Suggestive Readings:

Jain, Krishna. *A Textbook of Logic*. New Delhi: D.K. Printworld, 2018.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 3 (DSC-3): Indian Philosophy

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Indian Philosophy DSC 3 | 4 | 3 | 1 | 0 | Passed Class XII | Nil |

Learning Objectives

- In this course the focus will be on interactive learning where students will engage themselves into rigorous and an analytical examination of key concepts in a manner that enables them for contemporary engagement and reflection . Hence there will be a focus on the dialectical and analytical method to understand Indian philosophy.
- The aim is to make students familiar with and develop a clear understanding of the major concepts such as the Śruti and Smṛiti, Karma, Jñāna and Bhakti in different systems of Indian Philosophy and Śreyas and Preyas in Kathopanishad . It will also show the problems which arise in translating the Sanskrit terms to English, for example dharma as translated as religion within Indian Philosophical studies.
- Debate amongst the schools regarding the nature of the self will enhance various perspectives and further increase students understanding of Indian Philosophical systems and their philosophy.
- Improved critical reading of the texts, their rational and logical understanding, and writing abilities.
- Finally it will give a holistic development of their personality.

Learning Outcomes

- Students will understand the richness of Indian Intellectual Traditions through basic concepts such as Śruti and Smṛiti, Karma, Jñāna and Bhakti, Śreyas and Preyas and Students will appreciate the Indian Metaphysics of various ancient Indian schools such as Cārvāka, Buddhism, Jainism, Sāṅkhya, Pūrva-Mīmāṃsā and Vedānta, which will help them to understand and appreciate different perspectives within the society at large.
- Students will learn to develop scientific, logical and rational inquiry for understanding the systems.
- Students will be able to do a comparative analysis of all systems which will further enhance their debating skills.
- Students will develop the ability to think critically and to read and analyse scientific literature.

- Students will develop strong oral and written communication skills through the effective presentation of Projects, Quiz as well as through Seminars.

UNIT I Introduction to Indian Philosophy

12 Hours

1. Historical overview
1. Rise of Systems
2. Origins of Indian Philosophy

J.N.Mohanty, *Classical Indian Philosophy*, Lanham: Rowman and Little field,1999, pp.1-10.

A.K.Warder, *A Course in Indian Philosophy*, Delhi: Motilal Banarsidass Publishers,2018, pp.4-11

UNIT II Outlines of Indian Philosophy Hours

16

1. Distinction between *Śruti* and Smṛiti.
2. Distinction between Dharma and Religion.
3. Emphasis on *Karma* (Action), *Jñāna* (Knowledge) and *Bhakti* (Devotion) : An Understanding of different Indian Philosophical Schools
4. *Śreyas* and *Preyas* with reference to *Kaṭha Upaniṣad*.

1. Dasgupta, S.N. (2004), *A History of Indian Philosophy*, Vol. 1, Motilal Banarasi Das Publications, Delhi.

2. Radhakrishnan, S. Moore, (1967) CA, *A Sourcebook in Indian Philosophy*, Princeton.

3. Raju, P.T. (1985) *Structural Depths of Indian Thought*, NY Albany: State University of New York Press.

4. *Kaṭha Upaniṣad*

UNIT III Indian Metaphysics

20 Hours

- 1 Four Noble Truths (catvariyaśatyani), Doctrine of Dependent Origination (Pratityasamutpada) and Doctrine of Momentariness (Kṣāṇabhanga-vāda) in Buddhism. Prakṛti, Puruṣa and Parināmavāda of Sāṅkhya School.
- 2 Pūrva- Mīmāṃsā theory of Karma (Apurva)
- 3 Indian school of Materialism (Cārvāka, Early Sāṅkhya, Atomism of Vaiśeṣika)

1. Hiriyanna, M: (1951), *Outlines of Indian Philosophy*, London: Allen & Unwin
2. Dasgupta, S.N. (2004), *A History of Indian Philosophy*, Vol. 1, Motilal Banarasi Das Publications, Delhi
3. Chatterjee, S.C. & D.M. Datta (1984), *An Introduction to Indian Philosophy*, reprint, University of Calcutta.

4. M.N.Roy, *Materialism in Indian Philosophy*, Delhi: Critical Quest ,2017, Pp1-22(Selections from Materialism: An Outline of the History of Scientific Thought
5. Bhattacharya, Ramkrishna. “Materialism in India: A Synoptic View.” Retrieved 27 July 2012.<http://www.carvaka4india.com/2011/08/materialism-in-india-synoptic-view.html>

UNIT IV Indian Epistemology

20 Hours

1. Syādvāda of Jainism
 2. Prama and Pramana distinction with reference to Nyāya theory of Perception.
-
1. Chatterjee, S.C. (2008), Nyāya Theory of Knowledge, Delhi, Bharatiya Kala Prakashan.
 2. Sharma, C.D. (2003) Critical Survey of Indian Philosophy, Delhi: MotilalBanarsidass
 3. Stevenson, S.1951. The Heart of Jainism. London: Oxford University Press.
 4. Shastri, Haridatta, BhartiyaDarshanKaItihas.(Hindi)
 5. Upadhaya, Baldeva. BhartiyaDarshan (Hindi), Banaras.

Essential/recommended Readings

1. Hiriyanna, M: (1951), Outlines of Indian Philosophy, London: Allen & Unwin
2. Dasgupta, S.N. (2004), A History of Indian Philosophy, Vol. 1, MotilalBanarasiDas Publications, Delhi

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BA (Prog) with Philosophy as Major
Category II

DISCIPLINE SPECIFIC CORE COURSE (DSC-1): Philosophical Issues

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------------|----------|-----------------------------------|----------|---------------------|-------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DSC 1 Philosophical Issues | 4 | 3 | 1 | 0 | Passed Class XII | Nil |

Learning Objectives

- The primary objective of this course is to introduce the main philosophical issues to students
- It will encourage the students to think critically about some of the most important questions that philosophers ask
- It will also teach students how analytical and rigorous answers are possible to hard questions

Learning Outcomes

- By studying this course, a student should be able to demonstrate a clear understanding of the background the philosophical issues.
- They will acquire a good understanding of the key concepts of Indian schools as well as Western philosophy.
- They will have a sound understanding of epistemological, metaphysical, and ethical issues and shall be able to go for further studies in the subject.

Unit I Introduction

12 Hours

- What is Philosophy?
- What is a Philosophical Issue?
- Origins of Indian Philosophy

Moore, B. N., & Bruder, K. (2001). *Philosophy: The power of ideas* (5th ed.). New York: McGraw-Hill, pp. 1-5, 13-15

Warder, A K (2018). *A course in Indian Philosophy*, Motilal Banarsidass, Pg. 4-19

Unit II Metaphysical Issues

16 Hours

- What is metaphysics?
- Idea of Reality, Being, and Becoming

Laurence, Stephen and Cynthia Macdonald (eds.), 1998, *Contemporary Readings in the Foundations of Metaphysics*, Oxford: Blackwell.pp 1-21

Unit III. Epistemological Issues

12 Hours

- What is Knowledge?
- Prama, Prameya and Pramana

Lehrer, K. (1990). *Theory of knowledge*. Boulder, CO: Westview Press.pg 2-4

Puligandla, R. (2008). *Fundamentals of Indian Philosophy*, D K Printworld, pp. 184-191

Unit IV. Ethical Issues

20 Hours

- Morality and Ethics
- Buddhist Ethics

Rachels, J., & Rachels, S. (2012). "What is Morality?" In *The Elements of Moral Philosophy* 7e. McGraw Hill. pp 1 to 13

Keown, Damien (2018). "Buddhist Ethics", in Billimoria, Purushottama (ed.) (2018). *Routledge History of Indian Philosophy*. Routledge, pp. 496-505

Essential/recommended readings

Gupta, R.K., (1995), *Social Action and Non-violence*, ICPR, New Delhi.

Hiriyana, M. (1951), *Outlines of Indian Philosophy*, Allen & Unwin, London.

Kar, Bijayananda (1985), *Indian Philosophy*, Ajanta Publications, Delhi.

Keown, D. (1992), *The Nature of Buddhist Ethics*, Macmillan, London.

Lama, Dalai (1999), Ethics for the New Millennium, Riverhead Books, New York.
 O'Connor, D.J., (1964), Critical History of Western Philosophy, Free Press of Glencoe, London.
 Raju, P.T., (1971), The Philosophical Traditions of India, George Allen & Unwin Ltd., London.

Suggestive Readings

Rao, V. Ramakrishna (1987), Selected Doctrines from Indian Philosophy, Mittal Publications, Delhi.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2): Logic

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|----------|-----------------------------------|----------|---------------------|-------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Logic DSC 2 | 4 | 3 | 1 | 0 | Passed Class XII | Nil |

Learning Objective

- This course primarily helps in developing one's skill in correct reasoning or argumentation.
- It trains the student to construct good and sound arguments rejecting the vague and unsound ones at any point of time and situation.

Learning Outcomes

- Helps in sharpening the reasoning and argumentation skills of a learner and simultaneously helps in identifying the flaws.
- Enhances analytical skills so that one can resolve difficult issues and finally arrives at a reasonable solution.

Unit I Basic Logical Concepts

8 Hours

1. Proposition and Sentence
2. Deductive argument
3. Truth, Validity, and Soundness

Copi, Irving M., Carl Cohen, and Kenneth McMahon. *Introduction to Logic*. 14th ed. Delhi: Pearson, 2016. Ch 1-2.

Unit II Traditional Logic (A)

20 Hours

1. Terms and Distribution of terms
2. Categorical Propositions
3. Traditional Square of Opposition and Existential Import
4. Translating Ordinary Language Sentences into Standard form

Traditional Logic (B)

1. Immediate Inferences- Conversion, Obversion, and Contraposition
2. Categorical Syllogism: Figure and Mood
3. Syllogistic Rules and Fallacies
4. Venn Diagram

1. Copi, Irving M., Carl Cohen, and Kenneth McMahon. *Introduction to Logic*. 14th ed. Delhi: Pearson, 2016. Ch 5-7.

Unit III Symbolization Hours

20

1. Types of Truth functions: Negation, Conjunction, Disjunction (Alternation), Conditional (Implication), and Bi-Conditional (Equivalence)
2. Statements, Statement forms, and Logical status
3. Decision procedures: Truth table Method and Reductio ad Absurdum

1. Copi, Irving M., Carl Cohen, and Kenneth McMahon. *Introduction to Logic*. 14th ed. Delhi: Pearson, 2016. Ch 8.

Unit IV Indian Logic

12 Hours

1. Debate
2. Logic
3. Steps of Inference in Indian Logic

Warder, A K (2018). *A course in Indian Philosophy*, Motilal Banarsidass, Pg. 128-137 (“Debate and Logic”)

Essential/Recommended Readings

1. Copi, Irving M. *Introduction to logic*. 6th Ed. New York London: Macmillan Collier Macmillan, 1982. Ch5-7.
2. Ganeri, Jonardon (2001). *Indian Logic a Reader*. Psychology Press.

Suggestive Readings

- Jain, Krishna. *A Textbook of Logic*. New Delhi: D.K. Printworld, 2018.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BA (Prog) with Philosophy as Non-Major
Category II

DISCIPLINE SPECIFIC CORE COURSE (DSC-1): Philosophical Issues

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------------|----------|-----------------------------------|----------|---------------------|-------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DSC 1 Philosophical Issues | 4 | 3 | 1 | 0 | Passed Class XII | Nil |

Learning Objectives

- The primary objective of this course is to introduce the main philosophical issues to students
- It will encourage the students to think critically about some of the most important questions that philosophers ask
- It will also teach students how analytical and rigorous answers are possible to hard questions

Learning Outcomes

- By studying this course, a student should be able to demonstrate a clear understanding of the background the philosophical issues.
- They will acquire a good understanding of the key concepts of Indian schools as well as Western philosophy.
- They will have a sound understanding of epistemological, metaphysical, and ethical issues and shall be able to go for further studies in the subject.

Unit I Introduction

12 Hours

- What is Philosophy?
 - What is a Philosophical Issue?
 - Origins of Indian Philosophy
-

Moore, B. N., & Bruder, K. (2001). *Philosophy: The power of ideas* (5th ed.). New York: McGraw-Hill, pp. 1-5, 13-15

Warder, A K (2018). *A course in Indian Philosophy*, Motilal Banarsidass, Pg. 4-19

Unit II Metaphysical Issues

16 Hours

- What is metaphysics?
- Idea of Reality, Being, and Becoming

Laurence, Stephen and Cynthia Macdonald (eds.), 1998, *Contemporary Readings in the Foundations of Metaphysics*, Oxford: Blackwell.pp 1-21

Unit III. Epistemological Issues

12 Hours

- What is Knowledge?
- Prama, Prameya and Pramana

Lehrer, K. (1990). *Theory of knowledge*. Boulder, CO: Westview Press.pg 2-4

Puligandla, R. (2008). *Fundamentals of Indian Philosophy*, D K Printworld, pp. 184-191

Unit IV. Ethical Issues

20 Hours

- Morality and Ethics
- Buddhist Ethics

Rachels, J., & Rachels, S. (2012). “What is Morality?” In *The Elements of Moral Philosophy* 7e. McGraw Hill. pp 1 to 13

Keown, Damien (2018). “Buddhist Ethics”, in Billimoria, Purushottama (ed.) (2018). *Routledge History of Indian Philosophy*. Routledge, pp. 496-505

Essential/recommended readings

Gupta, R.K., (1995), *Social Action and Non-violence*, ICPR, New Delhi.

Hiriyana, M. (1951), *Outlines of Indian Philosophy*, Allen & Unwin, London.

Kar, Bijayananda (1985), *Indian Philosophy*, Ajanta Publications, Delhi.

Keown, D. (1992), *The Nature of Buddhist Ethics*, Macmillan, London.

Lama, Dalai (1999), Ethics for the New Millennium, Riverhead Books, New York.
O'Connor, D.J., (1964), Critical History of Western Philosophy, Free Press of Glencoe, London.
Raju, P.T., (1971), The Philosophical Traditions of India, George Allen & Unwin Ltd., London.

Suggestive Readings

Rao, V. Ramakrishna (1987), Selected Doctrines from Indian Philosophy, Mittal Publications, Delhi.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

COMMON POOL OF GENERIC ELECTIVE COURSES

Offered by Department of Philosophy

Category –IV

GENERIC ELECTIVES (GE-1): Ethics in Public Domain

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department offering the course |
|------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|--------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| Ethics in Public Domain GE 1 | 4 | 3 | 1 | 0 | Passed XII class | Nil | Philosophy |

Learning Objectives

- The course aims to develop an ethical perspective on socio-political and even economic issues where the public discourses and debates are often bereft of ethical/moral considerations and are often plagued with objectivism and materialism.
- Through theoretical understanding of ethics and its practical application in daily life, it generates ethical awareness/sensitivity necessary for overall wellbeing and inspires the readers to contribute voluntarily to the society as a responsible member.

Learning Outcomes

- To equip the students with tools and techniques for handling socio political issues that affect them on individual / collective basis.
- Larger awareness of public issues and empathy with marginalised issues in society.
- Inculcate a sense of ethical responsibility and a vision to challenge the existing norms in need of change.

Unit I: Introduction to Ethics

12

Hours

1.Morality

*Rachel, James. "What is Morality?" In The Elements of Moral Philosophy. 1-14. McGraw-Hill, 2012.

2.Cultural Relativism

*Rachel, James. "The Challenge of Cultural Relativism." In The Elements of Moral Philosophy. 15-34. McGraw- Hill, 2012.

Unit II Structures of Inequality

16 Hours

1.Caste

*Ambedkar, B. R. "Castes in India: Their Mechanism, Genesis and Development." Paper presented at an Anthology Seminar, Columbia University, 1916.

2. Gender

*Beauvoir, Simone de. "The Married Woman." In *Second Sex*, vol. II, part two, chapter 5. USA: Vintage, 2011.

Unit III Freedom and Morality

16 Hours

*Sen, Amartya. "Freedom, Agency and Wellbeing." In *Inequality Re-examined*, 56-72. USA: First Harvard University Press, 1992.

Archard, David. "Privacy, the public interest and a prurient public. In *Media Ethics* edited Matthew Kieran, 82-96. USA; Canada: Routledge. 2014

Unit IV Animal Ethics

16 Hours

*Singer, Peter. "All Animals Are Equal." In *Ethics in Practice: An Anthology* edited by Hugh LaFollette, 107-115. USA; UK; Australia: Blackwell, 2004.

Essential/Recommended Readings

Frey, R. G. & Wellman, Christopher Heath (eds.) (2003). *A Companion to Applied Ethics*. Wiley-Blackwell.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-2: Technology and Ethics)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department offering the course |
|-------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|--------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| Technology and Ethics GE 2 | 4 | 3 | 1 | 0 | Passed XII class | Nil | Philosophy |

Learning Objectives

- To enable students to ethically analyse the technological advancements which is a challenge for human kind in the light of ethical evaluation and implications of actions in the digital space.
- The studies aim to guide students to use technology responsibly. They will understand the development of technology and the importance of its ethical usage so that they become ethical citizens in a digital world.

Learning Outcomes

- Students' enhanced ability to analyse the impact of technology on social, political, economic and legal issues from an ethical point of view.

- They will responsibly function and lead the usage to technology so as to save society from its harmful effects.
- With an increased ethical sensitivity and an improved ethical judgment capacity, they will be expected to advocate for the best practices of technology with its ethical implications.

Unit I Ethical and Social Implications of Technology

16 Hours

- Ethical Issues in the Use of Technology
- Information Technology and Digital Divide

Veraszto, E. V., Freito, L. V. "Technology and Its Social Implications: Myths and Realities in the Interpretation of the Concept" *International Scholarly and Scientific Research& Innovation*, vol. 8, no 9, 2014, pp. 3015-19.

Floridi, L. (ed) *The Cambridge Handbook of Information and Computer Ethics*. Cambridge University Press. Cambridge . 2010. pp 116-131. 168-173.

Tavani, H. T. *Ethics and Technology*, (4th ed.) Wiley, 2004. pp. 303-309.

Unit II Biotechnology and Ethics

16 Hours

- Stem Cell Culture and its issues.

"Of Stem Cells Ethics" *Nature Cell Biology*, vol. 19, 2017. editorial pp. i. Also available at www.nature.com/articles/ncb3652.

Harris, J. (1997). "Goodbye Dolly?" The ethics of human cloning. *Journal of Medical Ethics* 23 (6):353-360.

Unit III Some Recent Considerations in Technology and its ethical implications (28 Hours)

1. Artificial Intelligence
2. Nano- technology

Tavani, H. T. *Ethics and Technology*, (4th ed.) Wiley, 2004. pp. 355-363, 382-387.

Robison, Wade L. (2011). Nano-Technology, Ethics, and Risks. *NanoEthics* 5 (1):1-13.

Liao, S. Matthew (ed.) (2020). *Ethics of Artificial Intelligence*. Oxford University Press.

Essential/recommended readings

- Mitcham C. *Encyclopedia of Science Technology and Ethics*, Introduction, Macmillan , U.S.A 2005.
- Bynum T.W. and Rogerson S. (eds.) *Computer Ethics and Professional Responsibility*, Wiley Blackwell Publishing , 2003.
- Canellopoulou M. and Himma K. E. *The Hand Book of Information and Computer Ethics*, New Jersey: John Wiley and sons, 2008.
- Floridi, L. (ed) *The Cambridge Handbook of Information and Computer Ethics*. Cambridge University Press. Cambridge . 2010.
- Barnes, B. *The Public Evaluation of Science and Technology From Carl Mitcham* (Ed.) *Encyclopedia of Science, Technology and Ethics:Mac Millan Reference USA*, 2005.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-3): Constitutional Morality

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department offering the course |
|---|----------|-----------------------------------|----------|---------------------|-------------------------|-----------------------------|--------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| Constitutional Morality GE 3 | 4 | 3 | 1 | 0 | Passed XII class | Nil | Philosophy |

Learning Objectives

- This course is about the underlying ethics and political philosophy of Indian constitution. The aim of the course is to introduce the key themes of constitution in terms of morality.
- Further this course explores the importance of democracy and its functioning by representing the aspirations of its people.

Learning Outcomes

- The student will come to know about the constitutional morality and its implications in everyday social and political life.
- The student will be aware of representation of people, rights of citizens and that leads to develop the democratic political culture for strengthening the nation state.

Unit I Constitutionalism and Democracy

16 Hours

John Elester, Introduction, John ElesterRune Stagstand, GudmundHernes(Eds), *Constitutionalism and Democracy*, Cambridge: Cambridge University Press,1988, pp.1-17
Preamble of Indian Constitution

Unit II Constitutional Morality

16 Hours

Dr. B. R. Ambedkar, motion to introduce the Draft Constitution, Constituent Assembly Debates vol 7 (4 November 1948)

Dr. B. R. Ambedkar, speech on third reading of the Draft Constitution, Constituent Assembly Debates vol 11 (25 November 1949)

Vallabhai Patel, Appendix. Constituent Assembly of India Debates Proceedings), Vol.3, Tuesday, the 29th April, 1947

Annexure-Justifiable Fundamental Rights, Constituent Assembly of India Debates Proceedings), Vol.3Tuesday, the 29th April, 1947

Unit III Citizenship and Rights

16 Hours

Upendra Baxi (2010), 'The Justice of Human Rights in Indian Constitutionalism', in Akash Singh and Silika Mohapatra (eds.), *Indian Political Thought: A Reader*. Routledge, London & New York, Chapter 17.

Shefali Jha, 'Rights versus Representation', *Economic and Political Weekly*, Vol. 38, Issue No. 16, 19 Apr, 2003

Unit IV Secularism and Social Justice

12 Hours

Rajeev Bhargava, 'India's Secular Constitution', Zoya Hasan, E. Sreedharan and R. Sudarshan (Eds.), *India's Living Constitution-Ideas, Practices and Controversies*, Delhi: Permanent Black, 2002 Pp. 105-133

Gopal Guru, 'Reclaiming Social Justice' Rajeev Bhargava (ed.) *Ethics and Politics of the Indian Constitution*, Delhi: Oxford University Press, pp. 92

Essential/Recommended Readings

Jawaharlal Nehru, "Speech on the Aims and Objects of the Constituent Assembly," Constituent Assembly Debates (13 December 1946)

Sujit Choudhary, Madhav Kosla and Pratap Bhanu Mehta . ' Locating Indian Constitutionalism,' *The Oxford Handbook of the Indian Constitution*, New Delhi: OUP, 2016

Uday S Mehta, "Indian Constitutionalism: Crisis, Unity, and History," *The Oxford Handbook of the Indian Constitution*, New Delhi: OUP, 2016

Granville Austin (1999), *Working a Democratic Constitution*. Oxford University Press, Delhi.

Ujjwal Kumar Singh and Anupama Rao, "B. R. Ambedkar and the Ideas of Constitutionalism and Constitutional Democracy," Summerhill, IAS Review, XXIII:2 (Winter 2017)

Rajeev Bhargava, *Ethics and Politics of the Indian Constitution*, Delhi: Oxford University Press, New Delhi: Oxford University Press, 2008

Pratap Bhanu Mehta, 'What is constitutional morality?'

https://www.india-seminar.com/2010/615/615_pratap_bhanu_mehta.htm

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-3): Media Ethics

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department offering the course |
|------------------------------|----------|-----------------------------------|----------|---------------------|-------------------------|-----------------------------|--------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| Media Ethics GE 4 | 4 | 3 | 1 | 0 | Passed XII class | Nil | Philosophy |

Learning Objectives

- To acquaint students with ethical practice of media usage, to democratize the public sphere.
- Also, theories of media ethics will be discussed along with the case studies related to important issues

Learning Objectives

- The student will learn how ideology affects content of media, and how media is often saturated with manufactured consent, paid or otherwise.
- The student will learn to be wary of the distinction between appearance and reality in media usage, ownership, democratization and representation of caste and gender and transparency in news etc.

Unit I Introduction to Media and Ethics

12 Hours

1. Defining Media Ethics
2. Approaches to media Ethics

Stephen J.A. Ward, (2011). Ch. 2. Approaches to Media Ethics (Pg. 52-87), *Ethics and the Media*. Cambridge University Press.

Unit 2: Media, Power and Control

16 Hours

- 1 Cultural Imperialism as Globalisation of Ideology
- 2 Adorno : Culture Industry
- 3 Political Economy and Ideology
- 4 Manufacturing Consent

Adorno, Ch.3. Culture Industry Reconsidered (Pg. 98-106), *Culture Industry*. Routledge. Chomsky, Ch. 1. A Propaganda Model, *Manufacturing Consent*. Pantheon Books

Unit3: Media and Democratic Bases

16 Hours

1. Objectivity: Senses and Origins
2. Normative Theory of Media
3. Evolution of Normative Traditions

Stephen J.A. Ward (2004). Ch. 1. Objectivity: Senses and Origins (Pg.9-36), *The Invention of Journalism Ethics*. McGil-Queens University Press

Christian G. Clifford, Theodore L. Glasser, Dennis McQuail, Kaarle Nordenstreng (2009). Evolution of Normative Traditions (Pg. 37-64), *Normative Theories of the Media*. University of Illinois Press.

Unit 4 Issues in Media Ethics and Professional Ethics

16 Hours

1. Representation of caste, gender
2. Violence and Obscenity
3. Paid News and advertisements
4. Professional ethics

Subarno Chatterji and Sevanti Ninan, *The Hoot Reader (Media Practice in Twenty First Century India)*, New Delhi: Oxford University Press, 2013 (Relevant Selections)

Vipul Mudgal. Ch. 6. *News for Sale: 'Paid News', Media Ethics, and India's Democratic Public Sphere* (Pg. 100-117). In Shakuntala Rao (Ed.), Herman Wasserman (Ed.). (2015). *Media Ethics and Justice in the Age of Globalization*. Palgrave MacMillan

Ashwini, S(2021) Social Media Platform Regulation in India- A special Reference to The Information Technology(Intermediary Guidelines and Digital Media Ethics Code) Rules,2021 , *Perspectives on Social Media Platform Regulation*, Nomos Verlagsgesellschaft, mbH&co.KG, pp215-232

Essential/Recommended Readings

Philip Patterson and Lee Wilkins,(1998). *Media Ethics: Issues and Cases* (7th Edition), New York: Mc Graw-Hill Co

Louis A Day, (2000). *Ethics in Media Communication: Cases and Controversies*(3rd edition) Belmont, CA: Wadsworth

Black , Jay, B. Steele and R.Barney (1999) *Doing Ethics in Journalism: A Hand book with case studies* (3rd edition), Boston: Allyn& Bacon

Christains, Clfford, M. Fackler, K. Rotzoll and B.McKee(1998) *Media Ethics: Cases and Moral Reasoning*(5th Edition) new York: Longman

Arant, David(Ed)(1999) *Ethics, Issues and controversies in Mass media*. Cpulder, Co: Coursewise Publishng

Suggestive Readings

Gordon, A. David and J M Kittross(1999), *Contraversies in Media Ethics*, New York: Addison Wesley Longman

Limburg Val E (1994) *Electronic Media Ethics*, Boston: Focal Press

Lynch, Dianne (ed) (1999) Stand! Virtual Ethics: Debating Media in Digital Age, Boulder, Co

Foreman, G(2010) The Ethical Journalist, MA: Wiley-Blackwell

Norms of Journalistic conduct, Press council of India

Untitled-1 (presscouncil.nic.in)

Salient features of Press Council of India's norms of Journalistic Conduct in India - Legal Desire

Thakurta, Paranjay Guha. (2008). Media Ethics: Truth, Fairness and Objectivity , New Delhi:

Oxford University Press, 2015

Rao, S. (2014). Covering Rape in Shame Culture: Studying Journalism ethics in India's New

Television News Media , Journal of Mass Media Ethics, 29(3), 153-167

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DEPARTMENT OF PUNJABI

BA (Hons.) Punjabi

Category-I

DISCIPLINE SPECIFIC CORE COURSE -1 (DSC-1)

PUNJABI BHASHA ATE GURMUKHI LIPI

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|--|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| PUNJABI BHASHA ATE GURMUKHI LIPI (DSC-1) | 4 | 3 | 1 | 0 | Class 12 th pass in any subject | Studied Punjabi up to 10 th Standard or Working knowledge of Punjabi language |

Credits: 4

L/T/P= 3/1/0

LEARNING OBJECTIVES:

- The purpose of this course is to enhance student's language skills.
- The study of language would help the students to enrich their linguistic and creative aptitude.
- The course seeks to develop a fundamental understanding of the basic nature, branches and history of Punjabi language, in students.
- The purpose of the course is to help the students to understand and use methods of analysing the data from various dialects of Punjabi language.
- The objective of the course is to provide students a broad interdisciplinary perspective of Punjabi language and Gurmukhi script.

LEARNING OUTCOMES:

- The students will obtain advanced knowledge of Punjabi language.
- They will develop an insight about various dialects of Punjabi language.
- They will have in-depth knowledge of selected areas of linguistics such as, language variation, language development, language learning etc.
- They will understand the concepts of phonology, morphology and syntax structure of Punjabi language.

- They will analyse the historical background of Indo-Aryan language family and its relation to Punjabi language.

Unit-I: ਭਾਸ਼ਾ ਅਤੇ ਪੰਜਾਬੀ ਭਾਸ਼ਾ

(Bhasha ate Punjabi Bhasha) (16 Hours)

- ਭਾਸ਼ਾ: ਸਰੂਪ ਅਤੇ ਲੱਛਣ
Bhasha: Saroop ate Lachhan
- ਵਿਸ਼ਵ ਭਾਸ਼ਾ ਸਮੂਹ ਅਤੇ ਇੰਡੋ-ਆਰੀਆਈ ਭਾਸ਼ਾਵਾਂ
Vishav Bhasha Samooch ate Indo-Aaryai Bhashavan
- ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦਾ ਨਿਕਾਸ ਅਤੇ ਵਿਕਾਸ
Punjabi Bhasha da Nikas ate Vikas
- ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦੀਆਂ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ
Punjabi Bhasha dian Vishestavan

Unit-II: ਪੰਜਾਬੀ ਦੀਆਂ ਉਪਭਾਸ਼ਾਵਾਂ

(Punjabi dian Upbhashavan) (16 Hours)

- ਮਾਝੀ
Majhi
- ਮਲਵਈ
Malwai
- ਦੁਆਬੀ
Doabi
- ਪੁਆਧੀ
Puadhi

Unit-III: ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਸੰਰਚਨਾ

(Punjabi Bhasha Sanrachna) (16 Hours)

- ਸਵਰ ਅਤੇ ਵਿਅੰਜਨ ਧੁਨੀਆਂ
Svar ate Viyanjan Dhunian
- ਪੰਜਾਬੀ ਸ਼ਬਦ ਬਣਤਰ: ਅਗੇਤਰ, ਪਿਛੇਤਰ, ਸਮਾਸੀ ਸ਼ਬਦ
Punjabi Shabad Bantar: Agetar, Pichhetar, Samasi Shabad
- ਵਾਕ ਦੀਆਂ ਕਿਸਮਾਂ: ਸਧਾਰਨ, ਸੰਯੁਕਤ ਅਤੇ ਮਿਸ਼ਰਤ ਵਾਕ
Vak dian Kisman: Sadharan, Sanyukat, Mishrat Vak
- ਅਰਥ ਵਿਸਤਾਰ, ਅਰਥ ਸੰਕੋਚ, ਅਰਥ ਪਰਿਵਰਤਨ
Arth Vistar, Arth Sankoch, Arth Parivartan

Unit-IV: ਗੁਰਮੁਖੀ ਲਿਪੀ

(Gurmukhi Lipi) (12 Hours)

- ਲਿਪੀ ਨਾਲ ਜਾਣ-ਪਛਾਣ
Lipi naal Jaan-Pachhaan
- ਗੁਰਮੁਖੀ ਲਿਪੀ ਦਾ ਨਿਕਾਸ ਅਤੇ ਵਿਕਾਸ
Gurmukhi Lipi da Nikas ate Vikas
- ਗੁਰਮੁਖੀ ਲਿਪੀ ਵਿਚ ਲਗਾਂ-ਮਾਤਰਾਵਾਂ ਅਤੇ ਲਗਾਂ-ਅੱਖਰਾਂ ਦੀ ਵਰਤੋਂ ਅਤੇ ਮਹੱਤਵ
Gurmukhi Lipi vich Lagan-Mataran ate Lagan-Akharan di Varton ate Mahatav
- ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਲਈ ਗੁਰਮੁਖੀ ਲਿਪੀ ਦੀ ਉਚਿਤਤਾ
Punjabi Bhasha lai Gurmukhi Lipi di Uchitata

ESSENTIAL/RECOMMENDED READINGS:

- Brar, Boota Singh, Nachhattar Singh (2015), **Punjabi Bhasha, Lipi ate Viakaran**, Arsee Publishers, New Delhi.
- Khehra, Surinder Singh (compiler) (2015), **Punjabi Bhasha: Viakaran ate Bantar**, Punjabi University, Patiala.

SUGGESTED READINGS:

- Atam Singh (Dr.) (1996), **Itihasik Bhasha Vigyan**, Punjabi University, Patiala.
- Bedi, Kala Singh (Dr.) (1995), **Lipi da Vikas**, Punjabi University, Patiala.
- Brar, Boota Singh (Dr.) (2012), **Punjabi Bhasha Sarot te Saroop**, Waris Shah Foundation, Amritsar.
- Cheema, Baldev Singh (Dr.) (2016), **Punjabi Viyakaran ate Bhasha Vigyan, Takniki Shabdavali Da Visha-Kosh (Second edition)**, Publication Bureau, Punjabi University, Patiala.
- Duni Chandar (1987), **Punjabi Bhasha da Vikas**, Punjab University, Chandigarh.
- G.B. Singh (2010), **Gurmukhi Lipi da Janam te Vikas (Fifth Edition)**, Punjab University, Chandigarh.
- Prem Prakash Singh (Dr.) (2004), **Punjabi Bhasha da Janam te Vikas**, Madan Publications, Patiala.
- Puar, Joginder singh (2001), **Bhasha Vigian: Sankalp ate Dishavan (Third Edition)**, Punjabi Bhasha Academy, Jalandhar.
- Sangha, Sukhwinder Singh (1997), **Punjabi Bhasha Vigian**, Punjabi Bhasha Academy, Jalandhar.

*(Note: Teachers are free to recommend additional related standard source books, if required so.)

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE -2 (DSC-2)

PUNJAB DI LOKDHARA

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------------|---------|-----------------------------------|----------|---------------------|--|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| PUNJAB DI LOKDHARA (DSC-2) | 4 | 3 | 1 | 0 | Class 12 th pass in any subject | Studied Punjabi up to 10 th Standard or Working knowledge of Punjabi language |

LEARNING OBJECTIVES:

- The objective of this course is to apprise students how Punjabi folks learn and internalize their folkloric traditions.
- This course seeks to give insights to the students about Punjabi folk wisdom.
- The purpose of this course is to develop a critical and reflective thinking ability through the oral traditions.
- This course would enable the students to understand how Punjabi society represents itself through its cultural idioms.
- This course would help the students to understand how folklore plays a role in communicating cultural constructs and community expressive behaviour.

LEARNING OUTCOMES:

- The students will understand the concept of folklore and its relation to the environment.
- The students will demonstrate the knowledge of folk-literature, folk-traditions, customs and rituals of Punjab.
- They will be able to examine the diversity of folk literature, customs and rituals of Punjab.
- The students will develop a knowledge of various fairs and festivals of Punjab and their importance in the society.
- They will be able to understand the current problems of Punjabi society and can try to find the appropriate way to handle these problems through folkloric wisdom.

Unit-I: ਲੋਕਧਾਰਾ ਅਤੇ ਪੰਜਾਬੀ ਲੋਕਧਾਰਾ

(Lokdhara ate Punjabi Lokdhara) (12 Hours)

- ਲੋਕਧਾਰਾ: ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਲੱਛਣ
Lokdhara: Paribhasha ate Lachhan
- ਲੋਕਧਾਰਾ ਦੀਆਂ ਵੰਨਗੀਆਂ
Lokdhara dian Vangiyan
- ਲੋਕਧਾਰਾ ਅਤੇ ਸਾਹਿਤ
Lokdhara ate Sahit
- ਪੰਜਾਬੀ ਲੋਕਧਾਰਾ ਦਾ ਸਰੂਪ
Punjabi Lokdhara da Saroop

Unit-II: ਪੰਜਾਬੀ ਲੋਕ ਸਾਹਿਤ ਪਰੰਪਰਾ

(Punjabi Lok Sahit Parampara) (16 Hours)

- ਲੋਕ ਕਾਵਿ: ਘੋੜੀਆਂ, ਸੁਹਾਗ, ਟੱਪੇ, ਮਾਹੀਆ
Lok Kaav: Ghodhian, Suhag, Tappe, Mahiya
- ਦੰਤ ਕਥਾਵਾਂ: ਰੂਪ ਬਸੰਤ, ਦੁੱਲਾ ਭੱਟੀ, ਪੂਰਨ ਭਗਤ
Dant Kathavan: Roop Basant, Dullah Bhatti, Puran Bhagat
- ਨੀਤੀ ਕਥਾਵਾਂ: ਕਿਸਮਤ ਦੀ ਭਾਲ, ਕਿਸਾਨ ਦੀ ਸਿਆਣਪ, ਏਕੇ ਦੀ ਬਰਕਤ
Niti Kathavan: Kismat di Bhaal, Kisan di Siyanap, Eke di Barkat
- ਲੋਕ ਸਿਆਣਪਾਂ: ਅਖਾਣ, ਮੁਹਾਵਰੇ, ਬੁਝਾਰਤਾਂ
Lok Siyanpan: Akhan, Muhavre, Bujhartan

Unit-III: ਪੰਜਾਬੀ ਅਨੁਸ਼ਠਾਨ ਅਤੇ ਲੋਕ ਵਿਸ਼ਵਾਸ

(Punjabi Anushthaan ate Lok Vishvas) (16 Hours)

- ਲੋਕ ਸੰਸਕਾਰ: ਜਨਮ, ਮੌਤ ਅਤੇ ਵਿਆਹ ਨਾਲ ਸੰਬੰਧਤ ਸੰਸਕਾਰ
Lok Sanskaar: Janam, Mout ate Viah naal Sambhandhat Sanskar
- ਪੂਜਾ ਵਿਧੀਆਂ: ਆਰਤੀ, ਮੂਰਤੀ ਪੂਜਾ, ਵਰਤ
Pooja Vidhian: Aarti, Murti Pooja, Varat
- ਕਰਮ-ਕਾਂਡ: ਯੱਗ, ਤੀਰਥ ਯਾਤਰਾ, ਜਾਦੂ-ਟੂਣਾ
Karam Kaand: Yagg, Tirath Yatra, Jadu-Tuna
- ਲੋਕ ਵਿਸ਼ਵਾਸ: ਸ਼ਗਨ-ਅਪਸ਼ਗਨ, ਜੋਤਿਸ਼, ਸਥਾਨਕ ਦੇਵੀ ਦੇਵਤੇ
Lok Vishvas: Shagan-Apshagan, Jotish, Sathanak Devi Devte

Unit-IV: ਪੰਜਾਬ ਦੇ ਲੋਕ ਨਾਟ, ਨਾਚ, ਮੇਲੇ, ਤਿਉਹਾਰ

(Punjab de Lok Naat, Naach, Mele, Teyohar) (16 Hours)

- ਲੋਕ ਨਾਟ: ਸਾਂਗ, ਨਕਲਾਂ, ਜਾਗੇ
Lok Naat: Saang, Naklan, Jago
- ਲੋਕ ਨਾਚ: ਭੰਗੜਾ, ਲੁੱਡੀ, ਗਿੱਧਾ, ਸੰਮੀ

Lok Naach: Bhangra, Ludi, Gidha, Sammi

- ਮੇਲੇ: ਜਰਗ, ਛਪਾਰ ਅਤੇ ਜਗਰਾਵਾਂ ਦੇ ਮੇਲੇ

Mele: Jarag, Chhappar ate Jagravan de Mele

- ਤਿਉਹਾਰ: ਵਿਸਾਖੀ, ਲੋਹੜੀ, ਰੱਖੜੀ

Teyohar: Visakhi, Lohri, Rakhri

ESSENTIAL/RECOMMENDED READINGS:

- Bedi, S.S.Wanjara (2019), **Punjab di Lokdhara**, National Book Trust, Delhi.
- Joshi, Jit Singh (Dr) (2011), **Lokdhara te Punjabi Lokdhara**, Waris Shah Foundation, Amritsar.

SUGGESTED READINGS:

- Bedi, S.S.Wanjara (2002), **Punjabi Lokdhara Vishavkosh**, National Book Shop, Delhi.
- Gurdial Singh (Undated), **Punjab De Mele ate Teyohar**, Parkashan Vibhag Bharat Sarkar, Delhi.
- Kairon, Joginder Singh (2008), **Lokyaan Shastar**, Punjabi University, Patiala.
- Kairon, Joginder Singh (2006), **Punjabi Sahit da Lokdharai Pichhokarh**, Punjabi Academy, Delhi.
- Rasoolpuri, Bhagwant (2021), **Lok Naat Naklan: Itihas, Sidhant te Muhandra**, National Book Trust, Delhi.
- Sidhu, Rushpal Kaur (2015), **Mehak Punjab di**, National Book Trust, India, Delhi.
- Tejinder Singh (Dr.) (2021), **Punjabi Lokdhara: Vibhin Pasar**, Sapatrisi Publication, Chandigarh.
- Thind, Karnail Singh (1995), **Lokyaan ate Madhkalin Punjabi Sahit**, Ravi Sahit Parkashan, Amritsar.
- Thind, Karnail Singh (2016), **Punjab da Lok Virsa**, Punjabi University, Patiala.

INTERNET RESOURCES:

- <https://www.punjabi-kavita.com>
- https://pa.wikisource.org/wiki/%E0%A8%AE%E0%A9%81%E0%A9%B1%E0%A8%96_%E0%A8%B8%E0%A8%AB%E0%A8%BC%E0%A8%BE
- <https://pa.wikipedia.org/wiki/%E0%A8%B2%E0%A9%8B%E0%A8%95%E0%A8%A7%E0%A8%BE%E0%A8%B0%E0%A8%BE>
- <https://punjabipedia.org/topic.aspx?txt=%E0%A8%AA%E0%A9%B0%E0%A8%9C%E0%A8%BE%E0%A8%AC%E0%A9%80%20%E0%A8%B2%E0%A9%8B%E0%A8%95%E0%A8%A7%E0%A8%BE%E0%A8%B0%E0%A8%BE>

*(Note: Teachers are free to recommend additional related standard source books, if required so.)

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE -3 (DSC-3)

PUNJABI SABHIYACHAR

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------|---------|-----------------------------------|----------|---------------------|--|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| PUNJABI SABHIYACHAR (DSC-3) | 4 | 3 | 1 | 0 | Class 12 th pass in any subject | Studied Punjabi up to 10 th Standard or Working knowledge of Punjabi language |

Credits: 4

L/T/P= 3/1/0

LEARNING OBJECTIVES:

- The objective of this course is to identify and address the cultural background of Punjabi society.
- It will help the students to recognize and collaboratively negotiate cultural diversity in Punjabi society.
- It will create an opportunity for students to understand the plurality in various cultural forms.
- It would empower students with cultural skills and help them in their personality development.
- The course seeks to sensitize the students to connect with their cultural roots.

LEARNING OUTCOMES:

- The students will understand the concept of culture, its constituents and also learn its relation to environment.
- They will learn the history of Punjabi Culture and its link with geography, language and people.
- They will explore the traces of Punjabi culture and various challenges which Punjabi culture is facing in the contemporary period.
- They will be able to understand the current problems occurring in Punjabi society and can try to find the appropriate way to handle them.
- The students will demonstrate the knowledge of various cultural traditions of Punjab.

Unit-I: ਸਭਿਆਚਾਰ ਅਤੇ ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ

(Sabhiyachar ate Punjabi Sabhiyachar) (16 Hours)

- ਸਭਿਆਚਾਰ: ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਲੱਛਣ
Sabhiyachar: Paribhasha ate Lachhan
- ਸਭਿਆਚਾਰ ਦੇ ਪ੍ਰਮੁੱਖ ਅੰਗ
Sabhiyachar de Pramukh Ang
- ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ ਦਾ ਸਰੂਪ
Punjabi Sabhiyachar da Saroop
- ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ ਦੇ ਪਛਾਣ-ਚਿੰਨ੍ਹ
Punjabi Sabhiyachar de Pachhaan-Chinh

Unit-II: ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ ਦੇ ਪ੍ਰਮੁੱਖ ਅਧਾਰ

(Punjabi Sabhiyachar de Pramukh Aadhar) (16 Hours)

- ਪੰਜਾਬ ਦੀ ਭੂਗੋਲਿਕ ਸਥਿਤੀ
Punjab di Bhugolik Sathiti
- ਪੰਜਾਬ ਦਾ ਇਤਿਹਾਸਕ ਪਿਛੋਕੜ
Punjab da Itihasak Pichhokarh
- ਪੰਜਾਬੀਅਤ ਦਾ ਸੰਕਲਪ
Punjabiya da Sankalp
- ਪੰਜਾਬ ਦੇ ਲੋਕ ਨਾਇਕ: ਗੁਰੂ ਨਾਨਕ, ਪੂਰਨ ਭਗਤ, ਦੁੱਲਾ ਭੱਟੀ
Punjab de Lok Nayak: Guru Nanak, Puran Bhagat, Dulla Bhatti

Unit-III: ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ ਦੇ ਪ੍ਰਮੁੱਖ ਲੱਛਣ

(Punjabi Sabhiyachar de Pramukh Lachhan) (12 Hours)

- ਰਿਸ਼ਤਾ-ਨਾਤਾ ਪ੍ਰਬੰਧ
Rishta-Naata Parbhandh
- ਪਹਿਰਾਵਾ, ਹਾਰ-ਸ਼ਿੰਗਾਰ
Pehrava, Haar-Shingar
- ਖਾਣ-ਪਾਣ
Khan-Paan
- ਲੋਕ-ਧੰਦੇ
Lok-Dhande

Unit-IV: ਸਭਿਆਚਾਰਕ ਰੂਪਾਂਤਰਨ ਅਤੇ ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ

(Sabhiyacharak Roopantran ate Punjabi Sabhiyachar) (16 Hours)

- ਆਧੁਨਿਕਤਾ ਅਤੇ ਸਭਿਆਚਾਰਕ ਰੂਪਾਂਤਰਨ

- Adhunikta ate Sabhiyacharak Roopantran
- ਸੰਚਾਰ ਸਾਧਨ ਅਤੇ ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ
Sanchar Sadhan ate Punjabi Sabhiyachar
- ਵਿਸ਼ਵੀਕਰਨ ਅਤੇ ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ
Vishvikaran ate Punjabi Sabhiyachar
- ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ ਦੇ ਸਨਮੁੱਖ ਚੁਣੌਤੀਆਂ
Punjabi Sabhiyachar de Sanmukh Chounotian

ESSENTIAL/RECOMMENDED READINGS:

- Frank, Gurbax Singh (1992), **Sabhiyachar ate Punjabi Sabhiyachar**, Waris Shah Foundation, Amritsar.
- Jaswinder Singh (Dr.), (2012), **Punjabi Sabhiyachar: Pachhaan Chinn**, Patiala, Gracious Books.

SUGGESTED READINGS:

- Bedi, S.S.V (2002), **Punjabi Lokdhara Vishavkosh**, National Book Shop, Delhi.
- Bedi, S.S.V (2019), **Punjab di Lokdhara**, National Book Trust, Delhi.
- Joshi, Jit Singh (Dr.), (2011), **Sabhiyachar ate Lokdhara**, Waris Shah Foundation, Amritsar.
- Khehra, Bhupinder Singh, **Lokdhara, Bhasha ate Sabhiyachar**, Pepsu Book Depot, Patiala.
- Naresh (Dr.) (2006), **Visriya Virsa**, National Book Trust, Delhi.
- Noor, Jagir Singh (Ed.), **Punjabi Sabhiyachar: Mool Pachhaan**, National Book Trust, Delhi.
- Pritam Singh (1998), **Punjab, Punjabi, Punjabiyat**, Singh Brothers, Amritsar.
- Sarhaddi, Sulakhan (2012), **Visar Riha Punjabi Virsa**, National Book Trust, Delhi.

JOURNALS /MAGAZINES:

- Khoj Patrika, **Punjabi Sabhiyachar Vishesh Ank (Ank-42)**, Punjabi University, Patiala.
- Punjabi Dunia, **Sabhiyachar Vishesh Ank**, Bhasha Vibhag, Patiala.

INTERNET RECOURSES:

- https://en.wikipedia.org/wiki/Punjabi_culture
- <https://punjabipedia.org/topic.aspx?txt=%E0%A8%AA%E0%A9%B0%E0%A8%9C%E0%A8%BE%E0%A8%AC%E0%A9%80+%E0%A8%B8%E0%A9%B1%E0%A8%AD%E0%A8%BF%E0%A8%86%E0%A8%9A%E0%A8%BE%E0%A8%B0>
- <https://pa.wikipedia.org/wiki/%E0%A8%B8%E0%A9%B1%E0%A8%AD%E0%A8%BF%E0%A8%86%E0%A8%9A%E0%A8%BE%E0%A8%B0>

*(Note: Teachers are free to recommend additional related standard source books, if required so.)

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BA (Prog.) with Punjabi as Major
Category II

DISCIPLINE SPECIFIC CORE COURSE -1 (DSC-1)
LEARN PUNJABI – 1

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------------|---------|-----------------------------------|----------|---------------------|---|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Learn Punjabi – 1 (DSC-1) | 4 | 3 | 1 | 0 | Class 12 th pass in any subject | NIL |

Credits: 4

L/T/P= 3/1/0

LEARNING OBJECTIVES:

- This Course would help to enhance the speaking, listening, reading and writing skills of students of Punjabi language.
- This course will develop the ability of word formation and vocabulary practice among the students.
- Students will learn meaning of words, phrases and sentences of Punjabi language.
- This course will develop communication skills and understanding of social interaction among the students in Multi-lingual societies.

LEARNING OUTCOMES:

- After completing this course, the students will be able to read, write, speak and understand Punjabi language.
- The students will be able to learn basic Punjabi word and sentence formation and practical use of it.
- The course will improve student's speaking skills in Punjabi both in terms of fluency and comprehensibility.
- The course will increase student's reading speed and comprehension of Punjabi language.
- The course will strengthen student's ability to write Punjabi words and sentences.

Unit-I: ਅੱਖਰ ਬੋਧ

(Akhar Bodh) (16 Hours)

- ਗੁਰਮੁਖੀ ਲਿਪੀ ਨਾਲ ਜਾਣ-ਪਛਾਣ
Gurmukhi Lipi naal Jaan-Pachhan

- ਪੈਂਤੀ ਅੱਖਰੀ ਅਤੇ ਪੈਰ ਬਿੰਦੀ ਵਾਲੇ ਵਰਨਾਂ ਦਾ ਉਚਾਰਨ ਅਤੇ ਸੁੰਦਰ ਲਿਖਾਈ ਦਾ ਅਭਿਆਸ
Painti Akhri ate Pair-bindi vale Varna da Ucharan ate Sunder Likhai da Abhiyas
- ਲਗਾਂ-ਮਾਤਰਾਵਾਂ ਅਤੇ ਲਗਾਖਰਾਂ ਨਾਲ ਜਾਣ-ਪਛਾਣ ਅਤੇ ਵਰਤੋਂ
Lagan-Matravan ate Lagakhran naal Jaan-Pachhan ate Varton
- ਭੁਲਾਵੇਂ ਅੱਖਰ
Bhulaven Akhar

Unit-II: ਸ਼ਬਦ

(Shabad Rachna) (16 Hours)

- ਬਿਨਾ ਲਗ ਵਾਲੇ (ਮੁਕਤਾ), ਦੋ ਅੱਖਰੀ, ਤਿੰਨ ਅੱਖਰੀ ਅਤੇ ਚਾਰ ਅੱਖਰੀ ਸ਼ਬਦਾਂ ਦਾ ਉਚਾਰਨ ਅਤੇ ਲਿਖਣ ਅਭਿਆਸ
Binan Lag Vale (Mukta), Do Akhri, Tin Akhri ate Chaar Akhri Shabadan da Ucharan ate Likhhan Abhiyas
- ਅੱਕੜ, ਦੁਲੈਂਕੜ, ਹੇੜਾ, ਕਨੇੜਾ, ਲਾਵਾਂ ਅਤੇ ਦੁਲਾਵਾਂ ਵਾਲੇ ਸ਼ਬਦਾਂ ਦਾ ਉਚਾਰਨ ਅਤੇ ਲਿਖਣ ਅਭਿਆਸ
Aunkar, Dulenkar, Horha, Kanaura, Lavan ate Dulavan Vale Shabdan Da Ucharan ate Likhhan Abhiyas
- ਸਿਹਾਰੀ ਅਤੇ ਬਿਹਾਰੀ ਦੀ ਵਰਤੋਂ ਵਾਲੇ ਸ਼ਬਦਾਂ ਦਾ ਉਚਾਰਨ ਅਤੇ ਲਿਖਣ ਅਭਿਆਸ
Sihari ate Bihari di Varton Vale Shabdan da Ucharan ate Likhhan Abhiyas
- ਬਿੰਦੀ, ਟਿੱਪੀ ਅਤੇ ਅੱਧਕ ਦੀ ਵਰਤੋਂ ਵਾਲੇ ਸ਼ਬਦਾਂ ਦਾ ਉਚਾਰਨ ਅਤੇ ਲਿਖਣ ਅਭਿਆਸ
Bindi, Tippi ate Adhak di Varton Vale Shabdan da Ucharan ate Likhhan Abhiyas

Unit-III: ਅਰਥ ਬੋਧ

(Arth Bodh) (16 Hours)

- ਸਮੇਂ, ਦਿਨਾਂ, ਦਿਸ਼ਾਵਾਂ, ਗਿਣਤੀ, ਸਰੀਰ ਦੇ ਅੰਗਾਂ ਅਤੇ ਸਬਜ਼ੀਆਂ, ਫਲਾਂ ਨਾਲ ਸੰਬੰਧਤ ਸ਼ਬਦਾਵਲੀ ਦਾ ਉਚਾਰਨ ਅਤੇ ਲਿਖਣ ਅਭਿਆਸ
Samey, Dinan, Dishaavan, Ginti, Sareer de Angaan ate Sabziaan, Phalaan naal Sambandhat Shabdaavli da Ucharan ate likhan Abhiyas
- ਖਾਣ-ਪੀਣ, ਰਸੋਈ ਦਾ ਸਮਾਨ, ਪਹਿਰਾਵੇ, ਰਿਸ਼ਤਾ-ਨਾਤਾ ਅਤੇ ਦਰੱਖਤਾਂ ਨਾਲ ਸੰਬੰਧਤ ਸ਼ਬਦਾਵਲੀ ਦਾ ਉਚਾਰਨ ਅਤੇ ਲਿਖਣ ਅਭਿਆਸ
Khaan-Peen, Rasoi da Samaan, Pehraave, Rishta-nata ate Darakhtaan, naal Sambandhat Shabdaavli da Ucharan ate likhan Abhiyas
- ਸਮਾਨਾਰਥਕ ਅਤੇ ਵਿਰੋਧਾਰਥਕ ਸ਼ਬਦਾਂ ਦਾ ਉਚਾਰਨ ਅਤੇ ਲਿਖਣ ਅਭਿਆਸ
Samanarthak ate Virodharthak Shabadan da Ucharan ate likhan Abhiyas
- ਬਹੁਅਰਥਕ ਸ਼ਬਦ ਅਤੇ ਬਹੁਤੇ ਸ਼ਬਦਾਂ ਦੀ ਥਾਂ ਇਕ ਸ਼ਬਦ ਦਾ ਉਚਾਰਨ ਅਤੇ ਲਿਖਣ ਅਭਿਆਸ

Bahuarthak Shabad ate Bahute Shabdan di thaani ik Shabad da Ucharan ate likhan Abhiyas

Unit-IV: ਵਾਕ ਬੋਧ

(Vaak Bodh) (16 Hours)

- ਸਧਾਰਨ ਵਾਕ, ਪ੍ਰਸ਼ਨ ਵਾਚਕ ਵਾਕ ਅਤੇ ਨਾਂਹ ਵਾਚਕ ਵਾਕ ਦੀ ਪਛਾਣ ਅਤੇ ਲਿਖਣ ਦਾ ਅਭਿਆਸ
Sadharan Vaak, Prashan Vaachak Vaak ate Nahn Vaachak Vaak di Pachhan ate Likhan da Abhiyas
- ਆਮ ਬੋਲ-ਚਾਲ, ਦਫਤਰੀ ਕੰਮ-ਕਾਜ, ਖਰੀਦੋ-ਫਰੋਖਤ ਨਾਲ ਸੰਬੰਧਤ ਸੰਵਾਦ ਦਾ ਵਾਕ ਲਿਖਣ ਅਭਿਆਸ
Aam Bol-chal, Daftri Kamm-kaaj, Kharido-Pharokhat naal Sambandhat Sanvaad da Vaak Likhan Abhiyas
- ਸ਼ੁੱਧ ਵਾਕ ਲਿਖਣ ਦਾ ਅਭਿਆਸ
Shudh Vaak Likhan da Abhiyas
- ਵਿਸਰਾਮ ਚਿੰਨ੍ਹ: ਜਾਣ-ਪਛਾਣ ਅਤੇ ਵਰਤੋਂ
Visram Chin: Jaan Pachhan ate Varton

ESSENTIAL/RECOMMENDED READINGS:

- **Adhunik Punjabi Viakaran ate Lekh Rachna** (2019), Punjab School Sikhia Board, Sahibzada Ajeet Singh Nagar.
- **Punjabi Path Pustak-4** (Dooji Bhasha) (2020), Punjab School Sikhia Board, Sahibzada Ajeet Singh Nagar.
- Teja, Charnjit Singh (Eds.) (2017), **Pehli Kitab**, Sann Santali Publication, Amritsar.

SUGGESTED READINGS:

- Brar, Boota Singh, Nachhattar Singh (2015), **Punjabi Bhasha Lipi ate Viakaran**, Arsee Publishers, New Delhi.
- Duggal, Narinder Singh (Dr.) (2000), **Punjabi Viakaran te Rachnavali**, New Book Company, Jalandhar.
- Harkirat Singh (2004), **Saadi Bhasha**, Punjabi University, Patiala.
- Harkirat Singh te Giani Lal Singh (1999), **Punjabi Viakaran**, Punjab State University Text Book Board, Chandigarh.
- Harkirat Singh (1988), **Punjabi Baare**, Punjabi University, Patiala.
- Teja Singh (1947), **Punjabi Kiven Likhiye (Second Edition)**, Hind Publishers Limited, Jalandhar.

INTERNET RESOURCES:

- <http://www.learnpunjabi.org/pr.aspx>

*(Note: Teachers are free to recommend additional related standard source books, if required so.)

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE -2 (DSC-2)
LEARN PUNJABI – 2

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------------|---------|-----------------------------------|----------|---------------------|--|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Learn Punjabi – 2 (DSC-2) | 4 | 3 | 1 | 0 | Class 12 th pass in any subject | NIL |

Credits: 4

L/T/P= 3/1/0

LEARNING OBJECTIVES:

- This Course would help to enhance the speaking, listening, reading and writing skills of students of Punjabi language and translation skills in Punjabi from Hindi/English.
- The aim and objective of the course is to help the students to get knowledge of Punjabi language, grammar, culture and translation.
- The course seeks to expose students to a research enterprise which aspires to discover what a person's linguistic capacity consists of, how it arises in children, how it functions in speaking and listening, etc.
- The objective of this course is to familiarise students with word category, word structure and sentence making in Punjabi language and make him/her capable of writing and translating.

LEARNING OUTCOMES:

- The study of Language will develop logical mind of students and also enrich their linguistic aptitude. Language ability is helpful to the students to understand other language structures.
- Students will develop a fundamental understanding of the word structure of Punjabi language.
- Students will understand and use methods of logical analysis while analysing Punjabi Language.
- After completing this course students will get exposed to the knowledge of Punjabi Grammar.

- This course will increase proficiency of students in the field of Punjabi language skills at intermediate level.

Unit-I ਅੱਖਰ ਬੋਧ ਅਤੇ ਸ਼ਬਦ ਰਚਨਾ

(Akhar Bodh ate Shabad Rachna) (16 Hours)

- ਪੈਂਤੀ ਅੱਖਰੀ, ਲਗਾਂ ਮਾਤਰਾਂ ਅਤੇ ਲਗਾਖਰ ਨਾਲ ਜਾਣ-ਪਛਾਣ
Painti Akhari, Lagaan Mattran ate Lagakhar naal Jaan-Pachhan
- ਸਧਾਰਨ ਸ਼ਬਦ (ਕੋਸ਼ੀ ਅਤੇ ਵਿਆਕਰਨਕ ਸ਼ਬਦ) ਅਤੇ ਮਿਸ਼ਰਿਤ ਸ਼ਬਦ (ਧਾਤੂ+ਵਧੇਤਰ)
Sadharan Shabad (Koshi ate Viakarnik Shabad) ate Mishrit Shabad (Dhatu+Vadhetar)
- ਸਮਾਸੀ ਸ਼ਬਦ
Samasi Shabad
- ਸੰਗਤੀ ਸ਼ਬਦ (ਤਤਸਮ: ਸੰਸਕ੍ਰਿਤ, ਅਰਬੀ-ਫ਼ਾਰਸੀ ਅਤੇ ਅੰਗਰੇਜ਼ੀ, ਤਦਭਵ: ਸੰਸਕ੍ਰਿਤ, ਅਰਬੀ-ਫ਼ਾਰਸੀ ਅਤੇ ਅੰਗਰੇਜ਼ੀ)
Sugaati Shabad (Tatsam: Sanskrit, Arbi-Faarsi ate Angrezi, Tadbhav: Sanskrit, Arbi-Faarsi ate Angrezi)

Unit-II ਵਾਕ ਰਚਨਾ

(Vaak Rachna) (16 Hours)

- ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦਾ ਵਾਕ ਪ੍ਰਬੰਧ: ਮੁਢਲੀ ਜਾਣ-ਪਛਾਣ
Punjabi Bhasha da Vaak Parbandh: Mudhli Jaan-Pachhan
- ਸਧਾਰਨ ਵਾਕ ਤੋਂ ਪ੍ਰਸ਼ਨ ਵਾਚਕ ਅਤੇ ਆਗਿਆਵਾਚਕ ਵਿੱਚ ਵਾਕ ਵਟਾਂਦਰਾ
Sadharan Vaak ton Prashan Vachak ate Aagiavachak vich Vaak Vatandra
- ਸਧਾਰਨ ਵਾਕ ਤੋਂ ਨਾਂਹ ਵਾਚਕ ਅਤੇ ਹਾਂ ਵਾਚਕ ਵਿੱਚ ਵਾਕ ਵਟਾਂਦਰਾ
Sadharan Vaak ton Nahn Vachak ate Haan vachak vich Vaak Vatandra
- ਸੰਵਾਦ ਕਲਾ: ਦੇਸਤ, ਅਧਿਆਪਕ, ਦੁਕਾਨਦਾਰ, ਡਾਕਟਰ, ਆਟੋ ਡਰਾਈਵਰ ਅਤੇ ਰੇਲਵੇ ਸਟੇਸ਼ਨ 'ਤੇ ਕਿਸੇ ਵਿਅਕਤੀ ਨਾਲ ਸੰਵਾਦ ਦਾ ਲਿਖਣ ਅਤੇ ਬੋਲਣ ਦਾ ਅਭਿਆਸ
Sanwad Kala: Dostan, Adhiyapak, Dukandar, Doctor, Auto Driver ate Railway Station te kise viakti naal sanwad da likhan ate bolan da abhiyas

Unit-III ਅਰਥ ਬੋਧ

(Arth Bodh) (16 Hours)

- ਪੰਜਾਬੀ ਜੀਵਨ ਨਾਲ ਸੰਬੰਧਿਤ ਵਿਹਾਰਕ ਸ਼ਬਦਾਵਲੀ: ਲੋਕ-ਧੰਦੇ, ਲੋਕ-ਗਹਿਣੇ, ਦਿਨ-ਤਿਉਹਾਰ, ਰਿਸ਼ਤੇ-ਨਾਤੇ ਅਤੇ ਦੇਸੀ ਮਹੀਨਿਆਂ ਨਾਲ ਸੰਬੰਧਤ
Punjabi Jeevan naal Sambandat Viharik Shabadavli: Lok-Dhande, Lok-Gahene, Din-Teohar, Rishte Naate ate Desi Mahinian naal Sambandat
- ਕਿਸੇ ਆਡੀਓ/ਵੀਡੀਓ ਟੈਕਸਟ (ਗੀਤ/ਫਿਲਮ) ਨੂੰ ਸੁਣਨਾ, ਸਮਝਣਾ, ਉਚਾਰਨਾ ਤੇ ਅਧਿਆਪਕ ਨਾਲ ਵਿਚਾਰਨਾ (ਫਿਲਮਾਂ: ਲਵ ਪੰਜਾਬ, ਅਰਦਾਸ, ਅੰਗਰੇਜ਼, ਉੜਾ ਐੜਾ ਈੜੀ ਅਤੇ ਗਾਇਕ:

ਸੁਰਿੰਦਰ ਕੋਰ,ਸਤਿੰਦਰ ਸਰਤਾਜ, ਗੁਰਦਾਸ ਮਾਨ ਤੇ ਅਮਰਿੰਦਰ ਗਿੱਲ)

Kise Audio/Video Text (Geet/Film) nu Sunna, Samajhana, Ucharna ate Adhiapak naal Vicharna (Filman: Love Punjab, Ardaas, Angrez, Urhaa Airhaa Irhee, Gaik: Surinder Kaur, Satinder Sartaj, Gurdas Maan ate Amrinder Gill)

- ਹਿੰਦੀ/ਅੰਗਰੇਜ਼ੀ ਸ਼ਬਦਾਂ ਦਾ ਪੰਜਾਬੀ ਵਿਚ ਅਨੁਵਾਦ

Hindi/Angrezi Shabdan da Punjabi vich Anuvad

- ਹਿੰਦੀ/ਅੰਗਰੇਜ਼ੀ ਵਾਕਾਂ ਦਾ ਪੰਜਾਬੀ ਵਿਚ ਅਨੁਵਾਦ

Hindi/Angrezi Vaakan da Punjabi vich Anuvad

Unit-IV ਰਚਨਾਤਮਕ ਅਭਿਆਸ

(Rachnatmik Abhiyas) (12 Hours)

- ਇਸ਼ਤਿਹਾਰ ਲੇਖਣ

Ishtihar Lekhan

- ਚਿੱਠੀ ਅਤੇ ਬਿਨੈ-ਪੱਤਰ ਲੇਖਣ

Chithi ate Bine-Pattar Lekhan

- ਪੈਰਾ ਰਚਨਾ ਲੇਖਣ

Paira Rachna Lekhan

- ਰਿਪੋਰਟ ਲੇਖਣ ਜਾਂ ਅੱਖੀਂ ਡਿੱਠੀ ਘਟਨਾ ਦਾ ਬਿਆਨ

Report Lekhan jan Akhin Dithi Ghatna Da Biyan

ESSENTIAL/RECOMMENDED READINGS:

- **Adhunik Punjabi Viakaran ate Lekh Rachna (2019)**, Punjab School Sikhia Board, Sahibzada Ajeet Singh Nagar.
- Brar, Boota Singh, Nachhattar Singh (2015), **Punjabi Bhasha lipi ate Viakaran**, Arsee Publishers, New Delhi.
- Duggal, Narinder Singh (Dr.) (2000), **Punjabi Viakaran te Rachnavali**, New Book Company, Jalandhar.

SUGGESTED READINGS:

- Brar, Boota Singh (2012), **Punjabi Bhasha Sarot te Saroop**, Waris Shah Foundation, Amritsar.
- Brar, Boota Singh (2018), **Punjabi Viakaran Sidhant ate Vihar** (Fourth Edition), Chetna Parkashan, Ludhiana.
- Duni Chandar (1987), **Punjabi Bhasha te Viyakaran**, Panjab University, Chandigarh.
- Harkirat Singh (2004), **Saadi Bhasha**, Punjabi University Patiala.
- Harkirat Singh, Giani Lal Singh (1999), **Punjabi Viakaran**, Punjab State University Text Book Borad, Chandigarh.
- Harkirat Singh (1988), **Punjabi Baare**, Punjabi University Patiala.

- Teja Singh (1947), **Punjabi Kiven Likhiye (Second Edition)**, Hind Publishers Limited, Jalandhar.

INTERNET RESOURCES:

- <http://www.learnpunjabi.org/pr.aspx>

*(Note: Teachers are free to recommend additional related standard resource books, if required so.)

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BA (Prog.) with Punjabi as Minor
Category-III

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

DISCIPLINE SPECIFIC CORE COURSE -1 (DSC-1)
LEARN PUNJABI – 1

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------------|---------|-----------------------------------|----------|---------------------|---|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Learn Punjabi – 1 (DSC-1) | 4 | 3 | 1 | 0 | Class 12 th pass in any subject | NIL |

Credits: 4

L/T/P= 3/1/0

LEARNING OBJECTIVES:

- This Course will help to enhance the ability of the students in speaking, listening, reading and writing Punjabi Language.
- This course will develop the ability of word formation and vocabulary practice among the students.
- Students will learn meaning of words, phrases and sentences of Punjabi language.
- Objective of this course is to develop communication skills and understanding of social interaction among the students in Multi-lingual societies.

LEARNING OUTCOMES:

- After completing this course, the students will be able to read, write, speak and understand the Punjabi language.
- The students will be able to learn basic Punjabi word and sentence formation, and practical use of it.
- The course will improve the student's speaking ability in Punjabi both in terms of fluency and comprehensibility.
- The course will increase the student's reading speed and comprehension of Punjabi language.
- The course will strengthen the student's ability to write Punjabi words and sentences.

Unit-I: ਅੱਖਰ ਬੋਧ

(Akhar Bodh) (12 Hours)

- ਗੁਰਮੁਖੀ ਲਿਪੀ ਨਾਲ ਜਾਣ-ਪਛਾਣ
Gurmukhi Lipi naal Jaan-Pachhan
- ਪੈਂਤੀ ਅੱਖਰੀ ਅਤੇ ਪੈਰ ਬਿੰਦੀ ਵਾਲੇ ਵਰਨਾਂ ਦਾ ਉਚਾਰਨ ਅਤੇ ਸੁੰਦਰ ਲਿਖਾਈ ਦਾ ਅਭਿਆਸ
Painti Akhri ate Pair-bindi vale Varna da Ucharan ate Sunder Likhai da Abhiyas

- ਲਗਾਂ-ਮਾਤਰਾਵਾਂ ਅਤੇ ਲਗਾਖਰਾਂ ਨਾਲ ਜਾਣ-ਪਛਾਣ ਅਤੇ ਵਰਤੋਂ
Lagan-Matran ate Lagakhran naal Jaan-Pachhan ate Varton
- ਭੁਲਾਵੇਂ ਅੱਖਰ
Bhulaven Akhar

Unit-II: ਸ਼ਬਦ ਰਚਨਾ

(Shabad Rachna) (16 Hours)

- ਬਿਨਾ ਲਗ ਵਾਲੇ (ਮੁਕਤਾ) , ਦੋ ਅੱਖਰੀ, ਤਿੰਨ ਅੱਖਰੀ ਅਤੇ ਚਾਰ ਅੱਖਰੀ ਸ਼ਬਦਾਂ ਦਾ ਉਚਾਰਨ ਅਤੇ ਲਿਖਣ ਅਭਿਆਸ
Binan Lag Vale (Mukta), Do Akhri, Tin Akhri ate Chaar Akhri Shabadan da Ucharan ate Likhan Abhiyas
- ਅੱਕੜ, ਦੁਲੈਂਕੜ, ਹੋੜਾ, ਕਨੇੜਾ, ਲਾਵਾਂ ਅਤੇ ਦੁਲਾਵਾਂ ਵਾਲੇ ਸ਼ਬਦਾਂ ਦਾ ਉਚਾਰਨ ਅਤੇ ਲਿਖਣ ਅਭਿਆਸ
Aunkar, Dulenkar, Horha, Kanaura, Lavan ate Dulavan Vale Shabadan Da Ucharan ate Likhan Abhiyas
- ਸਿਹਾਰੀ ਅਤੇ ਬਿਹਾਰੀ ਦੀ ਵਰਤੋਂ ਵਾਲੇ ਸ਼ਬਦਾਂ ਦਾ ਉਚਾਰਨ ਅਤੇ ਲਿਖਣ ਅਭਿਆਸ
Sihari ate Bihari di Varton Vale Shabadan da Ucharan ate Likhan Abhiyas
- ਬਿੰਦੀ, ਟਿੱਪੀ ਅਤੇ ਅੱਧਕ ਦੀ ਵਰਤੋਂ ਵਾਲੇ ਸ਼ਬਦਾਂ ਦਾ ਉਚਾਰਨ ਅਤੇ ਲਿਖਣ ਅਭਿਆਸ
Bindi, Tippi ate Adhak di Varton Vale Shabadan da Ucharan ate Likhan Abhiyas

Unit-III: ਅਰਥ ਬੋਧ

(Arth Bodh) (16 Hours)

- ਸਮੇਂ, ਦਿਨਾਂ, ਦਿਸ਼ਾਵਾਂ, ਗਿਣਤੀ, ਸਰੀਰ ਦੇ ਅੰਗਾਂ ਅਤੇ ਸਬਜ਼ੀਆਂ, ਫਲਾਂ ਨਾਲ ਸੰਬੰਧਤ ਸ਼ਬਦਾਵਲੀ ਦਾ ਉਚਾਰਨ ਅਤੇ ਲਿਖਣ ਅਭਿਆਸ
Samey, Dinan, Dishaavan, Ginti, Sareer de Angaan ate Sabziaan, Phalaan naal Sambandhat Shabdaavli da Ucharan ate likhan Abhiyas
- ਖਾਣ-ਪੀਣ, ਰਸੋਈ ਦਾ ਸਮਾਨ, ਪਹਿਰਾਵੇ, ਰਿਸ਼ਤਾ-ਨਾਤਾ ਅਤੇ ਦਰੱਖਤਾਂ ਨਾਲ ਸੰਬੰਧਤ ਸ਼ਬਦਾਵਲੀ ਦਾ ਉਚਾਰਨ ਅਤੇ ਲਿਖਣ ਅਭਿਆਸ
Khaan-Peen, Rasoi da Samaan, Pehraave, Rishta-nata ate Darakhtaan, naal Sambandhat Shabdaavli da Ucharan ate likhan Abhiyas
- ਸਮਾਨਾਰਥਕ ਅਤੇ ਵਿਰੋਧਾਰਥਕ ਸ਼ਬਦਾਂ ਦਾ ਉਚਾਰਨ ਅਤੇ ਲਿਖਣ ਅਭਿਆਸ
Samanarthak ate Virodharthak Shabadan da Ucharan ate likhan Abhiyas
- ਬਹੁਅਰਥਕ ਸ਼ਬਦ ਅਤੇ ਬਹੁਤੇ ਸ਼ਬਦਾਂ ਦੀ ਥਾਂ ਇਕ ਸ਼ਬਦ ਦਾ ਉਚਾਰਨ ਅਤੇ ਲਿਖਣ ਅਭਿਆਸ
Bahuarthak Shabad ate Bahute Shabadan di thaana ik Shabad da Ucharan ate likhan Abhiyas

Unit-IV: ਵਾਕ ਬੋਧ

(Vaak Bodh) (16 Hours)

- ਸਧਾਰਨ ਵਾਕ, ਪ੍ਰਸ਼ਨ ਵਾਚਕ ਵਾਕ ਅਤੇ ਨਾਂਹ ਵਾਚਕ ਵਾਕ ਦੀ ਪਛਾਣ ਅਤੇ ਲਿਖਣ ਦਾ ਅਭਿਆਸ
Sadharan Vaak, Prashan Vaachak Vaak ate Nahn Vaachak Vaak di Pachhan ate Likhan da Abhiyas
- ਆਮ ਬੋਲ-ਚਾਲ, ਦਫ਼ਤਰੀ ਕੰਮ-ਕਾਜ, ਖ਼ਰੀਦੋ-ਫ਼ਰੋਖਤ ਨਾਲ ਸੰਬੰਧਤ ਸੰਵਾਦ ਦਾ ਵਾਕ ਲਿਖਣ ਅਭਿਆਸ
Aam Bol-chal, Daftri Kamm-kaaj, Kharido-Pharokhat naal Sambandhat Sanvaad da Vaak Likhan Abhiyas
- ਸ਼ੁੱਧ ਵਾਕ ਲਿਖਣ ਦਾ ਅਭਿਆਸ
Shudh Vaak Likhan da Abhiyas
- ਵਿਸਰਾਮ ਚਿੰਨ੍ਹ: ਜਾਣ-ਪਛਾਣ ਅਤੇ ਵਰਤੋਂ
Visram Chin: Jaan Pachhan ate Varton

ESSENTIAL/RECOMMENDED READINGS:

- **Adhunik Punjabi Viakaran ate Lekh Rachna** (2019), Punjab School Sikhia Board, Sahibzada Ajeet Singh Nagar.
- **Punjabi Path Pustak-4** (Dooji Bhasha) (2020), Punjab School Sikhia Board, Sahibzada Ajeet Singh Nagar.
- Teja, Charnjit Singh (Eds.) (2017), **Pehli Kitab**, Sann Santali Publication, Amritsar.

SUGGESTED READINGS:

- Brar, Boota Singh, Nachhattar Singh (2015), **Punjabi Bhasha Lipi ate Viakaran**, Arsee Publishers, New Delhi.
- Duggal, Narinder Singh (Dr.) (2000), **Punjabi Viakaran te Rachnavali**, New Book Company, Jalandhar.
- Harkirat Singh (2004), **Saadi Bhasha**, Punjabi University, Patiala.
- Harkirat Singh te Giani Lal Singh (1999), **Punjabi Viakaran**, Punjab State University Text Book Board, Chandigarh.
- Harkirat Singh (1988), **Punjabi Baare**, Punjabi University, Patiala.
- Teja Singh (1947), **Punjabi Kiven Likhiye (Second Edition)**, Hind Publishers Limited, Jalandhar.

INTERNET RESOURCES:

- <http://www.learnpunjabi.org/pr.aspx>

*(Note: Teachers are free to recommend additional related standard source books, if required so.)

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES
Offered by Department of Punjabi
Category IV

GENERIC ELECTIVES (GE-1)
Punjabi Bhasha Da Mudhla Padhar

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|--|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Punjabi Bhasha Da Mudhla Padhar (GE-1) | 4 | 3 | 1 | 0 | Class 12 th pass in any subject | NIL |

Credits: 4

L/T/P= 3/1/0

LEARNING OBJECTIVES:

- To learn Punjabi Script as a beginner.
- To learn basic Punjabi vocabulary and practical use of it.
- To comprehend the meaning of words, phrases and sentences.
- To develop communication skills and understanding of social interactions in multi lingual societies.
- To collect information through Punjabi language and express thoughts about common topics.

LEARNING OUTCOMES:

- Students will learn speaking, writing and reading skills in Punjabi language.
- They will learn basic Punjabi words as well as sentence formation and practical use of it.
- They will be able to acquire knowledge of vocabulary prevalent in Punjabi society.
- They will also learn to express their thoughts in Punjabi language.

Unit-I: ਗੁਰਮੁਖੀ ਲਿਪੀ ਗਿਆਨ

(Gurmukhi Lipi Gyan) (12 Hours)

- ਅੱਖਰ ਗਿਆਨ
Akhar Gyan
- ਲਗਾਂ- ਮਾਤਰਾਵਾਂ ਦੀ ਵਰਤੋਂ
Lagan-Matranvan di Varton
- ਲਗਾਖਰਾਂ ਦੀ ਵਰਤੋਂ

Lagakharan di varton

- ਪੈਰੀਂ ਅੱਖਰ

Pairin Akhar

Unit-II: ਸ਼ਬਦ ਗਿਆਨ

(Shabad Gyan) (16 Hours)

- ਸ਼ਬਦ ਰਚਨਾ

Shabad Rachna

- ਵਿਹਾਰਕ ਸ਼ਬਦਾਂ ਦੀ ਵਰਤੋਂ (ਰੋਜ਼ਾਨਾ ਕੰਮਕਾਜ, ਪਹਿਰਾਵੇ, ਮਨੁੱਖੀ ਗੁਣ-ਐਗੁਣ, ਕੁਦਰਤ, ਫਲਾਂ-ਸਬਜ਼ੀਆਂ, ਰੁੱਖਾਂ-ਪੌਦਿਆਂ, ਮਨੁੱਖੀ ਸਰੀਰ, ਪਸ਼ੂਆਂ-ਜਾਨਵਰਾਂ ਨਾਲ ਸੰਬੰਧਤ ਸ਼ਬਦਾਵਲੀ)

Viharak Shabadan di Varton (Rozana Kamkaj, Pehrave, Manukhi Gun-Augun, Kudrat, Falan-Sabzian, Rukhan-Paudeyan, Manukhi Sareer, Pashuyan-Janwaran naal Sambandhit Shabadavali.)

- ਗਿਣਤੀ ਗਿਆਨ

Ginti Gyan

- ਅੰਗਰੇਜ਼ੀ ਅਤੇ ਹਿੰਦੀ ਸ਼ਬਦਾਂ ਤੋਂ ਪੰਜਾਬੀ ਸ਼ਬਦਾਂ ਵਿਚ ਅਨੁਵਾਦ

Angrezi ate Hindi Shabdan ton Punjabi Shabadaan vich Anuvad

Unit-III: ਵਾਕ ਗਿਆਨ

(Vaak Gyan) (16 Hours)

- ਨਾਂਵ ਅਤੇ ਪੜਨਾਂਵ ਦੀ ਵਾਕਾਂ ਵਿਚ ਵਰਤੋਂ

Naav ate Parhnav di Vaakan vich Varton

- ਕਿਰਿਆ ਦੀ ਵਾਕਾਂ ਵਿਚ ਵਰਤੋਂ

Kirya di Vaakan vich Varton

- ਵਿਸ਼ੇਸ਼ਣ ਦੀ ਵਾਕਾਂ ਵਿਚ ਵਰਤੋਂ

Visheshan di Vaakan vich Varton

- ਅੰਗਰੇਜ਼ੀ ਅਤੇ ਹਿੰਦੀ ਵਾਕਾਂ ਤੋਂ ਪੰਜਾਬੀ ਵਾਕਾਂ ਵਿਚ ਅਨੁਵਾਦ

Angrezi ate Hindi Vakan ton Punjabi Vaakan vich Anuvad

Unit-IV: ਅਰਥ ਗਿਆਨ

(Arth Gyan) (16 Hours)

- ਸਮਾਨਾਰਥਕ, ਬਹੁਅਰਥਕ ਅਤੇ ਵਿਰੋਧਾਰਥਕ ਸ਼ਬਦ

Smanarthak, Bahuarthak ate Virodharthak Shabad

- ਬਹੁਤੇ ਸ਼ਬਦਾਂ ਦੀ ਥਾਂ ਇਕ ਸ਼ਬਦ

Bahute Shabadan di Than Ik Shabad

- ਪੈਰਾ ਰਚਨਾ

Paira Rachna

- ਮਿੰਨੀ ਕਹਾਣੀ ਰਚਨਾ

Mini Kahani Rachna

ESSENTIAL/RECOMMENDED READINGS:

- Duggal, Narinder Singh (2008), **Punjabi Viyakaran te Rachnavali**, New Book Company, Jalandhar.
- Sandhu, Satnam Singh (Dr.) (2009), **Aao Punjabi Sikhiye**, Punjabi University, Patiala.
- Sandhu, Satnam Singh (Dr.) (2011), **Gurmukhi Sikho**, Punjabi University, Patiala.

SUGGESTED READINGS:

- Duggal, Narinder Singh (2017), CBSE, **Punjabi Viyakaran ate Likhat Rachna (IX X)**, New Book Company, Delhi.
- Dhiman, Harbans Singh (Dr.) (2009), **Viharak Punjabi Bhasha ate Viyakaran (Part-1)**, Manpreet Publications, Delhi.
- Dhiman, Harbans Singh (Dr.) (2010), **Viharak Punjabi Bhasha ate Viyakaran (Part-2)**, Manpreet Publications, Delhi.
- Sangha, Sukhwinder Singh (2010), **Punjabi Bhasha Vigyan**, Punjabi Bhasha Academy, Jalandhar.
- **Punjabi Path Pustak-4 (Dooji Bhasha)** (2020), Punjab School Sikkhia Board, Sahibzada Ajeet Singh Nagar.
- Teja Singh (1947), **Punjabi Kiven Likhiye (Second Edition)**, Hind Publishers Limited, Jalandhar.

INTERNET RESOURCES:

- <http://www.learnpunjabi.org/pr.aspx>

*(Note: Teachers are free to recommend additional related standard source books, if required so.)

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-2)

Punjab Di Lokdhara

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| | | | | | | |

| | | | | | | |
|---------------------------|---|---|---|---|--|---|
| Punjab Di Lokdhara (GE-2) | 4 | 3 | 1 | 0 | Class 12 th pass in any subject | Studied Punjabi up to 8th Standard or Working knowledge of Punjabi language |
|---------------------------|---|---|---|---|--|---|

Credits: 4

L/T/P=3/1/0

LEARNING OBJECTIVES:

- To learn about the concepts, forms, histories, terms, etymology, social importance and methods that help in understanding the documented as well as lived lores of people.
- To learn about generic osmosis between folklore and other streams of expression, like mythology, oral texts/ traditions, belief systems, rituals, fairs, festivals, pilgrimages, epics, and so on.
- To sensitize students about the rich oeuvre of folklore that surrounds them and also inspired many literary genres.
- To understand the concepts of Folklore and Culture, their constituents and also learn the relation of folklore to our surroundings, modernization and its various aspects.

LEARNING OUTCOMES:

- Students will demonstrate the knowledge of various Folk-traditions of Punjab.
- Students will be able to examine the diversity of the folk literature and customs of Punjab.
- Students will be able to understand the current problems occurring in Punjabi society and can try to find the appropriate way to handle them.
- Students will learn about various genres of Punjabi Folk-literature.
- Students will learn the history of Punjabi folk literature and its link with its geography and language.

Unit-I: ਲੋਕਧਾਰਾ: ਸਿਧਾਂਤਕ ਪੱਖ

(Lokdhara: Sidhantk Pakh) (12 Hours)

- ਲੋਕਧਾਰਾ: ਪਰਿਭਾਸ਼ਾ, ਤੱਤ ਅਤੇ ਖੇਤਰ
Lokdhara: Paribhasha, Tatt ate Khetar
- ਲੋਕਧਾਰਾ: ਵੰਨਗੀਆਂ
Lokdhara: Vangiyan

- ਲੋਕਧਾਰਾ: ਮਹੱਤਵ ਅਤੇ ਸਾਰਥਕਤਾ
Lokdhara: Mahatav ate Sarthakta
- ਲੋਕਧਾਰਾ ਅਤੇ ਆਧੁਨਿਕਤਾ
Lokdhara ate Adhunikta

Unit-II: ਲੋਕ ਪੇਸ਼ਕਾਰੀਆਂ

(Lok Peshkariyan) (16 Hours)

- ਪੰਜਾਬ ਦੇ ਲੋਕ ਸਾਜ਼ ਅਤੇ ਲੋਕ ਸੰਗੀਤ: ਪਰਿਭਾਸ਼ਾ, ਪ੍ਰਕਾਰ ਅਤੇ ਸਮਾਜਕ ਮਹੱਤਵ
Punjab de Lok Saaz ate Lok Sangeet: Paribhasha, Prakar ate Samajak Mahatav
- ਪੰਜਾਬ ਦੇ ਲੋਕ ਨਾਚ: ਪਰਿਭਾਸ਼ਾ, ਪ੍ਰਕਾਰ ਅਤੇ ਸਮਾਜਕ ਮਹੱਤਵ
Punjab de Lok Naach: Paribhasha, Prakar ate Samajak Mahatav
- ਪੰਜਾਬ ਦੀਆਂ ਲੋਕ ਖੇਡਾਂ: ਪਰਿਭਾਸ਼ਾ, ਪ੍ਰਕਾਰ ਅਤੇ ਸਮਾਜਕ ਮਹੱਤਵ
Punjab dian Lok Khedan: Paribhasha, Prakar ate Samajak Mahatav
- ਪੰਜਾਬ ਦੇ ਲੋਕ ਨਾਟ: ਪਰਿਭਾਸ਼ਾ, ਪ੍ਰਕਾਰ ਅਤੇ ਸਮਾਜਕ ਮਹੱਤਵ
Punjab de Lok Naat: Paribhasha, Prakar ate Samajak Mahatav

Unit-III: ਲੋਕਧਾਰਾ ਅਤੇ ਲੋਕ ਸਾਹਿਤ

(Lokdhara ate Lok Sahit) (16 Hours)

- ਪੰਜਾਬ ਦੇ ਲੋਕ ਗੀਤ: ਪਰਿਭਾਸ਼ਾ, ਪ੍ਰਕਾਰ ਅਤੇ ਸਮਾਜਕ ਮਹੱਤਵ
Punjab de Lok Geet: Paribhasha, Prakar ate Samajak Mahatav
- ਪੰਜਾਬ ਦੀ ਲੋਕ ਕਹਾਣੀ: ਪਰਿਭਾਸ਼ਾ, ਪ੍ਰਕਾਰ ਅਤੇ ਸਮਾਜਕ ਮਹੱਤਵ
Punjab di Lok Kahani: Paribhasha, Prakar ate Samajak Mahatav
- ਪੰਜਾਬ ਦੀ ਲੋਕ ਗਾਥਾ: ਪਰਿਭਾਸ਼ਾ, ਪ੍ਰਕਾਰ ਅਤੇ ਸਮਾਜਕ ਮਹੱਤਵ
Punjab di Lok Gatha: Paribhasha, Prakar ate Samajak Mahatav
- ਪੰਜਾਬ ਦੇ ਲੋਕ ਅਖਾਣ ਅਤੇ ਮੁਹਾਵਰੇ: ਪਰਿਭਾਸ਼ਾ, ਸਰੂਪ ਅਤੇ ਸਮਾਜਕ ਮਹੱਤਵ
Punjab de Lok Akhan ate Muhavre: Paribhasha, Saroop ate Samajak Mahatav

Unit-IV: ਰਸਮ-ਰਿਵਾਜ, ਮੇਲੇ-ਤਿਉਹਾਰ ਅਤੇ ਲੋਕ ਵਿਸ਼ਵਾਸ

(Rasam-Rivaj, Mele-Teohar ate Lok Vishvas) (16 Hours)

- ਪੰਜਾਬ ਦੇ ਰਸਮ-ਰਿਵਾਜ: ਪਰਿਭਾਸ਼ਾ, ਪ੍ਰਕਾਰ ਅਤੇ ਸਮਾਜਕ ਮਹੱਤਵ
Punjab de Rasam-Rivaj: Paribhasha, Prakar ate Samajak Mahatav
- ਪੰਜਾਬ ਦੇ ਮੇਲੇ: ਪਰਿਭਾਸ਼ਾ, ਪ੍ਰਕਾਰ ਅਤੇ ਸਮਾਜਕ ਮਹੱਤਵ
Punjab de Mele: Paribhasha Prakar ate Samajak Mahatav
- ਪੰਜਾਬ ਦੇ ਤਿਉਹਾਰ: ਪਰਿਭਾਸ਼ਾ, ਪ੍ਰਕਾਰ ਅਤੇ ਸਮਾਜਕ ਮਹੱਤਵ
Punjab de Teohar: Paribhasha, Prakar ate Samajak Mahatav
- ਪੰਜਾਬ ਦੇ ਲੋਕ ਵਿਸ਼ਵਾਸ: ਪਰਿਭਾਸ਼ਾ, ਪ੍ਰਕਾਰ ਅਤੇ ਸਮਾਜਕ ਮਹੱਤਵ

ESSENTIAL/RECOMMENDED READINGS:

- Bedi, S.S. Wanjara (1995), **Punjabi Lokdhara Vishavkosh**. National Book Shop, Delhi.
- Pooni, Balbeer Singh (2003), **Punjabi Lokdhara ate Sabhiyachar**, Waris Shah Foundation, Amritsar.
- Thind, Karnail Singh (Dr.) (2007), **Punjab da Lok Virsa (Part II)**, Punjabi University, Patiala.

SUGGESTED READINGS:

- Bedi, S.S. Wanjara (1987), **Madhkalin Punjabi Katha: Roop ate Parmpara**, Parmpara Parkashan, New Delhi.
- Bhupinder Singh, Surjit Singh (Eds.) (2009), **Lokdhara Di Bhumika**, Punjabi University, Patiala.
- Kapoor, Navrattan (Dr.) (1988), **Punjab de Lok Teohar**, Punjabi University, Patiala.
- Nahar Singh (Dr.) (1989), **Punjabi Lok Naach**, Lokgeet Parkashan, Sarhind.
- Naresh (Dr.) (1998), **Saadiyan Rasmaan**, Punjab State University, Text Book Board, Chandigarh.
- Noor, Jagir Singh (Dr.) (2008), **Punjabi Sabhiyachar: Mool Pachhan**, National Book Trust, Delhi.
- Thind, Karnail Singh (Dr.) (1973), **Lokyan ate Madhkali Punjabi Sahit**, Guru Nanak Dev University, Amritsar.

***(Note: Teachers are free to recommend additional related standard source books, if required so.)**

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-3)
Punjabi Sabhiyachar

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------------|---------|-----------------------------------|----------|---------------------|--|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Punjabi Sabhiyachar (GE-3) | 4 | 3 | 1 | 0 | Class 12 th pass in any subject | Studied Punjabi up to 8th Standard or <i>Working knowledge of Punjabi language</i> |

Credits: 4

L/T/P=3/1/0

LEARNING OBJECTIVES:

- To identify the basic elements of culture, including values and norms.
- To discuss diversity within cultures, including the concepts of ideal and real culture, subcultures and countercultures, and assimilation.
- To describe emerging issues in culture such as global and consumer culture.
- To develop students' socio-cultural competence and connect the content to their backgrounds and personal experiences.

LEARNING OUTCOMES:

- Students demonstrate their understanding and use of the language to observe the similarities and differences within the Punjabi culture and their own cultures.
- Students will be able to develop cultural competence and understanding.
- Students will develop an understanding and use of the language to investigate the relationships between the products that a culture produces, the practices that a culture manifests and the perspectives that underlie them.

Unit-I: ਸਭਿਆਚਾਰ: ਸਿਧਾਂਤ ਅਤੇ ਵਿਹਾਰ

(Sabhiyachar: Sidhant ate Vihar) (16 Hours)

- ਸਭਿਆਚਾਰ: ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਲੱਛਣ
Sabhiyachar: Paribhasha ate Lachhan
- ਸਭਿਆਚਾਰ ਦਾ ਮੰਤਵ
Sabhiyachar da Mantav
- ਸਭਿਅਤਾ, ਸਭਿਆਚਾਰ ਅਤੇ ਲੋਕਧਾਰਾ: ਸਾਂਝ ਅਤੇ ਵੱਖਰਤਾ
Sabhiyata, Sabhiyachar ate Lokdhara: Sanjh ate Vakhrata
- ਸਭਿਆਚਾਰ ਰੂਪਾਂਤਰਨ
Sabhiyachar Roopantran

Unit-II: ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ

(Punjabi Sabhiyachar) (16 Hours)

- ਇਤਿਹਾਸਕ ਪਿਛੋਕੜ
Itihasak Pichhokarh
- ਭੂਗੋਲਿਕਤਾ
Bhugolikta
- ਪਛਾਣ-ਚਿੰਨ੍ਹ
Pachhaan-Chinh
- ਵਿਸ਼ਵੀਕਰਨ ਅਤੇ ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ
Vishavikaran ate Punjabi Sabhiyachar

Unit-III: ਰਿਸ਼ਤਾ-ਨਾਤਾ ਪ੍ਰਬੰਧ

(Rishta-Naata Prabandh) (12 Hours)

- ਪਤੀ-ਪਤਨੀ ਅਤੇ ਸੰਤਾਨ
Pati-Patni ate Santaan
- ਨਾਨਕੇ ਅਤੇ ਦਾਦਕੇ
Naanake ate Daadke
- ਪੇਕੇ ਅਤੇ ਸਹੁਰੇ
Peke ate Sahure
- ਮਤਰਏ ਅਤੇ ਧਰਮ ਦੇ ਰਿਸ਼ਤੇ
Matreye ate Dharam de Rishte

Unit-IV: ਪੰਜਾਬੀ ਆਚਾਰ-ਵਿਵਹਾਰ, ਪਹਿਰਾਵਾ ਅਤੇ ਲੋਕ ਧੰਦੇ

(Punjabi Aachaar-Vivhaar, Pehraawa ate Lok Dhande) (16 Hours)

- ਸਭਿਆਚਾਰਕ ਨੈਤਿਕ ਮੁੱਲ-ਵਿਧਾਨ
Sabhiyacharak Naitik Mull-Vidhan

- ਪਹਿਰਾਵਾ ਅਤੇ ਹਾਰ-ਸ਼ਿੰਗਾਰ
Pehraawa ate Haar-Shingar
- ਖਾਣ-ਪੀਣ
Khaan-Peen
- ਲੋਕ-ਧੰਦੇ
Lok-Dhande

ESSENTIAL/RECOMMENDED READINGS:

- Jaswinder Singh (Dr.) (2012), **Punjabi Sabhiyachar: Pachhaan Chinh**, Gracious Books, Patiala.
- Joshi, Jeet Singh (Dr.) (1986), **Punjabi Sabhiyachar Bare**, Punjabi Writers Cooperative Society Limited, Amritsar.
- Pooni, Balbir Singh (2003), **Punjabi Lokdhara ate Sabhiyachar**, Waris Shah Foundation, Amritsar.

SUGGESTED READINGS:

- Bedi, S.S. Wanjara (2002), **Punjabi Lokdhara Vishavkosh**, National Book Shop, Delhi.
- Frank, Gurbax Singh (Dr.) (2010), **Sabhiyachar ate Punjabi Sabhiyachar**, Waris Shah Foundation, Amritsar.
- Jaswinder Singh (Dr.) (1985), **Sabhiyachar ate Qissa Kaav**, Sedh Prakashan, Patiala.
- Joshi, Jeet Singh (Dr.) (2010), **Lok Kala Ate Sabhiyachar**, Punjabi Bhasha Vikas Vibhag, Punjabi University, Patiala.
- Kazak, Kirpal (Prof.) (2011), **Punjabi Sabhiyachar Shabadavali Kosh**, Punjabi University, Patiala.
- Kazak, Kirpal (Prof.) (2017), **Punjabi Sabhiyachar te Lok Pehrawa**, Punjabi University, Patiala.
- Noor, Satinder Singh (Dr.) (1994), **Sabhiyachar te Sahit**, Arsi Publishers, Delhi.
- Thind, Karnail Singh (Dr.) (1973), **Lokyan ate Madhkali Punjabi Sahit**, Guru Nanak Dev University, Amritsar.

*(Note: Teachers are free to recommend additionall related standard source books, if required so.)

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-4)
PUNJABI LOK SAHIT

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------|---------|-----------------------------------|----------|---------------------|--|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Punjabi Lok Sahit (GE-4) | 4 | 3 | 1 | 0 | Class 12 th pass in any subject | Studied Punjabi up to 8th Standard or <i>Working knowledge of Punjabi language</i> |

Credits: 4

L/T/P=3/1/0

LEARNING OBJECTIVES:

- To promote rich Punjabi culture, folklore, language and literature to inculcate high social values.
- To discuss the beginning and growth of folklore explaining the diversity of perceptions about folklore at different times and in different situations.
- To develop keen interest in folk literature that forms a vast corpus of legends, stories, fables, fairy-tales, religious tales and mythological tales present in oral as well as written practice of a culture, language and people.
- To discuss the limitless literary pursuits that keep evolving, progressing, adapting and reorienting along with the dynamism of time and need of the people who create and possess folkloric tradition after generation.
- To develop an analytical sense about Punjabi folk literature that it has been progressive, revolutionary and rich in terms of themes, narratives and issues.

LEARNING OUTCOMES:

- Students will get an idea of Punjabi folk literature through various folkloric texts and of significant texts.
- Students will be able to identify different types of folk genres and their importance in Punjabi culture.
- Students can easily identify the common motifs and morals for life in all types of folk literature.

- Students will also be trained in the collection of folklore material in the field using the latest audio visual gadgets.
- Students will be able to appreciate the thematic and narrative concerns in Punjabi folk literature.

Unit-I: ਲੋਕ ਸਾਹਿਤ: ਸਿਧਾਂਤਕ ਪੱਖ

(Lok Sahit: Sidhantak Pakh) (16 Hours)

- ਲੋਕ ਸਾਹਿਤ: ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਪ੍ਰਕਿਰਤੀ
Lok Sahit: Paribhasha ate Parkirti
- ਲੋਕ ਸਾਹਿਤ ਅਤੇ ਵਿਸ਼ਿਸ਼ਟ ਸਾਹਿਤ: ਨਿਖੇੜਾ ਅਤੇ ਅੰਤਰ-ਸੰਬੰਧ
Lok Sahit ate Vishishat Sahit: Nikherha ate Antar-Sambandh
- ਲੋਕ ਸਾਹਿਤ ਦੀਆਂ ਵੰਨਗੀਆਂ
Lok Sahit diyan Vangiyaan
- ਲੋਕ ਸਾਹਿਤ ਦਾ ਸਮਾਜਕ ਮਹੱਤਵ
Lok Sahit da Samajak Mahatav

Unit-II: ਪੰਜਾਬੀ ਲੋਕ ਕਾਵਿ

(Punjabi Lok Kaav) (16 Hours)

- ਲੋਰੀਆਂ ਅਤੇ ਖੇਡ-ਗੀਤ
Lorian ate Khed-Geet
- ਸੁਹਾਗ ਅਤੇ ਘੋੜੀਆਂ
Suhag ate Ghorhian
- ਸਿੱਠਣੀਆਂ ਅਤੇ ਹੇਅਰੇ
Sithniya ate Heyre
- ਕੀਰਨੇ ਅਤੇ ਅਲਾਹੁਣੀਆਂ
Keerne ate Alahunian

Unit-III: ਪੰਜਾਬੀ ਲੋਕ ਕਥਾਵਾਂ

(Punjabi Lok Kathavan) (16 Hours)

- ਦੰਤ ਕਥਾ: ਪੂਰਨ ਭਗਤ, ਰਾਜਾ ਰਸਾਲੂ, ਦੁੱਲਾ ਭੱਟੀ
Dant Katha: Puran Bhagat, Raja Rasalu, Dulla Bhatti
- ਪਰੀ ਕਥਾ: ਸੰਦਲਾਂ, ਸਬਜ਼ਪਰੀ, ਇਕ ਖਾਵਾਂ ਕਿ ਦੋ ਖਾਵਾਂ
Pari Katha: Sandlan, Sabazpari, Ik Khavan Ke Do khavan
- ਨੀਤੀ ਕਥਾ: ਮੁੱਲਾ ਦੇ ਸ਼ਿਕਾਰੀ, ਚੰਦਰੀ ਸੰਗਤ, ਸ਼ੇਰ ਅਤੇ ਬਾਂਦਰ
Neeti Katha: Mulla de Shikari, Chandri Sangat, Sher ate Bandar
- ਜਨੇਰ ਕਥਾ: ਲੂਣ ਦਾ ਘਰ, ਟਾਹਲੀ ਮੇਰੇ ਬੱਚੇ, ਸ਼ੇਰ ਅਤੇ ਬ੍ਰਾਹਮਣ
Janur Katha: Loon Da Ghar, Tahli Mere Bache, Sher ate Brahman

Unit-IV: ਪੰਜਾਬੀ ਲੋਕ ਸਿਆਣਪਾਂ

(Punjabi Lok Siyanpaan) (12 Hours)

- ਮੁਹਾਵਰੇ
Muhavre
- ਅਖਾਣ
Akhan
- ਬੁਝਾਰਤਾਂ
Bujhaartan
- ਕਥਨ
Kathan

ESSENTIAL/RECOMMENDED READINGS:

- Bedi, S.S. Wanjara (Dr.) (2007), **Bataan Mudhh Kadeem Dian**, National Book Shop, Delhi.
- Ghuman, Bikram Singh (2012), **Punjabi Lok Geet**, Waris Shah Foundation, Amritsar.
- Kranti, Parminder Kaur, Acchru Singh (Eds.) (1997), **Kathan Kosh**, Lokgeet Prakashan, Chandigarh.

SUGGESTED READINGS:

- Bedi, S.S. Wanjara (2006), **Lok Aakhade Han**, Aarsi Publication, Delhi.
- Bedi, S.S. Wanjara (2002), **Punjabi Lokdhara Vishavkosh**. National Book Shop, Delhi.
- Ghuman, Amarjit Kaur (1995), **Saade Lok Geet (Punjab de Lok Geet)**, Roohi Prakashan, Amritsar.
- Jaswinder Singh (Dr.) (2012), **Punjabi Sabhiyachar: Pachhaan Chinh**, Gracious Books, Patiala.
- Jaswinder Singh (Dr.) (1985), **Sabhiyachar ate Qissa Kaav**, Sedh Prakashan, Patiala.
- Madpuri Sukhdev (2007), **Lok Siyanpaan: Akhan te Muhavre**, Lahore Book shop, Ludhiana.
- Pooni, Balbeer Singh (2003), **Punjabi Lokdhara ate Sabhiyachar**, Waris Shah Foundation, Amritsar.
- Randhawa, Mahinder Singh, Satyarthi, Devinder (1960), **Punjabi Lok Geet**, Sahit Academy, New Delhi.
- Thind, Karnail Singh (Dr.) (1973), **Lokyan ate Madhkali Punjabi Sahit**, Guru Nanak Dev University, Amritsar.

*(Note: Teachers are free to recommend additional related standard source books, if required so.)

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DEPARTMENT OF URDU

BA (Hons.) URDU

Category-I

DISCIPLINE SPECIFIC CORE COURSE – 1: Study of Urdu Fiction

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------------|----------------|--|-----------------|----------------------------|-------------------------------|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Study of Urdu Fiction | 4 | 3 | 1 | 0 | Urdu in Class XII or X | No Any |

Learning Objectives

The Learning Objectives of this course are as follows:

- To give a glimpses of classical writing with special reference to Urdu Fiction.
- To give a variety of Different short stories and novels, so students can get a profound knowledge of contemporary modern India.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Students can describe the features and style of fiction writers.
- Students can express their views on the stories and novels they have read.
- Students can analyze critically the theme , the style and the language of the fiction writer.

SYLLABUS OF DSC-1

UNIT – I

(8 Hours)

Afsana:

1. Afsane ki Tareef aur Ajzaye Tarkeebe
2. Afsane ka Aaghaz-o-Irteqa

3. Prem Chand ki Afsana Nigari

UNIT – II (3 Weeks)

4. Rajinder Singh Bedi ki Afsana Nigari
5. Krishn Chander ki ki Afsana Nigari
6. Ismat Chughtai ki Afsana Nigari

UNIT – III

(20 Hours)

7. Nijaat - Prem Chand (Matn ki Tadrees)
8. Lajwantee - Rajinder Singh Bedi (Matn ki Tadrees)
9. Poore Chaand ki Raat - Krishn Chander (Matn ki Tadrees)
10. Do Haath - Ismat Chughtai (Matn ki Tadrees)

UNIT – IV

(8 Hours)

1. Novel ka Fan
2. Novel ka Ahed-ba-Ahed Irteqa

UNIT – V

(12 Hours)

1. Mirza Mohammad Hadi Ruswa ki Novel Nigari
2. Umrao Jaan Ada (Matn ki Tadrees)

Essential/recommended readings

1. Naya Afsana - Waqar Azeem
2. Dastan se Afsane Tak - Waqar Azeem
3. Urdu Nasra ka Fani Irteqa - Dr. Farman Fatehpuri
4. Urdu Afsana Riwayat aur Masayel – Prof. Gopi Chand Narang
5. Urdu mein Biswin Sadi ka Afsanvi Adab- Prof. Qamar Raees

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2:
Study of Urdu Non-Fiction

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------|---------|-----------------------------------|----------|---------------------|------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Study of Urdu Fiction | 4 | 3 | 1 | 0 | Urdu in Class XII or X | No Any |

Learning Objectives

The Learning Objectives of this course are as follows:

- To Give a Glimpse of Non Fiction Prose Writing which Include Essay, Light Essay and Sketch.
- Give an Idea of Evolution of Urdu prose through various forms of prose.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Students can describe the features and style of non-fiction writers.
- Students can express their views on the essays, inshaiyas and sketches they have read.
- Students can analyze critically the theme, the style and the language of the non-fiction writers.

SYLLABUS OF DSC-2

UNIT – I (8 Hours)

Mazmoon:

1. Tareef, Usool aur Irteqa
2. Mohammad Hussain Azad ki Mazmoon Nigari
3. Maulana Abul Kalam Azad ki Mazmoon Nigari
4. Maulana Hali ki Mazmoon Nigari

UNIT – II (16 Hours)

1. Insan kisi haal mein khush nahi rahta – Mohammad Hussain Azad (Matn ki Tadrees)
2. Ek khutba-e-sadarat – Maulana Abul Kalam Azad (Matn ki Tadrees)
3. Zaban-e-Goya – Maulana Hali (Matn ki Tadrees)

UNIT – III (2 Weeks)

Inshaiah:

1. Tareef, Usool aur Irteqa
2. Rasheed Ahmad Siddiqui ki Inshaiah Nigari
3. Khwaja Hassan Nizami ki Inshaiah Nigari

UNIT – IV (16 Hours)

1. Charpaai - Rasheed Ahmad Siddiqui (Matn ki Tadrees)
2. Jheengar ka Janazah - Khwaja Hassan Nizami (Matn ki Tadrees)

UNIT – V (12 Hours)

Khaka:

1. Khaka Nigari ka Fan aur Irteqa
2. Shahid Ahmad Dehlvi ki Khaka Nigari
3. Meer Nasir Ali Dehlvi - Shahid Ahmad Dehlvi (Matn ki Tadrees)

Essential/recommended readings

1. Nairang-e-Khyal - Mohammad Hussain Azad
2. Khutbat-e-Azad – Compiled by Malik Ram
3. Urdu Essays - Syed Zaheeruddin Madni

Suggestive readings

1. Inshaiah aur Inshaiye – Syed Mohammad Hasnain
2. Urdu mein Khaka Nigari – Sabira Sayeed
3. Azadi ke baad Delhi mein Khaka Nigari – Shamim Hanfi
4. Urdu Inshaiah – Adam Shekh

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 3:
Introduction of Urdu Poetry

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------|---------|-----------------------------------|----------|---------------------|------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| INTRODUCTION OF URDU POETRY | 4 | 3 | 1 | 0 | Urdu in Class XII or X | No Any |

Learning Objectives

The Learning Objectives of this course are as follows:

- To give them a chance to appreciate modern Poetry in Urdu in the era of freedom struggle.
- To make them understand how a poet can express his thoughts in poetic forms.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Students can describe the features and style of poets.
- Students can express their views on the poems they have read.
- Students can analyze critically the theme and the central idea of poems .

SYLLABUS OF DSC-3

UNIT – I (20 Hours)

NAZM:

1. Urdu Nazm Tareef, Fan aur Irteqa
2. Nazeer Akbarabadi ki Nazm Nigari

UNIT – II (20 Hours)

1. Akbar Allahabadi ki Nazm Nigari
2. Altaf Hussain Hali ki Nazm Nigari
3. Holi ki Baharein, Roti Nama - Nazeer Akbarabadi

(Matn ki Tadrees)

UNIT – III (20 Hours)

- | | |
|---|-------------------|
| 1. Ek Miss Simeen Badan, Mustaqbil - Akbar Allahabadi | (Matn ki Tadrees) |
| 2. Barkharut, Munajat-e-Bewa - Altaf Hussain Hali | (Matn ki Tadrees) |

Essential/recommended readings

1. Intekhab-e-Manzumaat -I by Uttar Pradesh Urdu Academy

Suggestive readings

1. Urdu Shairi ka Fanni Irteqa – Dr Farman Fatehpuri
2. Asnaf-e-Adab Urdu – Edited by Qamar Raees and Khaleeq Anjum
3. Urdu Adab ki Tanqeedi Tareekh – Prof. Ehtesham Hussain

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BA (PROG.) WITH URDU AS MAJOR

Category II

DISCIPLINE SPECIFIC CORE COURSE (DSC-1): STUDY OF MODERN POETRY -I

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Study of Modern Poetry-I | 4 | 3 | 1 | N.A. | 10 th Pass | - |

Learning Objectives

The Learning Objectives of this course are as follows:

- To give knowledge of contemporary society of India through Urdu Poetry.
- To give a glimpse of modern literature with special reference to Urdu Poetry.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Understanding of concepts.
- Exercising concepts through writings.
- Demonstrating conceptual and textual understanding in test and exam.

SYLLABUS OF DSC-1

NAZMEIN:

UNIT – I (15 Hours)

1. Nazeer Akbarabadi – Muflisi, Banjaranama (Matn ki Tadrees)
2. Iqbal – Tasweere Dard, Jibreel Wa Iblees (Matn ki Tadrees)

UNIT – II (15 Hours)

3. Josh – Kisaan, Mahajan Aur Mufliis (Matn ki Tadrees)
4. Faiz – Tanhai, Nisar Main Teri Galiyon Pe (Matn ki Tadrees)

GHAZALEIN:

UNIT – III (15 Hours)

5. Shad Azimabadi
Kuchh Kahe Jata Tha Apne Hi Afsane Mein (Matn ki Tadrees)
Ab Bhi Ik Umr Pe Jeene Ka Na Andaaz Aaya (Matn ki Tadrees)
6. Hasrat Mohani
Bhulata Lakh Hun Lekin Barabar Yaad Aate Hain (Matn ki Tadrees)
Nigahe Naaz Jise Aashnae Raaz Kare (Matn ki Tadrees)

UNIT – IV (15 Hours)

7. Jigar Muradabadi
Dil Gaya Raunaqe Hayaat Gai (Matn ki Tadrees)
Kabhi Shakh-o-Sabza-o-Barg Par, Kabhi Ghuncha-o-Gul-o-Khar Par (Matn ki Tadrees)
8. Asghar Gondvi
Aalaame Rozgar Ko Aasaan Bana Diya (Matn ki Tadrees)
Koi Mahmil Nashin Kyun shad Ya Nashad Hota Hai (Matn ki Tadrees)

Practical component (if any) - NIL**Essential/recommended readings**

1. Intikhab-e-Manzumat Hissa Awwal-o-Dom – Uttar Pradesh Urdu Akademi, Lucknow

Suggestive readings

1. Urdu Shairi Ka Fanni Irtiqā – Dr. Farman Fatehpuri
2. Jadeed Urdu Nazm: Nazarita Wa Amal – Aqeel Ahmad Siddiqi
3. Nai Nazm Ka Safar – Khalilurrahman Azmi
4. Urdu Shairi Mein Azad Nazm Aur Nazme Muarra – Haneef Kaifi
5. Nazmon Ke Tajziye – Qazi Afzal Husain
6. Jadeed Urdu Nazm Hali Se Meeraji Tak –Kausar Mazhari
7. Jadeed Urdu Ghazal – Rasheed Ahmad Siddiqi
8. Urdu Ghazal – Kamil Qureshi
9. Ghazal Ki Sargushisht – Akhtar Ansari
10. Urdu Ghazal Ka Naya Manzarnama – Shameem Hanfi

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2): STUDY OF MODERN PROSE-I**Credit distribution, Eligibility and Prerequisites of the Course**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Study of Modern Prose-I | 4 | 3 | 1 | N.A. | 10 th Pass | - |

Learning Objectives

The Learning Objectives of this course are as follows:

- To give knowledge of contemporary society of India through Urdu fiction and non-fiction.
- To give knowledge of literature such as Afsana, Mazmoon and Inshaiya.
- To give a glimpse of classical literature with special reference to Urdu fiction and non fiction.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Understanding of concepts.
- Exercising concepts through writings.
- Demonstrating conceptual and textual understanding in test and exam.

SYLLABUS OF DSC- 2**MAZAMEEN:****UNIT – I (15 Hours)**

1. Prem Chand – Adab ki Gharaz-o-Ghayat (Matn ki Tadrees)
2. Abdul Haleem Sharar – Guzishta Lucknow (Matn ki Tadrees)

UNIT – II (15 Hours)

1. Sajjad Haider Yaldrum – Mujhe Mere Doston Se Bachao (Matn ki Tadrees)

2. Maulana Abul Kalam Azad – Intikhabe Ghubare Khatir

(Matn ki Tadrees)

AFSANE:

UNIT – III (15 Hours)

5. Prem Chand – Boorhi Kaaki

(Matn ki Tadrees)

6. Krishn Chander – Kalu Bhangi

(Matn ki Tadrees)

UNIT – IV (15 Hours)

7. Saadat Hasan Manto – Khol Do

(Matn ki Tadrees)

8. Rajinder Singh Bedi – Lajwanti

(Matn ki Tadrees)

Practical component (if any) - NIL

Essential/recommended readings

1. Intikhab-e-Nasr Hissa Dom – Uttar Pradesh Urdu Akademi, Lucknow

Suggestive readings (if any)

1. Urdu Afsana Riwayat Aur Masayel – Gopi Chand Narang
2. Urdu Nasr Ka Fanni Irteqa – Dr. Farman Fatehpuri
3. Urdu Essays – Syed Zaheeruddin Madni
4. Arbab-e-Nasr Urdu – Syed Mohammad

BA (PROG.) WITH URDU AS NON-MAJOR

Category III

DISCIPLINE SPECIFIC CORE COURSE (DSC-1): URDU-A, STUDY OF MODERN PROSE AND POETRY-I

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Urdu-A, Study of Modern Prose and Poetry-I | 4 | 3 | 1 | N.A. | 10 th Pass | - |

Learning Objectives

The Learning Objectives of this course are as follows:

- To give knowledge of contemporary society of India through Urdu Poetry and Fiction.
- To give knowledge of literature such as Afsana, Mazmoon, Nazmein and Ghazalein.
- To give a glimpse of modern literature with special reference to Urdu Prose and Poetry.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Understanding of concepts.
- Exercising concepts through writings.
- Demonstrating conceptual and textual understanding in test and exam.

SYLLABUS OF DSC-1

NASR:

UNIT – I (12 Hours)

1. Guzra Hua Zamana – Sir Syed (Matn ki Tadrees)
2. Murda Badast Zinda – Mirza Farhatullah Beg (Matn ki Tadrees)

UNIT – II (12 Hours)

3. Namak Ka Darogha – Prem Chand (Matn ki Tadrees)
4. Sawere Jo kal Ankh Meri Khuli – Patras Bukhari (Matn ki Tadrees)

NAZM:

UNIT – III (12 Hours)

5. (i) Ik Khalish Hoti hai Mahsoos Rage Jaan Ke Qareeb – Hasrat (Matn ki Tadrees)
(ii) Wasl Ki Banti Hain In Baton Ki Tadbiren Kahin – Hasrat (Matn ki Tadrees)
6. (i) Kabhi Shakho Sabzao Barg Par – Jigar (Matn ki Tadrees)
(ii) Dil Gaya Raunaqe Hayaat Gai – Jigar (Matn ki Tadrees)

UNIT – IV (12 Hours)

7. (i) Kabhi Ae Haqiqate Muntazar – Iqbal (Matn ki Tadrees)
(ii) Sitaron Se Aage Jahan Aur Bhi Hain – Iqbal (Matn ki Tadrees)
8. Badli Ka Chand – Josh (Matn ki Tadrees)

UNIT – V (12 Hours)

9. Do Ishq – Faiz (Matn ki Tadrees)
10. Aawara – Majaz (Matn ki Tadrees)

Note: Hissa Nasr Aur Nazm Mein Shamil Tamam Takhliqkaaroon Ke Fanni Mahasin Se Bhi Rushanas Karaya Jae.

Practical component (if any) - NIL

Essential/recommended readings

1. Jadeed Urdu Nasr Wa Nazm-I

Suggestive readings

1. Urdu Shairi Ka Fanni Irteqa – Dr. Farman Fatehpuri
2. Meer Amman Se Abdul Haq Tak – Sayyed Abdullah

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Common Pool of Generic Electives (GE) Courses

Offered by Department of Urdu

Category-IV

Generic Elective Course – 1: Study of Urdu Poetry I

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------|---------|-----------------------------------|----------|---------------------|--------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Study of Urdu Poetry I | 4 | 3 | 1 | 0 | Urdu in Class XII or X or VIII | No Any |

Learning Objectives

The Learning Objectives of this course are as follows:

- To Give Glimpses of Urdu Poetry of Early 20th Century.
- To Make them appreciate Urdu Poetry through popular genres such as Nazm and Ghazal

Learning outcomes

The Learning Outcomes of this course are as follows:

- Students can describe the life of poets and salient features of their poetry.
- Students can explain the couplets of Ghazals they have read.
- Students can analyze critically the theme and the central idea of the Nazms they have read.

SYLLABUS OF GE -1

UNIT – I (20 Hours) Nazm:

- | | |
|--|-------------------|
| 1. Sheir se Khitab – Altaf Hussain Hali | (Matn ki Tadrees) |
| 2. Farzi Lateefa – Akbar Allahabadi | (Matn ki Tadrees) |
| 3. Shuaa-e-Umeed – Allama Iqbal | (Matn ki Tadrees) |
| 4. Shikast-e-Zinda Kwaab – Josh Malihabadi | (Matn ki Tadrees) |

UNIT – II (16 Hours)

Ghazal:

1. Woh ji gaya,jo ishq mein ji se guzar gya (Faani) (Matn ki Tadrees)
2. Duniya meri bala jane mahangi hai ya sasti hai (Faani) (Matn ki Tadrees)
3. Bhulata lakh hoon lekin barabar yaad aate hain (Hasrat) (Matn ki Tadrees)
4. Husn-e-beparwah ko khudbeen khudaara kar diya (Hasrat) (Matn ki Tadrees)

UNIT – III (16 Hours)

1. Dil ko sukoon rooh ko aaram aa gaya (Jigar) (Matn ki Tadrees)
2. Dil gaya raunaq-e-hayaat gayi (Jigar) (Matn ki Tadrees)
3. Khud ko khoya bhi kahan ishq ko paya bhi kahan (Firaq) (Matn ki Tadrees)
4. Aaj bhi qafila-e-ishq rawan hai ki jo tha (Firaq) (Matn ki Tadrees)

UNIT – IV (8 Hours)

1. Urdu Nazm ki Tareef aur Rewayat
2. Ghazal ki Tareef aur Ajzaye Tarkeebi

Note: Shairon ke mukhtsar sawanehi haalat aur khususiyat-e-shairi par bhi roshni daali jaye.

Essential/recommended readings

1. Intekhab-e-Manzumaat (Part-I &II) by Uttar Pradesh Urdu Academy

Suggestive readings

1. Urdu Shairi ka Fanni Irteqa – Dr Farman Fatehpuri
2. Asnaf-e-Adab Urdu – Edited by Qamar Raees and Khaleeq Anjum
3. Urdu Adab ki Tanqeedi Tareekh – Prof. Ehtesham Hussain
4. Urdu Ghazal – Kamil Qureshi
5. Jadeed Urdu Ghazal – Rasheed Ahmad Siddiqui
6. Urdu Ghazal ka Naya Manzarnama – Shamim Hanfi

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Generic Elective Course -II: Study of Urdu Prose I

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------|---------|-----------------------------------|----------|---------------------|--------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Study of Urdu Prose I | 4 | 3 | 1 | 0 | Urdu in Class XII or X or VIII | No Any |

Learning Objectives

The Learning Objectives of this course are as follows:

- To give a glimpses of classical writing with special reference to Urdu short stories, essays and Inshaiyas.
- To give a variety of different short stories and essays so students can get a profound knowledge of contemporary modern India.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Students can describe the features and style of short story writers.
- Students can express their views on the stories they have read.
- Students can analyze critically the theme, the style and the language of the short story writers and essay writers.

SYLLABUS OF GE -II

UNIT – I (24 Hours)

Afsane:

- | | |
|--------------------------------------|-------------------|
| 1. Poos ki Raat – Prem Chand | (Matn ki Tadrees) |
| 2. Chauthi ka Joda – Ismat Chughtai | (Matn ki Tadrees) |
| 3. Naya Qanoon – Saadat Hassan Manto | (Matn ki Tadrees) |

UNIT – II (24 Hours)

Mazmoon aur Inshaiye:

1. Bahas-o-Takraar – Sir Syed Ahmad Khan (Matn ki Tadrees)
2. Insan kisi haal mein khush nahi rahta – Mohammad Hussain Azad (Matn ki Tadrees)
3. Murda badast-e-zindah – Mirza Farhat Ullah Beg (Matn ki Tadrees)
4. Diya Salai – Khwaja Hassan Nizami (Matn ki Tadrees)

UNIT – III (12 Hours)

1. Urdu Afsane ki tareef aur ajzaye tarkeebe
2. Urdu Mazmoon aur Inshaiye ki tareef aur fan

Note: Tamam takhleeqkar ke sawanehi haalat aur fan-e-khususiyat par bhi roshni daali jaye.

Essential/recommended readings

Suggestive readings

1. Urdu Afsana Rewayat aur Masail – Gopi Chand Narang
2. Urdu Nasr ka Fanni Irteqa – Dr. Farman Fatehpuri
3. Prem Chand Kahani ka Rehnuma – Jafar Raza
4. Inshaiah aur Inshaiye – Mohammad Hasnain
5. Urdu Essays – Syed Zaheeruddin Madni
6. Arbab-e-Nasr Urdu – Syed Mohammad

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Generic Elective Course III: Study of Urdu Poetry II

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-------------------------|---------|-----------------------------------|----------|---------------------|--------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Study of Urdu Poetry II | 4 | 3 | 1 | 0 | Urdu in Class XII or X or VIII | No Any |

Learning Objectives

- The Learning Objectives of this course are as follows: To Give Glimpses of Urdu Poetry of Early 20th Century.
- To Make them appreciate Urdu Poetry through popular genres such as Nazm and Ghazal

Learning outcomes

- Students can describe the life of poets and silent features of their poetry.
- Students can explain the couplets of Ghazals they have read.
- Students can analyze critically the theme and the central idea of the Nazms they have read.

SYLLABUS OF GE -III

UNIT – I (24 Hours)

Nazm:

- | | |
|--|-------------------|
| 1. Aadminama – Nazeer Akbarabadi | (Matn ki Tadrees) |
| 2. Aawaza-e-Qaum – Brij Narayan Chakbast | (Matn ki Tadrees) |
| 3. Subah-e-Azadi – Faiz Ahmad Faiz | (Matn ki Tadrees) |
| 4. Ek Ladka – Akhtar-ul-Iman | (Matn ki Tadrees) |

UNIT – II (20 Hours)

Ghazal:

- | | |
|---|-------------------|
| 1. Ulti ho gayeen sab tadbeeren kuchh na dawa ne kaam kiya – Meer | (Matn ki Tadrees) |
| 2. Hasti apni habab ki si hai – Meer | (Matn ki Tadrees) |
| 3. Hazaron khwahishen aisi ki har khwahish pe dam nikle – Ghalib | (Matn ki Tadrees) |
| 4. Ishrat-e-qatra hai dariya mein fana ho jana – Ghalib | (Matn ki Tadrees) |

UNIT – III (16 Hours)

- | | |
|--|-------------------|
| 5. Wo jo ham me tum mein qarar tha – Momin | (Matn ki Tadrees) |
| 6. Asar us ko zara nahi hota – Momin | (Matn ki Tadrees) |
| 7. Sitaron se aage jahaan aur bhi hain – Iqbal | (Matn ki Tadrees) |
| 8. Tere ishq ki inteha chahta hoon – Iqbal | (Matn ki Tadrees) |

Essential/recommended re

1. Intekhab-e-Manzumaat (Part-I &II) by Uttar Pradesh Urdu Academy

Suggestive readings

1. Urdu Shairi ka Fanni Irteqa – Dr Farman Fatehpuri
2. Asnaf-e-Adab Urdu – Edited by Qamar Raees and Khaleeq Anjum

3. Urdu Adab ki Tanqeedi Tareekh – Prof. Ehtesham Hussain
4. Urdu Ghazal – Kamil Qureshi
5. Jadeed Urdu Ghazal – Rasheed Ahmad Siddiqui
6. Urdu Ghazal ka Naya Manzarnama – Shamim Hanfi

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Generic Elective Course IV: Study of Urdu Prose II

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------|---------|-----------------------------------|----------|---------------------|--------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Study of Urdu Prose II | 4 | 3 | 1 | 0 | Urdu in Class XII or X or VIII | No Any |

Learning Objectives

The Learning Objectives of this course are as follows:

- To give a glimpses of classical writing with special reference to Urdu letters and Inshaiyas.
- To give a variety of different letters and essays so students can get a profound knowledge of contemporary modern India.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Students can describe the features and style of letter and essay writers.
- Students can express their views on the Inshaiyas they have read.
- Students can describe the origin and evolution of Urdu Tanz o Mizah.

SYLLABUS OF GE IV

UNIT – I (16 Hours)

Khutoot:

1. Khutoot-e-Ghalib
 - I. Suno ye Rampur hai daar-ul-suroor hai (Matn ki Tadrees)
 - II. Kyon kar tujh ko likhoon ki tera baap mar gaya (Matn ki Tadrees)

UNIT – II (24 Hours)

Tanz-o-Mezah:

1. Mazloom ki fariyaad- Rashid-ul-Khairi (Matn ki Tadrees)
2. Kutte- Patras Bukhari (Matn ki Tadrees)
3. Brijbaano – Kanhaiyalal Kapoor (Matn ki Tadrees)
4. Junoon-e-Lateefa – Mushtaq Ahmad Yusufi (Matn ki Tadrees)

UNIT – III (20 Hours)

1. Urdu Khutoot Nigari ka Fan aur Rewayat
2. Urdu Tanz-o-Mezah ki Rewayat

Note: Tamam takhleeqkar ke sawanehi haalat aur fan-e-khususiyat par bhi roshni daali jaye.

Essential/recommended readings

Suggestive readings

1. Ghalib ke khutoot vol. 1 ka muqaddema – Khaliq Anjum
2. Urdu Nasr ka Fanni Irteqa – Dr. Farman Fatehpuri
3. Khutoot Nigari ka Fan aur Tareekh – Rashida Khatoon
4. Urdu mein Tanz-o-Mezah – Wazeer Aagha
5. Bisween Sadi mein Urdu Nasr mei Tanz-o-Mezah – Naami Ansari

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Generic Elective Course V: Study of Short Story Writer Manto

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------------|---------|-----------------------------------|----------|---------------------|--------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Study of Short Story Writer Manto | 4 | 3 | 1 | 0 | Urdu in Class XII or X or VIII | No Any |

Learning Objectives

The Learning Objectives of this course are as follows:

- To familiarise students with the writings of legend story writer Manto who have realistic and critic approach of human life.
- To make them understand the evolution of Urdu short stories in the first half of 20th century.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Students can describe the features and style of Manto.
- Students can express their views on the stories they have read.
- Students can analyze critically the theme, the style and the language of the Manto.

SYLLABUS OF GE V

UNIT – I (24 Hours)

1. Manto: Sawaneh aur Shakhshiyat
2. Manto ke Afsano ke Mauzuaat
3. Manto ki Afsana Nigari

UNIT – II (36 Hours)

Matn ki Tadrees:

Naya Qanoon, Kaali Shalwar, Hatak, Muzail, Tooba Tek Singh

Essential/recommended readings

Manto ke Numaindah Afsane – Athar Parvez

Suggestive readings

1. Manto ek Motala'a – Waris Alvi
2. Manto Noori na Naari – Mumtaz Shirin
3. Manto Nama – Jagdish Wadhawan
4. Dastavez – Balraj Menra

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Generic Elective Course VI: Study of Development of Urdu

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------------|---------|-----------------------------------|----------|---------------------|--------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Study of Development of Urdu | 4 | 3 | 1 | 0 | Urdu in Class XII or X or VIII | No Any |

Learning Objectives

The Learning Objectives of this course are as follows:

- To give a glimpse of development of Urdu.

- To Make them aware about important stages of evolution of Urdu language and literature..

Learning outcomes

The Learning Outcomes of this course are as follows:

- Students can describe the development of Urdu.
- Students can express their views on the important Dastan of Urdu.

SYLLABUS OF GE VI

UNIT – I (16 Hours)

1. Urdu Zaban ka Aaghaz-o-Irteqa

UNIT – II (16 Hours)

1. Urdu Zaban ki Ibteda se Mutalliq Mukhtalif Nazariyaat

UNIT – III (16 Hours)

1. Urdu ki Adabi Dastaanein

UNIT – IV (12 Hours)

1. Fort William College ki Adabi Khidmaat

Essential/recommended readings

1. Urdu ki Kahani – Ehtesham Hussain

Suggestive readings

1. Urdu Adab ki Tanqeedi Tareekh – Prof. Ehtesham Hussain
2. Urdu ki Lisani Tareekh – Mirza Khaleel Ahmad Beg
3. Muqaddema-e-Tareekh Zaban-e-Urdu –Masud Hussain Khan
4. Hindustani Lisaniyaat – Dr. Mohiuddin Qadri Zor

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DEPARTMENT OF BUDDHIST STUDIES

BA (Prog) with Buddhist Studies as Major
Category-II

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITE OF THE COURSE

| Course Title & Code | Total Credits | Credit distribution of the course | | | Eligibility Criteria/ Prerequisite | Pre-requisite of the course, if any |
|---------------------------------------|---------------|-----------------------------------|----------|-----------|------------------------------------|-------------------------------------|
| | | Lecture | Tutorial | Practical | | |
| Introduction to Buddhism DSC -1-A1 | 4 | 3 | 1 | 0 | Class XII Passed | Nil |

Learning Objectives

The primary objective of this course is to make students aware of the background of the different aspects related to the origin and development of Buddhism in India.

Learning Outcomes

By studying this course, students would be able to have a clear understanding of the background to the origin and development of Buddhism along with its founder, decline and revival in India.

SYLLABUS OF DSC-1-A1

Unit I **16 Hours**

1. Background of the Origin of Buddhism or Pre-Buddhist India
2. Sources of Buddhism
3. Origins of Buddhism

Unit II **12 Hours**

1. Founder of Buddhism, and his Biography
2. Date of the Buddha

Unit III **20 Hours**

1. Establishment and evolution of the Buddhist Order (Saṅgha)
2. Origin and Growth of the various sects or schools of Buddhism

Unit IV **12 Hours**

1. Patrons and Supporters of Buddhism
2. Decline and Revival of Buddhism in India

Essential Readings

- Bapat, P.V. (ed.) *Bauddha Dharma Ke 2500 Varṣa*, New Delhi, Government of India, Publication Division, 1956.
- Bapat, P.V. (ed.), *2500 Years of Buddhism*, Publications Division, Ministry of Information and Broadcasting, Government of India, New Delhi: 1964.
- Conze, Edward. *The Life of Buddha: as Legend and History*, Delhi: Motilal Banarsidass, 1993.
- Sarao, KTS. *Origin and Nature of Ancient Indian Buddhism*, 4th rev edn, 2012.
- Walpola Rahula, *What the Buddha Taught* (First Published in 1978), The Corporate Body of the Buddha Educational Foundation, Taipei, 2009.

Suggested Readings

- Dutt, N., & K. D. Bajpai, *Development of Buddhism in Uttara Pradesh*, Publication Bureau, Lucknow, 1956.
- Dutt, N., *Buddhist Sects*, Reprint, Firma KLM (Pvt.) Ltd., Calcutta, 1997.
- Dutta, N., *Early Monastic Buddhism*, 2 Vols., Calcutta, 1943
- Law, B.C, *History of Pāli Literature*, 2 volumes; Calcutta: 1970.
- McGovern, M.W. *An Introduction to Mahāyāna Buddhism*, London: Kegan Paul, Trench, Trübner & Co, 1922.
- Pande, G.C., *Studies in the Origins of Buddhism*, Allahabad University, Allahabad, 1957
- Rhys Davids, T.W. (trans.). *Buddhist Birth-Stories (Jātaka Tales): The Commentarial Introduction Entitled Nidāna-Kathā, the Story of the Lineage*, new and revised edn by C.A.F. Rhys Davids, London: George Routledge & Sons Ltd, 1925..
- Sarao, K.T.S. *Prācīna Bhāratīya Bauddha Dharma: Udbhava, Swarupva Patana*, Delhi University: Hindi Directorate, 2009.
- Sarao, KTS and AK Singh (ed), *A Text Book of the History of Theravāda Buddhism*, Delhi, 2010.
- Srivastava, Srinarayan, 1981, *Bhārata Mein Bauddha Nikāyon kā Itihāsa*, Kishor Vidya Niketan, Varanasi, 1981.
- Strong, J.S. *The Buddha: A Short Biography*, Oxford: Oneworld, 2001.
- Thomas, E.J. *The Life of Buddha as Legend and History*, reprint, New Delhi: Asian Educational Services, 1927.
- Winternitz, M., *A History of Indian Literature*, 2 volumes, New Delhi; 1968.

DISCIPLINE SPECIFIC CORE COURSE -1 (DSC-1-B1): INTRODUCTION TO BUDDHIST LITERATURE

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITE OF THE COURSE

| Course Title & Code | Total Credits | Credit distribution of the course | | | Eligibility Criteria/ Prerequisite | Pre-requisite of the course, if any |
|---|---------------|-----------------------------------|----------|-----------|------------------------------------|-------------------------------------|
| | | Lecture | Tutorial | Practical | | |
| Introduction to Buddhist Literature DSC-1-B1 | 4 | 3 | 1 | 0 | Class XII Passed | Nil |

Learning Objectives

The primary objective of this course is to make students aware of the Indian languages (Pali and Buddhist Hybrid Sanskrit) in which the Buddhist literature including the biographical texts exists.

Learning Outcomes

By studying this course would make the students acquainted with the origin and development of the original language (Pāli) in which the Buddha disseminated his teachings in addition to develop a clear understanding among the students about the subsequently composed Buddhist literature in Sanskrit language.

SYLLABUS OF DSC-1-B1

Unit I **12 Hours**

1. Origin and Homeland of the language of Buddha's teachings

Unit II **16 Hours**

1. Buddhist Councils and the compilation of Buddha's teachings

Unit III **16 Hours**

1. Buddhist literature in Pali Language
2. Buddhist literature in Buddhist Sanskrit Literature – Nava Vaipulyasūtra or Mahāyānasūtra

Unit IV **16 Hours**

1. Biographical texts or Suttas of the Buddha – Mahāvagga, Suttanipāta, Mahāparinibbāna-sutta, Mahāpadāna-sutta, Ariyapariyesana-sutta, Nidānakathā, Mahāvastu, Lalitavistara, Āryabhiniṣkramaṇasūtra and etc

Essential Readings

- Bapat, P.V. (ed.) *Bauddha Dharma Ke 2500 Varṣa*, New Delhi, Government of India, Publication Division, 1956.
- Bapat, P.V. (ed.), *2500 Years of Buddhism*, Publications Division, Ministry of Information and Broadcasting, Government of India, New Delhi: 1964.
- Conze, Edward. *The Life of Buddha: as Legend and History*, Delhi: Motilal Banarsidass, 1993.
- Law, B.C, History of Pāli Literature, 2 volumes; Calcutta: 1970 Winternitz, M., A History of Indian Literature, 2 volumes, New Delhi; 1968.
- Edgerton, F. R., Buddhist Hybrid Sanskrit Grammar and Dictionary, 2 Vols., MLBD, Delhi

Suggested Readings

- Dutt, N., & K. D. Bajpai, *Development of Buddhism in Uttara Pradesh*, Publication Bureau, Lucknow, 1956.
- Dutt, N., *Buddhist Sects*, Reprint, Firma KLM (Pvt.) Ltd., Calcutta, 1997.
- Dutta, N., *Early Monastic Buddhism*, 2 Vols., Calcutta, 1943
- McGovern, M.W. *An Introduction to Mahāyāna Buddhism*, London: Kegan Paul, Trench, Trübner & Co, 1922.
- Pande, G.C., *Studies in the Origins of Buddhism*, Allahabad University, Allahabad, 1957
- Rhys Davids, T.W. (trans.). *Buddhist Birth-Stories (Jātaka Tales): The Commentarial Introduction Entitled Nidāna-Kathā, the Story of the Lineage*, new and revised edn by C.A.F. Rhys Davids, London: George Routledge & Sons Ltd, 1925..
- Sarao, K.T.S. *Prācīna Bhāratīya Bauddha Dharma: Udbhava, Swarupva Patana*, Delhi University: Hindi Directorate, 2009.
- Sarao, KTS and AK Singh (ed), *A Text Book of the History of Theravāda Buddhism*, Delhi, 2010.
- Sarao, KTS. *Origin and Nature of Ancient Indian Buddhism*, 4th rev edn, 2012.
- Srivastava, Srinarayan, 1981, *Bhārata Mein Baudha Nikāyon kā Itihāsa*, Kishor Vidya Niketan, Varanasi, 1981.
- Strong, J.S. *The Buddha: A Short Biography*, Oxford: Oneworld, 2001.
- Thomas, E.J. *The Life of Buddha as Legend and History*, reprint, New Delhi: Asian Educational Services, 1927.
- Walpola Rahula, *What the Buddha Taught* (First Published in 1978), The Corporate Body of the Buddha Educational Foundation, Taipei, 2009.

BA (Prog) with Buddhist Studies as Minor
Category-III

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITE OF THE COURSE

| Course Title & Code | Total Credits | Credit distribution of the course | | | Eligibility Criteria/ Prerequisite | Pre-requisite of the course, if any |
|---------------------------------------|---------------|-----------------------------------|----------|-----------|---------------------------------------|-------------------------------------|
| | | Lecture | Tutorial | Practical | | |
| Introduction to Buddhism DSC –1-A1 | 4 | 3 | 1 | 0 | Class XII Passed | Nil |

Learning Objectives

The primary objective of this course is to make students aware of the background of the different aspects related to the origin and development of Buddhism in India.

Learning Outcomes

By studying this course, students would be able to have a clear understanding of the background to the origin and development of Buddhism along with its founder, decline and revival in India.

SYLLABUS OF DSC-1-A1

Unit I **16 Hours**

4. Background of the Origin of Buddhism or Pre-Buddhist India
5. Sources of Buddhism
6. Origins of Buddhism

Unit II **12 Hours**

3. Founder of Buddhism, and his Biography
4. Date of the Buddha

Unit III **20 Hours**

3. Establishment and evolution of the Buddhist Order (Sangha)
4. Origin and Growth of the various sects or schools of Buddhism

Unit IV **12 Hours**

3. Patrons and Supporters of Buddhism
4. Decline and Revival of Buddhism in India

Essential Readings

- Bapat, P.V. (ed.) *Bauddha Dharma Ke 2500 Varṣa*, New Delhi, Government of India, Publication Division, 1956.
- Bapat, P.V. (ed.), *2500 Years of Buddhism*, Publications Division, Ministry of Information and Broadcasting, Government of India, New Delhi: 1964.
- Conze, Edward. *The Life of Buddha: as Legend and History*, Delhi: Motilal Banarsidass, 1993.
- Sarao, KTS. *Origin and Nature of Ancient Indian Buddhism*, 4th rev edn, 2012.
- Walpola Rahula, *What the Buddha Taught* (First Published in 1978), The Corporate Body of the Buddha Educational Foundation, Taipei, 2009.

Suggested Readings

- Dutt, N., & K. D. Bajpai, *Development of Buddhism in Uttara Pradesh*, Publication Bureau, Lucknow, 1956.
- Dutt, N., *Buddhist Sects*, Reprint, Firma KLM (Pvt.) Ltd., Calcutta, 1997.
- Dutta, N., *Early Monastic Buddhism*, 2 Vols., Calcutta, 1943
- Law, B.C, *History of Pāli Literature*, 2 volumes; Calcutta: 1970.
- McGovern, M.W. *An Introduction to Mahāyāna Buddhism*, London: Kegan Paul, Trench, Trübner & Co, 1922.
- Pande, G.C., *Studies in the Origins of Buddhism*, Allahabad University, Allahabad, 1957
- Rhys Davids, T.W. (trans.). *Buddhist Birth-Stories (Jātaka Tales): The Commentarial Introduction Entitled Nidāna-Kathā, the Story of the Lineage*, new and revised edn by C.A.F. Rhys Davids, London: George Routledge & Sons Ltd, 1925..
- Sarao, K.T.S. *Prācīna Bhāratīya Bauddha Dharma: Udbhava, Swarupva Patana*, Delhi University: Hindi Directorate, 2009.
- Sarao, KTS and AK Singh (ed), *A Text Book of the History of Theravāda Buddhism*, Delhi, 2010.
- Srivastava, Srinarayan, 1981, *Bhārata Mein Baudha Nikāyon kā Itihāsa*, Kishor Vidya Niketan, Varanasi, 1981.
- Strong, J.S. *The Buddha: A Short Biography*, Oxford: Oneworld, 2001.
- Thomas, E.J. *The Life of Buddha as Legend and History*, reprint, New Delhi: Asian Educational Services, 1927.
- Winternitz, M., *A History of Indian Literature*, 2 volumes, New Delhi; 1968.

DEPARTMENT OF PERSIAN

BA (Hons.) Persian

Category-I

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Persian: Reading & Writing (C-PRN-I) | 4 | 3 | 1 | NIL | Class XII pass | NIL |

Learning Objectives:

The Learning Objectives of this course are as follows:

1. To make students acquainted with Perso-Arabic Script.
2. To equip the students briefly with History of evolution of Perso-Arabic Script.
3. To enable the students to read and write in Persian language.

Learning outcomes:

The Learning Outcomes of this course are as follows:

- By studying this course, the students will be able to read, write and understand the basic knowledge of Persian language and literature
- By studying this course, they shall get to know the history of evolution of scripts in total and evolution of Perso-Arabic script in particular.

SYLLABUS OF DSC-1

UNIT – I (12 Hours)

- Persian Alphabets & word formation

UNIT – II (12 Hours)

- Persian Text Reading and Translation into English or Hindi or Urdu from Kitab-e-Farsi, Awwal Dabistan (Ch. No 1-3)

UNIT – III (12 Hours)

- Persian Text Reading and Translation into English or Hindi or Urdu from Kitab-e-Farsi, Awwal Dabistan (Ch. No 4-6)

UNIT – IV (12 Hours)

- Persian Text Reading and Translation into English or Hindi or Urdu from Kitab-e-Farsi, Awwal Divum (Ch. No 1-4)

UNIT – V (12 Hours)

- Persian Text Reading and Translation into English or Hindi or Urdu from Kitab-e-Farsi, Awwal Divum (Ch. No 5-7)

Essential/recommended readings:

- Kitab-e-Farsi Awwal Dabistan, Published by Sazmane Pazohishi wa Barname rizi-e-Amuzishi, Tehran, Iran, 1399
- Kitabe Farsi Divuum Dabistan. Published by Sazmane Pazohishi wa Barname rizi-e-Amuzishi, Tehran, Iran, 1399

Suggestive readings

- Fann-e-Tarjuma by Saffarzadeh, Tahera, Intesharat-e-Amir Kabir, Tehran, Iran.
- Farsi Dastoor by Kiya Khanlari, Dr. Zehra. Idarah-e-Adabiyat, Jayyed Press, Ballimaran, Delhi 110 006.
- Elementary Persian Grammar by Kumar, Dr. Rajinder, Harjeet Publication, Delhi-110034, 2009.
- An Introduction to Persian by Thackston, Wheler. Ibex Publication, Maryland, U.S.A., 2009.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2): Applied Persian Grammar & Translation (C-PRN-II)

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Applied Persian Grammar & Translation (C-PRN-II) | 4 | 3 | 1 | NIL | Class XII pass | NIL |

Learning Objectives:

The Learning Objectives of this course are as follows:

1. To equip the students with Applied Persian Grammar & Translation
2. To enable the students to form daily usage sentences in Persian language
3. To equip the students to speak, read and write in Persian language

Learning outcomes:

The Learning Outcomes of this course are as follows:

- By learning this course, students will come to know the basics of Persian Grammar and Translation
- By learning this course, students will be able to speak, read and write in Persian language

SYLLABUS OF DSC- 2

UNIT – I (12 Hours)

- Name of the Iranian months, Mode of Transportation, Cardinal and ordinal numbers, Time & Days, Colors, Birds and animals

UNIT – II (12 Hours)

- Iranian Food Iranian Culture

UNIT – III (12 Hours)

- Elementary Grammar: Infinitives Present, Past and Future Tenses, Conjugation, Definite and Indefinite Noun, Singular and Plural, Adjective, Prepositions, Degrees Infinitives, Imperatives.

UNIT – IV (8 Hours)

- Use of Simple, Negative, Interrogative sentences, Personal Pronoun and Possessive Pronoun, Objectives Compound, Verb Relative Clause Present Participle, Active and Passive Voice Conditional Sentences

UNIT – V (8 Hours)

- Persian Text Reading and Translation into English or Hindi or Urdu from Chapter no.11 to 24 of the prescribed book: Dars-e-Farsi by Namdaryan, Taqipur.

UNIT – VI (8 Hours)

- Sentences Translate from English to Persian or unseen English passage translate from English to Persian Practical, Comprehension from the prescribed book.

Essential/recommended readings:

1. Dars-e-Farsi by Namdaryan, Taqipur. Published by Institute for Humanities & Cultural Studies, Tehran, Iran, 1378 A.H./1999 A.D.

Suggestive readings:

1. Fann-e-Tarjuma by Saffarzadeh, Tahera, Intesharat-e-Amir Kabir, Tehran, Iran.
2. Farsi Dastoor by Kiya Khanlari, Dr. Zehra. Idarah-eAdabiyat, Jayyed Press, Ballimaran, Delhi 110 006.
3. Elementary Persian Grammar by Kumar, Dr. Rajinder. Harjeet Publication, Delhi-110034, 2009.
4. An Introduction to Persian by Thackston, Wheler. Ibex Publication, Maryland, U.S.A., 2009.

DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-3): An outline of the History of Persian speaking regions (upto Ghaznavid period) (C-PRN-III)
Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| An outline of the History of Persian speaking regions (upto Ghaznavid period) (C-PRN-III) | 4 | 3 | 1 | NIL | Class XII pass | NIL |

Learning Objectives:

The Learning Objectives of this course are as follows:

1. To acquaint the students with socio-cultural and religious changes began to emerge from the time of Tahirids to Ghaznavids.
2. To familiarize the students with major Genre adopted by the poets and writers in various areas of Persianate culture.

Learning outcome:

- By learning this course, students will come to know the socio-cultural and religious history of Persian speaking regions in medieval period in order to understand the literary trends of that time.

SYLLABUS OF DSC-3

UNIT – I (8 Hours)

- Old Persian: Language and Literature Unani, Yehudi, Islamic and Iranian sources

UNIT – II (12 Hours)

- Development and Promotion of Persian language Step by step changes in languages and writing

UNIT – III (8 Hours)

- Cuneiform Script Avesta Script Pahlavi Script Avesta book Inscriptions

UNIT – IV (8 Hours)

- Impact of Arabic language on Persian language

UNIT – V (12 Hours)

- Foremost poets of Persian in Iran: Bahram Goor Sassani, Hakim Abu Hafs Sughdi, Abbas Marvi,
- Tahiri Period: Hanzala Baadghisi ,Safari Period: Dabeer Mohammad Bin Vasaif, Firoz Mashriqi, Samani Period : Rudaki Samarqandi, Abu Shakoor Balkhi, Abul Hasan Shaheed Balkhi, Amara-eMarvazi, Hakim Kasai Marvazi. Daqiqi Toosi Other scholars:Hamza Isfehiani, Abu Bakr Zikriya Raazi, Abu Maishar Balkhi

UNIT – VI (12 Hours)

- Ghaznavid Period: Abul Qasim Ferdausi, Unsuri, Asjadi, Azairi Raazi, Farrukhi Sistani, Manuchehri, Shahnama writing in old time in Iran, Shahnama-e-Ferdausi, Sources of Shahnama-e-Ferdausi, Literary importance of Shahnama-e-Ferdausi

Essential/recommended readings:

1. Shafaq, Raza Zadeh, Tareekh-e-Adabyat-e-Iran, tr. by Syed Mubarizuddin Rafat, Nadvatul Musannefin, Urdu Bazar, Jama Masjid, Delhi-110 006. 1993.
2. Iran Sadiyon Ke Aine Main by Ishrat, Amrit Lal, Idara-e-Musannefin, Hyderabad.

Suggestive readings:

1. A History of Persian Language by Ansari, Dr. Noorul Hasan. Idara-e-Adabiyat-e-Delhi, Delhi 110 006. Vol. I, 1982.
2. The Rise, Growth and Decline of Indo-Persian Literature by Chopra, Raavindra Mohan. Iran Society, Calcutta, 2012.

BA (Prog) with Persian as Major

Category-II

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|----------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Applied Persian Grammar and Script writing (C-PRN-P1) | 4 | 3 | 1 | NIL | Class XII pass | NIL |

Learning Objectives:

The Learning Objectives of this course are as follows:

1. To equip the students with Applied Persian Grammar & Translation
2. To enable the students to form daily usage sentences in Persian language
3. To equip the students to speak, read and write in Persian language

Learning outcomes:

The Learning Outcomes of this course are as follows:

- By learning this course, the students will be acquainted with applied Persian Grammar
- By learning this course, the students will be acquainted with Perso-Arabic script
- By learning this course, the students will develop fluency in reading and writing in Persian language

SYLLABUS OF DSC-1

UNIT – I (12 Hours)

- Elementary Grammar: Infinitives Present, Past and Future Tenses, Conjugation, Definite and Indefinite Noun, Singular and Plural, Adjective, Prepositions, Degrees Infinitives, Imperatives.

UNIT – II (12 Hours)

- Use of Simple, Negative, Interrogative sentences, Personal Pronoun and Possessive Pronoun, Objectives Compound, Verb Relative Clause Present Participle, Active and Passive Voice Conditional Sentences

UNIT – III (12 Hours)

- *Saffar Muqaddam, Dr. Ahmad: Zaban-e Farsi*, Council for the Promotion of Persian Language and Literature, Tehran, Iran, Vol. I

UNIT – IV (12 Hours)

- *Saffar Muqaddam, Dr. Ahmad: Zaban-e Farsi*, Council for the Promotion of Persian Language and Literature, Tehran, Iran, Vol. II

UNIT – V (12 Hours)

- Name of the Iranian months, Mode of Transportation, Cardinal and ordinal numbers, Time & Days, Colors, Birds and animals

Essential/recommended readings:

1. Saffar Muqaddam, Dr. Ahmad: Zaban-e Farsi, Council for the Promotion of Persian Language and Literature, Tehran, Iran, Vol. I,II & III
2. Let's learn Persian, NCPUL, Ministry of HRD, New Delhi.
3. Elementary Persian Grammar by Kumar, Dr. Rajinder. Harjeet Publication, Delhi-110034, 2009.

Suggestive readings:

1. Fann-e-Tarjuma by Saffarzadeh, Tahera, Intesharat-e-Amir Kabir, Tehran, Iran.
2. Farsi Dastoor by Kiya Khanlari, Dr. Zehra. Idarah-eAdabiyat, Jayyed Press, Ballimaran, Delhi 110 006.
3. Elementary Persian Grammar by Kumar, Dr. Rajinder. Harjeet Publication, Delhi-110034, 2009.
4. An Introduction to Persian by Thackston, Wheler. Ibex Publication, Maryland, U.S.A., 2009.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2): Persian Prose: Elementary Level

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Persian Prose: Elementary Level (C-PRN-P2) | 4 | 3 | 1 | NIL | CLASS XII PASS | NIL |

Learning Objectives:

The Learning Objectives of this course are as follows:

1. To make the students able to have a comprehensive understanding of Persian Language.
2. To enable the students to read and write the language more efficiently.

Learning outcomes:

The Learning Outcomes of this course are as follows:

- By selecting this course, the students will be able to read and write the language more efficiently.

SYLLABUS OF DSC- 2

UNIT – I (12 Hours)

- Lesson no 1 to 5 from the book (Farsi Barai Gher Farsi Zabanani written by Samineh Baghchiban).

UNIT – II (12 Hours)

- Lesson no 6 to 10 from the book (Farsi Barai Gher Farsi Zabanani written by Samineh Baghchiban).

UNIT – III (12 Hours)

- Lesson no 11 to 15 from the book (Farsi Barai Gher Farsi Zabanani written by Samineh Baghchiban).

UNIT – IV (12 Hours)

- Lesson no 16 to 20 from the book (Farsi Barai Gher Farsi Zabanani written by Samineh Baghchiban).

UNIT – V (12 Hours)

- Lesson no 21 to 25 from the book (Farsi Barai Gher Farsi Zabanani written by Samineh Baghchiban).

Essential/recommended readings:

1. Baghchiban, Samineh, Farsi Barai Gher Farsi Zabanani, Idareh Adabiyat-i-Dilli

BA (Prog) with Persian as Minor

Category-III

DISCIPLINE SPECIFIC CORE COURSE (DSC-1): Applied Persian Grammar and Script writing (C-PRN-P1)

This course is common in BA (Programme) in Persian as major discipline

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|----------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Applied Persian Grammar and Script writing (C-PRN-P1) | 4 | 3 | 1 | NIL | Class XII pass | NIL |

Learning Objectives:

The Learning Objectives of this course are as follows:

1. To equip the students with Applied Persian Grammar & Translation
2. To enable the students to form daily usage sentences in Persian language
3. To equip the students to speak, read and write in Persian language

Learning outcomes:

The Learning Outcomes of this course are as follows:

- By learning this course, the students will be acquainted with applied Persian Grammar
- By learning this course, the students will be acquainted with Perso-Arabic script
- By learning this course, the students will develop fluency in reading and writing in Persian language

SYLLABUS OF DSC-1

UNIT – I (12 Hours)

- Elementary Grammar: Infinitives Present, Past and Future Tenses, Conjugation, Definite and Indefinite Noun, Singular and Plural, Adjective, Prepositions, Degrees Infinitives, Imperatives.

UNIT – II (12 Hours)

- Use of Simple, Negative, Interrogative sentences, Personal Pronoun and Possessive Pronoun, Objectives Compound, Verb Relative Clause Present Participle, Active and Passive Voice Conditional Sentences

UNIT – III (12 Hours)

- *Saffar Muqaddam, Dr. Ahmad: Zaban-e Farsi*, Council for the Promotion of Persian Language and Literature, Tehran, Iran, Vol. I

UNIT – IV (12 Hours)

- *Saffar Muqaddam, Dr. Ahmad: Zaban-e Farsi*, Council for the Promotion of Persian Language and Literature, Tehran, Iran, Vol. II

UNIT – V (12 Hours)

- Name of the Iranian months, Mode of Transportation, Cardinal and ordinal numbers, Time & Days, Colors, Birds and animals

Essential/recommended readings:

1. Saffar Muqaddam, Dr. Ahmad: *Zaban-e Farsi*, Council for the Promotion of Persian Language and Literature, Tehran, Iran, Vol. I, II & III
2. Let's learn Persian, NCPUL, Ministry of HRD, New Delhi.
3. Elementary Persian Grammar by Kumar, Dr. Rajinder. Harjeet Publication, Delhi-110034, 2009.

Suggestive readings:

1. Fann-e-Tarjuma by Saffarzadeh, Tahera, Intesharat-e-Amir Kabir, Tehran, Iran.
2. Farsi Dastoor by Kiya Khanlari, Dr. Zehra. Idarah-eAdabiyat, Jayyed Press, Ballimaran, Delhi 110 006.
3. Elementary Persian Grammar by Kumar, Dr. Rajinder. Harjeet Publication, Delhi-110034, 2009.
4. An Introduction to Persian by Thackston, Wheler. Ibex Publication, Maryland, U.S.A., 2009.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES

Offered by Department of Persian

Category-IV

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department offering the course |
|--|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|--------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| Introduction to Elementary Persian Language (GE-PRN-1) | 4 | 3 | 1 | NIL | CLASS XII PASS | NIL | Department of Persian |

Learning Objectives:

The Learning Objectives of this course are as follows:

1. To acquaint the students with an introduction to elementary Persian Language
2. To provide the students with holistic approach of all facets of Persian language classical as well as modern Persian.

Learning outcomes:

The Learning Outcomes of this course are as follows:

- By leaning this course, the students will get familiar with the basics of Persian Language.
- By leaning this course, the students will come to know all facets of Persian language, classical as well as Modern Persian.

SYLLABUS OF GE-1

UNIT – I (12 Hours)

- Iranian culture
- Iranian food
- Name of Persian Days of the week
- Name of Persian Months, Time and date
- Name of colors in Persian
- Name of Animals, Birds, flowers in Persian
- Cardinal and Ordinal numbers
- Mode of Transportation

UNIT – II (12 Hours)

- Elementary Persian Grammar
- Persian Script
- Infinitives
- Present, Past and Future Tenses
- Forms of the Verb
- Conjugation
- Singular and Plural

UNIT – III (8 Hours)

- Opposite words
- Adjectives
- Use of simple and negative sentences

UNIT – IV (8 Hours)

- Interrogative sentences
- Exclamatory sentences
- Imperative sentences
- Comparative sentences

UNIT – V (12 Hours)

Chapters of the Book:

- Chapter 01 to 15 of Kitab-e-Farsi by: Samina Baghcheban.
- Translation of chapters into English or Urdu or Hindi Exercises of the chapter.

UNIT – VI (8 Hours)

- Translation from Persian to English of the simple sentences.
- Translation from English to Persian of the simple sentences.
- Reading of Persian by the prescribed book.

Essential/recommended readings:

1. Samina Baghcheban; Kitab-e-Farsi, Published by Idara-e-Adabyat, Jayyad Press, Ballimaran, Delhi 110 006.

Suggestive readings:

1. Mehdi Zarghamian; Dars-e-Farsi, Intesherat-e-Dabirkhaneh-e-Shuara-e-Gustarish-e-Zaban-oAdabiyat-e-Farsi, Tehran, Iran, 1377/1998.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-2): History of Persian Literature (India) (GE-PRN-2)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department offering the course |
|---|----------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|--------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| History of Persian Literature (India) (GE-PRN-2) | 4 | 3 | 1 | NIL | CLASS XII PASS | NIL | Department of Persian |

Learning Objectives:

The Learning Objectives of this course are as follows:

1. To understand the relevance of Indo-Persian literature, role of Sufis to create social harmony in the society and reflection of composite culture in medieval India.

Learning outcomes:

The Learning Outcomes of this course are as follows:

- By learning this course, students will be aware of the History of Persian literature produced in India that is called “Indo-Persian Literature”.
- By learning this course, students will come to know about some of the prominent Indo-Persian poets and writers and literary importance of their works.

SYLLABUS OF GE-2

UNIT – I (20 Hours)

The following poets:

- | | |
|---|---|
| <ul style="list-style-type: none"> • Amir Khusrau • Shaikh Bu Ali Shah Qalandar • Ghazali Mashhaadi • Naziri Nishapuri • Bedil Dehlavi • Allama Iqbal | <ul style="list-style-type: none"> • Hasan Sijzi Dehlavi • Shaikh Jamali Dehlavi • Urfi Shirazi • Chander Bhan Barhaman • Ghalib Dehlavi • 'Isami |
|---|---|

UNIT – II (20 Hours)

The following writers:

- Tajuddin Hasan Nizami
- Shams Siraj Afif
- Ziauddin Barni
- Shaikh Naseeruddin Chiragh Dehli
- Abdul Hamid Lahori
- Abul Faiz Faizi
- Sadeeduddin Mohammad Aufi
- Minhajus Siraj Juzjani
- Hazrat Nizamuddin Aulia
- Abdul Qadir Badayuni
- Abul Fazal Allami
- DaraShikoh

UNIT – III (20 Hours)

The introduction of the following Indo-Persian literary works:

- Taj-ul-Maasir
- Qiran-us-Saadain
- Khazainul Futuh
- Futuhus Salateen
- Fawaidul Fuwad
- Siyarul Aulia
- Farhang-e-Qawwas
- Tuzk-e-Babari
- Tabaqat-e-Nasiri
- Nuh Sipher
- Tughlaq Nama
- Lubabul Albab
- Khairul Majalis
- Tarikh-e-Firuzshahi
- Akhbarul Akhyar Fi Asrarul Abrar
- Humayun Nama

Essential/recommended readings:

1. Shafaq, Razazadeh: Tarikh-e-Adabiyat-e-Iran, Translated in Urdu by Sayyed Mubarezuddin Rafat, Kutubkhana, Khurshidia, Urdu Bezar, Lahore, 2014.
2. Shibli Nomani: Shair-ul Ajam, Shibli Academy, Azamgarh (U.P.).
3. Sabahuddin, Abdur Rahman: Bazm-e-Taimuriah, Shibli Academy, Azamgarh, (U.P.).
4. Sabahuddin, Abdur Rahman: Bazm-e-Mamlukia, Shibli Academy Azamgarh (U.P.).
5. Sabahuddin, Abdur Rahman: Bazm-e-Sufiyah, Shibli Academy, Azamgarh (U.P.).
6. Sabahuddin, Abdur Rahman: Sufi Amir Khusrau, Shibli Academy, Azamgarh (U.P.).
7. Sabahuddin, Abdur Rahman: Hindustan Amir Khusrau ki Nazar Mein, Shibli Academy, Azamgarh (U.P.).
8. Zahuruddin Ahmad: Irani Adab, Markaz-e-Tahqiqat-e-Farsi-e-Iran wa Pakistan, Islamabad, 1375/1996.
9. Abidi, Amir Hasan: Hindustan Mein Farsi Adab, Indo-Persian Society, Delhi, 1984.
10. Naeemuddin: Hindustan Mein Farsi Adab, M.S. Publications, Lal Kuan, Delhi, 1985.
11. SEir ul Aulia, Mir Khurd Kirmani, Lahore 1978
12. Jahan, Dr Nargis, Saadi-e-Hind (Hasan Dehlavi), University of Delhi.1989
13. Kulliyate Amir Hasan Sijzi Dehlavi, edited by Prof. Nargis Jahan, Delhi

Credit distribution, Eligibility and Pre-requisites of the Course

GENERIC ELECTIVES (GE-3): History of Persian Literature (India) (GE-PRN-3)

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| An outline history of language & literature of Iran. (Pre-Islamic Period) (GE-PRN-3) | 4 | 3 | 1 | NIL | CLASS XII PASS | NIL |

Learning Objectives:

The Learning Objectives of this course are as follows:

1. To know the form of the Persian Language of Pre-Islamic Persian
2. The any other Old Iranian Language

Learning outcomes:

The Learning Outcomes of this course are as follows:

- By learning this course, students will be aware of an outline history of language & literature of Iran during pre-Islamic period.
- By learning this course, students will come to know about ancient Iranian literature like Gathas and Avesta, the holy book of Zoroastrianism.

SYLLABUS OF GE-3

UNIT – I (12 Hours)

Old Persian: Language and Literature from Unani, Yehuda, Islamic and Iranian sources

UNIT – II (12 Hours)

Development and Promotion of Persian language step by step changes in languages and writing

UNIT – III (12 Hours)

History of Cuneiform Script, Avestan Script, Pahlavi Script, Books and Inscription in said languages

UNIT – IV (12 Hours)

History of Middle Persian/Pahlavi

UNIT – V (12 Hours)

Impact of Arabic language on Persian language

Essential/recommended readings:

1. Shafaq, Raza Zadeh: Tareekh-e-Adabiyat-e-Iran, tr. by Syed Mubarizuddin Raf'at , NadvatulMusannafin , Urdu Bazar, Jama Masjid, Delhi- 110006. 1993.
2. Iran SadiyonkeAine Main by Ishrat, Amrit Lal, Idara-e-Musannefin, Hyderabad.
3. A History of Persian Language by Ansari, Dr.Noorul Hasan. Idara-e-Adabiyat-e-Delhi, 110006. Vol. 1, 1982.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DEPARTMENT OF PSYCHOLOGY

BA (Hons.) Psychology

Category-I

DISCIPLINE SPECIFIC CORE COURSE – 1 CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITE OF THE COURSE

| Course Title & Code | Total Credits | Credit distribution of the course | | | Eligibility Criteria/ Prerequisite | Pre-requisite of the course, if any |
|-----------------------------------|----------------------|--|-----------------|------------------|---|--|
| | | Lecture | Tutorial | Practical | | |
| Introduction to Psychology | 4 | 3 | 0 | 1 | Class XII Passed | Nil |

Credit: 4 (3 Lecture + 1 Practical) Course Learning Outcomes:

- To introduce the key concepts of the field of psychology with an emphasis on applications of psychology in everyday life.
- To Develop an understanding and ability to interweave basic concepts of learning, memory, motivation and emotion in Psychology.
- To develop an understanding of the key figures, diverse theoretical perspectives and research findings that have shaped some of the major areas of contemporary psychology.

Unit 1: Introduction: Nature of Psychology- Indian and Western ;Scope of Psychology ,Perspectives in Psychology, Subfields of Psychology, Psychology Today
(15 Hours)

Unit 2: Learning and Memory: Learning, Nature of learning, Principles and applications of Classical Conditioning, Operant Learning, Observational Learning, and Cognitive Learning in brief Memory: Definition, Models of memory, Forgetting, Improving memory
(15 Hours)

Unit 3: Motivation and Emotion **Motivation:** Nature, Perspectives, Types- biogenic, sociogenic, intrinsic and extrinsic motivation, relationship between motivation and emotion. **Emotions:** Nature, Functions of Emotion, Theories of emotion , Culture and Emotion - Indian perspective.
(15 Hours)

PRACTICAL : (30 Hours)

Any one Practicum based on Unit 2 or Unit 3. Each practical group will consist of 10-12 students.

References:

- Baron, R., & Misra, G. (2016). *Psychology* (5th ed.). New Delhi: Pearson.
- Feldman, R.S. (2011). *Understanding Psychology* (10th ed.). New York: McGraw Hill.
- Galotti, K.M. (2014). *Cognitive Psychology In and Out of the Laboratory* (5th ed.). New Delhi: Sage.
- Passer, M.W., & Smith, R.E. (2010). *Psychology: The science of mind and behaviour*. New Delhi: Tata McGraw-Hill.
- Zimbardo, P.G., Johnson, R.L., & McCann, V.M. (2012). *Psychology: Core concepts*. (7th ed.). U.S.A.: Pearson.

Additional References:

- Singh, K. (2022). There isn't only cultural blindness in psychology; psychology is culture blind. In Robert W. Hood, Jr. & Sariya Cheruvallil-Contractor (Eds.), *Research in the social scientific study of religion, volume 32* (pp. 399-426). Boston: Brill.

DISCIPLINE SPECIFIC CORE COURSE – 2

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITE OF THE COURSE

| Course Title & Code | Total Credits | Credit distribution of the course | | | Eligibility Criteria/ Prerequisite | Pre-requisite of the course, if any |
|-----------------------------|---------------|-----------------------------------|----------|-----------|------------------------------------|-------------------------------------|
| | | Lecture | Tutorial | Practical | | |
| Cognitive Psychology | 4 | 3 | 0 | 1 | Class XII Passed | Nil |

Credit: 4 (3 Lecture + 1 Practical)

Course Learning Outcomes:

- To gain an understanding of basic theoretical, empirical, and applied knowledge that have shaped cognitive psychology.
- To understand the fundamentals of cognitive processes and cognitive psychology.

Unit 1: Introduction to Cognitive Psychology: Brief history, Nature & Research methods in Cognitive Psychology, Paradigms- Information processing, Connectionist, Evolutionary Ecological

(15 Hours)

Unit 2: Sensing and Perceiving: Sensation to representation, approaches to perception, perception of object and forms, perception of constancies and deficits of perception, Attention: nature & theories, when attention fails us, Automatic and Controlled Processes in Attention

(15 Hours)

Unit 3: Thinking, Problem Solving and Decision Making:

Components of thoughts, imagery and cognitive maps, strategies and barriers of effective problem solving; judging and making decisions: biases and methods

(15 Hours)

PRACTICAL : (30 Hours)

Any one practicum based on Unit 2 or Unit 3. Each practical group will consist of 10-12 students.

References:

- Braisby, N., & Gellatly, A. (2005). *Cognitive Psychology*. Oxford University Press.
- Galotti, K. (2013). *Cognitive Psychology In and Out of the Laboratory* (5th ed.). Sage Publications.
- Sternberg, K., & Sternberg, R. (2011). *Cognitive Psychology*. Cengage Learning.
- Zimbardo, P.G., Johnson, R.L., & McCann, V.M. (2012). *Psychology: Core concepts*. (7th ed.). U.S.A.: Pearson.

Additional References:

- Singh, K. (2022). There isn't only cultural blindness in psychology; psychology is culture blind. In Robert W. Hood, Jr. & Saria Cheruvallil-Contractor (Eds.), *Research in the social scientific study of religion, volume 32* (pp. 399-426). Boston: Brill.

DISCIPLINE SPECIFIC CORE COURSE – 3

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITE OF THE COURSE

| Course Title & Code | Total Credits | Credit distribution of the course | | | Eligibility Criteria/ Prerequisite | Pre-requisite of the course, if any |
|---------------------|---------------|-----------------------------------|----------|-----------|------------------------------------|-------------------------------------|
| | | Lecture | Tutorial | Practical | | |
| Bio Psychology | 4 | 3 | 1 | 0 | Class XII Passed | Nil |

Course Learning Outcomes:

- To understand into the nature and scope of bio psychology and its applications in psychology
- To learning the structure and function of Neuron and the importance of action potential and synaptic activity
- To become aware of the methods to study the brain and its role in behavior
- To learn how endocrine glands mediate behavior.

Unit 1: Introduction to Biopsychology & Nerve Impulse: Nature & scope of bio psychology(briefly explain what is bio psychology, and its application in psychology).

(9 Hours)

Unit 2: Neuron: structure and function of Neurons, action potential/nerve impulse, synaptic transmission

(12 Hours)

Unit 3: Brain and Behavior: Methods (EEG, CT, fMRI), CNS and behavior(Spinal cord and Brain functions.)

(12 Hours)

Unit 4: Endocrine System: Endocrine basis of behavior, Structure, function and abnormalities(Pituitary, Adrenal, Thyroid, Gonads)

(12 Hours)

References:

- Carlson, N. R.(2009). *Foundations of Physiological Psychology* (6th ed.). New Delhi: Pearson Education. (Latest ed., pp. 26-59; pp. 62-92).
- Khosla, M. (2017). *Physiological Psychology: An Introduction*. Delhi: Sage Texts.
- Leukel, F. (1976). *Introduction to Physiological Psychology*. Pearson: New Delhi. (pp 35-55).
- Levinthal, C. F. (1983). *Introduction to Physiological psychology*. New Delhi. PHI. (pp 116-151).
- Pinel, J. P. J. (2016). *Biopsychology* (9th ed.). New Delhi: Pearson Education. (Pp 25-39, pp 75-120).

References for Additional Readings:

- Kolb, B., & Whishaw, I. Q. (2009). *Fundamentals of Human Neuropsychology*, 6th Edition. Worth Publishers: New York. Pg 51-81, 110-131
- Rains, G. D. (2002). *Principles of Human Neuropsychology*. McGraw Hill: New York. Pg 45-71.

BA (Hons.) Applied Psychology
Category-I

DISCIPLINE SPECIFIC CORE COURSE – 1
CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITE OF THE COURSE

| Course Title & Code | Total Credits | Credit distribution of the course | | | Eligibility Criteria/ Prerequisite | Pre-requisite of the course, if any |
|--------------------------------------|---------------|-----------------------------------|----------|-----------|---------------------------------------|-------------------------------------|
| | | Lecture | Tutorial | Practical | | |
| Basic processes in Psychology | 4 | 3 | 0 | 1 | Class XII Passed | Nil |

Course Learning Outcomes

- To develop an understanding of the foundational concepts of the human mind and behaviour
- To identify various approaches, fields and sub-fields of Psychology
- To develop skills that enable students to apply the knowledge gained through this course in everyday life

Unit 1: Introduction to Psychology: Nature and scope of Psychology. Difference between Psychology and Applied Psychology. Historical Development and Current Status. Methods of Psychological Research (experiments, psychological tests and observation). Ethics in Psychological Research. Biological Basis of Behavior (Structure of Neurons, Brain Structure and functions, Lateralization)

(15 Hours)

Unit 2: Attention and Perception: Nature, Difference between selective and divided attention, Theories of Selective Attention (Broadbent's Filter Model, Triesman's Attenuation Model, Limited Capacity Model, Kahneman Attention Theory), Perceptual processes: laws of perceptual organizations, depth perception, constancy (Size), Top-down theory (Gregory's Theory) and Bottom-up Theory (Gibson's Ecological Theory), Illusions and factors affecting perception. Application of attention and perception in Indian Context

(15 Hours)

Unit 3: Learning and Memory: Nature (memory), Memory as Information Processing, Models of Memory (Levels of Processing Model, Parallel Distributed Processing Model), Improving Memory, Forgetting, Nature (Learning), Conditioning, Cognitive Learning, Observation learning; applications of learning. Application of learning and memory in Indian Context

(15 Hours)

PRACTICAL: (30 Hours)

Total of TWO Experiments- One each from Unit 2 and 3 based on course DSC01: Basic Processes in Psychology. Each practical group will consist of 10-12 students.

References:

- Abhedananda, S. (2008). True Psychology. Ram Krishna Vedanta Math. Kolkata
- Atkinson, R. L., Atkinson, R. C., Smith, E. E., Bem, D. J., & Hilgard, E. R. (2013). Introduction to Psychology. New York: H. B. J. Inc.
- Baron, R. A., & Misra, G. (2014). Psychology. New Delhi: Pearson Education.
- Ciccarelli, S. K., Meyer, G. E., & Misra, G. (2013). Psychology: South Asian Edition. New Delhi: Pearson Education.
- ICSSR Research Surveys and Explorations: Psychology, Vols 1–5
- Nolen-Hoeksema, S., Fredrickson, B., Loftus, G. R., & Lutz, C. (2014). Atkinson & Hilgards: Introduction to Psychology. Andover: Cengage Learning.
- Paranjpe, C. A. (2002). Self and Identity in Modern Psychology and Indian Thought. Kluwer Academic Publishers
- Passer, M. W., & Smith, R. E. (2013). Psychology: The Science of Mind and Behavior. New Delhi: Tata McGraw- Hill
- Sinha, D., Misra, G., & Dalal, K. A. (2015). Psychology for India. Sage Publications.
- Zimbardo, G. P. (2013). Psychology and Life. Pearson

DISCIPLINE SPECIFIC CORE COURSE – 2 CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITE OF THE COURSE

| Course Title & Code | Total Credits | Credit distribution of the course | | | Eligibility Criteria/ Prerequisite | Pre-requisite of the course, if any |
|----------------------------------|---------------|-----------------------------------|----------|-----------|------------------------------------|-------------------------------------|
| | | Lecture | Tutorial | Practical | | |
| Applied Social Psychology | 4 | 3 | 0 | 1 | Class XII Passed | Nil |

Course Learning Outcomes

- Describe the key concepts and methods relevant to the study of social psychology.
- Understand and improve the relationship between self and society.
- Understand the significance of indigenous social psychology and apply social psychological processes in promoting change in Indian society.

Unit 1: Introduction: Social Psychology & Applied Social Psychology: Structure of Indian

Society (with reference to unity and diversity), Definitions, historical development of the field and current status, Levels of analysis, theoretical approaches (Symbolic Interactionism, Social Constructionism), Methodological approaches in social psychology: experimental and non-experimental; Action research.

(15 Hours)

Unit 2: Social Cognition: Nature of social cognition, social schema, heuristic, new directions of social cognition; Attribution theory (Heider, Kelley, Jones and Davis, Weiner); attribution biases; Person perception: impression formation and management (definition, process and factors).

(15 Hours)

Unit 3: Attitude & Attitude Change: Structure, functions, formation of attitudes, attitude-behavior relationship, Attitude Change: Process of persuasion, related factors, Theories of attitude change. Strategies of promoting attitude and behavior change in India-illustrative case studies in Indian context.

(15 Hours)

PRACTICAL: (30 Hours)

Any 2 lab/field practicums based on course DSC02: Applied Social Psychology. Each practical group will consist of 10-12 students.

References:

- Aronson, E., Wilson, T. D., Albert, R. M., Sommers, S. R., & Tucker, V. (2020). Social Psychology (10th ed.). Pearson India Education Services Pvt. Ltd.
- Baron, R. A., Branscombe, N. R., Byrne, D., & Bhardwaj, G. (2010). Social Psychology (12th ed.). Delhi, Pearson.
- Baumeister, R. F., & Bushman, B. J. (2013). Social Psychology & Human Nature. Wadsworth.
- Hogg, M., & Vaughan, G. M. (2008). Social Psychology. Prentice Hall.
- Myers, D. G. (2005). Social Psychology (8th ed.). New Delhi: Tata McGraw-Hill Pub. Co. Ltd
- Tucker, V. (2020). Research Methods in Social Sciences. Pearson India Education services Pvt. Ltd.

DISCIPLINE SPECIFIC CORE COURSE – 3
CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITE OF THE COURSE

| Course Title & Code | Total Credits | Credit distribution of the course | | | Eligibility Criteria/ Prerequisite | Pre-requisite of the course, if any |
|--|---------------|-----------------------------------|----------|-----------|------------------------------------|-------------------------------------|
| | | Lecture | Tutorial | Practical | | |
| Psychology of Health and Well-Being | 4 | 3 | 0 | 1 | Class XII Passed | Nil |

Course Learning Outcomes

- To understand the concept of health and well-being from the standpoint of biological, psychological, social and cultural factors in interaction with each other.
- To learn about the role of health beliefs, attitudes and behaviours affecting individuals' decisions relating to health.
- To understand the importance of modifying the problematic health behaviours.

Unit 1: Introduction: Definition of health psychology, goals of health psychology, illness-wellness continuum, Mind-body relationship, Bio-psychosocial model of Health; Indian perspective to health (concept of health in Ayurveda and Yoga); Subjective Well-being (Diener); Emotional, Social and Psychological well-being (Ryff). **(15 Hours)**

Unit 2: Behaviour and Health: Characteristics of health behaviours (health behaviour, illness behaviour and sick-role behaviour); Barriers to health behaviour (individual, interpersonal and community). Theories of health behaviour (Protective motivation theory, theory of reasoned action, Transtheoretical model). **(15 Hours)**

Unit 3: Health enhancing behaviors and health compromising behaviours: Health enhancing behaviours: Exercise, Nutrition; Health compromising behaviours: Alcoholism and Smoking; **(15 Hours)**

PRACTICAL: - 30 Hours

Any two practicums (one in lab and one in field) on any of the two topics from the DSC03: Psychology of Health and Well-Being using scales on general health behaviours, sleep, well-being etc. Each practical group will consist of 10-12 students.

References:

- Allen, F. (2011). Health Psychology and Behaviour. Tata McGraw-Hill Education. (Unit 1: Chapters 6,7,8 and 9; Unit 2: Chapter 4; Unit 3: Chapter -8).

- Dalal, A., & Misra, G. (2006). Psychology of Health and Well-being. Psychological Studies.
- Dalal, A., & Misra, G. (2012). New Directions in Health Psychology. India: Sage Publications.
- Dalal, A. K. (2016). Cultural Psychology of Health in India: Well-being, Medicine and traditional Health Care. India: Sage Publications.
- Dimatteo, M. R., & Martin, L. R. (2011). Health Psychology. Indian adaptation by Tucker, V. & Tucker O. P. (2018). New Delhi: Pearson India Educational Services Pvt. Ltd. (Unit 1: Chapter 1; Unit 2: Chapter 6).
- Hariharan, M. (2020). Health Psychology: Theory, Practice and Research. Sage Publications.
- Ravishankar, B., & Shukla, V. J. (2007). Indian Systems of Medicine: A Brief Profile. African Journal of Traditional, Complementary, and Alternative Medicines: AJTCAM, 4(3), 319–337.
- Snyder, C. R., Lopez, S. J., & Pedrotti, J. T. (2011). Positive Psychology: The Scientific and Practical Explorations of Human Strengths. New Delhi: Sage. (Unit 4: Chapter 5).
- Taylor, S. E. (2006). Health Psychology (6th ed.). New Delhi: Tata McGraw-Hill. (Unit 2: Chapter 3; Unit 3: Chapters 4 and 10).

BA (Prog.) with Psychology as Major
Category-II

DISCIPLINE SPECIFIC CORE COURSE – 1
CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITE OF THE COURSE

| Course Title & Code | Total Credits | Credit distribution of the course | | | Eligibility Criteria/ Prerequisite | Pre-requisite of the course, if any |
|-----------------------------------|---------------|-----------------------------------|----------|-----------|---------------------------------------|-------------------------------------|
| | | Lecture | Tutorial | Practical | | |
| Fundamentals of Psychology | 4 | 3 | 0 | 1 | Class XII Passed | Nil |

3 classes for theory + 2 classes for Practical (10-12 students per week per group)

Objective: To introduce learners to the basic concepts of the field of psychology with an emphasis on applications of psychology in everyday life.

Learning Outcomes: After completing this course, the student will be able to:

- Understand the basic psychological processes
- Apply principles of psychology in everyday life

Unit 1: Introduction (9 Hours)

Psychology: Nature, goals and scope; Perspectives in psychology: Structuralism, Functionalism, Evolutionary, Psychodynamic, Behaviourism, Cognitive, Humanistic-Existential, Indian perspective.

Unit 2: Learning and Memory (12 Hours)

Nature of Learning and applications: Classical conditioning, operant conditioning, observational learning.

Memory: Nature and models of memory- Information processing, levels of processing, parallel distributed processing; techniques for improving memory.

Unit 3: Personality and Intelligence (12 Hours)

Personality: Nature of personality; theories of personality: Trait theory (Big Five Theory), Psychoanalytic and Humanistic

Intelligence: Nature of intelligence; theories of intelligence: Spearman's two factor, Gardener's multiple intelligence, Sternberg triarchic theory; PASS model

Unit 4: Practicum (4 weeks)

Any one experiment based on Unit-2.

References:

Baron, R. A. & Mishra, G. (2016). Psychology. Pearson.

Baron, R. A. (2002). Psychology (5th Edition), New Delhi: Pearson Education.

Chadha, N.K. & Seth, S. (2014). The Psychological Realm: An Introduction. New Delhi: Pinnacle Learning.

Ciccarelli, S. K., & Meyer, G. E. (2010). Psychology: South Asian Edition. New Delhi: Pearson Education.

Passer, M.W. & Smith, R.E. (2010). Psychology: The science of mind and behaviour. New Delhi: Tata McGraw-Hill.

Feldman R.S. (2011). Understanding Psychology, 10th edition. Delhi : Tata- McGraw Hill.
Hilgard & Atkinson- Introduction to Psychology (2003) 14th Edition, Thomson Learning Inc.

Morgan, C.T., King, R.A., Weisz, J.R., & Schopler, J. (2008). Introduction to psychology (7th edition) Bombay: Tata-McGraw Hill.

Hussain, Akbar (2014). Experiments in Psychology. Publishers: PHI learning Pvt. Ltd.

Mohanty. G. (2010). Experiments in Psychology. New Delhi: Kalyani Publishers.

Dandekar. W.N (1999). Experimental Psychology. Pune: Proficient publishing house.

DISCIPLINE SPECIFIC CORE COURSE – 2 CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITE OF THE COURSE

| Course Title & Code | Total Credits | Credit distribution of the course | | | Eligibility Criteria/ Prerequisite | Pre-requisite of the course, if any |
|--------------------------------------|---------------|-----------------------------------|----------|-----------|------------------------------------|-------------------------------------|
| | | Lecture | Tutorial | Practical | | |
| Fundamentals of Cognitive Psychology | 4 | 3 | 0 | 1 | Class XII Passed | Nil |

3 classes for theory + 2 classes for Practical (10-12 students per week per group)

Objective: Understanding the fundamental concepts of human cognition and how cognitive

functioning operates in everyday life.

Learning Outcomes: After completing this course, the student will be able to:

- Appreciate important concepts related to cognition such as attention, perception, problem-solving and creativity
- Develop an insight into the applications of cognitive psychology concepts in everyday life.
- Design studies/research on cognitive concepts.

Unit 1: Introduction (9 Hours)

Cognitive Psychology: Cognitive revolution, nature, methods and scope; fundamental ideas and key themes; culture and cognition

Unit 2: Attention and Perception (12 Hours)

Attention: Nature, determinants, theories, and applications

Perception: Nature of perception, laws of perception, perceptual illusions

Unit 3: Problem solving and Creativity (12 Hours)

Problem Solving: Nature, processes and methods (Algorithms and Heuristics), barriers of problem solving, convergent and divergent thinking, creativity in problem-solving

Unit 4: Practicum (8 Hours)

Any one laboratory or field practicum based on the above three units.

References

Baron, R. A. & Mishra, G. (2016). Psychology. Pearson

Ciccarelli, S.K., & White, J.N. (2012). *Psychology*. Pearson Education, Inc.

Eysenck, M.W. & Keane, M.T. (2002). *Cognitive Psychology: A Student's Handbook*. Psychology Press.

Feldman, R. (2017). *Essentials of Understanding Psychology*. McGraw-Hill Education.

Galotti, K.M. (2015). [*Cognitive Psychology: In And Out Of The Laboratory*](#). Sage.

Mishra, G. (2009). *Psychology In India, Volume I: Basic Psychological Processes And Human Development*. Pearson Education

Mangal, S.K. (2002). *Advanced Educational Psychology*. PHI Learning Pvt. Ltd.

Morgan, C.T., King, R.A., Weisz, J.R., & Schopler, J. (1993). *Introduction to Psychology*.

Tata-McGraw

Passer, M.W., & Smith, R.E. (2011). *Psychology: The Science of Mind and Behaviour*. McGraw-Hill.

Sternberg, R. Sternberg, K., & Mio, J. (2012). *Cognitive Psychology*. Cengage Learning.

[Varnum, M., Grossman, I., Kitayama, S., & Nisbett, R. \(2010\). *The Origin of Cultural Differences in Cognition: Evidence for the Social Orientation Hypothesis*. Curr Dir Psychol Sci. 2010; 19\(1\): 9–13.doi: \[10.1177/0963721409359301\]\(https://doi.org/10.1177/0963721409359301\)](#). Available from

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2838233/>

BA (Prog.) with Psychology as Minor
Category-III

DISCIPLINE SPECIFIC CORE COURSE – 1
CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITE OF THE COURSE

| Course Title & Code | Total Credits | Credit distribution of the course | | | Eligibility Criteria/ Prerequisite | Pre-requisite of the course, if any |
|-----------------------------------|---------------|-----------------------------------|----------|-----------|---------------------------------------|-------------------------------------|
| | | Lecture | Tutorial | Practical | | |
| Fundamentals of Psychology | 4 | 3 | 0 | 1 | Class XII Passed | Nil |

3 classes for theory + 2 classes for Practical (10-12 students per week per group)

Objective: To introduce learners to the basic concepts of the field of psychology with an emphasis on applications of psychology in everyday life.

Learning Outcomes: After completing this course, the student will be able to:

- Understand the basic psychological processes
- Apply principles of psychology in everyday life

Unit 1: Introduction (9 Hours)

Psychology: Nature, goals and scope; Perspectives in psychology: Structuralism, Functionalism, Evolutionary, Psychodynamic, Behaviourism, Cognitive, Humanistic-Existential, Indian perspective.

Unit 2: Learning and Memory (12 Hours)

Nature of Learning and applications: Classical conditioning, operant conditioning, observational learning.

Memory: Nature and models of memory- Information processing, levels of processing, parallel distributed processing; techniques for improving memory.

Unit 3: Personality and Intelligence (12 Hours)

Personality: Nature of personality; theories of personality: Trait theory (Big Five Theory), Psychoanalytic and Humanistic

Intelligence: Nature of intelligence; theories of intelligence: Spearman's two factor, Gardener's multiple intelligence, Sternberg triarchic theory; PASS model

Unit 4: Practicum (8 Hours)

Any one experiment based on Unit-2.

References:

Baron, R. A. & Mishra, G. (2016). Psychology. Pearson.

Baron, R. A. (2002). Psychology (5th Edition), New Delhi: Pearson Education.

Chadha, N.K. & Seth, S. (2014). The Psychological Realm: An Introduction. New Delhi: Pinnacle Learning.

Ciccarelli, S. K., & Meyer, G. E. (2010). Psychology: South Asian Edition. New Delhi: Pearson Education.

Passer, M.W. & Smith, R.E. (2010). Psychology: The science of mind and behaviour. New Delhi: Tata McGraw-Hill.

Feldman R.S. (2011). Understanding Psychology, 10th edition. Delhi : Tata- McGraw Hill.
Hilgard & Atkinson- Introduction to Psychology (2003) 14th Edition, Thomson Learning Inc.

Morgan, C.T., King, R.A., Weisz, J.R., & Schopler, J. (2008). Introduction to psychology (7th edition) Bombay: Tata-McGraw Hill.

Hussain, Akbar (2014). Experiments in Psychology. Publishers: PHI learning Pvt. Ltd.

Mohanty. G. (2010). Experiments in Psychology. New Delhi: Kalyani Publishers.

Dandekar. W.N (1999). Experimental Psychology. Pune: Proficient publishing house.

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES

Offered by Department of Psychology

GENERIC ELECTIVE– 1

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITE OF THE COURSE

| Course Title & Code | Total Credits | Credit distribution of the course | | | Eligibility Criteria/ Prerequisite | Pre-requisite of the course, if any |
|---------------------------|---------------|-----------------------------------|----------|-----------|---------------------------------------|-------------------------------------|
| | | Lecture | Tutorial | Practical | | |
| Foundations of Psychology | 4 | 3 | 1 | 0 | Class XII Passed | Nil |

Course Learning Outcomes

- To introduce the core concepts of psychology with an emphasis on applications of psychology in everyday life.
- To help students develop an insight into their own and others' behavior and underlying mental processes.
- To understand and be able to interweave the fundamental psychological concepts of learning, memory, motivation, and emotion.
- To understand the theoretical perspectives and research findings that have shaped some of the most important areas of contemporary psychology.

Unit 1: What is Psychology : Psychology as a science; Major schools of Psychology; Evolution of Psychology in India; Subfields and Applications of Psychology **(12 Hours)**

Unit 2: Mind as Information Processer: Bottom-up and Top-down processing, Perceptual organizational processes, Acquiring Information: Learning by Association, Social Cognitive Learning, Encoding and Retrieval in Memory: Information Processing model; Why we forget? Mnemonics **(16 Hours)**

Unit 3: Self and Personality: Nature and Perspectives (Trait and Type, Jungian Theory of Psychoanalysis, Roger's Self Theory), Measures of Personality: Inventories and Projective techniques, Culture and Personality **(16 Hours)**

Unit 4: Intelligence and Creativity: Nature and Perspectives: Psychometric approach (Spearman's 'g' factor theory), Cognitive perspective (Fluid and Crystallized Intelligence; Triarchic Theory of Intelligence), Multiple Intelligences, Managing emotions intelligently, Nature of Creativity **(16 Hours)**

References:

- Baron, R.A and Misra, G. (2014). Psychology (Indian Subcontinent Edition). Pearson Education Ltd.
- Ciccarelli, S. K & Meyer, G.E (2008). Psychology (South Asian Edition). New Delhi: Pearson
- Feldman. S.R. (2009). Essentials of understanding psychology (7th Ed.) New Delhi: Tata Mc Graw Hill.
- Passer, M.W., Smith, R.E., Holt, N. and Bremner, A. (2008). Psychology: The Science of Mind and Behaviour. McGraw-Hill Education. UK
- Zimbardo, P.C. & Weber, A.L. (1997). Psychology, New York: Harper Collins College Publishers.
- Robinson-Riegler, G., & Robinson-Riegler, B. (2008). *Cognitive psychology: Applying the science of the mind (2nd ed.)*. Boston: Pearson/Allyn and Bacon.
- Singh A.K (2017) संज्ञात्मक मनोविज्ञान: Cognitive Psychology. Motilal Banarsidass Publishers Pvt.Ltd.
- Singh A.K (2017) उच्चतर सामान्य मनोविज्ञान: Advanced General Psychology. Motilal Banarsidass Publishers Pvt.Ltd.

GENERIC ELECTIVE– 2

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITE OF THE COURSE

| Course Title & Code | Total Credits | Credit distribution of the course | | | Eligibility Criteria/ Prerequisite | Pre-requisite of the course, if any |
|--------------------------|---------------|-----------------------------------|----------|-----------|------------------------------------|-------------------------------------|
| | | Lecture | Tutorial | Practical | | |
| Understanding Psychology | 4 | 3 | 0 | 1 | Class XII Passed | Nil |

Course Learning Outcomes

- To develop an understanding of self and others' by using the knowledge gained through the course about the different approaches in understanding behavior
- Demonstrate comprehension of the theoretical concepts of psychology and the related empirical findings in areas such as perception, memory, motivation, emotions, learning, Intelligence, personality, cognition etc.

Unit 1: Introduction to Psychology: Nature and Scope, Historical Development (structuralism, functionalism, psychoanalytic, cognitive, behavioural, humanistic- existential, gestalt), Psychology in India (15 Hours)

Unit 2: Intelligence and Personality: Nature (Intelligence and Personality) Theories of

personality: Psychoanalytic and Socio Cognitive Theory; Theories of intelligence: Sternberg's Triarchic Theory and Gardner's theory of Multiple Intelligence; Emotional intelligence; Assessment of intelligence and personality. Intelligence and personality in Indian Context
(15 Hours)

Unit 3: Learning and Memory : Nature (Learning and Memory), Conditioning (Classical and Instrumental), Observation learning. Memory- Models (Information Processing Model, Levels of Processing Model, Improving memory. Memory in Indian Context
(15 Hours)

PRACTICAL: Total of TWO Experiments- One each from Unit 2 and 3 based on course GE02: Understanding Psychology. Each practical group will consist of 10-12 students.

30 Hours

References:

- Abhedananda, S. (2008). True Psychology. Ram Krishna Vedanta Math. Kolkata
- Atkinson, R. L., Atkinson, R. C., Smith, E. E., Bem, D. J., & Hilgard, E. R. (2013). Introduction to Psychology. New York: H. B. J. Inc.
- Baron, R. A., & Misra, G. (2014). Psychology. New Delhi: Pearson Education.
- Ciccarelli, S. K., Meyer, G. E. & Misra, G. (2013). Psychology: South Asian Edition. New Delhi: Pearson Education.
- ICSSR Research Surveys and Explorations: Psychology, Vols 1–5
- Nolen-Hoeksema, S., Fredrickson, B., Loftus, G. R., & Lutz, C. (2014). Atkinson & Hilgards: Introduction to Psychology. Andover: Cengage Learning.
- Paranjpe, C. A. (2002). Self and Identity in Modern Psychology and Indian Thought. Kluwer Academic Publishers
- Passer, M. W., & Smith, R. E. (2013). Psychology: The Science of Mind and Behavior. New Delhi: Tata McGraw- Hill
- Sinha, D., Misra, G., & Dalal, K. A. (2015). Psychology for India. Sage Publications.
- Zimbardo, G. P. (2013). Psychology and Life. Pearson

GENERIC ELECTIVE– 3
CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITE OF THE COURSE

| Course Title & Code | Total Credits | Credit distribution of the course | | | Eligibility Criteria/ Prerequisite | Pre-requisite of the course, if any |
|-------------------------------|---------------|-----------------------------------|----------|-----------|------------------------------------|-------------------------------------|
| | | Lecture | Tutorial | Practical | | |
| Psychology for Healthy Living | 4 | 3 | 1 | 0 | Class XII Passed | Nil |

Course Learning Outcomes

- To build an in-depth understanding of topics like stress, health, well-being and positive human behaviour
- To develop skills and competencies by application of these principles for promoting health, well-being and positive functioning in self and others.

Unit 1: Stress and coping: Understanding causes of stress; Effects of stress on physical and mental health; coping strategies (emotion focused, problem focused, avoidant coping), coping techniques **(12 Hours)**

Unit 2: Understanding subjective wellbeing and health: Meaning of subjective and psychological/hedonistic and eudaimonic well-being); comparing Medical and Bio-psycho-social approaches to health. **(16 Hours)**

Unit 3: Health-enhancing behaviours: Introduction to health enhancing behaviours: Exercise, Nutrition and Sleep **(16 Hours)**

Unit 4: Promoting Positive human functioning: Introduction to Positive Psychology, Hope (definitions, Snyder model, applications), Optimism (Optimism as an explanatory style, benefits) and Self-efficacy (Bandura's concept, sources of self-efficacy, applications in different arenas) **(16 Hours)**

References:

- Arora, M.K. and Sran, S.K (2017) Psychology of health and well-being , Book Age Publications: New Delhi, ISBN: 978-93-83281-71-8.
- Carr, A. (2011). Positive Psychology: The Science of Happiness and Human Strength. London, UK: Routledge.
- Dalal, A.K., & Misra, G. (2011). New Directions in Health Psychology. Sage
- Dimatteo, M. R., & Martin L. R. (2011). Health psychology. Indian adaptation by Tucker, V and Tucker O.P. (2018). New Delhi: Pearson India Educational Services Pvt. Ltd. (Unit 1: Chapter 1; Unit 2: Chapter 6).
- Khosla, M. (Ed.) (2022). Understanding the Psychology of Health and Well-being. Sage

Texts, Delhi.ISBN 9789354794391

- Lazarus, J. (2008). *Stress Relief and Relaxation Techniques*. Los Angeles: KeatsPublishing.
- Luthans, F, Brett C. Luthans, Kyle W. (2015). *Organizational behaviour: An evidence based approach*,13th Edition. McGraw Hill(Chapter: Positive organizational behavior and Psychological Capital).
- Sarafino, P, E (1998). *Health Psychology: Biopsychosocial Interactions* (third edition). John Wiley & Sons, Inc. (Unit 1: Chapter 3, Chapter 4; Unit 2: Chapter 5).
- Seaward, B.L. (2018). *Managing Stress: Principles and Strategies for Health and Well-Being* (9th Edition). Burlington, MA: Jones & Bartlett Learning.
- Snyder, C.R., Lopez S. J., &Pedrotti, J. T. (2011). *Positive psychology: The scientific and practical explorations of human strengths*. New Delhi: Sage. (Unit 4: Chapter 5).
- Taylor, S.E. (2006). *Health psychology*, 6th Edition. New Delhi: Tata McGraw Hill.(Unit 2: chapter 3; Unit 3: Chapters 4 and 10
- Weiten, W. & Lloyd, M.A (2007). *Psychology Applied to Modern life*. Thomson Detmar earning.(Unit 1: Chapter 3; Unit 2: Chapter 4)

GENERIC ELECTIVE– 4

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITE OF THE COURSE

| Course Title & Code | Total Credits | Credit distribution of the course | | | Eligibility Criteria/ Prerequisite | Pre-requisite of the course, if any |
|--------------------------|---------------|-----------------------------------|----------|-----------|------------------------------------|-------------------------------------|
| | | Lecture | Tutorial | Practical | | |
| Understanding Human Mind | 4 | 3 | 1 | 0 | Class XII Passed | Nil |

Course Learning Outcomes:

:

- To introduce students to the various perspectives of studying the mind with special emphasis on sensitizing with the Indian models.
- To acquaint the students with the discipline of Psychology which involves studying important social-cognitive skills
- To discuss the scope and methodological challenges involved in studying the human mind
- To introduce students to the practical aspects of cognitive psychology in understanding human behavior.

Unit 1: Introduction: Perspectives of studying the mind: Eastern- Advait Vedanta, Sāṃkhya Yoga, Buddhism, Sri Aurobindo's theory of mind. Western-Wilhelm Wundt Structuralism, William James functionalism, Freudian three levels of mind, cognitive- information processing model.
(12 Hours)

Unit 2: Methods and Scope of studying mind: Methods-Experimental, Case study, Introspection, Observation, Phenomenology Scope-Cognitive neuroscience, Artificial Intelligence, Psychotherapy and preventive measures. (16 Hours)

Unit 3: Perception and Attention: Nature, factors and automatic and controlled processes, Perception: Perceptual processes, perceptual organization, role of attention in perception. Indian Perspective on attention and perception- Advait Vedanta- *chitta, vritti*; Sāṃkhya Yoga- *buddhi, ahankara, manas*. (16 Hours)

Unit 4: Thinking and Problem Solving: Mental images, concepts and prototypes; Problemsolving approaches – Algorithm; heuristics, means-end analysis, insight. Concept of Thinking in Indian perspective. (16 Hours)

References:

- Vivekananda, S. (2003). *Raja Yoga*. Advaita Ashrama.
- Galotti, K. M. (2018). *Cognitive Psychology In and out of the laboratory* (4th ed.). Thomson Wadsworth.
- Rao, K.R., &Paranjpe, A.C. (2016). *Scope, Substance, and Methods of Study*. In: *Psychology in the Indian Tradition* (pp-1-35).Springer: New Delhi.
- Rao, K.R.,&Paranjpe, A.C. (2016). *Mind–Body Complex*. In: *Psychology in the Indian Tradition* (pp- 95-128) (102-105 Advait Vedanta, Sāṃkhya Yoga-102). Springer: New Delhi.
- Sen, I. (1952). *Sri Aurobindo's Theory of Mind*. Philosophy East and West. 1(4), (pp 45-53).
- Singh, A.K. (2017). संयानां कमनोवियान *Cognitive Psychology*. Motilal Banarsidass Publishers Pvt.Ltd.
- Singh, A.K. (2017). उडैरसामा कमनोवियान *Advanced General Psychology*. Motilal Banarsidass Publishers Pvt.Ltd.
- Stenberg & Stenberg (2012). *Cognitive Psychology*. (6th ed.).
- Watson, J.L. (2020). *Ayurvedic and Bionian Theories of Thinking: Mental Digestion and the Truth Instinct*.

DEPARTMENT OF MIL&LS

BA (Hons.) Bengali

Category-I

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|--|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Barnanatmak Bhasabigyan: Bangla Bhasha | 4 | 3 | 1 | NIL | Class 12 th pass in any subject | Studied Bengali Up to 10 th & Above |

Learning Objectives:

Language is the basis of any existing literature. To study literature, one must know the language well beforehand and then delve into its literature. Thus, our first paper will be the descriptive linguistics of Bengali.

Learning outcomes:

To study the linguistics of any particular language is not limited to knowing the language to be able to communicate but to have vivid knowledge of its construction, its fundamental properties, its Phonology, Morphology etc. Students will be taught the science of Bengali language which is a branch of the discipline, i.e. Linguistics.

SYLLABUS OF DSC-1

UNIT – I (20 Hours)

- ভাষার সংজ্ঞা ও বৈশিষ্ট্য

ধ্বনিতত্ত্ব

- ধ্বনি ও বর্ণ স্বরধ্বনি ও ব্যঞ্জনধ্বনি ; বৈশিষ্ট্য ও শ্রেণিবিভাগ উচ্চারণ বৈচিত্র্য ও স্বনিম
- ধ্বনি পরিবর্তন : কারণধারা ও সূত্র ,
- ধ্বনির আগম : স্বরাগম — অপিনিহিতি, স্বরভক্তি, ব্যঞ্জনাগম — শ্রুতিধ্বনি

- ধ্বনির নির্গমন বা ধ্বনিলোপ — স্বরলোপ সমাষ্করলোপ, ব্যঞ্জনলোপ,
- ধ্বনির রূপান্তর — অভিশ্রুতিনাসিক্যভবন, সমীভবন, স্বরসঙ্গতি,
- ধ্বনির স্থানান্তর — ধ্বনির বিপর্যাস

UNIT – II (20 Hours)

- আন্তর্জাতিক ধ্বনিমূলক বর্ণমালা সংজ্ঞা ও রূপান্তর :

UNIT – III (20 Hours)

- রূপিম— বদ্ধ রূপিম ও মুক্ত রূপিম
- শব্দ— সংজ্ঞা ও শ্রেণিবিভাগ (জাতি ও গঠন, অর্থ)

Practical component (if any) - NIL

Essential/recommended readings

রামেশ্বর শ, '১৪১৯ বঙ্গাব্দ, সাধারণ ভাষাবিজ্ঞান ও বাংলা ভাষাকলকাতা, পুস্তক বিপণি,

Suggestive readings

পবিত্র সরকার, ১৯৯৮, পকেট বাংলা ব্যাকরণ, আজকাল, কলকাতা
 পবিত্র সরকার, ২০১৪, বাংলা ব্যাকরণ প্রসঙ্গ, দে'জ পাবলিশিং' কলকাতা
 পরেশচন্দ্র মজুমদার, ১৯৯২, বাঙলা ভাষা পরিক্রমা, প্রথম খণ্ড, দে'জ পাবলিশিং কলকাতা,
 পরেশচন্দ্র মজুমদার, ২০১২, বাঙলা ভাষা পরিক্রমা, দ্বিতীয় খণ্ড, দে'জ পাবলিশিং কলকাতা,
 মুহম্মদ শহীদুল্লাহ, ২০১২, বাঙ্গালা ভাষার ইতিবৃত্তাকা, মাওলা ব্রাদার্স,
 শিশিরকুমার দাশ, ১৯৯৯, ভাষাজিজ্ঞাসা, প্যাপিরাস কলকাতা,
 সুকুমার সেন, ২০০১, ভাষার ইতিবৃত্ত, আনন্দ পাবলিশার্স কলকাতা,
 সুনীতিকুমার চট্টোপাধ্যায়, ১৯৯৬, বাঙ্গালা ভাষাতত্ত্বের ভূমিকা, কলিকাতা বিশ্ববিদ্যালয় কলকাতা,
 সুনীতিকুমার চট্টোপাধ্যায়, ২০০৩, ভাষা-প্রকাশ বাঙ্গালা ব্যাকরণ, রূপানতুন দিল্লী,

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2): Bangla Upanyas

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|--|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Bangla Upanyas | 4 | 3 | 1 | NIL | Class 12 th pass in any subject | Studied Bengali Up to 10 th & Above |

Learning Objectives:

The world of Bengali Fiction is growing day by day with authors experimenting the genre with various subjects and narrative styles. Bangla Upanyas dates back to the later part of nineteenth century. This paper will focus the development of this genre through reading of some Bengali Novels.

Learning outcomes:

Students who have just passed the 12th standard examination will be introduced to the abundance of their literature and they will be expected to know after going through this paper that studying literature is not only to read some novels but they have to inculcate the habit of working and research of the given literature. Students will be able to study the development of their society and culture through literature.

SYLLABUS OF DSC- 2

UNIT – I (15 Hours)

উপন্যাসের সংজ্ঞা ও বৈশিষ্ট্য

UNIT – II (45 Hours)

- বঙ্কিমচন্দ্র চট্টোপাধ্যায় — কৃষ্ণকান্তের উইল
- মানিক বন্দ্যোপাধ্যায় — পদ্মানদীর মাঝি

Practical component (if any) - NIL

Essential/recommended readings

বঙ্কিমচন্দ্র চট্টোপাধ্যায়, ২০০৭-২০০৬, *কৃষ্ণকান্তের উইল*, শশাঙ্কশেখর বাগচী সম্পাদিত, (মডার্ন বুক এজেন্সী, কলকাতা)
মানিক বন্দ্যোপাধ্যায়, ২০০৮, *পদ্মানদীর মাঝি*, বেঙ্গল পাবলিশার্স কলকাতা,

Suggestive readings (if any)

অরুণকুমার মুখোপাধ্যায়, ২০০২, *মধ্যাহ্ন থেকে সায়াহ্নে: বিংশ শতাব্দীর বাংলা উপন্যাস*, দে'জ পাবলিশিং কলকাতা,
অরুণকুমার মুখোপাধ্যায়, ২০১০, *কালের প্রতিমা: বাংলা উপন্যাসের পঁচাত্তর বছর: ১৯২৩জ 'দে', ১৯৯৭* কলকাতা, পাবলিশিং
অলোক রায় সম্পাদিত, ২০০৮, *গিরিজাপ্রসন্ন রায়চৌধুরীর বঙ্কিমচন্দ্র* কলকাতা, পুস্তক বিপণি,
অশ্রু কুমার সিকদার, ১৯৮৮, *আধুনিকতা ও বাংলা উপন্যাস* কলকাতা, অরুণা প্রকাশনী,
আবদুল মানান সৈয়দ, ২০১৩, মানিক বন্দ্যোপাধ্যায় : অন্তর্বাস্তবতা বহির্বাস্তবতা, প্রথমা প্রকাশন, ঢাকা
প্রমথনাথ বিশী, বঙ্গাব্দ ১৪০৮, *বঙ্কিম* কলকাতা, মিত্র ও ঘোষ পাবলিশার্স, *সরগী*
মোহিতলাল মজুমদার, ২০০৫, *বঙ্কিমচন্দ্রের উপন্যাস ও বঙ্কিমবরণ* কলকাতা, করুণা প্রকাশনী,
দেবীপদ ভট্টাচার্য, ১৯৬১, *উপন্যাসের কথা* কলকাতা, সুপ্রকাশ,
শিশির চট্টোপাধ্যায়, ১৯৬২, *উপন্যাস-পাঠের ভূমিকা*, বুকল্যান্ড, কলকাতা
শ্রীকুমার বন্দ্যোপাধ্যায়, ২০১১-২০১০, *বঙ্গসাহিত্যে উপন্যাসের ধারা*, মডার্ন বুক এজেন্সী কলকাতা,
সত্যেন্দ্রনাথ রায়, ২০০০ *বাংলা উপন্যাস, ও তার আধুনিকতা*, দে'জ পাবলিশিং কলকাতা,
সরোজ বন্দ্যোপাধ্যায়, ২০১২, *বাংলা উপন্যাসের কালান্তর*, দে'জ পাবলিশিং কলকাতা,
সুবোধচন্দ্র সেনগুপ্ত, ১৯৭৫, *বঙ্কিমচন্দ্র*, এ মুখার্জী কলকাতা,
Foster, E M. 1990, *Aspects of Novel*, Penguin press, London
Hellerin, John. (ed.), 1974, *Theory of the Novel*, OUP, New York

DISCIPLINE SPECIFIC CORE COURSE- 3 (DSC-3): Bangla Sahityer Itihas : Prachin O Madhyajug -1

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|--|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Bangla Sahityer Itihas : Prachin O Madhyajug - 1 | 4 | 3 | 1 | NIL | Class 12 th pass in any subject | Studied Bengali Up to 10 th & Above |

Learning Objectives:

The whole range of literary creations in Bangla cannot be searched and studied in detail by any student of Bengali Literature of UG course. A history of Literature, thus, is a holistic approach towards the development of the literature. This paper will discuss the old (ancient) and medieval period literature.

Learning outcomes:

It is impossible for a student of literature to know the vast number of written-literature intricately in a particular language. History of Literature will let the students know and study about the outline of Bengali literature and its development time to time with special reference to its background.

SYLLABUS OF DSC-3

UNIT – I (10 Hours)

বাংলা সাহিত্যের ইতিহাসের যুগবিভাগ, প্রাচীন ও মধ্যযুগের যুগলক্ষণ

UNIT – II (20 Hours)

চর্যাপদ, শ্রীকৃষ্ণকীর্তন

UNIT – III (30 Hours)

সংরূপ পরিচিতি, উদ্ভব ও ক্রমবিকাশ, কবি পরিচিতি:

অনুবাদ সাহিত্য)মালাধর বসু, কৃত্তিবাস ওঝা, কাশীরাম(, বৈষ্ণব পদাবলী ,জ্ঞানদাস ,চণ্ডীদাস ,বিদ্যাপতি)
(গোবিন্দদাস

Practical component (if any) - NIL

Essential/recommended readings

অসিতকুমার বন্দ্যোপাধ্যায় ,২০০৪-২০০৫ ,বাংলা সাহিত্যের সম্পূর্ণ ইতিবৃত্ত, মডার্ন বুক এজেন্সী ,
কলকাতা

ক্ষেত্র গুপ্ত ,২০০২ ,বাংলা সাহিত্যের সমগ্র ইতিহাসগ্রন্থ ,নিলয়কলক ,াতা

Suggestive readings

সুকুমার সেন২০ ,০৯ ,বাঙ্গালা সাহিত্যের ইতিহাস,প্রথম খণ্ড ,আনন্দকলকাতা ,

অসিতকুমার বন্দ্যোপাধ্যায় ,০৭-২০০৬ ,বাংলা সাহিত্যের ইতিবৃত্ত ,দ্বিতীয় খণ্ড, মডার্ন বুক এজেন্সী ,
কলকাতা

অসিতকুমার বন্দ্যোপাধ্যায়,২০০৮ , বাংলা সাহিত্যের ইতিবৃত্ত,প্রথম খণ্ড, মডার্ন বুক এজেন্সীকলকাতা ,

গোপাল হালদার, বঙ্গাব্দ ১৪০৪, *বাংলা সাহিত্যের রূপ* কলকাতা, অরুণা প্রকাশনী, প্রথম খণ্ড, রেখা
দীনেশচন্দ্র সেন, ২০১৭, *প্রাচীন বাঙ্গালা সাহিত্যে মুসলমানের অবদান*, বাতিঘরচট্টগ্রাম,
দেবেশ কুমার আচার্য্য, ২০০৪, *বাংলা সাহিত্যের ইতিহাস*, ইউনাইটেড বুক এজেন্সি, আদি ও মধ্য যুগ,
কোলকাতা
মুহম্মদ শহীদুল্লাহ, ২০০৬, *বাংলা সাহিত্যের কথাচাকা*, মওলা ব্রাদার্স, প্রাচীন যুগ, প্রথম খণ্ড,
আহমদ শরীফ, ২০১৪, *বাঙালী ও বাংলা সাহিত্য*, প্রথম খণ্ড, নয়া উদ্যোগ, কলকাতা
গোপাল হালদার, বঙ্গাব্দ ১৪০৪, *বাংলা সাহিত্যের রূপ* কলকাতা, অরুণা প্রকাশনী, প্রথম খণ্ড, রেখা

BA (Prog) with Bengali as Major

Category II

DISCIPLINE SPECIFIC CORE COURSE -1 (DSC-1) – : Prak-Uponibesher Bangla Sahitya – I (10th to 18th Shatak)

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|--------------------------------------|----------|------------------------|--|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Prak- Uponibesher Bangla Sahitya – I (10 th to 18 th Shatak) | 4 | 3 | 1 | NIL | Class 12 th pass in any subject | Studied Bengali Up to 10 th standard Or working knowledge of Bengali Language |

Learning Objectives:

To give the students a detail idea about Pre-Colonial Bengali Literature.

Learning outcomes:

The course will enlighten the students about Pre-Colonial Bengali Literature, it's characteristics and features. It will also introduce students about their socio – cultural background of Bengal.

SYLLABUS OF DSC-1

UNIT – I (15 Hours)

বাংলা সাহিত্যের ইতিহাসের যুগবিভাগ

UNIT – II (15 Hours)

চর্যাপদ, শ্রীকৃষ্ণকীর্তন

UNIT – III (30 Hours)

সংরূপ পরিচিতি, উদ্ভব ও ক্রমবিকাশ, কবি পরিচিতি:

অনুবাদ সাহিত্য(মালাধর বসু, কৃতিবাস, কাশীরাম), জীবনীকাব্য (বন্দাবন দাস, কৃষ্ণদাস কবিরাজ, সৈয়দ সুলতান) , মঙ্গল কাব্য(বিজয়গুপ্ত, মুকুন্দরাম, ঘনরাম চক্রবর্তী, ভারতচন্দ্র) , আরাকান রাজসভাপ্রিত কাব্য(আলাওল, দৌলত কাজী)

Practical component (if any) - NIL

Essential/recommended readings:

অসিতকুমার বন্দ্যোপাধ্যায়, ২০০৪-২০০৫, বাংলা সাহিত্যের সম্পূর্ণ ইতিবৃত্ত, মডার্ন বুক এজেন্সী, কলকাতা

Suggestive readings:

জহর সেনমজুমদার, ২০০৯, মধ্যযুগের কাব্য : স্বর ও সংকট, বঙ্গীয় সাহিত্য সংসদ, কলকাতা

দেবেশ কুমার আচার্য্য, ২০১৩, বাংলা সাহিত্যের ইতিহাস(আদি ও মধ্য যুগ), ইউনাইটেড বুক এজেন্সী, কলকাতা

রশীদ আল ফারুকী, ১৯৮৪, বাংলা উপন্যাসে মুসলমান লেখকদের অবদান, রত্না প্রকাশন, কলিকাতা

সুকুমার সেন, ২০০৭, বাংলার সাহিত্য-ইতিহাস, সাহিত্য অকাদেমি, নতুন দিল্লি

সুকুমার সেন, ২০০৯, বাঙ্গালা সাহিত্যের ইতিহাস, প্রথম খণ্ড, আনন্দ, কলকাতা

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

**DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2): Prak-Uponibeshar
Bangla Sahitya – II (10th to 18th Shatak)**

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|--|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Prak-Uponibeshar Bangla Sahitya – II (10 th to 18 th Shatak) | 4 | 3 | 1 | NIL | Class 12 th pass in any subject | Studied Bengali Up to 10 th standard Or working knowledge of Bengali Language |

Learning Objectives:

To give the students a detail idea about Pre-Colonial Bengali Literature.

Learning outcomes:

The course will enlighten the students about Pre-Colonial Bengali Literature, it's characteristics and features. It will also introduce students about their socio – cultural background of Bengal.

SYLLABUS OF DSC- 2

UNIT – I (20 Hours)

বৈষ্ণব পদাবলী(বিদ্যাপতি, চণ্ডীদাস, জ্ঞানদাস, গোবিন্দদাস), শাক্ত পদাবলী(রামপ্রসাদ সেন, কমলাকান্ত ভট্টাচার্য)

UNIT – II (20 Hours)

ময়মনসিংহ গীতিকা, জঙ্গনামা, নাথ সাহিত্য, রায়মঙ্গল ও শীতলা মঙ্গল, পীর সাহিত্য

UNIT - III (20 Hours)

বাউল ও ফকিরী গান, কবিওয়ালা ও কবিগান

Practical component (if any) - NIL

Essential/recommended readings

অমরেন্দ্রনাথ রায় (সম্পা.), ২০০২, শাক্ত পদাবলী চয়ন, কলিকাতা বিশ্ববিদ্যালয়, কলকাতা
অমিত্রসুদন ভট্টাচার্য (সম্পা.) ২০০৪, বড়ু চণ্ডীদাসের শ্রীকৃষ্ণকীর্তন সমগ্র, দে'জ পাবলিশিং, কলকাতা
খগেন্দ্রনাথ মিত্র প্রমুখ, (সম্পা.), ১৯৯০, বৈষ্ণব পদাবলী চয়ন, কলিকাতা বিশ্ববিদ্যালয়, কলিকাতা
বৃন্দাবন দাস, ১৯৯৩, শ্রীচৈতন্যভাগবত, শ্রীচৈতন্যমঠ, মায়াপুর, পশ্চিমবঙ্গ
ব্রজেন্দ্রনাথ বন্দ্যোপাধ্যায় ও সজনীকান্ত দাস(সম্পা) ১৪২১ বঙ্গাব্দ, ভারতচন্দ্র-গ্রন্থাবলী, বঙ্গীয়-সাহিত্য-পরিষৎ, কলকাতা
মুহম্মদ এনামুল হক (সম্পা.), ১৯৯৯, শাহ মুহম্মদ সগীর বিরচিত ইউসুফ-জোলেখা, মাওলা ব্রাদার্স, ঢাকা

Suggestive readings (if any)

আশুতোষ ভট্টাচার্য, ২০০৬, বাংলা মঙ্গলকাব্যের ইতিহাস, এ, মুখার্জী এন্ড কোং, কলকাতা
জহর সেনমজুমদার, ২০০৯, মধ্যযুগের কাব্য : স্বর ও সংকট, বঙ্গীয় সাহিত্য সংসদ, কলকাতা
তারাপদ মুখোপাধ্যায়, ১৯৭১, শ্রীকৃষ্ণকীর্তন, মিত্র ও ঘোষ, কলকাতা

BA (Prog.) with Bengali as Minor

Category III

B.A Prog. Courses for Undergraduate Programme of study with discipline as one of the Core Disciplines
(For e.g. courses for B.A. Programmes with Bengali as non-Major or Minor discipline)

DISCIPLINE SPECIFIC CORE COURSE (DSC-1): Bangla Bhasha, Sahitya O Itihas Parichay -1

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|--|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Bangla Bhasha, Sahitya O Itihas Parichay - 1 | 4 | 3 | 1 | NIL | Class 12 th pass in any subject | Studied Bengali Up to 10 th standard Or working knowledge of Bengali Language |

Learning Objectives:

To give the students a brief idea about Bengali Language, Literature & History.

Learning outcomes:

The course will enlighten the students about rise and development of Bengali Language, History of early Bengal and selected literature of ancient and mediaeval Bengal.

SYLLABUS OF DSC-3

UNIT – I (10 Hours)

বাংলা ভাষার উদ্ভব ও বিকাশ

UNIT – II (20 Hours)

বাঙালি জাতি সত্ত্বার ইতিহাস (প্রাচীন যুগ)

শশাঙ্ক, পাল যুগ, সেন যুগ

UNIT – III (30 Hours)

প্রাচীন ও মধ্যযুগের বাংলা সাহিত্য

চর্যাপদ, গ্রীকৃষ্ণকীর্তন, চল্লীমঙ্গল, মনসামঙ্গল, লোরচন্দ্রাণী ও সতী ময়না

Practical component (if any) - NIL

Essential/recommended readings

সুকুমার সেন, ২০০১, ভাষার ইতিবৃত্ত, আনন্দ পাবলিশার্স, কলকাতা

নিহাররঞ্জন রায়, বাঙালির ইতিহাসঃ আদি পর্ব, ১৪২২, দে'জ, কলকাতা

অসিতকুমার বন্দ্যোপাধ্যায়, ২০০৪-২০০৫, বাংলা সাহিত্যের সম্পূর্ণ ইতিবৃত্ত, মডার্ন বুক এজেন্সী, কলকাতা

ক্ষেত্র গুপ্ত, ২০০২, বাংলা সাহিত্যের সমগ্র ইতিহাস, গ্রন্থনিলয়, কলকাতা

Suggestive readings

অসিতকুমার বন্দ্যোপাধ্যায়, ২০০৯-২০১০, বাংলা সাহিত্যের ইতিবৃত্ত, পঞ্চম খণ্ড, মডার্ন বুক এজেন্সী, কলকাতা

অসিতকুমার বন্দ্যোপাধ্যায়, ২০০৭, বাংলা সাহিত্যের ইতিবৃত্ত, ষষ্ঠ খণ্ড, মডার্ন বুক এজেন্সী, কলকাতা

অসিতকুমার বন্দ্যোপাধ্যায়, ১৯৯২, বাংলা সাহিত্যের ইতিবৃত্ত, সপ্তম খণ্ড, মডার্ন বুক এজেন্সী, কলকাতা

অসিতকুমার বন্দ্যোপাধ্যায়, ২০০৭, বাংলা সাহিত্যের ইতিবৃত্ত, অষ্টম খণ্ড, মডার্ন বুক এজেন্সী, কলকাতা

BA (Prog.) with Tamil Discipline as Major

Category-II

DISCIPLINE SPECIFIC CORE COURSE (DSC-1): History of Tamil Language -I

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------------|---------|-----------------------------------|----------|---------------------|--|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| History of Tamil Language -I | 04 | 03 | 01 | - | Students who have studied the Tamil language up to Class XII | NIL |

Learning Objectives:

This course aims at introducing the history of Tamil language beginning from the origin of the Tamil script available from the cave inscriptions and archeological excavations to the modern developments of 20th century. The earliest available literature of Tamil, the *Sangam* Anthology and *Tolkāppiyam* are taken as the source to discuss the structure of ancient Tamil. The latter texts of grammatical treatises, epics, commentaries etc., stand as the resource for the study of evolution of Tamil during the medieval period. It discusses phonological, morphological, semantic, and syntactic changes taken place in the language.

Learning Outcomes:

This course would enlighten the students the place of Tamil in Dravidian family of languages, various dialects of Tamil and the impact of Sanskrit and other languages in Tamil.

SYLLABUS OF DSC-1

Unit -I (15 Hours)

- Dravidian Languages and Tamil

Unit -II (15 Hours)

- History of Tamil Script

Unit -III (15 Hours)

- Sources of Tamil Language History

Unit -IV (15 Hours)

- Phonological, Morphological, and syntactic changes

Essential/recommended Readings:

1. Varadarajan.M. 2017. *Mozhi Varalaru*, Chennai: Pari Nilayam.
2. Suyambu, P., 2005, *Moḷi Varalārril Tamīl*, Chennai: Visalakshi Nilaiyam.
3. Meenakshisundaram, T.P., (Trans. S. Jeyaprakasam), 1982, *Tamiḷ Moḷi Varalāru*, Madurai: Sarvodaya Ilakkiyappannai.

Suggestive Readings:

1. Sastri, Suriya Narayana, 2003, *Tamiḷmoḷiyiṇ Varalāru*, Chennai: International Institute of Tamil Studies.
2. Saktivel, S., 1991 (2nd Ed.), *Tamiḷmoḷi Varalāru*, Chennai: Manivasagar Nulagam.
3. Rajendran. M., (Ed.), *Tamiḷmoḷi Varalāru*, Chennai: Directorate of Tamil Development.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2): History of Tamil

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-------------------------------|---------|-----------------------------------|----------|---------------------|--|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| History of Tamil Language -II | 04 | 03 | 01 | - | For students who have studied the Tamil language up to Class X | NIL |

Learning Objectives:

This course tries to introduce the origin and history of Tamil language. It discusses phonological, morphological, semantic, and syntactic changes taken place in the language.

Learning Outcomes:

This course would enlighten the students the place of Tamil in Dravidian family of languages, various dialects of Tamil.

SYLLABUS OF DSC- 2

Unit -I (15 Hours)

- Origin & History of Tamil Language

Unit -II (15 Hours)

- Units and Verities of Tamil Language

Unit -III (15 Hours)

- Sources of Tamil Language History

Unit -IV (15 Hours)

- Semantic changes & Dialects of Tamil

Essential/recommended Readings:

1. Varadarajan.M. 2017. *Mozhi Varalaru*, Chennai: Pari Nilayam.
2. Suyambu, P., 2005, *Moḷi Varalārriḷ Tamil*, Chennai: Visalakshi Nilaiyam.
3. Meenakshisundaram, T.P., (Trans. S. Jeyaprakasam), 1982, *Tamiḷ Moḷi Varalāru*, Madurai: Sarvodaya Ilakkiyappannai.

Suggestive Readings (if any):

1. Sastri, Suriya Narayana, 2003, *Tamiḷmoḷiyiṇ Varalāru*, Chennai: International Institute of Tamil Studies.
2. Saktivel, S., 1991 (2nd Ed.), *Tamiḷmoḷi Varalāru*, Chennai: Manivasagar Nulagam.
3. Rajendran. M., (Ed.), *Tamiḷmoḷi Varalāru*, Chennai: Directorate of Tamil Development.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BA (Prog.) with Tamil Discipline as Minor

Category-III

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|----------------|--|-----------------|--------------------------------|--|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| An Introduction of Tamil Language | 04 | 03 | 01 | - | For students who have studied the Tamil language up to Class VIII | NIL |

Learning Objectives:

This course aims at introducing the history of Tamil language beginning from the origin of the Tamil script. It discusses the origin and Development of the Tamil Language, Indian & Dravidian Languages.

Learning Outcomes:

This course would enlighten the students the place of Tamil in Dravidian family of languages, various dialects of Tamil and the impact of Sanskrit and other languages in Tamil.

SYLLABUS OF DSC- 3

Unit -I (15 Hours)

- Introduction to Indian Languages

Unit -II (15 Hours)

- Introduction to Dravidian Languages

Unit -III (15 Hours)

- History of Tamil Script

Unit -IV (15 Hours)

- Origin and Development of Tamil Language

Essential/recommended Readings:

1. Varadarajan.M. 2017. *Mozhi Varalaru*, Chennai: Pari Nilayam.
2. Suyambu, P., 2005, *Moḷi Varalārril Tamīl*, Chennai: Visalakshi Nilaiyam.
3. Meenakshisundaram, T.P., (Trans. S. Jeyaprakasam), 1982, *Tamiḷ Moḷi Varalāru*, Madurai: Sarvodaya Ilakkiyappannai.

Suggestive Readings (if any):

1. Sastri, Suriya Narayana, 2003, *Tamiḷmoḷiyiṇ Varalāru*, Chennai: International Institute of Tamil Studies.
2. Saktivel, S., 1991 (2nd Ed.), *Tamiḷmoḷi Varalāru*, Chennai: Manivasagar Nulagam.
3. Rajendran. M., (Ed.), *Tamiḷmoḷi Varalāru*, Chennai: Directorate of Tamil Development.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BA (Prog.) with Telugu Discipline as Major

Category II

(Provide the details of the Discipline Specific Courses offered by your department for the UG Programme with your discipline as the Single Core Discipline)

[UG Programme for Bachelor in B.A. (Programme) degree in three years]

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|--|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| A Progressive grammar of the Telugu Language | 4 | 03 | 01 | -- | Students who have studied Telugu up to Class X and above | NIL |

Learning Objectives

The primary objective of this paper is to provide essential principles of Telugu grammar with prescriptive rules and exercises to bring the learner as quickly as possible to the point where he/she can understand the imperative features of forms and structure of words (morphology) with their customary arrangement in phrases and sentences; and, to serve as a reference for consolidating the grasp of the language.

Learning outcomes

It is expected that the Students will be able to develop a basic understanding of the imperative features of forms and structure of words with their customary arrangement in Phrases and Sentences.

SYLLABUS OF DSC-1

Unit-I

(20 Hours)

- Prakriti and Pratyayamu; Dhatusu and Pratipadikamu.
- Tatsamamu, Tadbhavamamu, Desyamamu, Anyadesyamamu and Gramyamamu.

Unit-II Vibhakti, Viseshyamamu and Viseshanamamu.

(20 Hours)

- Vachanam, Lingamu and Avyayamu.

Unit-III Vakyaamu, Uddesyamu and Vidheyamu.

(20 Hours)

Essential/recommended readings

Chinnaya Suri, Paravastu., 1958, *Bala Vyakaranamu*, Chennai: Vavilla Ramaswamy Sastrulu & Sons.

Kasyapa, 1993, *Vidyarthi Vyakaranamu*, Vijayawada: Deluxe Publications.

Nagabhushanam, A., 1993, *Bala-Praudha Vyakarana Digdarsini*, Guntur: _____

Simmanna, V., 1998, *Telugu Bhasha Chandrika*, Visakhapatnam: Dalita Sahitya peetham.

Simmanna, V., 2001, *Telugu bhasha Kaumudi*, Visakhapatnam: Dalita Sahitya Peetham.

Simmanna, V., 2006, *Telugu Bhasha Deepika*, Visakhapatnam: Dalita Sahitya Peetham.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2): TELUGU LITERATURE AND OTHER ARTS

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|--|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| TELUGU LITERATURE AND OTHER ARTS | 04 | 03 | 01 | | Students who have studied Telugu up to Class XII and above | NIL |

Learning Objectives

This course looks closely at the relationship between art, Architecture, Music, Dance and literature, focusing most specifically upon the complementary nature of the forms from a historical perspective, i.e., how this relationship has changed the art forms since their inception. The course discusses how different arts were depicted in medieval and modern Telugu literature

and the place of music and metre in literature. It will focus on the origin and development of Andhra traditional dance, its importance in the qualitative life of human beings, and how the different dance forms are reflected in the region's art, architecture and literature.

Learning outcomes

This course will outline the interaction between literature and other arts, and Students will be able to understand the multidisciplinary approach method in the literature.

SYLLABUS OF DSC- 2

Units of the Course:

- Unit-I** Introduction to the relationship between literature and arts. (12 Hours)
- Unit-II** Telugu literature and Architecture. (12 Hours)
- Unit-III** Telugu literature and Art. (12 Hours)
- Unit-IV** Telugu literature and Music. (12 Hours)
- Unit-V** Telugu literature and Dance. (12 Hours)

Essential/recommended readings

Somasekhara Sharma, Mallampalli; Venkata Rangaiah, Mamidipudi; Venkata Ramanaiah, Nelaturi; Satyanarayana, Moturi (Ed.). 1959, *Andhra Shilpa Kala Parinamamu* (pp. 660-672). Andhra Chitra Kala (pp. 673-682), Sangeetamu (pp. 683-693) and Natya Kala (pp. 694-700) in Telugu Vijnana Sarvasvamu (Moodava Bhagamu), , Madras: Telugu Bhasha Samiti.

Suggestive readings (if any)

Jagannadharao, Manchala., _____, *Andhrula Sangeeta Kala*, Hyderabad: Andhra Pradesh Sangeeta nataka Academi.

Lakshmikantamma, Utukuri., 1982, *Andhrula Kertana vangmaya kalaseva*. Guntur:_____.

Ramakrishna, Nataraja. 1975, *Andhrulanatyakala*. Hyderabad: Andhra Pradesh Sangeeta nataka Academi.

Subrahmanyareddi, D. 1992, *Bharatadesha Kalalu- Shilpa Kalalu*, Hyderabad: Telugu Academi,

BA (Prog.) with Telugu Discipline as Minor

Category III

DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-3): STUDY OF LITERARY TEXTS: TELUGU SHORT STORIES

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|---|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Study of literary texts: Telugu Short Stories | 04 | 03 | 01 | NIL | Students who have studied Telugu up to Up to Class VIII | NIL |

Course Objective:

Short stories became one of the popular literary genres in Telugu literature. The main aim of the course is to introduce the influence of European thoughts on Telugu literature. This course will also discuss the Telugu literary heritage of storytelling - socio-political issues in Telugu short stories, and contemporary trends and approaches in Telugu short story writing.

Course Learning Outcomes:

Students will be able to understand the history of Telugu short stories and their unique features.

Students will get knowledge of important short story writers in Telugu.

Students will be able to analyse the texts critically

SHORT STORIES:

Unit -1 origin and Development of Telugu short story **(20 Hours)**

Unit -2 Features of Telugu short story **(20 Hours)**

Unit -3 Select short stories **(20 Hours)**

- Mee Peremiti* by Gurajada Appa Rao

- ii. *Bharya* by Gudipati Venkata Chalam
- iii. *Galivana* by Palagummi Padma Raju
- iv. *Vendi Kancham* by Munimanikyam Narasimha Rao
- v. *Moksham* by Ravi Sastry
- vi. *Sampenga Puvvu* by Gopichand
- vii. *Uri Chivara Illu* by Devarakonda Balagangadhara Tilak
- viii. *Arti* by Olga
- ix. *Supermom Syndrome* by P. Satyavati
- x. *Kappadalu* by Toleti Jaganmohan rao

Prescribed Texts:

Jampala Chaudari & A.K. Prabhakar., 2010, *Rendu Dashabdalalu Telugu Katha 1990-2009*, Secunderabad: Katha Sahiti.

Pandu Rangarao, Vakati, & Vedagiri Rambabu, 2001, *Bangaru Kathalu*, New Delhi: Sahitya Akademi.

Reference:

Dakshinamurti, Poranki., 1977, *Kathanika Swarupa Swabhavalu*, Hyderabad:_____.

Venkata Subbaiah, Vallampati., 1995, *Katha Shilpam*, Hyderabad: Visalandhra Publishing House.

Teaching Learning Process: Lectures-50 Hrs. Discussions-5Hrs. Assignments/Presentations-5Hrs.

Assessment Methods: Monthly Test, Internal Exam., Semester Exam.

Key Words: Telugu, Short story, Fiction

BA (PROG.) with Sindhi as minor

Category-III

ORIGIN AND DEVELOPMENT OF SINDHI LANGUAGE AND SCRIPTS.

Credit- 4

60 hours

The course provides a brief introduction to the history of Sindhi language and scripts. The beginning of writing system in Sindhi within the emergence of writing culture in India is addressed to start with. This followed by a discussion on the language families of the Indian sub-continent and the Indo- Aryan family of languages to which Sindhi belongs to. The subsequent three parts deal with old Sindhi, Middle Sindhi and Modern Sindhi phases of the language. The last phase deals with the regional varieties of Sindhi.

Reading list :-

- Adwani Bherumal Mahirchand, *Sindhi Boli ji tarikh*, Department of Modern Indian Languages, University of Delhi, 1963
- Jetley Murlidhar, *Bolia jo Sirishto ain Likhavat*, National Council for Promotion of Sindhi Language, 2018.
- Rohira Satish, *Sindhi Bolia ji Atamkatha*, Sindhi Times Publication, Ulhas Nagar, 2007
- Hiranandani Popati, *Boli Muhiniji Mau*, Published by writer, Kolaba, Mumbai, 1977

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES
Offered by Department of MI&LLS
Category-IV

GENERIC ELECTIVES (GE-1): Introductory Bengali

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department offering the course |
|----------------------|---------|-----------------------------------|----------|---------------------|---|-----------------------------|--------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| Introductory Bengali | 4 | 3 | 1 | Nil | Class 12 th pass in any subject except Bengali | None | Bengali |

Learning Objectives:

The Learning Objectives of this course are as follows:

- This course is aimed to teach the basic language skills in Bengali.
- It will introduce basic skills of the Bengali Language: its alphabets, essential words and simple sentence construction methods.
- The course intends to facilitate students acquiring primary skills of reading, writing and speaking Bengali along with building up an elementary vocabulary.

Learning outcomes:

The Learning Outcomes of this course are as follows:

- The course will enable the students to obtain the basic skills of reading, writing and speaking in Bengali along with building up a primary vocabulary.
- After the course they can read and write simple Bengali sentences, can figure out words having conjunct character.
- Students will learn basic everyday conversation.

SYLLABUS OF GE-1

UNIT – I (15 Hours)

Introduction to Bengali Vowel & Consonant sounds along with the sound-images

Introduction to vowel allographs

Introduction to Bengali Consonant Conjuncts

UNIT – II (15 Hours)

Introduction to Bengali Pronoun

Introduction to Bengali Noun, Numbers & Case Markers

UNIT – III (15 Hours)

Introduction to Verb & Time/Tense

Conjugation of different verbs

Bengali qualifiers/adjectives

Bengali postpositions

Conjunctions and its usage

UNIT – IV (15 Hours)

Making simple sentences in Bengali (basic syntactical rules)

Making Negative sentences in Bengali

Making Interrogative sentences in Bengali

Practical component (if any): NIL**Essential/recommended readings:**

Mahapatra, Tushar Kanti. (1999), Bengali for Non-Bengalis, Shishu Sahitya Samsad, Kolkata.

Mahapatra, Tushar Kanti. (1999), Bengali for Benginners, Shishu Sahitya Samsad, Kolkata.

Suggestive readings:

Study Materials will be provided by the respective department.

GENERIC ELECTIVES (GE-2: Bangla Sahityer Sankhipta Parichay)**Credit distribution, Eligibility and Pre-requisites of the Course**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------|---------|-----------------------------------|----------|---------------------|------------------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Bangla Sahityer | 4 | 3 | 1 | Nil | Class 12 th pass in any | Studied Bengali Up to |

| | | | | | | |
|--------------------|--|--|--|--|---------|---|
| Sankhipta Parichay | | | | | subject | 10 th standard Or working knowledge of Bengali Language |
|--------------------|--|--|--|--|---------|---|

Learning Objectives:

To introduce the general history of the history of Bengali language and literature, periodization of Bengali literature, important genres, institutions and litterateurs of Bengali literature.

Learning outcomes:

This course will enable students to understand the general history of Bengali language and literature along with basic knowledge of important genres, institutions and litterateurs of Bengali literatures.

SYLLABUS OF GE-2

UNIT – I (20 Hours)

বাংলা সাহিত্যের সংক্ষিপ্ত পরিচয়: বাংলাসাহিত্যের যুগবিভাগ ও যুগবৈশিষ্ট্য

UNIT – II (20 Hours)

প্রাচীন ও মধ্যযুগ : চর্যাপদ, শ্রীকৃষ্ণকীর্তন, অনুবাদ সাহিত্য(কৃতিবাস ওঝা), মঙ্গলকাব্যমুকুন্দরাম), ভারতচন্দ্র(, বৈষ্ণব পদাবলীবিদ্যাপতি), চণ্ডীদাস(, শাক্ত পদাবলী(রামপ্রসাদ সেন), প্রণয় কাব্যসৈয়দ) (আলাওল

UNIT – III (20 Hours)

আধুনিক যুগ : বাংলা গদ্যের বিকাশফোর্ট উইলিয়াম কলেজ), রামমোহন রায়, বিদ্যাসাগর (বঙ্কিমচন্দ্র চট্টোপাধ্যায়)কথাসাহিত্য, রবীন্দ্রনাথ ঠাকুর, শরৎচন্দ্র চট্টোপাধ্যায়(, নাটক ও প্রহসনমধুসূদন) দত্ত, দীনবন্ধু মিত্র, গিরিশ ঘোষ,(কাব্য ও কবিতা মহাকাব্য -দত্ত মধুসূদন), বিহারীলাল চক্রবর্তী - গীতিকাব্য, রবীন্দ্রনাথ ঠাকুর)

Practical component (if any): NIL

Essential/recommended readings:

অসিতকুমার বন্দ্যোপাধ্যায়, ২০০৫-২০০৮, *বাংলা সাহিত্যের সম্পূর্ণ ইতিবৃত্ত* কলকাতা, মডার্ন বুক এজেন্সী, ফ্রেড গুপ্ত, ২০০২, *বাংলা সাহিত্যের সমগ্র ইতিহাস* কলকাতা, গ্রন্থনিলয়,

Suggestive readings:

আহমদ শরীফ, ২০১১, *বাঙালী ও বাঙলা সাহিত্য* কলকাতা, নয়া উদ্যোগ, দ্বিতীয় খণ্ড, আহমদ শরীফ, ২০১৪, *বাঙালী ও বাঙলা সাহিত্য* কলকাতা, নয়া উদ্যোগ, প্রথম খণ্ড,

গোপাল হালদার, বঙ্গাব্দ ১৪০৪, *বাংলা সাহিত্যের রূপকলকাতা*, অরুণা প্রকাশনী, প্রথম খণ্ড, *রেখা*
 গোপাল হালদার, বঙ্গাব্দ ১৪১২, *বাংলা সাহিত্যের রূপকলকাতা*, অরুণা প্রকাশনী, দ্বিতীয় খণ্ড, *রেখা*
 দেবেশ কুমার আচার্য, ২০০৪, *বাংলা সাহিত্যের ইতিহাস*, ইউনাইটেড বুক এজেন্সি, আদি ও মধ্য যুগ,
 কোলকাতা
 দেবেশ কুমার আচার্য, ২০০৭, *বাংলা সাহিত্যের ইতিহাস*, ইউনাইটেড বুক এজেন্সি, আধুনিক যুগ,
 কোলকাতা
 সুখময় মুখোপাধ্যায়, ১৯৭৪, *মধ্যযুগের বাংলা সাহিত্যের তথ্য ও কালক্রমজি*, ভরদ্বাজ এণ্ড কোং,
 কলকাতা

GENERIC ELECTIVES (GE-3): **Bingsha Shatabdir Bangla Kathasahitya**

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------------------------|---------|-----------------------------------|----------|---------------------|--|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Bingsha Shatabdir Bangla Kathasahitya | 4 | 3 | 1 | Nil | Class 12 th pass in any subject | Studied Bengali Up to 10 th standard Or working knowledge of Bengali Language |

Learning Objectives:

To introduce the generic features of novel and short story, and important texts of Bengali novel and short story.

Learning outcomes:

This course will enable students to understand the generic features of novel and short story and the artistic achievement of Bengali writers in these genres.

SYLLABUS OF GE-3

UNIT – I (20 Hours)

উপন্যাস ও ছোটগল্পের সংজ্ঞা ও শ্রেণিবিভাগ

UNIT – II (20 Hours)

বিভূতিভূষণ বন্দ্যোপাধ্যায় – পথের পাঁচালী

UNIT – III (20 Hours)

পরশুরাম — চিকিৎসা সংকট

মানিক বন্দ্যোপাধ্যায় – হারানের নাতজামাই

বনফুল — নিমগাছ

প্রেমেন্দ্র মিত্র – শৃঙ্খল

লীলা মজুমদার – নটে মামা

Practical component (if any): NIL

Essential/recommended readings:

বিভূতিভূষণ বন্দ্যোপাধ্যায়, ১৪১১, পথের পাঁচালী, মিত্র ও ঘোষ পাবলিশার্স প্রা:লি., কলকাতা
দীপংকর বসুসম্পাদিত), (২০০৩, পরশুরাম গল্পসমগ্র, এম. সি. সরকার এন্ড সন্স কলকাতা,
বনফুল, ২০০৬, বনফুলের শ্রেষ্ঠ গল্প, বাণীশিল্পকলকাতা,
যুগান্তর চক্রবর্তী(সম্পাদিত), ২০০৮, মানিক বন্দ্যোপাধ্যায়ের শ্রেষ্ঠ গল্প, বেঙ্গল পাবলিশার্স লিমিটেড (:প্রা),
কলকাতা

সোমা গঙ্গোপাধ্যায়(সম্পাদিত), ২০০৮, লীলা মজুমদার রচনাসমগ্র প্রথম খণ্ড:, লালমাটি, কলকাতা
সৌরীন ভট্টাচার্য(সম্পাদিত), ২০১৫, প্রেমেন্দ্র মিত্রের শ্রেষ্ঠ গল্প, দে'জ পাবলিশিং, কলকাতা

Suggestive readings:

অরুণকুমার মুখোপাধ্যায়, ২০০২, মধ্যাহ্ন থেকে সায়াহ্নে: বিংশ শতাব্দীর বাংলা উপন্যাস, দে'জ
পাবলিশিং কলকাতা,

অরুণকুমার মুখোপাধ্যায়, ২০০৪, কালের পুতলিকা : বাংলা ছোটগল্পের একশ দশ বছর: ১৮৯১, ২০০০-
জ পাবলিশিং কলকাতা'দে

অরুণকুমার মুখোপাধ্যায়, ২০১০, কালের প্রতিমা: বাংলা উপন্যাসের পঁচাত্তর বছর: ১৯২৩জ 'দে, ১৯৯৭
কলকাতা, পাবলিশিং

অশ্রু কুমার সিকদার, ১৯৮৮, আধুনিকতা ও বাংলা উপন্যাসকলকাতা, অরুণা প্রকাশনী,

উজ্জ্বলকুমার মজুমদার সম্পাদিত), ২০০৮, গল্পচর্চাকলকাতা, বঙ্গীয় সাহিত্য সংসদ,

জগদীশ ভট্টাচার্য, ১৯৯৪, আমার কালের কয়েকজন কথাশিল্পী, ভারবিকলকাতা,

তরুণ মুখোপাধ্যায় ও শীতল চৌধুরী সম্পাদিত), (২০০০, প্রেমেন্দ্র মিত্র ও আধুনিক বাংলা সাহিত্য,
কলকাতা, সাহিত্যলোক

দেবীপদ ভট্টাচার্য, ১৯৬১, উপন্যাসের কথা, সুপ্রকাশকলকাতা,

নারায়ণ গঙ্গোপাধ্যায় ১৪০৫, বঙ্গবন্ধু, সাহিত্যে ছোটগল্প, মিত্র ও ঘোষ পাবলিশার্স কলকাতা,

রথীন্দ্রনাথ রায়, ১৯৯৬, ছোটগল্পের কথা, পুস্তক বিপণিকলকাতা,

রফিকউল্লাহ খান, ২০০২, কথাসাহিত্যের বিচিত্র বিষয় ও নন্দনতত্ত্বঢাকা, অনন্যা,

শিশির চট্টোপাধ্যায়, ১৯৬২, উপন্যাস-পাঠের ভূমিকা, বুকল্যান্ড, কলকাতা

শিশিরকুমার দাশ, ২০০৭, বাংলা ছোটগল্প : ১৮৭৩, ১৯২৩- দে'জ পাবলিশিং কলকাতা,

শ্রীকুমার বন্দ্যোপাধ্যায়, ২০১১-২০১০, বঙ্গসাহিত্যে উপন্যাসের ধারা, মডার্ন বুক এজেন্সীকলকাতা,

সত্যেন্দ্রনাথ রায়, ২০০০ *বাংলা উপন্যাস ও তার আধুনিকতা*, দে'জ পাবলিশিং কলকাতা,
সরোজ বন্দ্যোপাধ্যায়, ২০১২, *বাংলা উপন্যাসের কালান্তর*, দে'জ পাবলিশিং কলকাতা,

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-4): Byabaharik Bangla Bhasha O Byakaran

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-------------------------------------|---------|-----------------------------------|----------|---------------------|--|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Byabaharik Bangla Bhasha O Byakaran | 4 | 3 | 1 | Nil | Class 12 th pass in any subject | Studied Bengali Up to 10 th standard Or working knowledge of Bengali Language |

Learning Objectives:

To give the students an idea of introductory grammar of Bengali language. It also offers a general idea of writing skills, such as letter writing, paragraph writing etc. to the students.

Learning outcomes:

The course will enlighten the students with basic level of Bengali Grammar and language.

SYLLABUS OF GE-3

UNIT – I (15 Hours)

সমোচ্চারিত ভিন্নার্থক শব্দ, বিপরীতার্থক শব্দ, সমার্থক শব্দ

UNIT – II (15 Hours)

বাক্য সংশোধন

UNIT – III (15 Hours)

পত্ররচনা

UNIT – IV (15 Hours)

বোধ পরীক্ষণ

Practical component (if any): NIL

Essential/recommended readings:

তারকনাথ গঙ্গোপাধ্যায়, ১৯৮৮, প্রবন্ধ বিচিত্রা, খণ্ড ১ ও ২, গ্রন্থভারতী, কলকাতা

বাংলা কি লিখবেন কেন লিখবেন আনন্দবাজার পত্রিকা ব্যবহার বিধি, ২০১৪, আনন্দ, কলকাতা

সুনীতিকুমার চট্টোপাধ্যায়, ২০১১, সরল ভাষাপ্রকাশ বাঙলা ব্যাকরণ, প্রকাশ ভবন, কলকাতা

Suggestive readings:

মুহম্মদ শহীদুল্লাহ, ২০১২, বাঙ্গালা ভাষার ইতিবৃত্ত, মাওলা ব্রাদার্স, ঢাকা

সুকুমার সেন, ২০০১, ভাষার ইতিবৃত্ত, আনন্দ পাবলিশার্স, কলকাতা

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-5): Bangla Byakaran Parichay – I

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|------------------------------|---------|-----------------------------------|----------|---------------------|--|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Bangla Byakaran Parichay – I | 4 | 3 | 1 | Nil | Class 12 th pass in any subject | Studied Bengali Up to 10 th standard Or working knowledge of Bengali Language |

Learning Objectives:

- To make the students aware about basic grammar of Bengali language.
- To make students familiar with various forms of Bengali modern grammar.

Learning outcomes:

- The course would enlighten the students on the topic such as Dhawani, Barna, Pada etc.
- The students could be able to understand and analyse the basic knowledge of Bengali language.

SYLLABUS OF GE-3

UNIT – I (20 Hours)

ধ্বনি ও বর্ণ (সংজ্ঞা, পার্থক্য, শ্রেণিবিভাগ - স্বরধ্বনির শ্রেণিবিভাগ এবং উচ্চারণস্থান অনুযায়ী ব্যঞ্জনধ্বনির শ্রেণিবিভাগ)

UNIT – II (20 Hours)

ধ্বনি পরিবর্তনের কারণ, ধারা ও নির্বাচিত সূত্র (অপিনিহিত্তি, অভিশ্রুতি, স্বরসঙ্গতি, সমীভবন)

UNIT – III (20 Hours)

পদ (সংজ্ঞা ও শ্রেণিবিভাগ), কারক (সংজ্ঞা ও শ্রেণিবিভাগ), ক্রিয়ার কাল (মৌলিক কাল)

Practical component (if any): NIL

Essential/recommended readings:

আবুল কালাম মনজুর মোরশেদ, ২০১৩, আধুনিক ভাষাতত্ত্ব, মাওলা ব্রাদার্স, ঢাকা
রামেশ্বর শ', ১৪১৯ বঙ্গাব্দ, সাধারণ ভাষাবিজ্ঞান ও বাংলা ভাষা, পুস্তক বিপণি, কলকাতা
সুনীতিকুমার চট্টোপাধ্যায়, ২০১১, সরল ভাষাপ্রকাশ বাংলা ব্যাকরণ, প্রকাশ ভবন, কলকাতা

Suggestive readings:

পরেশচন্দ্র মজুমদার, ২০০৮, বাংলা ভাষা পরিক্রমা, ২-খণ্ড, দে'জ, কলকাতা
মুহম্মদ শহীদুল্লাহ, ২০১২, বাঙ্গালা ভাষার ইতিবৃত্ত, মাওলা ব্রাদার্স, ঢাকা
সুকুমার সেন, ২০০১, ভাষার ইতিবৃত্ত, আনন্দ পাবলিশার্স, কলকাতা

Note: Examination scheme and mode shall be as prescribed by the Examination Branch,
University of Delhi, from time to time.

GENERIC ELECTIVES (GE-6): Introduction to Indian Literature

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department offering the course |
|-----------------------------------|---------|-----------------------------------|----------|---------------------|--|-----------------------------|--|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| Introduction to Indian Literature | 04 | 03 | 01 | NIL | Class 12 th passed in any subject | None | Modern Indian Languages and Literary Studies |

Learning Objectives

The course aims at introducing the diversity of Indian languages and literary traditions in India. It aims at familiarizing the students with the philological characteristics and distribution of the languages in India and the nature of literary culture of the country. The course also aims at taking a survey of literatures produce in different Indian languages.

Learning outcomes

The course is expected to acquaint the students with the vast Indian literary cultures produced in different Indian languages. It will orient the students towards identifying the commonalities and establishing connections among the languages and literatures of India.

SYLLABUS OF GE-1

UNIT – I (15 Hours)

Indian Languages: Distribution and Philological Characteristics

UNIT – II (15 Hours)

Understanding the Concept of Indian Literature

UNIT – III (15 Hours)

Indian Literary Tradition: Written and Oral

UNIT – IV (15 Hours)

Brief Survey of Literatures in Indian Languages

Essential/recommended readings

Aizaz, Ahmad. "Indian Literature." *Theory: Classes, Nations, Literatures*. Verso. 1992. 243-285.

Chatterji, Suniti Kumar. *Languages and Literatures of Modern India*. Bengal Publishers Pvt. Ltd., 1963.

Emeneau, M. B. "India as a Linguistic Area" *Language*, Vol. 32, No. 1, Jan. - Mar., 1956, pp. 3-16.

Nagendra. *Indian Literature: Short Critical Surveys of 12 Major Indian Languages and Literatures*. Lakshmi Narain Agarwal, 1959. (Selections)

Suggestive readings:

Das, Sisir Kumar. *A History of Indian Literature*, 3 Volumes. Sahitya Akademi, 1991, 2005.

Gokak, Vinayak Krishna. *The Concept of Indian Literature*. Munshiram Manoharlal, 1979.

GENERIC ELECTIVES (GE-7: **Introducing Comparative Indian Literature**)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|-----------|-----------------------------------|-----------|---------------------|--|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introducing Comparative Indian Literature | 04 | 03 | 01 | NIL | Class 12th passed in any subject | None |

Learning Objectives

The course aims at introducing the basic concepts and premises underlying the discipline of Comparative Indian Literature.

The course also touches upon the history of its development along with the basic methods and models it follows

Learning outcomes

The course is expected to orient the students towards a departure from the mono-literary investigation and the need for a new methodology for the literary analysis in a multi-lingual and multi-cultural situation that India provides.

SYLLABUS OF GE-2

UNIT – I (15 Hours)

World Literature, Comparative Literature and Indian Literature

UNIT – II (15 Hours)

What is Comparative Indian Literature?

Evolution of Comparative Indian Literature as a Discipline

UNIT – III (15 Hours)

Nature and Perspective of Comparative Indian Literature

Indian Literature as Comparative Literature

UNIT – IV (15 Hours)

Introduction to Tools and Methods of Comparison

Essential/recommended readings:

Dasgupta, Subha Chakraborty. "Comparative Literature in India: An Overview of its History." 2016.

Dev, Amiya and Sisir Kumar Das. eds. *The Idea of Comparative Literature: Theory and Practice*. Allied Publishers, 1989 (Selections)

Dev, Amiya. "Comparative Literature in India". *Comparative Literature and Culture*. Vol 2 Issue 4. Purdue University. 2000

Tiwari, Bhavya, "Rabindranath Tagore's Comparative World Literature" in Theo D'hen and et.al edited *The Routledge Companion to World Literature*. Routledge, 2012

Suggestive readings –

Bandhyopadhyay, S. (Ed.) *Thematology: Literary Studies in India*. Jadavpur University. 2004 (Selections)

Chanda, Ipshita (ed.) *Literary Studies in India: Literary Historiography*. Jadavpur University, 2004. (Selections)

Dasgupta, Subha Chakraborty. *Literary Studies in India: Genology*. Jadavpur University, 2004. (Selections)

George, K.M. ed. *Comparative Indian Literature* (Vol. I and II). Kerala Sahitya Akademi, 1984. (Selections)

Majumdar, Swapan. *Comparative Literature: Indian Dimensions*. Papyrus, 1987.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-8): BASIC TELUGU

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department offering the course |
|---------------------|---------|-----------------------------------|----------|---------------------|---|-----------------------------|--------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| Basic Telugu | 4 | 3 | 1 | | Students who have not studied Telugu up to 8 th Standard | NIL | MIL&LS |

Learning Objectives:

The course aims to teach basic language skills in Telugu, and it intends to facilitate students in acquiring foundational skills of reading, writing and speaking in Telugu along with synonyms to expand vocabulary. This course is divided into three units, and it will cover the basic language structures, the activities and functions generally explored by a beginners' syllabus, i.e. learning Telugu syllables, making simple sentence construction and using the same sentences with fellow students; it goes further, covering situations such as working, studying and including materials focused on the Telugu media, i.e., cinema, television, the press and advertising. Regarding grammar structures, the exercises are at the primary level only.

Course Learning Outcome:

The course will enable the students to obtain the basic skills of reading, writing and speaking in Telugu, along with building a primary vocabulary. After completing the course, they can read and construct simple Telugu sentences, figure out words with conjunct characters, and learn functional, everyday conversation in different language situations. Students interact with classmates by using simple sentences about their daily routine matters on official and informal occasions.

Allotted classes: 30 hours

Credits: 02

Unit -I (20 Hours)

Introduction to Telugu Vowel & Consonant sounds & along with the sound-image

Script introduction

Introduction of Numerals (up to 70+30)

Unit -II (24 Hours)

Introduction to Telugu Noun & Pronoun, its Subjunctives

Telugu qualifiers/adjectives

Telugu prepositions

Conjunctions and their usage

Introduction to Verb & Time/Tense

Conjugation of different verbs

Unit –III (16 Hours)

Making simple sentences in Telugu (basic syntactical rules)

Making Negative sentences in Telugu

Making Interrogative sentences in Telugu

Teaching Learning Process: Lecture-30 Hrs. Discussions 4Hrs.

Assignments / Presentation-4 Hrs

Assessment Methods: Monthly Test., Internal Exam, Semester Examinations.

Keywords: Telugu, Alphabets, Simple Sentence, Elementary Vocabulary.

Reading list:

Arden, A H., 1905, *A progressive grammar of the Telugu language*. 2nd ed. Madras: Society for promoting Christian knowledge.

Krishnamurti, B. and Gwynn, J. P. L. 1986, *A Grammar of Modern Telugu*. USA: Oxford University Press,

Parandhama Reddy, M. and Venkateswara Shastri, J. 1997. *Telugu Velugu- I*. Mysore: Central Institute of Indian Languages.

Ramanarasimham, Parimi. 1985, *An Intensive Course in Telugu*. Mysore: Central Institute of Indian Languages,

Sanjay, D., 2019, *Spoken Telugu for Absolute Beginners*. _____: _____.

Venkatavadhani, Divakarla. 2017, *Telugu in Thirty Days*. Hyderabad. Andhra Pradesh Sahitya academy,.

GENERIC ELECTIVES (GE-9: TELUGU LITERATURE AND HISTORY: AN INTRODUCTION)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|--|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Telugu Literature and History: An Introduction | 4 | 3 | 1 | 0 | Students who have not studied Telugu up to 10 th Standard | NIL |

Learning Objectives

The course provides students with a substantive understanding of literature and the history of Telugu. This course gives an outline of Telugu literature cultural development of Telugu people as seen through the lens of literature. It will discuss the role of literature in the reconstruction of history from an ancient period to present times and the importance of literature in reflecting the social, political and cultural histories. It mainly focuses on the study of Andhra history through literary works, especially the historical writings by various authors.

The objective of the course:

The main objective of the course is to introduce the Telugu language, literature and culture to non-Telugu students. The first half of the course focuses on the history of Telugu literature from the ancient period and the second half focuses on the History of Telugu through English translations

Course Units

Unit-1. *Kavitrayam* (Nannaya, Tikkana, Errana): An Introduction (15 Hours)

Unit-2. Ramayana Poets (Ranganatha, Bhaskara, Molla): An Introduction (15 Hours)

Unit-3. Prabandha poets or Asta Diggaja poets and their: An Introduction (15 Hours)

Unit-4 History of Telugu people: An Introduction (15 Hours)

Reading list:

Chenchayya, P., and M. Bhujanga Rao Bahadur. 1988. *A History of Telugu Literature*. Chennai: Asian Educational Services.

Hanumanta Rao, B.S.L., 1995. *Socio-Cultural History of ancient and Medieval Andhra*. Hyderabad: Telugu University.

Krishnamurthi, Salva. 1994. *History of Telugu Literature from Early Times to 1100 A.D.* (2 Vols.). Madras: Institute of Asian Studies.

Kulasekhara Rao, M., 1988. *A History of Telugu Literature*. Hyderabad: M. Kulasekhara Rao.

Raju, P.T. 1944. *Telugu Literature*. Bombay: Onal Book House Ltd.

Sitapati, Gidugu Venkata. 1968. *History of Telugu Literature*. New Delhi: Sahitya Akademi.

GENERIC ELECTIVES (GE-10): Basic Tamil

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------|---------|-----------------------------------|----------|---------------------|---|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Tamil | 04 | 03 | 01 | - | Students who have studied the Tamil language up to Class VIII | - |

Learning Objectives:

This course is aimed to teach the basic language skills in Tamil. It will introduce basic skills of the Tamil Language: its alphabets, essential words and simple sentence construction methods. The course intends to facilitate students acquiring primary skills of reading, writing and speaking Tamil along with building up an elementary vocabulary.

Learning Outcomes:

The course will enable the students to obtain the basic skills of reading, writing and speaking in Tamil along with building up a primary vocabulary. After the course they can read and write simple Tamil sentences, can figure out words having conjunct character, and can have basic everyday conversation.

SYLLABUS OF GE-10

Unit I (15 Hours)

- Introduction to Tamil Vowel & Consonant
- Introduction to Tamil Consonant Conjunct

Unit II(15 Hours)

- Introduction to Tamil Pronoun & its Subjunctives
Tamil Noun, Numbers & its Subjunctives
- Tamil adjectives & prepositions

- Conjunctions and its usage

Unit III (15 Hours)

- Introduction to Verb & Time/Tense
- Conjugation of different verbs

Unit IV (15 Hours)

- Making simple sentences in Tamil
- Making Negative sentences in Tamil

Essential/recommended Readings:

1. *Arokianathan, S. Spoken Tamil for Foreigners, (Lesson 1-5) A-team Info Media Publishers Pvt. Ltd, Chennai. 2012.*
2. *Tamil Alphabet in Hart, Kausalya. Tamil for Beginners Part I & II, (Lesson 1- 5 & 10) Centre for South and South East Asia, University of California at Berkeley, 1992.*
3. *Hart, Kausalya. Tamil for Beginners Part I & II, (Lesson 1- 5 & 10) Centre for South and South East Asia, University of California at Berkeley, 1992.*
4. *Asher, R.E. Colloquial Tamil, Routledge (Lesson 1), London. 2002.*
5. *Karunakaran, K. & Balakrishnan.R. Elementry Tamil (Introductory Course), Sabanayagam Printers, Chidambaram, 2001.*
6. *Rajaram, S. An Intensive Course in Tamil (Unit. 4), CIIL, Mysore, 1987.*
7. *Arangarajan. Maruthur. Thavarinrrith Thamizh Ezhutha, Ainthinaip Pathippagam, Chennai, 2007*

Suggestive readings: NIL

GENERIC ELECTIVES (GE-11: Introduction to Tamil Folk Literature)**Credit distribution, Eligibility and Pre-requisites of the Course**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|-----------|-----------------------------------|-----------|---------------------|--|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction to Tamil Folk Literature | 04 | 03 | 01 | - | Students who have not studied the Tamil language up to Class VIII | NIL |

Learning Objectives:

The aim of the course is to teach the students to read literature as the source to understand and explain the Folklore. It will train the students to write on the specialized subject of Folklore and Culture with the help of literary texts and to incorporate this knowledge in understanding of literature and other studies. This course will enhance the ability in language usage by developing the technical terminology of the specific fields of knowledge. The teaching method of this course includes the identification of texts which contains the elements of Folklore and Culture in Tamil.

Learning Outcomes:

The intense study will equip the students to understand the particular field of knowledge in Tamil and inculcate an ability to write on these disciplines. This study shall explain the role of literature to understand Folklore and Culture and the need of these disciplines in understanding and production of literary texts.

SYLLABUS OF GE -11

Unit I (15 Hours)

- Introduction to Tamil Folklore Studies

Unit II(15 Hours)

- Oral Traditions

Unit III (15 Hours)

- Folklore and Culture of Tamils

Unit IV (15 Hours)

- Analysis and Interpretations Folk Creations

Essential/recommended Readings:

1. N.Vanamamalai.1969. *Studies in Tamil Folk Literature*, Madras: NCBH.

Suggestive Readings:

1. Arunachalam.M. 1976. *Ballad Poetry*, Thiruchitrambalam: Gandhi Vidhyalayam.
2. Dorson, Richard. (Ed.) 1972, *Folklore and Folklife: An Introduction*, Chicago: The University of Chicago Press.
3. Hundoo, Jawaharlal, (Ed.) 1977. *A Bibliography of Indian Folk Literature*, Mysore : CILL
4. Dundes, Alen, (Ed.) 1965. *The Study of Folklore*, Englwood Cliffs, N.J: Prientice Hall, Inc.
5. Blackburn, Stuart Hart, 1983.*Performance As Paradigm: The Tamil Bow Song Tradition*, Michigan: University Microfilms International.
6. N.Vanamamalai.1981. *Interpretation of Tamil Folk Creations*, Trivandrum: Dravidian Linguistics Association.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DEPARTMENT OF LINGUISTICS

BA (Prog.) with Linguistics as Major

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria/ Pre-requisite of the course |
|--------------------------|---------|-----------------------------------|----------|------------------------|--|
| | | Lecture | Tutorial | Practical/ Practice | |
| Introduction to Language | 4 | 3 | 1 | 0 | Class XII with |

Learning Objectives. This course provides an introduction to the nature of language and its structure. It discusses the nature of human language and its properties with reference to both nature and nurture perspectives on language.

Course learning outcomes. The learning outcomes include basic knowledge of the structure of human language, nature and properties of human language, and essential skills in analysing language structure.

Unit 1: Introduction to Language

Hours: 12

- Nature of language: Language evolution, properties of human language, cognitive, social, and biological perspectives on language, spoken and signed languages.
- Language as a Scientific Phenomenon: Knowledge of language and how it is revealed
- Language and other areas of knowledge

Unit 2: Phonetics: Study of speech Sounds and their properties

Hours: 16

- The relationship between words and sounds and sounds and spelling
- Sounds in languages of the world, a finite set; Speech versus non-speech sounds; why study speech sounds? Anatomy of human speech
- Sounds and symbols, Speech production and description

Unit 3: Phonology

Hours: 12

- Organization of speech sounds
- Phonemes, allophones, possible sequences of speech sounds in a specific language
- Phonological processes

Unit 4: Morphology and Syntactic structure

Hours: 20

- Structure of words: Morphemes and allomorphs, Morphological Processes
- Phrase structure: Words versus Phrases; relationship among words
- Phrase structure of Noun Phrases, Verb Phrases, Adjectival Phrases, Prepositional Phrases
- Syntactic structure: Basic typology of syntactic structures

Readings

1. Akmajian, Adrian, Demers, Richard A., Farmer, Ann K., & Harnish, Robert M. (2010). *Linguistics: An introduction to language and communication*. Cambridge, Massachusetts: MIT Press. (Chapters: 1, 2, 3, 4, 5).
2. Ashby, Michael and Maidment, John. 2005. *Introducing Phonetic Science*. Cambridge University Press. (Chapter 9 deals with phonology)
3. Ladefoged, Peter. 2001 (4th edn.). *A course in phonetics*. New York: Harcourt Brace.
4. Ladefoged, Peter and Johnson, Keith. 2011. *A course in phonetics*. Wadsworth. Part II.

DSC-2: INTRODUCTION TO INDIAN LANGUAGES

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria/ Pre-requisite of the course |
|---------------------------------|---------|-----------------------------------|----------|-----------|--|
| | | Lecture | Tutorial | Practical | |
| Introduction to Indian Language | 4 | 3 | 1 | 0 | Class XII with |

Objectives. Simultaneous with DSC-1, this additional paper introduces students to the specifics being learnt to Indian languages as a case study, as such, it provides a clear knowledge and expertise in the concepts learnt in DSC-1. This course provides a brief survey and the characteristics of Indian languages and Indian language families.

Course learning outcomes. The learning outcomes include the classification of the Indian languages and the essential properties of Indian languages.

Unit 1: India as a ‘Linguistic Area’

Hours: 12

- A brief survey of Indian Languages.
- Description of Indian Languages.
- Classification of Indian Languages

Unit 2: Classification and features of Indo-Aryan Language family

Hours: 16

- geographical distribution of the Modern Indo-Aryan languages
- Classification of Indo-Aryan Language family
- Characteristics/features of Indo-Aryan Language family
- A note of any two Indo-Aryan Languages or dialects.

Unit 3: Classification and features of Dravidian language family and Tibeto-Burman language family

Hours : 16

- geographical distribution of the Modern Dravidian languages
- Classification and features of Dravidian Language family
- geographical distribution of Tibeto-Burman languages
- Classification and features of Tibeto-Burman language family

Unit 4: Classification and features of Austro-Asiatic language family and Languages of Andaman and Nicobar

Hours : 16

- geographical distribution of the Austro-Asiatic languages
- Classification and features of Austro-Asiatic Language family
- geographical distribution of languages of Andaman and Nicobar Islands
- Classification and features of languages of Andaman and Nicobar Islands

Readings

1. Benedict, Paul A. 1972. *Sino-Tibetan: A Conspectus*. Berkeley: STEDT.
2. Cardona, George & Dhanesh Jain (eds). 2003. *The Indo-Aryan Languages*. London/ New York: Routledge.
3. Gregory, D. S. Anderson (ed.). 2008. *The Munda Languages*. London: Routledge.
4. Grierson, G.A. 1927. *Linguistic Survey of India*. Vol. I Part I. Ed. by Siddheswar Verma. Delhi: Motilal Banarsidass.
5. Krishnamurti, Bhadriraju. 2003. *The Dravidian Languages*. Cambridge: Cambridge University Press.
6. Masica, Collin. P. 1991. *The Indo-Aryan Languages*. Cambridge: Cambridge University Press.

BA (Prog.) with Linguistics as Non-Major

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria/ Pre-requisite of the course |
|--------------------------|---------|-----------------------------------|----------|---------------------|---|
| | | Lecture | Tutorial | Practical/ Practice | |
| Introduction to Language | 4 | 3 | 1 | 0 | Class XII with |

Learning Objectives. This course provides an introduction to the nature of language and its structure. It discusses the nature of human language and its properties with reference to both nature and nurture perspectives on language.

Course learning outcomes. The learning outcomes include basic knowledge of the structure of human language, nature and properties of human language, and essential skills in analysing language structure.

Unit 1: Introduction to Language

Hours: 12

- Nature of language: Language evolution, properties of human language, cognitive, social, and biological perspectives on language, spoken and signed languages.
- Language as a Scientific Phenomenon: Knowledge of language and how it is revealed
- Language and other areas of knowledge

Unit 2: Phonetics: Study of speech Sounds and their properties

Hours: 16

- The relationship between words and sounds and sounds and spelling
- Sounds in languages of the world, a finite set; Speech versus non-speech sounds; why study speech sounds? Anatomy of human speech
- Sounds and symbols, Speech production and description

Unit 3: Phonology

Hours: 12

- Organization of speech sounds
- Phonemes, allophones, possible sequences of speech sounds in a specific language
- Phonological processes

Unit 4: Morphology and Syntactic structure

Hours: 20

- Structure of words: Morphemes and allomorphs, Morphological Processes
- Phrase structure: Words versus Phrases; relationship among words
- Phrase structure of Noun Phrases, Verb Phrases, Adjectival Phrases, Prepositional Phrases
- Syntactic structure: Basic typology of syntactic structures

Readings

5. Akmajian, Adrian, Demers, Richard A., Farmer, Ann K., & Harnish, Robert M. (2010). *Linguistics: An introduction to language and communication*. Cambridge, Massachusetts: MIT Press. (Chapters: 1, 2, 3, 4, 5).
6. Ashby, Michael and Maidment, John. 2005. *Introducing Phonetic Science*. Cambridge University Press. (Chapter 9 deals with phonology)
7. Ladefoged, Peter. 2001 (4th edn.). *A course in phonetics*. New York: Harcourt Brace.
8. Ladefoged, Peter and Johnson, Keith. 2011. *A course in phonetics*. Wadsworth. Part II.

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department offering the course |
|---------------------------|----------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|--------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| Language and Crime | 4 | 3 | 1 | 0 | Class XII | | Linguistics |

Learning Objectives

The Learning Objectives of this course are as follows:

- To make learners appreciate the interface between language and law

- To make learner understand the use of language in the legal process
- To teach the fundamentals of text analysis using linguistic tools
- To teach students to analyse linguistic data in a forensic context by understanding social contexts of language

Learning outcomes

By participating in this course, the student will develop:

- an appreciation of theory behind analysis of speech involved in criminal contexts;
- skills to analyse spoken and written language using linguistic tools, in the contexts of criminal courtroom statements, interactions and documents
- experience of handling of difficult and sensitive materials and an understanding of ethical issues involved in crime-related data;
- skills of auditory analysis and digital processing of forensic recordings.

SYLLABUS OF GE-1 (SEMESTER-I)

UNIT – I (12 Hours)

Language-Crime Interface

- legal language and grammar
- legal language and meaning
- Courtroom discourse

UNIT – II (16 Hours)

Forensic Speech Science

- Indian language speech sounds
- Transcription of speech data
- Acoustic data analysis

UNIT – III (16 Hours)

Sociophonetics

- phonological variation
- dialects and speech varieties
- language change

UNIT – IV (16 Hours)

Linguistic analysis and Identification

- linguistic fingerprinting
- discourse analysis
- analysis of social media texts and images

Essential/recommended readings

Jessen, M. (2008) Forensic phonetics. *Language and Linguistics Compass* 2: 671-711.

Solan, Lawrence M. and Tiersma, Peter M. (eds.) (2012) *The Oxford Handbook of Language and Law*. Oxford: OUP.

Foulkes, P., Scobbie, J.M., & Watt, D. (2010). Sociophonetics. In Hardcastle, W.J., Laver, J. & Gibbon, F.E. (eds.) *The Handbook of Phonetic Sciences*, 2nd edn. Oxford: Blackwell. pp. 703-754.

Suggestive readings

Fromkin, V., Rodman, R. and Hyams, N. (eds.). (2012). *Introduction to language*. Thomson-Wadsworth.

Mesthrie, R., Swann, J., Deumert, A., & Leap, W. (2009) (2nd edition). *Introducing sociolinguistics*. Edinburgh University Press.

DEPARTMENT OF SANSKRIT
BA (Hons.) Sanskrit

Category-I

Credit distribution, Eligibility and Pre-requisites of the Course

DSC 1: Applied Sanskrit

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Applied Sanskrit | 04 | 3 | 1 | 0 | Class XII Pass | Nil |

Learning Objectives

- To generate interest in Sanskrit language among the students.
- To impart knowledge of the structure of Sanskrit language.
- To impart general skills of communication and writing in Sanskrit.

Learning outcomes

- The students will be able to understand the general structure of Sanskrit language.
- The students will be able to write and communicate in Sanskrit.
- Students will become more interested in Sanskrit language.
- Students will be better equipped to comprehend the Hons. syllabus.

SYLLABUS OF DSC-1

Unit 1: विभक्ति एवं लट् व लृट् लकार

(15 Hrs)

- विभक्तियाँ व उनके सामान्य अर्थ- छात्र, कवि, शिशु, पितृ, कर्तृ, आत्मन्, भवत्, लता, मति, नदी, वाक्, मनस् (तृतीया द्विवचन भ्याम् से सप्तमी बहुवचन सु)
- अकारान्त पुल्लिङ्ग व नपुंसक लिङ्ग- प्रथमा व द्वितीया विभक्ति व भ्वादि, तुदादि, दिवादि एवं चुरादि लट् लकार प्रथमपुरुष में वाक्य रचना
- अकारान्त पुल्लिङ्ग व नपुंसकलिङ्ग शब्दों की सारी विभक्तियों में एकवचन के रूप व वाक्य रचना

- iv. **प्रतिनिधि धातुओं के आधार पर गण एवं विकरण परिचय** – (अदादिगण) अस्, (जुहोत्यादिगण) दा, (स्वादि) श्रु, (क्र्यादि) ज्ञा, ग्रह, (तनादि) कृ धातुओं के प्रथमपुरुष के प्रयोग एवं वाक्य रचना
- v. **सर्वनाम पुल्लिङ्ग शब्द**- तत्, एतत्, किम्, यत् के शब्दों के साथ तुमुन्, क्त्वा व ल्यप् से वाक्य रचना
- vi. **अस्मद् के प्रथमा एवं द्वितीया के प्रयोग**- विविध धातुओं के उत्तम पुरुष के प्रयोग
- vii. **युष्मद् के प्रथमा एवं द्वितीया के प्रयोग**- विविध धातुओं के मध्यम पुरुष के प्रयोग
- viii. **अस्मद् एवं युष्मद् के तृतीयादि विभक्तियों के प्रयोग एवं वाक्य रचना** (केवल सह के साथ तृतीया)
- ix. **हलन्त पुं, स्त्री० व नपुं० लिंगों में सब विभक्तियों के एक वचन शब्दों से वाक्य रचना**, लृट् लकार
- x. **इकारान्त व उकारान्त पुल्लिङ्ग के प्रथमा व द्वितीया के पदों के साथ वाक्य रचना**, अन्य विभक्तियों के एक वचन के प्रयोग एवं वाक्य रचना, पूर्वपठित तृतीयादि विभक्तियों के वाक्य
- xi. **आकारान्त, उकारान्त व ईकारान्त स्त्रीलिङ्ग के प्रयोग तथा वाक्य रचना**, लृट् लकार के प्रयोग

Unit 2 – कृदन्त व अन्य लकार

(15 Hrs)

- i. उपर्युक्त सभी पदों के साथ शतृ प्रत्यय के पुल्लिङ्ग व स्त्रीलिङ्ग में प्रयोगाधारित वाक्य रचना
- ii. ऋकारान्त पुल्लिङ्ग व स्त्रीलिङ्ग शब्दों के साथ उपर्युक्त प्रत्ययों के प्रयोग एवं वाक्य रचना
- iii. **क्त एवं क्तवतु प्रत्यय**- कर्मवाच्य एवं भाववाच्य में वाक्य रचना
- iv. सब गणों की प्रतिनिधि धातुओं के प्रयोग लङ् लकार का पूर्वपठित सब शब्दों के साथ प्रयोग एवं वाक्य रचना
- v. सब गणों की प्रतिनिधि धातुओं के लोट् लकार प्रयोग एवं वाक्य रचना
- vi. सब गणों की प्रतिनिधि धातुओं के विधिलिङ् प्रयोग एवं वाक्य रचना

Unit 3: सन्धि एवं तिङन्त कर्मवाच्य

(15 Hrs)

- i. अच् सन्धि – दीर्घ, गुण, वृद्धि, यण्, अयादि, पूर्वरूप
- ii. विसर्ग सन्धि
- iii. व्यंजन सन्धि
- iv. आत्मनेपद – पाँच लकार
- v. यक् प्रत्यय – कर्मवाच्य एवं भाववाच्य में विविध लकारों में प्रयोग

तव्यत् अनीयर् क्त (कर्मणि प्रयोग)

vi. इकाई तीन पर आधारित परीक्षा

Unit 4: समास – विविध समासों की संरचना

(15 Hrs)

i. विभक्ति तत्पुरुष

ii. द्वन्द्व

iii. कर्मधारय – विशेषण – विशेष्य, उपमामूलक, रूपकमूलक

iv. उपपद तत्पुरुष

v. बहुव्रीहि

vi. अव्ययीभाव

vii. इकाई चार पर आधारित परीक्षा

Essential/recommended readings

- द्विवेदी, कपिलदेव: प्रारम्भिक रचनानुवादकौमुदी, विश्वविद्यालय प्रकाशन, वाराणसी, उत्तर प्रदेश, संस्करण २०१९
- रूपचन्द्रिका, डॉ० ब्रह्मानन्द त्रिपाठी, चौखम्बा सुरभारती प्रकाशन, वाराणसी

Suggested readings

- पाण्डेय, राधामोहन: संस्कृत सहचर, स्टूडेंट्स फ्रेंड्स पटना, बिहार
- नौटियाल, चक्रधर: बृहद् अनुवाद चन्द्रिका, मोतीलाल बनारसीदास, दिल्ली

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

DSC 2: Classical Sanskrit Poetry

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Classical Sanskrit Poetry | 04 | 3 | 1 | 0 | Class XII Pass | Nil |

Learning Objectives

- This course aims at getting the students acquainted with the general outlines of Classical Sanskrit Literature (Poetry) through classical texts.
- The course also seeks to help students to creatively and critically engage with texts.

Learning outcomes

- This course will help the students develop a fair idea of the works of great Sanskrit poets.
- They will be able to appreciate the styles and thoughts of individual poets focusing on the poetical, artistic, cultural and historical aspects of their works.
- This course will enhance competence in chaste classical Sanskrit and give them skills in translation and interpretation of poetic works.

SYLLABUS OF DSC-2

Unit: I (15 Hrs)

Nitishatakam Verses 1 to 15

Unit: II (15 Hrs)
Kumarasambhavam Canto V Verses 1 to 29 (Parvati's Penance)

Unit: III (15 Hrs)
Kiratarjuniyam, Canto I Verses 1 to 25

Unit IV (15 Hrs)
Origin and Development of Mahākāvyas (Sanskrit Epics), General Introduction to Sanskrit Mahākāvyas (Sanskrit Epics) with special focus on Aśvaghoṣa, Kālidāsa, Bhāravi, Māgha, Śrīharṣa. Origin and Development of Gītikāvyas (lyric poetry), General Introduction to Gītikāvyas (lyric poetry) with special focus on Kālidāsa, Jayadeva, Amaruka, Bhartṛhari and Bilhaṇa.

Essential/recommended readings:

1. त्रिपाठी, कृष्णमणि, रघुवंशम् (मल्लिनाथकृत सञ्जीवनीटीका), चौखम्बा सुरभारती प्रकाशन, वाराणसी
2. जनार्दन शास्त्री, भारविकृत किरातार्जनीयम्, मोतीलाल बनारसीदास, दिल्ली
3. नेमिचन्द्र शास्त्री, कुमारसम्भवम्, मोतीलाल बनारसीदास, दिल्ली
4. त्रिपाठी, बाबूराम (सम्पा.), भर्तृहरि कृत नीतिशतकम् महालक्ष्मी प्रकाशन, आगरा, १९८६
5. पाण्डेय, ओमप्रकाश (व्या.), मनोरमा हिन्दी-व्याख्या सहित, भर्तृहरि कृत नीतिशतकम्,

- चौखम्बा अमरभारती प्रकाशन, वाराणसी, १९८२
6. विष्णुदत्त शर्मा शास्त्री (व्या.), भर्तृहरि कृत नीतिशतकम्, विमलचन्द्रिकासंस्कृतटीका व हिन्दी- व्याख्यासहित, ज्ञानप्रकाशन, मेरठ, संवत् २०३४.
 7. शर्मा, समीर, मल्लिनाथकृत घंटापथ टीका, भारवि कृत किरातार्जनीयम्, चौखम्बा विद्याभवन, वाराणसी
 8. C. R. Devadhar (Ed.), Raghuvamśam of Kālidāsa, MLBD, Delhi.
 9. Gopal Raghunatha Nandargikar (Ed.), Raghuvamśam of Kālidāsa, MLBD, Delhi.
 10. M.R. Kale (Ed.), Kirātārjunīyam of Bhāravi, MLBD, Delhi.
 11. M.R. Kale (Ed.), Kumārasambhavam, MLBD, Delhi.
 12. M.R. Kale (Ed.), Nītiśatakam of Bhartṛhari, MLBD., Delhi.
 13. M.R. Kale (Ed.), Raghuvamśam of Kālidāsa, MLBD, Delhi.

Suggested readings:

1. Mirashi, V.V., Kālidāsa, Popular Publication, Mumbai.
2. Keith, A.B., History of Sanskrit Literature, MLBD, Delhi.
3. Krishnamachariar, History of Classical Sanskrit Literature, MLBD, Delhi.
4. Gaurinath Shastri, A Concise History of Sanskrit Literature, MLBD, Delhi.
5. Winternitz, Maurice: Indian Literature (Vol. I-III), also Hindi Translation, MLBD, Delhi.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

DSC 3: Indian Social Institutions and Polity

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Indian Social Institutions and Polity | 04 | 3 | 1 | 0 | Class XII Pass | Nil |

Learning Objectives

- To generate interest in Ancient Sociological and Political Structure of the Society. students.

- To impart knowledge of the ancient Political Thinkers.
- To impart general skills to argue on the related topics.
- To establish the relevance of Ancient Indian Social and Political Institutions.

Learning outcomes

- Social institutions and Indian Polity have been highlighted in *Dharma and Artha śāstra* literature.
- The aim of this course is to make students acquainted with various aspects of social institutions and Indian polity as propounded in the ancient Sanskrit texts such as *Mahābhārata*, Kauṭilya's *Arthaśāstra* and other works known as *Nītiśāstra*.
- After learning this, students will be able to know the ancient Indian Political system and its universal theory.

SYLLABUS OF DSC-3

Unit 1 - Foundations of Indian Society

(15 Hrs)

i. Dharma

Sources of Dharma (*Manusmṛti*, 2,12; *Yājñavalkyasmṛti*,1.7)

Fourteen-Dharmasthānas (*Yājñavalkyasmṛti*,1.3)

Dharma as Social and Moral Duty (*Mitākṣarāṭīkā* on *Yājñavalkyasmṛti*,1.1). (*Manusmṛti*,6.92);

ii. Dharma as an evolving institution – Directions of and reasons for changes in Dharma Śāstra

iii. Sociological Significance of Sixteen *Samśkāras*.

iv. Balanced Life - Four aims of life 'Puruṣārtha Catuṣṭaya' - 1. Dharma, 2. Artha, 3. Kāma, 4. Mokṣa.

Unit II - Structure of Society

(15 Hrs)

i. Varṇa-System and Caste System:

Four-fold division of *Varṇa* System, (*R̥gveda*, 10.90.12),

Mahābhārata, *Śāntiparva*,72.3.8

Division of *Varṇa* according to *Guṇa* and *Karma* (*Bhagvadgītā*, 4.13, 18.41-44).

Caste-System and Inter-caste Marriages (*Mahābhārata*, *Anuśāsanaparva*, 48.3-11);

Assimilation of foreign tribes in *Varṇa*-System (*Mahābhārata*, *Śāntiparva*, 65.13-22).

Up-gradation and down-gradation of Caste (*Āpastambadharmasūtra*, 2.5.11.10-11,

Baudhāyanadharmasūtra, 1.8.16.13-14, *Manusmṛti*, 10,64, *Yājñavalkyasmṛti*, 1.96)

ii. Position of Women in the Society:

Brief survey of position of women in different stages of Indian Society;

Position of women in *Mahābhārata* (*Anuśāsanaparva* 46.5-11, *Sabhāparva*, 69.4-13.

Praise of women in The *Bṛhatsaṃhitā* of Varāhamihira

(*Strīprasamsā*, chapter-74.1-10)

Unit III - State and Kingship

(15 Hrs)

- i. Concept of Welfare State in *Arthaśāstra* of Kauṭilya (*Arthaśāstra*, 1.13: 'matsyanyāyābhibhutah' to 'yo' *asmāngopāyatīti*')
- ii. Essential Qualities of King (*Arthaśāstra*, 6.1.16-18: 'sampādayatyasampannaḥ' to 'jayatyeva na hīyate')
- iii. Conduct of the state (Manu Smṛiti 7 Verses 1 to 15)

Unit IV - State and International Relations

(15 Hrs)

- i. 'Saptāṅga' Theory of State: 1. *Svāmi*, 2. *Amātya*, 3. *Janapada* 4. *Pura*, 5. *Kośa*, 6. *Daṇḍa* and 7. *Mitra* (*Arthaśāstra*, 6.1. Mahābhārata, *Śāntiparva*, 56.5, *Śukranīti*, 1.61-62).
- ii. 'Maṇḍala' Theory of Inter-State Relations: 1. *Ari*, 2. *Mitra*, 3. *Ari-mitra*, 4. *Mitra-mitra*, 5. *Ari-mitramitra*;
- iii. *Śāḍgunya* Policy of War and Peace: 1. *Sandhi*, 2. *Vigraha*, 3. *Yāna*, 4. *Āsana*, 5. *Samśraya* 6. *Dvaidhibhāva*.

Essential/recommended readings

1. *Arthaśāstra* of Kautilya - (Ed.) Kangale, R.P. Delhi, Motilal Banarasidas 1965
2. *Mahābhārata* (7 Vols) - (Eng. Tr.) H.P. Shastri, London, 1952-59.
3. *Manu's Code of Law* - (Ed. & Trans.): Olivelle, P. (A Critical Edition and Translation of the *Manava-Dharmasāstra*), OUP, New Delhi, 2006.
4. *Yājñavalkyasmṛiti with Mitākṣarā commentary* - Chowkhamba Sanskrit Series Office, Varanasi, 1967
5. कौटिलीय अर्थशास्त्र – उदयवीर शास्त्री मेहर चन्द लछमन दास, दिल्ली
6. बृहत्संहिता – वराहमिहिर, हिन्दी अनुवाद बलदेव प्रसाद मिश्र, खेमराज श्रीकृष्णदास प्रकाशन, मुंबई
7. महाभारत (भाग १ – ६), हिन्दी अनुवाद सहित, गीता प्रेस गोरखपुर
8. मनुस्मृति- चौखंबा प्रकाशन, दिल्ली

Suggested readings

1. काणे, पी. वी. धर्मशास्त्र का इतिहास (1-4 भाग), अनु० अर्जुन चौबे काश्यप, (उत्तर प्रदेश हिन्दी संस्थान, लखनऊ, 1966-73)
2. जायसवाल सुवीरा, वर्ण तथा जाति व्यवस्था उद्भव तथा विकास, 2004
3. विद्यालङ्कार सत्यकेतु- प्राचीनभारतीय शासन व्यवस्था और राजशास्त्र, सरस्वतीसदन, मैसूर, 1968
4. Altekar, A.S, *State and Government in Ancient India*, Motilal Banarsidass, Delhi, 2001.

5. Altekar, A.S, The Position of Women in Hindu Civilization, Delhi, 1965.
6. Bhandarkar, D.R., Some Aspects of Ancient Indian Hindu Polity, Banaras Hindu University
7. Ghosal, U.N., A History of Indian Political Ideas, Bombay, 1959.
8. Jayaswal, K.P. Hindu Polity, Bangalore, 1967.
9. Jha, M.N. -Modern Indian Political Thought, Meenakshi Parkashan, Meerut, UP.
10. Law, N. S., Aspect of Ancient Indian Polity, Calcutta, 1960.
11. Lingat Robert, Classical Hindu Law,
12. Mathur A.D. Medieval Hindu Law, Oxford University Press, New Delhi, 2006
13. Mehta, V.R., Foundations of Indian Political Thought, Manohar Publisher, Delhi, 1999.
14. Pandey, G.C. Jaina Political Thought, Jaipur Prakrit Bharti, 1984.
15. Prabhu, P.H. Hindu Social Organisation, Popular Prakashan, Mumbai, 1998
16. Prasad, Beni, Theory of Government in Ancient India, Allahabad, 1968.
17. Saletore, B.A. Ancient Indian Political Thought and Institutions, Bombay, 1963.
18. Sharma, R. S., Aspects of Political Ideas and Institutions in Ancient India, MLBD, Delhi, 1996.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

BA (Prog.) With Sanskrit as Major
Category-II

DSC 1: Sanskrit Grammar

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-------------------------|-----------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Sanskrit Grammar | 04 | 3 | 1 | 0 | Class XII Pass | Nil |

Learning Objectives:

Sanskrit is much known for a long tradition of grammatical and semantic analysis of the language. Panini's grammar has always been highly respected for providing the best model for structural and semantic studies. This course intends to introduce to students the basic structure of Sanskrit language through the Laghusiddhantakaumudi, the premier text of Sanskrit grammar by Varadaraj.

Learning outcomes:

After completion of this course

- Students will understand the basic structural nuances of Panini's grammar.
- They will become familiar with fundamental sandhi and compounding patterns.
- They will also understand some most important primary and secondary suffixes of Sanskrit.
- The practice of the application of the rules learnt from the reading of the texts will further enhance their knowledge of the structural patterns of Sanskrit language.

SYLLABUS OF DSC-1

Unit I (15 Hrs)

Laghusiddhantakaumudī : Sañjñā Prakaraṇa

Mahesvar Sutra, Pratyahara, Uchcharana Sthan, Different types of Sound.

Unit II (15 Hrs)

Laghusiddhantakaumudī: Sandhi Prakaraṇa

ac sandhi: yaṇ, guṇa, dīrgha, ayādi, vṛddhi and pūrvarūpa.
hal sandhi: ścutva, ṣṭutva, anunāsikatva, chhatva and jaṣṭva
visarga sandhi: utva, lopa, satva and rutva

Unit III

(15 Hrs)

Laghusiddhāntakaumudī: Vibhaktyartha Prakaraṇa Vibhaktyartha Prakaraṇa

Unit IV

(15 Hrs)

General introduction to Samasa based on Laghusiddhāntakaumudī.

Essential/recommended readings:

1. धरानन्द शास्त्री, लघुसिद्धान्तकौमुदी, मूल एवं हिन्दी व्याख्या, दिल्ली ।
2. भीमसेन शास्त्री, लघुसिद्धान्तकौमुदी भैमी व्याख्या (भाग-1), भैमी प्रकाशन, दिल्ली ।
3. चारुदेव शास्त्री, व्याकरण चन्द्रोदय (भाग-1,2 एवं 3), मोतीलाल बनारसीदास, दिल्ली ।
4. सत्यपाल सिंह, लघुसिद्धान्तकौमुदी: प्रकाशिका नाम्नी हिन्दी व्याख्या सहिता, शिवालिक पब्लिकेशन, दिल्ली, 2014 ।
5. V.S. Apte, The Students' Guide to Sanskrit Composition, Chowkhamba Sanskrit Series, Varanasi (Hindi Translation also available).
6. M.R. Kale, Higher Sanskrit Grammar, MLBD, Delhi (Hindi Translation also available).

Suggested readings:

1. चक्रधर नौतियाल हंस, बृहद् अनुवाद चन्द्रिका, मोतीलाल बनारसीदास, दिल्ली
2. कपिलदेव द्विवेदी – रचनानुवादकौमुदी, विश्वविद्यालय प्रकाशन, वाराणसी

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

DSC 2: Sanskrit Poetry

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Sanskrit Poetry | 04 | 3 | 1 | 0 | Class XII Pass | Nil |

Learning Objectives:

This course aims at getting the students acquainted with the general outlines of Classical Sanskrit Literature (Poetry) through classical texts.

Learning outcomes :

- This course will help the students develop a fair idea of the works of great Sanskrit poets.
- They will be able to appreciate the styles and thoughts of individual poets focusing on the poetical, artistic, cultural and historical aspects of their works.
- This course will enhance competence in chaste classical Sanskrit and give them skills in translation and interpretation of poetic works.

SYLLABUS OF DSC- 2**Unit I****(15 Hrs)****Raghuvamśam: Canto-I (Verses 1-25):**

Introduction (Author and Text), Meaning/translation, Explanation, Story, Characteristics of Raghu Clan, Characteristics of Dilīpa, Role of Dilīpa for the welfare of the subjects. Appropriateness of title, Background of given contents.

Unit II**(15 Hrs)****Śiśupālavadhān - Canto II, (Verses 26-56):**

Introduction (Author and Text), Appropriateness of title, Background of given contents, Grammar, Translation, Explanation, Poetic excellence, thematic analysis. **माघे सन्ति त्रयो गुणाः, मेघे माघे गतं वयः, तावद् भा भारवेर्भाति यावन्माघस्य नोदयः ।**

Unit III**(15 Hrs)****Nītiśatakam - (Verses 1-20):**

Translation, explanation, social experiences of Bhartṛhari, Types of Fool.

Unit IV**(15 Hrs)****History of Sanskrit Poetry:**

Aśvaghōṣa, Kālidāsa, Bhāravi, Māgha, Śrīharṣa, Jayadeva, Bhartṛhari and their works. Origin and Development of Different types of Mahākāvya and Gītikāvya with special reference to the following Poets and their works.

Essential/recommended readings:

1. त्रिपाठी, कृष्णमणि, रघुवंशम् (मल्लिनाथकृत सञ्जीवनीटीका), चौखम्बा सुरभारती प्रकाशन, वाराणसी
2. झा, तारिणीश (व्या.), भर्तृहरिकृत नीतिशतकम् ,संस्कृत टीका, हिन्दी व अंग्रेजीव्याख्यानवादसहित, रामनारायणलाल बेनीमाधव , इलाहाबाद, १९७६.
3. त्रिपाठी, बाबूराम (सम्पा.), भर्तृहरिकृत नीतिशतकम् महालक्ष्मी प्रकाशन, आगरा, १९८६

4. विष्णुदत्त शर्मा शास्त्री (व्या.), भर्तृहरिकृत नीतिशतकम्, विमलचन्द्रिकासंस्कृतटीका व हिन्दी-व्याख्यासहित, ज्ञानप्रकाशन, मेरठ, संवत् २०३४.
5. शिशुपालवध – माघ, चौखम्बा विद्याभवन, वाराणसी
6. C.R. Devadhar (Ed.), Raghuvamśam of Kālidāsa, MLBD, Delhi.
7. Gopal Raghunath Nandargikar (Ed.), Raghuvamśam of Kālidāsa, MLBD, Delhi.
8. M.R. Kale (Ed.), Nītiśatakam of Bhartṛhari, MLBD., Delhi.
9. M.R. Kale (Ed.), Raghuvamśam of Kālidāsa, MLBD, Delhi.

Suggested readings:

1. Keith, A.B., History of Sanskrit Literature, MLBD, Delhi.
2. Krishnamachariar, History of Classical Sanskrit Literature, MLBD, Delhi.
3. Gaurinath Shastri, A Concise History of Sanskrit Literature, MLBD, Delhi.
4. Winternitz, Maurice: Indian Literature (Vol. I-III), also Hindi Translation, MLBD, Delhi.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

BA (Prog.) with SANSKRIT as MINOR

Category-III

DSC 1: Sanskrit Grammar

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department Offering the Course |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|--------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| Sanskrit Grammar | 04 | 3 | 1 | 0 | Class XII Pass | Nil | Sanskrit |

Learning Objectives:

Sanskrit is much known for a long tradition of grammatical and semantic analysis of the language. Panini's grammar has always been highly respected for providing the best model for structural and semantic studies. This course intends to introduce to students the basic structure of Sanskrit language through the Laghusiddhantakaumudi, the premier text of Sanskrit grammar by Varadaraj.

Learning outcomes:

After completion of this course

- Students will understand the basic structural nuances of Panini's grammar.
- They will become familiar with fundamental sandhi and compounding patterns.
- They will also understand some most important primary and secondary suffixes of Sanskrit.
- The practice of the application of the rules learnt from the reading of the texts will further enhance their knowledge of the structural patterns of Sanskrit language.

SYLLABUS OF DSC-1

Unit I

(15 Hrs)

Laghusiddhantakaumudī : Sañjñā Prakaraṇa

Mahesvar Sutra, Pratyahara, Uchcharana Sthan, Different types of Sound.

Unit II

(15 Hrs)

Laghusiddhantakaumudī: Sandhi Prakaraṇa

ac sandhi: yaṇ, guṇa, dīrgha, ayādi, vṛddhi and pūrvarūpa.

hal sandhi: ścutva, ṣtutva, anunāsikatva, chhatva and jaśtva
visarga sandhi: utva, lopa, satva and rutva

Unit III

(15 Hrs)

Laghusiddhāntakaumudī: Vibhaktyartha Prakaraṇa

Vibhaktyartha Prakaraṇa

Unit IV

(15 Hrs)

General introduction to Samasa based on Laghusiddhāntakaumudī.

Essential/recommended readings:

1. धरानन्द शास्त्री, लघुसिद्धान्तकौमुदी, मूल एवं हिन्दी व्याख्या, दिल्ली ।
2. भीमसेन शास्त्री, लघुसिद्धान्तकौमुदी भैमी व्याख्या (भाग-1), भैमी प्रकाशन, दिल्ली ।
3. चारुदेव शास्त्री, व्याकरण चन्द्रोदय (भाग-1,2 एवं 3), मोतीलाल बनारसीदास, दिल्ली ।
4. सत्यपाल सिंह, लघुसिद्धान्तकौमुदी: प्रकाशिका नाम्नी हिन्दी व्याख्या सहिता, शिवालिक पब्लिकेशन, दिल्ली, 2014 ।
5. V.S. Apte, The Students' Guide to Sanskrit Composition, Chowkhamba Sanskrit Series, Varanasi (Hindi Translation also available).
6. M.R. Kale, Higher Sanskrit Grammar, MLBD, Delhi (Hindi Translation also available).

Suggested readings:

1. चक्रधर नौतियाल हंस, बृहद् अनुवाद चन्द्रिका, मोतीलाल बनारसीदास, दिल्ली
2. कपिलदेव द्विवेदी – रचनानुवादकौमुदी, विश्वविद्यालय प्रकाशन, वाराणसी

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

**Common Pool of Generic Electives (GE) Courses
Offered by Department of Sanskrit**

Category-IV

GE-1: Basic Sanskrit

| Course Title | Nature of the Course | Total Credits | Components | | | Eligibility Criteria/ Prerequisite |
|-----------------------|----------------------|---------------|------------|----------|-----------|---------------------------------------|
| | | | Lecture | Tutorial | Practical | |
| Basic Sanskrit | GE-01 | 4 | 3 | 1 | 0 | Class XII Pass |

Basic Sanskrit

[A] Course Objectives:

This is an elementary course in Sanskrit language designed for students who wish to learn Sanskrit from the very beginning. Essential Sanskrit grammar will be introduced (without reference to Panini's sutras) through the multiple example method with emphasis on students constructing themselves the simple Sanskrit sentences.

[B] Course Learning Outcomes:

- Students will acquire the basic and working knowledge of the Sanskrit language.
- Students will be able to communicate in simple Sanskrit.
- Students will develop an interest in Sanskrit.
- Students will be motivated to study further.

[C] Course Contents

Unit: I Grammar and Composition, Part I:

- Nominative forms of 'a' ending masculine and neuter gender nouns with paṭh, khād, likh, bhū, and other similar simple verbs in present, past and future tenses. Accusative forms of nouns in singular number with the usage of more simple verbs.
- 'ā' and 'ī' ending feminine words in nominative and accusative cases with loṭ lakāra (imperative).
- Masculine and Feminine nouns ending in 'i' and masculine nouns ending in 'u' in various cases in singular number.
- Nominative forms of pronouns- asmad, yuṣmad, tat, etat, yat, kim in masculine, feminine and neutral genders.
- Masculine nouns ending in consonants – bhavat, guṇin, ātman and Feminine nouns ending in consonants – vāk.
- Neuter nouns ending in consonants – jagat, manas.

Unit: II Grammar and Composition, Part II

Special Verb forms – in parasmaipada –past, present, future and imperative - kr, śrū

Special Verb forms – in parasmaipada –past, present, future and imperative - jñā

Special Verb forms – in parasmaipada –past, present, future and imperative – dā, dhā

Special Verb forms – in ātmanepada – past, present, future and imperative – edh, sev

Unit: III Sandhis and Pratyayas

Ac Sandhis:

yaṇ, guṇa, dirgha, ayadi, vrddhi and pūrvarūpa

Hal sandhis:

scutva, stutva, anunāsikatva, chhatva and jaštva

Visarga sandhis:

satva and rutva

Unit: IV Pratyayas–

śatṛ, śānac, ktavatu, kta

ktvā, lyap, tumun

Active – passive structures only in laṭ lakāra

[D] References:

Compulsory Readings:

1. Mishra, Dr. Yadunandan, Anuvada Chandrika, Chaukhambha Orientaliya, Delhi, 2021.
2. Apte, Vaman Shivram, Students Guide to Sanskrit Composition, The Standard Publishing Company, Girgaon, Bombay, 1925.
3. Tripathi, Dr. Brahmananda, Rupa Chandrika, Chaukhamba Surbharati Prakashan, Varanasi, 2008.
4. Kridanta Rupa Mala – Srijan Jha – App. available on Google Play Store

[E] Teaching Learning Process:

1. Teachers will introduce the prescribed components of grammar with several examples.
2. Teachers will make students produce and practise with more examples.
3. Teachers will put words in phrases and sentences and repeat them in several variations.
4. Students will construct Sanskrit sentences in the class singly and collectively and exhibit them in spoken as well as written forms.
5. Teachers will provide practice sheets to the students for each section, which they will solve either in class or at home.
6. Teachers will from the very beginning, encourage students to make short and simple Sanskrit sentences and speak in Sanskrit.

GE -2: INDIAN AESTHETICS

| Course Title | Nature of the Course | Total Credits | Components | | | Eligibility Criteria/ Prerequisite |
|--------------------------|----------------------|---------------|------------|----------|-----------|------------------------------------|
| | | | Lecture | Tutorial | Practical | |
| Indian Aesthetics | GE-02 | 4 | 3 | 1 | 0 | Class XII Pass |

Course Objectives:

Aesthetics is a potent and important field of literary criticism. It has acquired the status and recognition of an independent academic discipline today, Aesthetics deals with the historically determined essence of human values, their creation, perception, appreciation and assimilation. It is the science and philosophy of all fine art forms. Indian perception accepts poetry, drama, music, architecture, iconography and painting as independent Art forms. The principal objective of this course is to give the students an overview of the major trends of Indian Aesthetics.

Course Learning Outcomes:

This course will enable students to identify the real essence behind all ideas of Beauty as propounded by Indian rhetoricians. After the completion of the course, the learner will be able to understand the Indian deliberations on aesthetic experience in the form of Rasa and its process. The participant will be able to appreciate the various artistic modes of expressions of Beauty in general and poetry in particular. The course will help the student peep into the historical evolution of the Indian science of aesthetics.

Course Contents:

Unit: I

Aesthetics (Saundaryāśāstra), its nature and components

Beauty (Saundarya): its definition, nature, importance and components: vāya, rūpa, vacana, hāva, Discussion of synonyms of the term Beauty (Saundarya): ramaṇīyatā, lāvaṇya, cārutā, kānti, madhuratā, manohāritā, suṣmā, abhirāmtā

Unit: II

The process of Aesthetic experience (Rasa)

- Constituents of rasa: Bhāva (human feelings and emotions) Vibhāva (causes or determinants), Anubhāva (voluntary gestures), Sāttvika bhāva (Involuntary gestures), Vyabhicāri bhava (transitory states) and Sthāyibhāva(basic mental states), Sahṛdaya/Sāmājika (Connoisseur/Spectator). Anukārya, Anukartā, Sādharaṇīkaraṇa (Generalization), four mental stages of rasa realization: Vikāsa (cheerfulness), Vistāra(exaltation), Kṣobha (agitation), Vikṣepa (perturbation).
- Number of rasas according to Bharat.
- Nature of rasa (Aesthetic experience) according to Sāhityadarpaṇa, aesthetic enjoyment – eternal bliss, the ultimate reality (ānandamayātā, alaukikatā)

Unit: III

Aesthetic elements (saundarya - tattva)

- Art as the mode of expression of Saundarya –Architecture, Sculpture and Painting

and Music.

- Main aesthetic elements of literary arts (Poetry and Drama): Alaṅkāra, rīti, Dhvani, Vakrokti & Aucitya.

Unit: IV

Prominent thinkers of Indian Aesthetics and Perception of beauty in Abhijñānaśākuntalam

- Bharata, Bhāmaha, Vāmana, Ānandavardhana, Rajśekhara, Abhinavagupta, Maṃmaṭa, Viśvanātha, Rūpagoswamī and Paṇḍitarāja Jagannātha
- Perception of beauty in Drama from cultural, social and aesthetical point of view in the context of Abhijñānaśākuntalam.

References:

Compulsory Reading:

1. Singh, Satyavrata, Sāhityadarpaṇa of Viśvanātha, Chaukhamba Vidyabhavan, Varanasi, 1957.
2. Kane P.V., *History of Sanskrit Poetics* pp.352-391, Motilal Banarasidas Publishers Private Limited, Delhi, 2002.
3. Pandey, Dr. Kantichandra: *Comparative Aesthetics*, vol.1 Chowkhamba Sanskrit series office Varanasi, 1972.
4. चतुर्वेदी ब्रजमोहन , भारतीय सौन्दर्यदर्शन , मध्यप्रदेश हिन्दी ग्रन्थ अकादमी. पृ. 5-12, 22-34.
5. चतुर्वेदी ब्रजमोहन, भारतीय सौन्दर्यदर्शन, पृ. 42-60
6. पाण्डेय कान्तिचन्द्र, स्वतन्त्र कलाशास्त्र, प्रथम भाग पृ. 593-625
7. चतुर्वेदी ब्रजमोहन, भारतीय सौन्दर्यदर्शन, पृ. 37-42
8. पाण्डेय कान्तिचन्द्र, स्वतन्त्र कलाशास्त्र, प्रथम भाग पृ. 593-625, चौखम्बा प्रकाशन, 1978
9. चतुर्वेदी ब्रजमोहन, भारतीय सौन्दर्यदर्शन, पृ. 61-76

Additional Resources:

1. Gnoli, R.: *The Aesthetic Experience according to Abhinavagupta*, Chowkhamba Sanskrit series office Varanasi, 1956
2. उपाध्याय बलदेव , संस्कृत- आलोचना , हिन्दी समिति, सूचना विभाग , उ. प्र., 1963
3. कृष्णकुमार, अलंकारशास्त्र का इतिहास , साहित्य भण्डार, मेरठ, 1998
4. Coomarswami A: *Introduction to Indian Art*, Theosophical Society, Adyar, 1956.
5. कृष्णकुमार, अलंकारशास्त्र का इतिहास , साहित्य भण्डार, मेरठ, 1998
6. पाण्डेय, कान्तिचन्द्र, स्वतन्त्र कलाशास्त्र, प्रथम तथा द्वितीय भाग, चौखम्बा संस्कृत सीरीज,

वाराणसी 1967, 1978

Teaching Learning Process:

The teaching-learning process for this paper will be theoretical as well as practical wherein all relevant elements will be analyzed. The students will know the salient features of Aesthetic based on Sanskrit literature on the Subject.

GE -3: BASIC PRINCIPLES OF AYURVEDA

| Course Title | Nature of the Course | Total Credits | Components | | | Eligibility Criteria/ Prerequisite |
|-------------------------------------|----------------------|---------------|------------|----------|-----------|---------------------------------------|
| | | | Lecture | Tutorial | Practical | |
| Basic Principles of Ayurveda | GE-03 | 4 | 3 | 1 | 0 | Class XII Pass |

Basic Principles of Āyurveda

Course Objectives:

The primary objective of this course is to offer the students an opportunity of learning about Ancient Indian Medical practices. Students will be familiar with the basic principles of the Science of Ayurveda.

Course Learning Outcomes:

This course will enable the students to get a fair understanding of the Science of Ayurveda (Medical Science). The course will make the learner capable of analyzing the classification and elements of Indian herbs. The course is supposed to create among the students an awareness of ancient medical practices.

Course Contents:

Unit: I

Introduction to Āyurveda

Definition of Āyurveda, Aim of Āyurveda, Subject Matter of Āyurveda, Salient Features of Āyurveda, Concept of Health according to Āyurveda, Unique features of Āyurveda.

History of Āyurveda

Introduction to Major Texts (Suśrut Samhitā and Caraka Samhitā) and Authors (Suśruta and Caraka) and Aṣṭāṅga Hṛdayam, Aṣṭāṅga Saṅgraha of Vāgbhaṭa.

Unit: II

Basic Principles of Āyurveda

1. **Triguṇas:** Sattva, Rajas and Tamas.
2. **Pañcamahābhūtas:** Ākāśa (Space), Vāyu (Air), Teja or Agni (Fire), Jala (Water) and Pṛthvī (Earth).
3. **Tridoṣas:** Vāta, Pitta and Kapha.
4. **Saptadhātus:** Rasa (fluid), Rakta (blood), Māmsa, Meda (fat), Asthi, Majjā and Śukra.

5. **Trayodasāgni:** Jatharāgni (gastric fire), Saptadhātvāgni and Pācabhātāgni.
6. **Trimalas:** Purīṣā (faeces), Mūtra (urine) and Sveda (sweat).

Unit: III

Aṣṭāṅga Āyurveda:

1. Kāy cikitsā (General Medicine)
2. Kaumārabhr̥tya (Pediatrics)
3. śalyatantra (Surgery)
4. Śālākya-Tantra (Ent. and Ophthalmology)
5. Bhūta Vidyā (Psychiatry Medicine).
6. Viṣa Vijñāna (Toxicology).
7. Rasāyana (Rejuvenates).
8. Vajīkaraṇa (Aphrodisiac).

Unit: IV

Important Medicinal Plants and their bases on Āyurveda

Medicinal Plants in Suśruta Saṁhitā: Tulsī, Haridrā, Sarpagandhā, Ghṛta Kumārī, Guggulu, Brāhmī, āmalā, Aśwagandhā, Arjun, Haldi, Neema Plant, Jamun, Pudina

[D] References:

1. Acharya, Srinivas, Panchakarma Illustrated, Chaukhamba Sanskrit Pratishthana, Delhi, 2006.
2. V.B. Athavale, Basic Principles of Āyurveda, Chaukhamba Sanskrit Pratishthan New Delhi, 2005.
3. Āyurveda Kā Saṅkṣipta Itihāsa, Hindi Sahitya Sammelan, Allahabad.
4. Bhagavan Dash, Vaidya, and Acarya Manfred M. Junius, A Handbook of Āyurveda, Concept Publishing Co., New Delhi, 1987.
5. Bhishagratna, Kaviraj Kunjalal, ed., translator. (2002). Sushruta Samhita Volumes I and II. Varanasi, India: Chowkhamba Sanskrit Series.
6. Charak Samhita E-text: <http://www.charakasamhita.com/>
7. <http://www.speakingtree.in/blog/medicinal-plants-from-ancient-india>
8. http://www.tkdil.res.in/tkdil/langdefault/ayurveda/Ayu_Principles.asp?GL=#q1
9. K. R. Srikantha Murthy, Illustrated Susruta Samhita, Chaukhamba Orientalia, 2012
10. M.S. Valiathan, An Introduction to Āyurveda Paperback, Universities Press (India) Private Limited, 2013
11. M.S. Valiathan, The Legacy of Suśruta, Universities Press, 2007
12. Priya Vrat Sharma, Essentials of Āyurveda: Sodasangahṛdayam, Motilal Banarsidass Publishers, 1999
13. Ravi Datta Tripathi, Vāgbhata's Aṣṭāṅg-saṅgraha, Chowkhamba Sanskrit Pratishthanam, Delhi., 2011.
14. Shantha Godagama, The Handbook of Āyurveda, North Atlantic Books, 2004
15. Sharma, Priyavrit V., ed., translator. (1981-1994). Charaka Samhita, Vols. 1 - 4, Chaukhamba Sanskrit Series, Varanasi, India: Varanasi, India: Chowkhamba Sanskrit Series.
16. Sharma, Ram Karan and Bhagawan Dash, Vaidya, eds., translators (1992 – 2000). Charaka Samhita Vols. 1 – 6. Varanasi, India. Chaukhamba Sanskrit Series.
17. Srikrishnamurthy, K.R. Srikantha, translator. (1991-1992). Vagbhata, Astanga Hridayam Vols. 1 and 2. Varanasi, India: Krishnadas Academy.

18. Srikrishnamurthy, K.R. Srikantha, translator. (2001). Sharangadhara Samhita: A treatise on Āyurveda. Varanasi, India: ChaukhambaOrientalia.
19. SusrutaSusruta (Author), Kunja Lal Bhishagratna, An English Translation of the Sushruta Samhita, Based on Original Sanskrit Text. Edited and Published by KavirajKunja Lal Bhishagratna. with a Full ... Notes, Comperative Views, Index, Glossary, Nabu Press, 2012

[E] Teaching Learning Process:

1. Teachers will explain the relevant texts in lecture method.
2. Teachers will make the students visit to and experience themselves the medicinal plants.
3. Teachers will instruct the students to prepare reports on their understanding of the plants.

GE -4: SANSKRIT NARRATOLOGY

| Course Title | Nature of the Course | Total Credits | Components | | | Eligibility Criteria/ Prerequisite |
|-----------------------------|----------------------|---------------|------------|----------|-----------|------------------------------------|
| | | | Lecture | Tutorial | Practical | |
| Sanskrit Narratology | GE-04 | 4 | 3 | 1 | 0 | Class XII Pass |

Course Objectives:

This course aims at acquainting the students with various aspects of Sanskrit Narratology. These aspects cover origin and development of Sanskrit narratives, its distinctive features, functions, forms and cross-cultural reception.

Course Learning Outcomes:

Students will acquire the basic understanding of Sanskrit Narratives. They will be able to appreciate the essence of Sanskrit Narratology. They will develop an interest in Sanskrit Narratives and will be motivated to study the subject further.

Course Contents:

Unit: I Origin and Development of Sanskrit Narratives

- A. Vedic Origin- Ṛgvedic Saṁvāda Sūktas, Gāthā Nārāsaṁsī, Upniṣadic ākhyāna
- B. Itihāsa-purāṇa tradition
- C. Bṛhatkathā and its Sanskrit recensions – Bṛhatkathā ślokaṁgrha, Kathāśartitsāgara, Bṛhatkathāmañjarī
- D. Origin and Development of Sanskrit Fables – Pañcatantra, Hitopadeśa, Vetālapañcaviṁśikā, Siṁhāsanadvātriṁśikā, Puruṣaparīkṣā, Śukasaptati

Unit: II Distinctive Features and Functions of Sanskrit Narratology

(i) Distinctive Features of Sanskrit Narratology

1. Interiorization 2. Serialisation 3. Fantasisation 4. Cyclicalisation 5. Allegorisation
6. Anonymisation 7. Elasticisation of Time 8. Spatilisation 9. Stylisation
10. Improvisation

(ii) **Institution and Function of Story-telling**

1. Ritualistic, spiritualistic, recreational and pedagogical thrust
2. Narrator as a social-class- Kuśīlava, Cāraṇa, Sūta

Unit: III Art-forms as Medium of Sanskrit Narrative

Kathāsātra (Symposium of Story-telling), Drama, Dance-forms, Cave-paintings, Miniature Paintings and Sculpture.

Unit: IV Cultural Reception of Pañcatantra

Adaptation, Re-casting and Re-telling of Pañcatantra across cultures and nations.

[D] References:

1. Sadhale, Nalini, *Katha in Sanskrit Poetics*, Sanskrit Academy, Osmania University, Hyderabad, 1986
2. Paniker, K. Ayyapaa, *Indian Narratology*, IGNCA, Delhi, 2003
3. Dev, Amiya (Ed.), *Narrative, A Seminar*, Sahitya Academy, Delhi, 2017
4. Daya, Krishna, *India's Intellectual Tradition*, Delhi, ICPR, 1987
5. Mahulikar, Gauri, *Effect of Ramayana on Various Cultures and Civilizations*, Ramayana Institute.
6. Video of London 2009 ICR Illustrated Lecture on the Westward Migration of Panchatantra from India.
7. V. Raghavan Ed. *The Rāmāyana Tradition in Asia*,
8. Dr. Edgerton, Franklin (1924), *The Pañcatantra Reconstructed* (Vol.1: Text and Critical Apparatus, Vol.2: Introduction and Translation), New Haven, Connecticut: American Oriental Series. Volumes 2-3 Hertel, Johannes (1908-15), *The Pañcatantra : a collection of ancient Hindu tales, in the recension called Pañcākhyānaka, and dated 1199 A.D., of the Jaina monk*
9. Anand Krishna, *A Reassessment of the Tuti-Nama Illustrations in the Cleveland Museum of Art*, *Artibus Asiae*, Vol. 35, No.3, pp. 241-268 (28 pages). Artibus Asiae Publishers, 1973.
10. Winternitz, M. *Some Problems of Indian Literature* –Munshiram Manoharlal, Delhi, 1978.

[E] Teaching Learning Process:

1. Teachers will introduce the elements of Sanskrit Narratology.
2. Teachers will explain and clarify the fundamental concepts and issues of Narratology in the class.
3. Teachers will suggest the students to visit the blogs, articles and other digital and non – digital sources in the subjects.
4. Teachers will make the students understand the preventive approach of Sanskrit Narratology.

Department of English

BA (Hons.) English

Category I

[UG Programme for Bachelor in English (Honours) degree in three years]

DISCIPLINE SPECIFIC CORE COURSE -1 (DSC-1) – : Introduction to Literary Studies

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|-------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DSC 1: Introduction to Literary Studies | 4 | 3 | 1 | 0 | Passed Class XII with English | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To offer students a foundational understanding of the domain of literature, its genres, methods of critique and its distinctive ability to influence and project social and cultural change.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to grasp a basic sense of literature as a discipline of thought and application.

SYLLABUS OF DSC-1

UNIT – I (20 Hours)

UNIT I: Reading the Novel

- Jane Austen: *Pride and Prejudice*
- Prince, Gerald J. *Narratology: Form and Function of Narrative*. NY: Mouton Publishers, 1982. pp 7 – 16 & pp 103 – 105

3. Kaul, A.N. 'A New Province of Writing,' *The Domain of the Novel: Reflections on Some Historical Definitions*. Routledge, 2021. pp 20-36

UNIT – II (20 Hours)

UNIT II: Reading Poetry

1. John Milton: 'On His Blindness'
2. William Wordsworth: 'Composed Upon Westminster Bridge'
3. Emily Dickinson: '341 After Great Pain'
4. Rabindranath Tagore: 'Where the Mind is Without Fear'
5. Ferguson, Margaret, Mary Jo Salter and Jon Stallworthy, 'Versification and Poetic Syntax', *The Norton Anthology of Poetry, 5th edition*. NY and London: W.W. Norton & Company, 2005. pp 2021 – 2065

UNIT – III (20 Hours)

UNIT III: Reading Drama

1. Mahesh Dattani: *Tara*
2. Watson, G.J. 'The Nature of Drama', *Drama: An Introduction* (London: Macmillan, 1983)
3. Tanvir, Habib. *It Must Flow: A Life in Theatre*
<http://www.seagullindia.com/stq/pdf/STQ%20Issue%2010.pdf>
4. Day, Gary. 'Introduction', *Class*. UK: Routledge, 2001. pp 1 – 18

Practical component (if any) - NIL

Essential/recommended readings- as listed in the units

Suggestive readings:

1. Hudson, William Henry. *An Introduction to the Study of Literature*. New Delhi: Atlantic Publishers and distributors 1998, 2006.
2. Booth, Wayne C. *The Rhetoric of Fiction*. University of Chicago Press, 1983.
3. King, Bruce. 'Introduction', *Modern Indian Poetry in English*. New Delhi: OUP, 2nd edn. 2005.
4. Dharwadker, A.B. *Theatres of Independence: Drama, theory and urban performance in India since 1947*. University of Iowa Press, 2009

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2): European Classical Literature

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------------------|---------|-----------------------------------|----------|---------------------|-------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DSC 2- European Classical Literature | 4 | 3 | 1 | 0 | Passed Class XII with English | NIL |

Learning Objectives:

The Learning Objectives of this course are as follows:

- To offer students a basic understanding of the mode of thought and understanding in classical Europe and contextualize the western classical texts within literary studies in a scholarly manner.

Learning outcomes:

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to gain an understanding of the classical, that is valuable in itself and as a frame of reference for subsequent periods of literary studies

SYLLABUS OF DSC- 2

UNIT – I (20 Hours)

- Homer: *The Odyssey*

UNIT – II (20 Hours)

- Aristotle: *Poetics*
- Sophocles: *Antigone*

UNIT – III (20 Hours)

- Aristophanes: *Lysistrata*

Practical component (if any) - NIL

Essential/recommended readings- as listed in the units

Suggestive readings (if any):

1. Plato, 'Book X', *The Republic*. tr. Desmond Lee, London: Penguin, 2007.
2. Horace, 'Ars Poetica', *Horace: Satires, Epistles and Ars Poetica*. tr. H. Rushton Fairclough, Cambridge Mass.: Harvard University Press, 2005.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-3): Indian Classical Literature

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------|---------|-----------------------------------|----------|---------------------|-------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Indian Classical Literature | 4 | 3 | 1 | 0 | Passed Class XII with English | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To offer students a foundational understanding of Indian classical literary tradition.
- To introduce students to a rich and diverse literature from two classical languages of India, Sanskrit and Tamil.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to gain knowledge of the aesthetic and cultural values that serve as the groundwork for later developments in Indian philosophical and social change.

SYLLABUS OF DSC-3

UNIT – I (20 Hours)

1. Vyasa. Selections from *The Mahabharata*, from *The Mahabharata of Krishna-Dwaipayana Vyasa*, trans. K. M. Ganguli (Delhi: Munshiram Manoharlal Publishers, 2012).

- a) 'The Dicing' and 'Sequel to Dicing', Book 2, Sabha Parva Section XLVI-LXXII
- b) 'The Temptation of Karna', Book 5, Udyog Parva, Section CXL-CXLVI.
- c) 'Krishna's Peace Proposal', Book 5, Udyog Parva, Section LXXXIX-CXXXI

UNIT – II (20 Hours)

1. Kalidasa. *Abhijnanasakuntalam*, trans. Chandra Rajan, in *Kalidasa: The Loom of Time*. Penguin Classics, 1989, reprint 2000.

UNIT – III (20 Hours)

1. Ilango Atikal. 'The Book of Vanci', *Cilappatikaram*. trans. R. Parthasarathy (Columbia University Press, 1993; Penguin Books India, 2004).

Practical component (if any) - NIL

Essential/recommended readings- as listed in the units

Suggestive readings:

1. Bharata Muni. Selections from *Natyasastra*. (i) Chapter 6, 'The Sentiments'; (ii) Chapter 20, 'Ten Kinds of Play'; (iii) Chapter 35, 'Characteristics of the Jester', trans. Manomohan Ghosh, Calcutta: Asiatic Society of Bengal, 1951. pp105-17; 355-74; 548-50
2. Osho. Selections from *Krishna: The Man and His Philosophy*. (i) Krishna is Complete and Whole (ii) Draupadi: A Rare Woman (iii) Action, Inaction and Non-Action (iv) Rituals, Fire and Knowledge, Delhi: Jaico Publishing House, 1991.
3. Kapoor, Kapil. *Indian Knowledge System Vol. 1*. New Delhi: D.K. Printworld Pvt. Ltd., 2005. pp 1-31
4. Gerow, Edwin, et al. 'Indian Poetics', *The Literatures of India: An Introduction*. ed. Edward. C. Dimock et al, Chicago: University of Chicago Press, 1974. pp 115-143
5. Venkatachalapathy, R. 'Introduction', *Love Stands Alone: Selections from Tamil Sangam Poetry*. Delhi: Penguin Classics, 2013. pp XIII-XLI; 25; 45; 70; 186

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BA (PROG) WITH ENGLISH AS MAJOR

Category II

**(Discipline Specific Courses for Undergraduate Programme of study with
ENGLISH(Major) as one of the Core Disciplines)**

DISCIPLINE SPECIFIC CORE COURSE (DSC-1): Introduction to Literary Studies

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|--------------------------------------|----------|------------------------|--|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DSC 1: Introduction to Literary Studies | 4 | 3 | 1 | 0 | Passed Class XII with English | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To offer students a foundational understanding of the domain of literature, its genres, methods of critique and its distinctive ability to influence and project social and cultural change.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to grasp a basic sense of literature as a discipline of thought and application.

SYLLABUS OF DSC-1

UNIT – I (20 Hours)

UNIT I: Reading the Novel

1. Jane Austen: *Pride and Prejudice*
2. Prince, Gerald J. *Narratology: Form and Function of Narrative*. NY: Mouton Publishers, 1982. pp 7 – 16 & pp 103 – 105
3. Kaul, A.N. 'A New Province of Writing,' *The Domain of the Novel: Reflections on Some Historical Definitions*. Routledge, 2021. pp 20-36

UNIT – II (20 Hours)

UNIT II: Reading Poetry

1. John Milton: 'On His Blindness'
2. William Wordsworth: 'Composed Upon Westminster Bridge'
3. Emily Dickinson: '341 After Great Pain'
4. Rabindranath Tagore: 'Where the Mind is Without Fear'
5. Ferguson, Margaret, Mary Jo Salter and Jon Stallworthy, 'Versification and Poetic Syntax', *The Norton Anthology of Poetry, 5th edition*. NY and London: W.W. Norton & Company, 2005. pp 2021 – 2065

UNIT – III (20 Hours)

UNIT III: Reading Drama

1. Mahesh Dattani: *Tara*
2. Watson, G.J. 'The Nature of Drama', *Drama: An Introduction* (London: Macmillan, 1983)
3. Tanvir, Habib. *It Must Flow: A Life in Theatre*
<http://www.seagullindia.com/stq/pdf/STQ%20Issue%2010.pdf>
4. Day, Gary. 'Introduction', *Class*. UK: Routledge, 2001. pp 1 – 18

Practical component (if any) - NIL

Essential/recommended readings- as listed in the units

Suggestive readings:

1. Hudson, William Henry. *An Introduction to the Study of Literature*. New Delhi: Atlantic Publishers and distributors 1998, 2006.
2. Booth, Wayne C. *The Rhetoric of Fiction*. University of Chicago Press, 1983.
3. King, Bruce. 'Introduction', *Modern Indian Poetry in English*. New Delhi: OUP, 2nd edn. 2005.
4. Dharwadker, A.B. *Theatres of Independence: Drama, theory and urban performance in India since 1947*. University of Iowa Press, 2009

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE –(DSC-2): Indian Classical Literature

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------|---------|-----------------------------------|----------|---------------------|-------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Indian Classical Literature | 4 | 3 | 1 | 0 | Passed Class XII with English | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To offer students a foundational understanding of Indian classical literary tradition.
- To introduce students to a rich and diverse literature from two classical languages of India, Sanskrit and Tamil.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to gain knowledge of the aesthetic and cultural values that serve as the groundwork for later developments in Indian philosophical and social change.

SYLLABUS OF DSC-3

UNIT – I (20 Hours)

1. Vyasa. Selections from *The Mahabharata*, from *The Mahabharata of Krishna-Dwaipayana Vyasa*, trans. K. M. Ganguli (Delhi: Munshiram Manoharlal Publishers, 2012).

- a) 'The Dicing' and 'Sequel to Dicing', Book 2, Sabha Parva Section XLVI-LXXII
- b) 'The Temptation of Karna', Book 5, Udyog Parva, Section CXL-CXLVI.
- c) 'Krishna's Peace Proposal', Book 5, Udyog Parva, Section LXXXIX-CXXXI

UNIT – II ((20 Hours)

1. Kalidasa. *Abhijnanasakuntalam*, trans. Chandra Rajan, in *Kalidasa: The Loom of Time*. Penguin Classics, 1989, reprint 2000.

UNIT – III (20 Hours)

1. Ilango Atikal. 'The Book of Vanci', *Cilappatikaram*. trans. R. Parthasarathy (Columbia University Press, 1993; Penguin Books India, 2004).

Practical component (if any) - NIL

Essential/recommended readings- as listed in the units

Suggestive readings:

1. Bharata Muni. Selections from *Natyasastra*. (i) Chapter 6, 'The Sentiments'; (ii) Chapter 20, 'Ten Kinds of Play'; (iii) Chapter 35, 'Characteristics of the Jester', trans. Manomohan Ghosh, Calcutta: Asiatic Society of Bengal, 1951. pp105-17; 355-74; 548-50
2. Osho. Selections from *Krishna: The Man and His Philosophy*. (i) Krishna is Complete and Whole (ii) Draupadi: A Rare Woman (iii) Action, Inaction and Non-Action (iv) Rituals, Fire and Knowledge, Delhi: Jaico Publishing House, 1991.
3. Kapoor, Kapil. *Indian Knowledge System Vol. 1*. New Delhi: D.K. Printworld Pvt. Ltd., 2005. pp 1-31
4. Gerow, Edwin, et al. 'Indian Poetics', *The Literatures of India: An Introduction*. ed. Edward. C. Dimock et al, Chicago: University of Chicago Press, 1974. pp 115-143
5. Venkatachalapathy, R. 'Introduction', *Love Stands Alone: Selections from Tamil Sangam Poetry*. Delhi: Penguin Classics, 2013. pp XIII-XLI; 25; 45; 70; 186

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BA (PROG.) WITH ENGLISH AS NON-MAJOR

Category III

Discipline Specific Courses for Undergraduate Programme of study with ENGLISH (minor) as one of the Core Disciplines

DISCIPLINE SPECIFIC CORE COURSE (DSC-1): Introduction to Literary Studies

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|-------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DSC 1: Introduction to Literary Studies | 4 | 3 | 1 | 0 | Passed Class XII with English | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To offer students a foundational understanding of the domain of literature, its genres, methods of critique and its distinctive ability to influence and project social and cultural change.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to grasp a basic sense of literature as a discipline of thought and application.

SYLLABUS OF DSC-1

UNIT – I (20 Hours)

UNIT I: Reading the Novel

1. Jane Austen: *Pride and Prejudice*
2. Prince, Gerald J. *Narratology: Form and Function of Narrative*. NY: Mouton Publishers, 1982. pp 7 – 16 & pp 103 – 105
3. Kaul, A.N. 'A New Province of Writing,' *The Domain of the Novel: Reflections on Some Historical Definitions*. Routledge, 2021. pp 20-36

UNIT – II ((20 Hours)

UNIT II: Reading Poetry

1. John Milton: 'On His Blindness'
2. William Wordsworth: 'Composed Upon Westminster Bridge'
3. Emily Dickinson: '341 After Great Pain'
4. Rabindranath Tagore: 'Where the Mind is Without Fear'
5. Ferguson, Margaret, Mary Jo Salter and Jon Stallworthy, 'Versification and Poetic Syntax', *The Norton Anthology of Poetry, 5th edition*. NY and London: W.W. Norton & Company, 2005. pp 2021 – 2065

UNIT – III (20 Hours)

UNIT III: Reading Drama

1. Mahesh Dattani: *Tara*
2. Watson, G.J. 'The Nature of Drama', *Drama: An Introduction* (London: Macmillan, 1983)
3. Tanvir, Habib. *It Must Flow: A Life in Theatre*
<http://www.seagullindia.com/stq/pdf/STQ%20Issue%2010.pdf>
4. Day, Gary. 'Introduction', *Class*. UK: Routledge, 2001. pp 1 – 18

Practical component (if any) - NIL

Essential/recommended readings- as listed in the units

Suggestive readings:

1. Hudson, William Henry. *An Introduction to the Study of Literature*. New Delhi: Atlantic Publishers and distributors 1998, 2006.
2. Booth, Wayne C. *The Rhetoric of Fiction*. University of Chicago Press, 1983.
3. King, Bruce. 'Introduction', *Modern Indian Poetry in English*. New Delhi: OUP, 2nd edn. 2005.
4. Dharwadker, A.B. *Theatres of Independence: Drama, theory and urban performance in India since 1947*. University of Iowa Press, 2009

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BA (Hons) JOURNALISM

Category I

[UG Programme for Bachelor in Journalism(Honours) degree in three years]

DISCIPLINE SPECIFIC CORE COURSE -1 (DSC-1) – :

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------------|---------|-----------------------------------|----------|---------------------|-------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DSC 1: Introduction to Journalism | 4 | 3 | 0 | 1 | Passed Class XII with English | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand what it takes to be a competent reporter and the problems that journalists face in the media industry.
- To equip students to work as a cub-reporter in any news media organisation.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to understand the nature of news and the process of news transmission to the readers.
- Students will be able to write news stories and comprehend the role of the press in a democratic society.

SYLLABUS OF DSC-1

UNIT – I (20 Hours)

UNIT I: Understanding News

- Meaning and definition of Journalism
- Ingredients of news
- News: meaning, definition, nature
- The news process: from the event to the reader (how news is carried from event to reader)
- Hard news vs. Soft news
- Basic components of a news story
- Attribution, on-record, off-the record, embargo,
- Verification, balance, fairness, brevity, dateline, credit line and byline.
- Criteria for news worthiness, principles of news selection

UNIT – II ((20 Hours)

UNIT II: Historical Perspective and News Writing Skills

- Yellow journalism
- Penny press, tabloid press
- Language of news- Robert Gunning: Principles of clear writing
- Rudolf Flesch formula- skills to write news
- Organizing a news story, 5W's and 1H, Inverted pyramid
- Use of archives, sources of news, use of internet

UNIT – III (20 Hours)

Unit III: Different mediums-a comparison

- Language and principles of writing on different media platforms
- Basic differences between print, electronic and online journalism
- Citizen Journalism

Practical component (if any) - Writing stories in the inverted pyramid format, identifying the news values in news stories of different newspapers, identifying the 5W's and 1 H in news stories, writing soft-news stories.

Essential/recommended readings-

1. Bruce D. Itule and Douglas A. Anderson. *News writing and reporting for today's media*. McGraw Hill Publication, 2000.

2. George Rodmann. *Mass Media in a Changing World*. McGraw Hill Publication, 2007.
3. Carole Flemming and Emma Hemmingway. *An Introduction to Journalism*. Vistaar Publications, 2006.
4. Richard Keeble. *The Newspaper's Handbook*. Routledge Publication, 2006.

Suggestive readings-

1. M.L. Stein, Susan Paterno & R. Christopher Burnett. *News writer's Handbook: An Introduction to Journalism*. Blackwell Publishing, 2006.
2. Michael Ryan and James W. Tankard. *Writing For Print And Digital Media*. Mcgraw-Hill College, 2004.
3. Helmut Kipphan. *Handbook of Print Media*. Springer, 2001.
4. Paranjoy Guha Thakurta. *Media Ethics: Truth, Fairness and Objectivity*. Oxford University Press, 2011.
5. Vincent F. Filak. *Dynamics of News Reporting and Writing Foundational Skills for a Digital Age*. Sage Publications, Inc, 2021.
6. Robert Gunning. *Techniques of Clear Writing*. McGraw Hill Higher Education, 1968.
7. W. Richard Whitaker & Janet E. Ramsey & Ronald D. Smith. *Media Writing: Print, Broadcast, and Public Relations*. Routledge, 2019.
8. Wynford Hicks, Adams Sally, Harriett Gilbert, Tim Holmes, Jane Bentley. *Writing for Journalists*. Routledge, London, 2016.
9. John Hohenberg. *The professional journalist: a guide to the practices and principles of the news media*. Holt, Rinehart and Winston, New York, 1973.
10. M. V. Kamath. *The Journalists Handbook*. Vikas Publishing, New Delhi, 2009.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2): Introduction to Media and Communication

CREDIT DISTRIBUTION, ELIGIBILITY AND PREREQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|-------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DSC-2 Introduction to Media and Communication | 4 | 3 | 1 | 0 | Passed Class XII with English | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To facilitate a deep understanding of the role and influence of the media in an individual's life. It will help the student to critically perceive the effects of the media use.
- To hone the communication skills.
- To help identify media's communicative potential through everyday examples such as mobile phone, television shows and other media use.
- To think retrospectively of media use and its effects through live and vibrant examples from everyday experience.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to understand the important aspects of communication to help them get their messages across to public, essential in all sectors of media.
- Students will be enabled to work in any sector/media organisation as a content writer/communication consultant.

SYLLABUS OF DSC- 2

UNIT – I ((20 Hours)

UNIT I: Communication and Mass Communication

- Media and Everyday life

- Forms of Communication, Levels of Communication
- Mass Communication and its Process
- Normative Theories of the Press
- Media and the Public Sphere
- Four Models of Communication: transmission models, ritual or expressive models, publicity model, reception model

UNIT – II ((20 Hours)

UNIT II: Mass Communication and Effects Paradigm

- Direct Effects; Mass Society Theory, Propaganda
- Limited Effects; Individual Difference Theory, Personal Influence Theory
- Digital influencers in the contemporary world

UNIT – III (20 Hours)

UNIT III: Cultural Effects and the Emergence of an Alternative Paradigm

- Cultural Effects: Agenda Setting
- Spiral of Silence, Cultivation Analysis
- Critique of the effects paradigm and emergence of alternative paradigm

Practical component (if any) - NIL

Essential/recommended readings-

1. Michael Ruffner and Michael Burgoon. *Interpersonal Communication*. New York, Holt, Rinehart and Winston, 1981. 21-34; 59-72
2. John Fiske. *Introduction to Communication Studies*. Routledge 1982. pp 138
3. Dennis Mc Quail. *Mass Communication Theory*. London, Sage, 2000. pp 111; 41-54; 121-133(fourth Edition)
4. Baran and Davis. *Mass Communication Theory*. Indian Edition, South West Coengage Learning, 2006. pp 42-64; 7184; 148-153; 236-298
5. Kevin Williams. *Understanding Media Theory*. 2003. pp 168-188

Suggestive readings (if any)-

1. Robin Jeffrey. *Cell Phone Nation: How Mobile Phones have Revolutionized Business, Politics and Ordinary Life in India*. New Delhi: Hachette, 2013.
2. Ravi Sundaram. 'The Art of Rumour in the Age of Digital Reproduction', *The Hindu*. Posted 19 August, 2012, Updated 16 November 2021
<https://www.thehindu.com/news/national/article60457070.ece>

3. Maya Ranganathan. 'Commercial FM radio takes over Indian cities', *Indian Media In A Globalised World*. ed. Ranganathan, Maya, and Usha M. Rodrigues, SAGE Publications India, 2010.
4. Sreya Mitra (2012) 'The show of the millennium': screening the big-money quiz show and the Bollywood superstar, *South Asian History and Culture*, 3:4. 20 Sep 2012. pp 566-582
DOI: 10.1080/19472498.2012.720071
5. Little John, Stephen, W and Foss, Karen, A. *Encyclopedia of Communication Theory*. Sage Publications, Inc. 2009.
6. Narula, Uma. *Communication Models*. Atlantic Publishers and Distributors (P) Ltd., New Delhi. 2022.
7. Neumann, Elisabeth Noelle. *Spiral of Silence: Public Opinion--Our Social Skin*. University of Chicago Press; 2nd edition. 1993.
8. Perse, Elizabeth M. and Lambe, Jennifer. *Media Effects and Society*. Routledge. 2016.
9. Watson, James. *Media Communication: An Introduction to Theory and Process*. Palgrave Macmillan. 2003.
10. Endo, Kaoru, Kurihara, Santoshi and Kamihigashi, Takashi (eds.) *Reconstruction of the Public Sphere in the Socially Mediated Age*. Springer, Singapore. 2017.
11. Shohini Ghosh, "Inner and Outer Worlds of Emergent Television Cultures," in *No Limits: Media Studies from India*, Ed. Ravi Sundaram. New Delhi: Oxford (2013).

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-3): History of the Media

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-------------------------------|---------|-----------------------------------|----------|---------------------|-------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DSC-3 History of the Media | 4 | 3 | 0 | 1 | Passed Class XII with English | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To help students attain familiarity with the historical evolution of the media.
- To contextualize the developments of the media and its role through political and economic changes across the world.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to assist any organisation in writing historical aspects in an efficient manner.
- students will also get an opportunity to work as a researcher and place key developments in media technologies across history.

SYLLABUS OF DSC-3

UNIT – I (20 Hours)

UNIT I: History of Print Media

- Print revolution and telegraph
- Yellow Journalism, Evolution of Press in United States and Great Britain
- History of the Press in India: Colonial Period, National Freedom Movement
- Gandhi and Ambedkar as Journalists and Communicators
- Emergency and Post Emergency Era

UNIT – II (20 Hours)

UNIT II: Beginnings of Sound Media

- The coming of Gramophone
- Early history of Radio in India
- Evolution of AIR Programming
- Patterns of State Control; the Demand for Autonomy
- FM: Radio Privatization

UNIT – III (20 Hours)

UNIT III: Visual Media

- The early years of Photography and Cinema
- The coming of Television and the State's Development Agenda
- Commercialization of Programming (1980s)
- Invasion from the Skies: The coming of transnational television (1990s)
- Formation of Prasar Bharati

Practical component (if any) –

A comparative study of a Community Radio project and any of AIR's Local Radio stations. Projects such as case studies of radio programmes, tracing the transformation of certain traditional musical genres like devotional music, ghazals and folk songs with the advent of cassette technology, presentations on the importance of archiving and archives of films, newspapers, music and photographs as well as projects on digital archives of sound and visual media.

Essential/recommended readings-

1. Briggs, A and Burke, P. *Social History of Media: From Gutenberg to the Internet*. Polity Press, 2010. Chapter 2 and Chapter 5
 2. Jeffrey, Robin. *India's News Paper Revolution: Capitalism, Politics and the Indian Language Press*. New Delhi: Oxford, 2003.
 3. David Page and William Crawley. *Satellites Over South Asia*. Sage, 2001. Chapter 2, chapter 8 and Chapter 9
 4. Erik Barnouw and Krishnaswamy. "Beginnings," & "Three Get Started", *Indian Film*. New York: Oxford University press, 192nd Edition, 1980
- [Early communication system in India \(part - I\) - YouTube](https://www.youtube.com/watch?v:9WocwNyYo8g)
<https://www.youtube.com/watch?v:9WocwNyYo8g>

Suggestive readings-

1. Jeffrey, Robin. "Communications and capitalism in India, 1750–2010." *South Asia: Journal of South Asian Studies* 25, no. 2 (2002): 61-75.

2. V. Ratnamala, *Ambedkar and media*, 2012
http://roundtableindia.co.in/index.php?option=com_content&view:article&id:4992:ambedkar-and-media&catid:119:feature&Itemid:132
3. Manuel, Peter. *Cassette Culture*. Chicago: University of Chicago Press, 1993, Pages 1- 32
4. *Satellite Television: An Impact on Social Participation*, Sabharwal, Tarjeet, ISBN 978-81-8457-064-9, Kanishka Publishers, 2008
5. Chatterjee, P.C, *Broadcasting in India* page (New Delhi, Sage, 1991) pp 39-57
6. Neurath P. "Radio Farm Forum as a Tool of Change in Indian Villages," *Economic Development of Cultural Change*, vol 10, No. 3 (pp 275-283), 1962
7. Das, Biswajit, "Mediating Modernity: Colonial Discourse and Radio Broadcasting in India", *Communication Processes Vol 1: Media and Mediation*, B. Bel, B. Das, J. Brower, Vibhodh Parthasarathi, G. Poitevin (Ed.) (Sage 2005)
8. Parthasarathi, Vibhodh, "Constructing a New Media Market: Merchandising the Talking Machine", *Communication Processes Vol 1: Media and Mediation*, B. Bel, B. Das, J. Brower, Vibhodh Parthasarathi, G. Poitevin (Ed.), Sage 2005
9. Thirumal, P., and C. Lalrozami. *Modern Mizoram: History, Culture, Poetics*. Taylor & Francis, 2018. Chapter 1
10. Francis Robinson. "Technology and Religious change: Islam and the impact of Print", *Modern Asian Studies*. Vol 27, No. 1 (Feb 1993) pp. 229-251.
11. *Seminar* Issue October 1997, Indian Language Press
12. Neyazi, Taberezh Ahmed, and Akio Tanabe. "Introduction: democratic transformation and the vernacular public arena in India", *Democratic Transformation and the Vernacular Public Arena in India*, pp. 17-40. Routledge, 2014.
13. Maya Ranganathan, "The Pan Tamil rhetoric in regional media", *Indian Media In A Globalised World*. ed. Ranganathan, Maya, and Usha M. Rodrigues, SAGE Publications India, 2010. pp 83-105
14. G.N.S Raghavan, Early years of PTI, PTI story: Origin and Growth of Indian Press (Bombay, Press Trust of India, 1987. pp 92-119
15. Melissa Butcher. *Transnational Television, Cultural Identity and Change*. New Delhi, Sage, 2003. 49-77
16. Cappon, Rene, J. The Associated Press Guide to News Writing, 4th Edition. Peterson's; 4th edition, 2019.
17. Sheridan, Lynette Burns. *Understanding Journalism*. SAGE Publications Ltd; Second edition, 2012.
18. Rudin, Richard and Ibbotson, Trevor. *Introduction to Journalism: Essential techniques and background knowledge*. Routledge, 1st Edition, 2002.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Common Pool of Generic Electives (GE) Courses offered by the Department of English

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department offering the course |
|------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|--------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| GE-1 Language and Culture | 4 | 3 | 1 | 0 | Passed Class XII | NIL | English |

Learning Objectives

The Learning Objectives of this course are as follows:

- To familiarize students with the basic approaches to the study of language.
- To impart a socio- cultural perspective to the study of English in the Indian context.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to analyze both the socio-cultural and formal aspects of language in general and English in particular.
- Students will be able to understand the shifting and evolving dynamics of the link between language and culture in India.

SYLLABUS OF GE-1

UNIT – I (20 Hours)

UNIT I-Language

1. Connor-Linton, Jeffrey, and Fasold, Ralph. 'Introduction', *An Introduction to Language and Linguistics*. United States: Cambridge University Press, 2006.
2. Fromkin, Victoria, Robert Rodman, and Nina Hyams. 'Part 1', *An Introduction to the Study of Language*. Boston, MA: Cengage, 2017.
3. Wardaugh, Ronald. Chapters 2 and 3, *An Introduction to Sociolinguistics*. Malden, MA: Blackwell, 2006.

4. Rodriques, M V. Chapters 2 and 6, *Perspectives of Communication and Communicative Competence*. India: Concept Pub, 2000.

UNIT – II (20 Hours)

UNIT II- English Language in India and Multilingualism

1. Jayendran, Nishevita, et al. Chapters 3, 5 and 6, *Language Education: Teaching English in India*. India: Taylor & Francis, 2021.
2. Mukherjee, Joybrato. 'The development of the English language in India', *The Routledge Handbook of World Englishes*. ed. A. Kirkpatrick, London and New York: Routledge, Taylor & Francis Group, 2000. pp 167-180
3. Bhatia, Tej K. 'The Multilingual Mind, Optimization Theory and Hinglish', *Chutnefying English: The Phenomenon of Hinglish. India*. ed. Rita Kothari & Rupert Snell, Penguin Books, 2011.

UNIT – III (20 Hours)

UNIT III: Language and Society

1. Wardaugh, Ronald. 'Gender', *An Introduction to Sociolinguistics*. Malden, MA: Blackwell, 2006.
2. Soden, Satori, et al. Chapter 5, 6, 8, 9, *Language, Society and Power: An Introduction*. Taylor & Francis, 2010.
3. Wilson, James C. and Cynthia Lewiecki-Wilson. 'Disability, Rhetoric, and the Body': *Embodied Rhetorics: Disability in Language and Culture*. United States: Southern Illinois University Press, 2001.

Practical component (if any) - NIL

Essential/recommended readings- as listed in the units

Suggestive readings:

1. Fowler, Roger. *The Linguistics of Literature*. London: Routledge and Kegan Paul Ltd, 1971.
2. Bailey, R. W. and J. L. Robinson, ed. *Varieties of present-day English*. New York: Macmillan, 1973.
3. Fishman, J.A. *Sociolinguistics: A Brief Introduction*. Mass: Newbury House Rowley, 1971.
4. Gupta R. S. and K. S. Agarwal, *Studies in Indian Sociolinguistics*. New Delhi: Creative Books, 1996.
5. 'Notes on the History of the Study of the Indian Society and Culture', *Structure and Change in Indian Society*, ed. Milton Singer and Bernard S Cohn. Chicago: Aldine Press, 1968.
6. 'Towards a Definition of Culture', *India and World Culture*. New Delhi: Sahitya Academy, 1986.

7. 'Culture and Ideology', *Culture, Ideology and Hegemony: Intellectual and Social Consciousness in Colonial India*. London and New York: Longman, 1995.
8. Crystal, David. *The Stories of English*. UK: Penguin Books Limited, 2005.
9. Krishnaswamy, N., and Krishnaswamy, Lalitha. *The Story of English in India*. India: Foundation Books, 2006.
10. Crystal, David. *The Cambridge Encyclopedia of the English Language*. Cambridge: Cambridge University Press, 1995.
11. Mesthrie, Rajend, and Bhatt, Rakesh M. *World Englishes: The Study of New Linguistic Varieties*. United Kingdom: Cambridge University Press, 2008.
12. Marckwardt, Albert H. "English as a Second Language and English as a Foreign Language." *PMLA*, vol. 78, no. 2, 1963, pp 25–28.
13. Kramschin, Claire. *The Routledge Handbook of Language and Culture*. United Kingdom, Taylor & Francis, 2014.

GENERIC ELECTIVES (GE-2: Genre Fiction)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Genre Fiction | 4 | 3 | 1 | 0 | Passed Class XII | |

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand how the evolving genre of fiction engages with contemporary social and cultural realities.
- To understand the strategies of narrative and themes this specific genre of fiction uses.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to efficiently undertake textual analysis within the specific rubric of genre fiction.
- Students will gain knowledge of the aspects of fictionality while engaging with popular culture.

SYLLABUS OF GE-2

UNIT – I (20 Hours)

1. Arthur Conan Doyle: *The Sign of Four*

UNIT – II (20 Hours)

1. Kashigo Ishiguro: *Never Let Me Go*

UNIT – III (20 Hours)

1. Ibn-e-Safi: *House of Fear*

2. Madulika Liddle: *Crimson City*

Practical component (if any) - NIL

Essential/recommended readings- as listed in the units

Suggestive readings:

1. H. Thomas Milhorn: *Writing Genre Fiction: A Guide to the Craft* (2006)

2. Beth Driscoll, Kim Wilkins, Lisa Fletcher: *Genre Worlds: Popular Fiction and Twenty-First-Century* (2022)

3. Joyce G. Saricks: *The Readers' Advisory Guide to Genre Fiction* (2009)

4. Jeremy Rosen: 'Literary Fiction and the Genres of Genre Fiction' Posted 8th July, 2018.

<https://post45.org/2018/08/literary-fiction-and-the-genres-of-genre-fiction/>

GENERIC ELECTIVES (GE-3): Dystopian Writings

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GE-3: Dystopian Writings | 4 | 3 | 1 | 0 | Passed Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To familiarize students with the evolution of the literary trends/movements under Dystopian writings.
- To analyse texts and identify the distinctions across prominent milieus and regions.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to understand what constitutes the genre of Dystopian Writings.
- students will be able to discern the shifting dynamics of reality and representation.

SYLLABUS OF GE-3

UNIT – I (20 Hours)

1. Mary Shelley: *The Last Man*

UNIT – II (20 Hours)

1. H.G. Wells: *The Time Machine*

UNIT – III (20 Hours)

1. Malcolm Bradbury: *Fahrenheit 451*

Practical component (if any) - NIL

Essential/recommended readings- as listed in the units

Suggestive readings:

1. Stock, Adam. *Modern Dystopian Fiction and Political Thought: Narratives of World Politics*. United Kingdom: Taylor & Francis, 2018.
2. Gottlieb, Erika. *Dystopian Fiction East and West: Universe of Terror and Trial*. Maldives: McGill-Queen's University Press, 2001.
3. Basu, Balaka, et al. (ed.) *Contemporary Dystopian Fiction for Young Adults: Brave New Teenagers*. United States: Taylor & Francis, 2013.
4. Isomaa, Saija, et al. (ed.) *New Perspectives on Dystopian Fiction in Literature and Other Media*. United Kingdom: Cambridge Scholars Publishing, 2020.
5. Anthony, Ashley G., et al. (ed.) *Worlds Gone Awry: Essays on Dystopian Fiction*. United States: Incorporated Publishers, 2018.

GENERIC ELECTIVES (GE-4) Literature & Human Rights

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GE-4 Literature & Human Rights | 4 | 3 | 1 | 0 | Passed Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To consider the relationship between literature and human rights.
- To indicate investments in human rights within literary texts.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to understand the relevance of human rights in everyday contexts.
- Students will be able to appreciate the importance of human rights in literary and theoretical terms.

SYLLABUS OF GE-4

UNIT – I (20 Hours))

1. George Orwell: *1984*(1949)

UNIT – II (20 Hours)

1. Harper Lee: *To Kill a Mockingbird* (1960)

UNIT – III (20 Hours)

1. *Freedom: Short Stories Celebrating the Universal Declaration of Human Rights*. Amnesty International, 2009.
 - (i) 'In the Prison of Repose'—Paulo Coelho
 - (ii) 'Amnesty'—Nadine Gordimer
 - (iii) 'ABC Antidote'—Ishmael Beah
2. Maya Angelou: 'I Know Why the Caged Bird Sings'[poem]
3. June Millicent Jordan: 'Poem About My Rights'

Practical component (if any) - NIL

Essential/recommended readings- as listed in the units

Suggestive readings:

1. The Universal Declaration of Human Rights
https://www.un.org/en/udhrbook/pdf/udhr_booklet_en_web.pdf

2. Barzilay, Vered Cohen. 'Foreword: The Tremendous Power of Literature', *Freedom: Short Stories Celebrating the Universal Declaration of Human Rights*. Amnesty International, 2009.
3. Hunt, Lynn. *Inventing Human Rights: A History*. W.W. Norton, 2008.
4. Nickel, James W. *Making Sense of Human Rights: Philosophical Reflections on the Universal Declaration of Human Rights*. United Kingdom: University of California Press, 1987.
5. Tierney, Brian. *The Idea of Natural Rights: Studies on Natural Rights, Natural Law, and Church Law, 1150-1625*. United Kingdom: Eerdmans Publishing Company, 2001.
6. Rawls, John. *The Law of Peoples: with "The Idea of Public Reason Revisited"*. United Kingdom: Harvard University Press, 1999.
7. Griffin, James. *On Human Rights*. United Kingdom: OUP, 2009.

GENERIC ELECTIVES (GE-5) Readings on Indian Diversities and Literary Movements

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GE-5 Readings on Indian Diversities and Literary Movements | 4 | 3 | 1 | 0 | Passed Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To introduce the social and cultural history of India which were conducive to the development of art and literature
- To inculcate new ways to interpret, understand and read representations of diversity.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to read non-verbal social and cultural history.
- Students will be encouraged to be open to the diverse modes of thought.

SYLLABUS OF GE-5

UNIT – I (20 Hours)

1. Overview
2. Linguistic Plurality within Sufi and Bhatia Tradition

UNIT – II (20 Hours)

1. Language Politics: Hindi and Urdu
2. Tribal Verse
3. Dalit Voices

UNIT – III (20 Hours)

1. Writing in English
2. Woman Speak: Examples from Kannada and Bangla
3. Literary Cultures: Gujarati and Sindhi

Practical component (if any) - NIL

Essential/recommended readings:

1. Kumar, Sukrita Paul et al. (eds.). *Cultural Diversity, Linguistic Plurality, and Literary Traditions in India*. New Delhi: Macmillan, 2005.

Suggestive readings- NIL

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-6) Indian English Literatures

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GE-6 Indian English Literatures | 4 | 3 | 1 | 0 | Passed Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To introduce literary texts from a range of regional, cultural, social, and political locations within India.
- To inculcate an in-depth understanding of some of the major issues shaping this literary production.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to comprehend regional differences in the issues discussed and in socio-cultural contexts.
- Students will be able to analyze the use of the English language by non-native speakers and writers.

SYLLABUS OF GE-6

UNIT – I (20 Hours)

1. Vikram Seth: *A Suitable Boy*

UNIT – II (20 Hours)

1. Shashi Deshpande: 'The Intrusion'
2. Salman Rushdie: 'The Courter'
3. Rohinton Mistry: 'Swimming Lessons'
4. Vikram Chandra: 'Dharma'

UNIT – III (20 Hours)

1. Kamala Das: (i) 'An Introduction' (ii) 'My Grandmother's House'
2. Nissim Ezekiel: (i) 'Night of the Scorpion' (ii) 'Goodbye Party for Miss Pushpa TS'
3. Arun Kolatkar: (i) 'The Bus'
4. Mamang Dai, 'The Sorrow of Women'

Practical component (if any) - NIL

Essential/recommended readings- as listed in the units

Suggestive readings:

1. Burton, Antoinette. *Dwelling in the Archive: Women Writing House, Home, and History in Late Colonial India*. Oxford UP, 2003.
2. Zecchini, Laetitia. *Arun Kolatkar & Literary Modernism in India: Moving Lines*. USA: Bloomsbury Academic, 2014.
3. Nerlekar, Anjali. *Bombay Modern: Arun Kolatkar and Bilingual Literary Culture*. Speaking Tiger, 2017.

4. Anjaria, Ulka. *Realism in the Twentieth-Century Indian Novel: Colonial Difference and Literary Form*. Cambridge UP, 2012.
5. Parashkevova, Vassilena. *Salman Rushdie's Cities: Reconfigurational Politics and the Contemporary Urban Imagination*. Bloomsbury, 2012.

**Generic Electives Language Courses offered by the Department of English
(GE Language 1) English Language through Literature-I**

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------------------------|---------|-----------------------------------|----------|------------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| English Language Through Literature-I | 4 | 3 | 1 | 0 | Passed Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To develop in students the ability and confidence to process, understand and examine different kinds of texts-verbal and written-that they encounter in everyday life.
- To enable students to identify and understand social contexts and ethical frameworks in the texts they encounter.
- To encourage suitable research—to recognize sources; to distinguish fact from opinion/editorialization; produce objective versus subjective pieces
- To learn skilled comprehension; listening/reading; skimming; summarizing; précis writing; paraphrasing; note making
- To identify key topics/arguments/ideas
- To accomplish writing goals: creating an essay; writing a thesis statement; producing topic sentences; developing organised paragraphs; evolving the skill of producing suitable transitions between paragraphs
- To enable students to write in expository argumentative and descriptive modes
- To help students identify and use the characteristic features of various writing forms: letters; programmes reports/press-releases; newspaper; feature articles; fiction and nonfiction
- To enable students to choose between expository, argumentative, descriptive and narrative writing styles to assemble their own writing

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to inculcate confident expression.
- Students will be able to articulate their own views confidently as their language skills sufficiently empower them to converse, research and collate information from various textual sources—verbal or written.

SYLLABUS OF GE LANGUAGE-1-

UNIT – I (20 Hours)

UNIT 1: Understanding Everyday Texts.

1. Edwards, Adrian 'Forced displacement worldwide at its highest in decades'

UNHCRorgUNHCR

<http://www.unhcr.org/afr/news/stories/2017/6/5941561f4/forced-displacement-worldwide-its-highest-decades.html#> Accessed 1st June, 2022

2. Jadhav, Radheshyam 'Groom wanted: Trader peon...anyone but a farmer' *Times News Network*. 1st Jan, 2018

<https://timesofindia.indiatimes.com/city/chandigarh/groom-wanted-trader-peon-anyone-but-a-farmer/articleshow/62321832.cms> Accessed 1st June, 2022

3. Knapton, Sarah 'Selfitis' -- the obsessive need to post selfies-- is a genuine mental disorder say psychologists' *The Telegraph*. 15th December 2017

<https://www.telegraph.co.uk/science/2017/12/15/selfitis-obsessive-need-post-selfies-genuine-mental-disorder/> Accessed 1st June 2022

4. '13 letters every parent every child should read on Children's Day' *The Indian Express*. 10th November 2014

<http://indianexpress.com/article/lifestyle/feelings/12-letters-every-parent-every-child-should-read-on-childrens-day/> Accessed 1st June 2022

UNIT – II (20 Hours)

UNIT 2: Understanding Drama

5. Lakshmi, CS. (i) 'Ambai' (ii) 'Crossing the River', *Staging Resistance: Plays by Women in Translation*. Ed. Tutun Mukherjee, Oxford: Oxford University Press, 2005.

UNIT – III (20 Hours)

UNIT 3: Understanding Poetry

6. Angelou, Maya. 'Caged Bird', *The Complete Collected Poems of Maya Angelou*. New York: Random House Inc, 1994.

7. Ezekiel, Nissim. 'Goodbye Party for Miss Pushpa TS', *Collected Poems*. New Delhi: Oxford University Press, 2005.

8. Okara, Gabriel. 'Once Upon a Time', *Gabriel Okara: Collected Poems*. Nebraska: University of Nebraska, 2016.

9. Lawrence, DH. 'Last Lesson of the Afternoon', *The Complete Poems of DH Lawrence*. Hertfordshire: Wordsworth Editions, 1994.

Practical component (if any) - NIL

Essential/recommended readings- as listed in the units

Suggestive readings- NIL

GENERIC ELECTIVES LANGUAGE COURSES (GE Language 2) Digital Communication-I

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Digital Communication-I | 4 | 3 | 1 | 0 | Passed Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To hone skills for online communication and provide interpersonal skills required in the digital world.
- To effectively present themselves in personal and professional capacities using online mediums.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to understand and learn globally emerging forms of digital communication in English and effectively communicate in their everyday contexts be it in social or professional situations.

SYLLABUS OF GE LANGUAGE-2

UNIT – I (20 Hours)

UNIT I: Constructing a Self

1. Creating a personal/professional profile for social media. (Facebook, LinkedIn etc.)
2. Striking up formal, informal conversations (register, tone, vocabulary)
3. Social Media etiquette

UNIT – II (20 Hours)

UNIT II: Expressing the Self

1. Blogs, Facebook posts (expressing likes and dislikes)
2. Formal and informal correspondence (emails, making announcements on social groups: expressing/ declining interests, making requests, sharing information)

3. Acknowledging and negotiating opinions

UNIT – III (20 Hours)

UNIT III: Expressing Visually

1. Introducing oneself in a vlog (how to create a narrative: biography, autobiography)
2. Striking a rapport/connecting with viewers/audience (colloquial language, discourse markers)
3. Moderating content (integrating narrative with visuals/images)

Practical component (if any) - NIL

Essential/recommended readings- as listed in the units

Suggestive readings- NIL

GENERIC ELECTIVES LANGUAGE COURSES (GE Language 3) English Fluency-I

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| English Fluency-I | 4 | 3 | 1 | 0 | Passed Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To describe or express their opinions on topics of personal interest such as their experiences of events, their hopes and ambitions.
- To read and understand information on topical matters and explain the advantages and disadvantages of a situation.
- To write formal letters, personal notes, blogs, reports and texts on familiar matters.
- To comprehend and analyse texts in English.
- To organise and write paragraphs and short essays in a variety of rhetorical styles.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to effectively communicate in their everyday contexts.
- Students will be equipped with skills that will help them interact with people around their personal, institutional and social spaces.

SYLLABUS OF GE LANGUAGE-3-

UNIT – I (20 Hours)

UNIT I: In the domestic sphere

1. Diary

2. Modifiers, Prepositions, Conjunctions
3. Write a diary entry and convert it into a blog post
4. Convert a transcript/ script/ piece of dialogue into a diary entry/ blog post

Readings:

1. Morgan, Esther. 'The Lost Word', *New Writing*. ed. Penelope Lively and George Szirtes, Picador India, 2001.
2. Sharma, Natasha. *Squiggle Gets Stuck: All About Muddled Sentences*. India: Penguin Books Limited, 2016.

UNIT – II (20 Hours)

UNIT II: In the University

1. Introducing oneself -- Note-making
2. Pronunciation Intonation – Nouns, Verbs, Articles
3. Blog writing
- A. Introduce yourselves as individuals and as groups -- group discussion exercise Take notes on your fellow students' introductions.
- B. Introduce characters from the text you are reading via posters

Readings:

1. Ghose, Premola. *Tales of Historic Delhi*. Zubaan, 2011.

UNIT – III (20 Hours)

UNIT III: In public places

1. CV Job applications
2. Tenses and concord
- A. Write the CV of a fictional character
- B. Write the perfect job application for your dream job

Readings:

1. Chakrabarti, Narendranath. 'Amalkanti', *The Oxford Anthology of Modern Indian Poetry*. ed. Vinay Dharwadkar and A.K. Ramanujan, India: Oxford University Press, 1994.
2. Anand, S., et al. *Bhimayana: Incidents in the Life of Bhimrao Ramji Ambedkar*. India: Navayana Pub, 2011. pp 60-71

Practical component (if any) - NIL

Essential/recommended readings- as listed in the units

Suggestive readings: NIL

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES LANGUAGE COURSES (GE Language 4) Developing English Language Skills-I

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Developing English Language Skills-I | 4 | 3 | 1 | 0 | Passed Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To enhance comprehension skills and enrich vocabulary through the reading of short and simple passages with suitable tasks built around these.
- To introduce simple syntactical structures and basic grammar to students through contextualized settings and ample practice exercises so that they can engage in short independent compositions.
- To introduce the sounds of the language and the essentials of English pronunciation to students in order to remove the inhibitions experienced by them while speaking English.
- To acquaint students with social formulae used to perform various everyday functions so that they can converse in English in simple situations.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to read and write in English with confidence.
- The course will help in increasing their proficiency in English, increase their vocabulary and improve their comprehension of syntactical structures

SYLLABUS OF GE LANGUAGE-4-

UNIT – I (20 Hours)

UNIT 1: Reading & Vocabulary–I

1. Strategies for language learning;
2. various ways of reading;
3. understanding different text types like newspaper articles, poems, stories, etc. through a variety of textual tasks such as reading aloud, sentence completion, true/false activities, re-ordering jumbled sentences, supplying alternative titles, short comprehension questions, etc.

Readings:

1. A Foundation English Course for Undergraduates: Book II. Delhi: University of Delhi, 1992. pp 8–10, 47–49
2. Developing Language Skills I. Delhi: Manohar, 1997. pp 61–69
3. English at the Workplace. Delhi: Macmillan, 2006. pp 1–3, 16–20
4. Everyday English. Delhi: Pearson, 2005. pp 21–31
5. Everyday English 2. Delhi: Foundation Books, 2006. pp 95 – 100

UNIT – II (20 Hours)

UNIT 2: Writing & Grammar–I

1. Understanding the structure of written texts by identifying topic sentences and supporting details.
2. summarizing passages.
3. expanding ideas, subjects and topics.
4. the steps involved in the process of good writing.
5. Revising key topics in grammar: subject - verb agreement, tenses, articles, prepositions.

Readings:

1. A Foundation English Course for Undergraduates: Book III. Delhi: University of Delhi, 1993. pp 119–125
2. Developing Language Skills I. Delhi: Manohar, 1997. pp 186–195, 209–216
3. Developing Language Skills 2, Delhi: Doaba House, 1995. pp 76–88
4. English at the Workplace. Delhi: Macmillan, 2006. pp 38–42
5. English at the Workplace II. Delhi: Oxford University Press, 2007. pp 29–30

UNIT – III (20 Hours)

UNIT 3: Speaking & Listening–I

1. Learning to use language according to situation: the difference between formal and informal;
2. ways of socializing and showing politeness;
3. expressions used for greetings and asking after, introducing oneself and others, thanking, wishing well, apologizing and excusing, asking for and giving information, making offers and requests and giving orders.

Readings:

1. Developing Language Skills I. Delhi: Manohar, 1997. pp 1–26
2. English at the Workplace. Delhi: Macmillan, 2006. pp 10–13
3. English at the Workplace II. Delhi: Oxford University Press, 2007. pp 5–8, 14–18.

Practical component (if any) - NIL

Essential/recommended readings- as listed in the units

Suggestive readings- NIL

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Common Pool of Generic Electives (GE) Journalism Courses offered by the Department of English

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--------------------------------------|----------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GE-1 Basics of Journalism | 4 | 3 | 0 | 1 | Passed Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To learn the process of structuring news formation for print publications as print journalists.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to understand the notion of Journalism and grasp the underlying factors that define the news.

SYLLABUS OF GE-1

UNIT – I (20 Hours)

UNIT I: Understanding News

- Meaning and definition of Journalism; news and reportage
- News: meaning, definition, nature
- Hard news versus. Soft news, basic components of a news story- dateline, credit line and byline.
- Attribution, embargo, verification, balance and fairness, brevity
- Different forms of print-A historical perspective (Yellow journalism, Penny press, tabloid press)

UNIT – II (20 Hours)

UNIT II: Understanding the structure and construction of news

- Organizing a news story- 5W's and 1H, Inverted pyramid
- Criteria for news worthiness
- Principles of clear writing
- Basic differences between the print, electronic and online journalism

UNIT – III (20 Hours)

UNIT III: Role of media in a democracy

- Citizen Journalism
- Responsibility to Society
- Contemporary debates and issues relating to media
- Ethics in Journalism

Practical component (if any) - Prepare a presentation on difference between Soft news and Hard news from the newspapers.

Essential/recommended readings-

1. Bruce D. Itule and Douglas A. Anderson. News writing and reporting for today's media; McGraw Hill Publication, 2000.
2. M.L. Stein, Susan Paterno & R. Christopher Burnett. News writer's Handbook: An Introduction to Journalism; Blackwell Publishing, 2006.
3. George Rodmann. Mass Media in a Changing World; McGraw Hill Publication, 2007.
4. Carole Flemming and Emma Hemmingway. An Introduction to Journalism; Vistaar Publications, 2006.

Suggestive readings-

1. Richard Keeble. The Newspaper's Handbook; Routledge Publication, 2006.
2. The Golden Age of the Newspaper. George H. Douglas. Greenwood Publishing Group, 1999 - Language Arts & Disciplines - 300 pages.
3. Media Ethics: Truth, Fairness, and Objectively 2nd Edition (English, Paperback, Paranjay Guha Thakurta), Oxford, 2015.
4. Media, the State and Marginalisation: Tackling Challenges: Rachna Sharma: UK, Cambridge Scholars Publishing, (2018) (ed.)

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-2: Introduction to Media Studies)

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GE-2 Introduction to Media Studies | 4 | 3 | 1 | 0 | Passed Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To identify media's communicative potential through everyday examples such as mobile phone, television shows and other media use.
- To think retrospectively of media use and its effects through live and vibrant examples from everyday experience.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to identify communication practices, their formative role in society, understand the relationship between media and democracy.
- This course will help students in reporting on political issues and democratic concerns as journalists.

SYLLABUS OF GE-2

UNIT – I (20 Hours)

UNIT I: Communication, Mass Communication and Models

- Levels of Communication
- Mass Communication and its Process
- Forms of Communication
- Transmission models

- Ritual or Expressive models
- Publicity Model, Reception Model

UNIT – II (20 Hours)

UNIT II: Mass Communication and Effects Paradigm

- Direct Effects: Mass Society Theory, Propaganda
- Limited Effects: Individual Difference Theory, Personal Influence Theory
- Public Opinion
- Cultural Effects and the Emergence of an Alternative Paradigm
- Critique of the effects Paradigm and emergence of alternative paradigm
- Cultural Effects: Agenda Setting, Spiral of Silence
- Cultivation Analysis

UNIT – III (20 Hours)

UNIT III: Media and the Everyday

- Media technologies and the everyday
- Media and Modernity
- Normative Theories of the Press
- Media and the Public Sphere

Practical component (if any) - NIL

Essential/recommended readings-

1. Michael Ruffner and Michael Burgoon, Interpersonal Communication (New York, Holt, Rinehart and Winston 1981, 2134; 5972
2. John Fiske, Introduction to Communication Studies, (Routledge 1982), pp 138

3. Dennis McQuail, Mass Communication Theory, (London, Sage, 2000), pp 111; 4154; 121133 (fourth Edition)

4. Baran and Davis, Mass Communication Theory, Indian Edition, (South West Coengate Learning, 2006) pages 4264; 7184; 148153; 298236

5. Kevin Williams, Understanding Media Theory, (2003), pp.168188

Suggestive readings – NIL

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-3) Basics of Photography

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|----------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GE-3 Basics of Photography | 4 | 3 | 1 | 0 | Passed Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To use technological tools of photography in journalism.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to utilize the technology and the tools of the photography in the production of photographic images, to include the operation of the camera, exposure, lenses etc required to work as a photojournalists and photographers.

SYLLABUS OF GE-3

UNIT – I (20 Hours)

UNIT I: Beginning & Types of Photography

- The birth of Camera and its evolution
- Invention of Digital Photography
- Photojournalism- News Photography, Sports Photography, Nature Photography, Portrait Photography, Travel Photography, Fashion Photography and Advertisement Photography

UNIT – II (20 Hours)

UNIT II: Camera Equipment & Lighting

- Camera Lenses, Aperture, Shutter
- Digital Storage
- Different types of Lighting-Natural lighting and Artificial Lighting
- Three-Point Lighting

UNIT – III (20 Hours)

UNIT III: Photo Editing Software

- Microsoft Office Picture manager, CorelDraw, Adobe Photoshop Elements, Photoshop CC (Creative Cloud)
- Correcting imperfect images: Picture orientation, Cropping, Levels, Altering brightness and contrast, Red eye

Practical component (if any) - NIL

Essential/recommended readings-

1. The Photography Book by Editors of Phaidon Press, 30 April 2000.
2. Communication Technology for Development, Pannu. P, Tomar A Yuki, IK international publishing House, 2011
3. All about Photography by Ashok Dilwali, National Book Trust, Year of Publication:2010 New Delhi.
4. Practical photography by O.P. SHARMA Hindi Pocket Books,2003.

5. The Photographer's Guide to Light by Freeman John Collins & Brown, 2005.

6. Lonely Planet's Best Ever Photography Tips by Richard I'Anson published by Lonely Planet, 2013.

Suggestive readings- NIL

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-4) Advertising and Corporate Communication

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GE-4 Advertising and Corporate Communication | 4 | 3 | 1 | 0 | Passed Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To develop an understanding of corporate communications and the tools available to build the corporate identity for organizations.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to plan, execute and evaluate advertising and public relations campaigns for brands, advertising agencies and other related organisations.

SYLLABUS OF GE-4

UNIT – I (20 Hours)

Unit I: Advertising: Concepts, Functions and Process

- Meaning, Evolution and Functions of Advertising
Concept of Marketing Mix, Promotional Mix: Advertising, Publicity, Events, Sales Promotion, Personal Selling and PR, Role of Advertising in the Marketing Mix
- Advertising Objectives, Segmentation, Positioning, Targeting and Branding
- Media Selection, Planning, Scheduling

- Advertising Department vs. Agency - Structure, and Functions
- Creativity and Copy Writing
- Campaign Planning, Creation and Production
- Ethical & Regulatory Aspects of Advertising - Apex Bodies in Advertising - AAAI, ASCI and their codes

UNIT – II (20 Hours)

Unit II: Corporate Communication

- Corporate Communication - Concept and Meaning
- Facets of Corporate Communication - Organizational Communication, Marketing Communication, Management Communication
- Functions of Corporate Communication - Employee Relations (ER) Investor Relations (IR), Media Relations (MR), Government Relations (GR), Customer Relations (CR) and
- Public Relations (PR)
- Principles and Tools of communication in ER, IR, MR, GR, CR and PR
- Role of Communication in building Corporate Reputation: Corporate Identity, Corporate Image and Corporate Brands
- Corporate Social Responsibility, Case Studies in CSR

UNIT – III (20 Hours)

Unit III: Public Relations: Concept, Principles and Practice

- Public Relations: Concept and Practice

- Importance, Role and Functions of PR
- Publics in PR
- Principles and Tools of Public Relations
- PR Strategies for social media
- Organization of Public relations: In House Department versus Consultancy
- PR Campaign - Planning, Execution, Evaluation
- Role of PR in Crisis Management
- Ethical issues in PR, Apex bodies in PR - IPRA and PRSI Code

Practical component (if any) - NIL

Essential/recommended readings-

1. Jethwaney and Jain, Advertising Management, Oxford University Press Jethwaney Jaishri, Advertising, Phoenix Publishing House, 2012.
 2. Philip Kotler and Lane Keller, Marketing Management (Designing and Managing Integrated Marketing Communication), Upper Saddle River, N.J. : Pearson Prentice Hall, 2009.
 3. Pickton D& Broderick A, Integrated marketing communications 2ND ED., Pearsons, 2009
- Heath Robert L, Handbook of Public Relations, Sage Publications.

Suggestive readings-

1. Dennis L. Wilcoxe & Glen T, Public Relations, Pearson, 2014.
2. Cutlip S.M and Center A.H., Effective Public Relations, Prentice Hall Kaul J.M., Noya Prakash, Public Relation in India, Calcutta, 2006.
3. Social Media Marketing: Strategies for engaging on Facebook, Twitter and other social media, Liana Evans, Que Publishing, 2010.
4. Social Media Marketing: Tracy L. Tuten, Michael R. Solomon, Sage, 2017.

5. The power of corporate communication; Argenti, Paul A.& Forman, Janis, McGraw Hill, 2002.

6. Van Riel, C. B., & Fombrun, C. J. (2007). Essentials of Corporate Communication: Implementing practices for effective reputation Management, Routledge.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-5) Television Journalism

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|----------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GE-5 Television Journalism | 4 | 3 | 1 | 0 | Passed Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To train students for television Journalism.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to create TV News bulletins, documentaries and other programs as Television journalists.

SYLLABUS OF GE-5

UNIT – I (20 Hours)

Unit I: Understanding TV Journalism

- Organizational structure of TV news channels
- TV Reporters Tools and techniques
- Structuring a TV news report, V/O's, packages & story formats.
- PTC: Opening, Bridge and closing.
- Introduction to the equipment: Shooting, recording and editing.
- Understanding the pitfalls of broadcast punctuation and presentation

UNIT – II (20 Hours)

Unit II: TV News Production

- The production team and the process: Line producers, field producers and their role
- The production process, Gate keeping and the run downs
- Back timing and going on air,
- News analysis and experts
- Commercials and promo breaks,
- Headlines
- Discussion and talk shows & organizing studio for TV news programs

UNIT – III (20 Hours)

Unit III: The Changing Newsroom

- Live reporting: organizing thoughts and adlibbing, DSNG, Multiple OB locations and Split screen, V/O from field and technical challenges.
- Satellite link for News reporting: Satellite bookings & co-ordination with local TV channels, booking local editing facilities
- Planning news stories of cultural and social interest on the sidelines
- Satellite phones, broadband, optical fiber and internet & 4G based solutions

Practical component (if any) - NIL

Essential/recommended readings-

1. Bignell, Jonathan, Jeremy, Orlebar, and Patrica Holland, The Television Handbook, London: Routledge, 2005.
2. Chatterji, P.C., Broadcasting in India. New Delhi: Sage, 1987.

3. Fleming, Carole, and Pete Wilby, The Radio Handbook, London: Routledge, 2002.

4. Orlebar, Jeremy, The Practical Media Dictionary, London: Arnold, 2003.

5. Page, David, and William Crawley, Satellites over South Asia, (1st edition), New Delhi: Sage Publications, 2001.

Suggestive readings-

1. Rajagopal, Arvind, Politics after Television, (1st Edition), Cambridge UK: Cambridge University Press, 2001.

2. Saksena, Gopal, Television in India, (1st Edition), New Delhi: Vikas Publication House, 1996.

3. Starkey, Guy, and Andrew Crisell, Radio Journalism, (1st edition), Los Angeles: Sage, 2009.

4. Thussu, Daya Kishan, News as Entertainment, (1st edition), Thousand Oaks California: Sage, 2007.

5. Verma, and Adarsh Kumar, Advanced Journalism, (1st edition), New Delhi: Har-Anand Publications, 1993.

6. Baruah, U.L., This is All India Radio. (1st Edition), New Delhi: Publication Division, Ministry of Information and Broadcasting, Govt. of India, 1983.

7. Bhatt, S.C., Satellite Invasion of India, (1st Edition), New Delhi: Gyan Publication House, 1994.

8. Sabharwal, Tarjeet, Satellite Television: An Impact on Social Participation, Kanishka Publishers, 2008

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-6) Web Journalism

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GE-6 Web Journalism | 4 | 3 | 1 | 0 | Passed Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To acquire web journalism skills.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to creatively and meaningfully engage in the cyberspace as web journalists.

SYLLABUS OF GE-6

UNIT – I (20 Hours)

Unit I: Basics of Web Journalism

- The origin and development of web journalism – historicizing web journalism
- Web journalism - Redefining journalism concepts and practices
- Convergence: Impact & new forms, Changes due to convergence
- Web journalism and its distinct characteristics, Functions of Web Journalism
- The structure and formation of new media industry, the distinct structure and workflow of news room for web journalism

- New media Economics

UNIT – II (20 Hours)

Unit II: Forms and Formats of Web Journalism

- Writing for web journalism Photo, audio and video for web – their different narrative forms and techniques
- Info-graphics and data visualization, multimedia package and multi-media documentary
- New forms of journalism and latest narrative devices – blogs, social media and beyond
- News website and its different production stages
- Researching online, online news sources, news gathering process, verification and fact check Editing for web
- Packaging and distribution of online news, online advertising and marketing

UNIT – III (20 Hours)

Unit III: Ethical and Legal Issues in Journalism

- Cyber laws and regulatory Framework, IT Act
- Cyber Crime, Cyber Terrorism, Cyber Security, Cyber defense, Cyber-attack,
- Surveillance
- Community Informatics, Open-Source Approaches, Activism in Cyberspace

Practical component (if any) - NIL

Essential/recommended readings-

1. Blaine, M., The Digital Reporter's Notebook. London: Routledge, 2013.
2. Bradshaw, P., and L. Rohumaa, Online Journalism Handbook. New York: Pearson, 2011.
3. Brigg, M., Entrepreneurial Journalism- How to build what is next for news. Washington DC: CQ Press, 2011.
4. Brigg, M. Journalism Next. Washington DC: CQ Press, 2016.
5. Curran et.al. Misunderstanding the Internet. New York: Routledge, 2012.
6. Doctor, Ken, Newsonomics, USA: Martin's Press, 2010.
7. Friend and Singer. Online Journalism ethics, New York: ME Sharpe, 2007.

Suggestive readings-

1. Hill, S., and P. Lashmar, Online Journalism -The Essential Guide, 2013.
2. Jim, H., Online Journalism: A critical Primer. London: Pluto Press, 2001.
3. Jones, and Lee, Digital Journalism. London: Sage, 2011.
4. Ray, T. Online Journalism: A basic text. Cambridge: Cambridge University press, 2006.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-7) Print Journalism

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-----------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GE-7 Print Journalism | 4 | 3 | 0 | 1 | Passed Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To equip students with the skills required for working as a print journalist.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to increase their understanding of print media.

SYLLABUS OF GE-7

UNIT – I (20 Hours)

UNIT I: Introduction to Print Journalism

- News-Definition; types of news
- Brief on various types of publications- Newspapers, Magazines
- Types of newspapers-Based on size, periodicity & content, tabloid, broadsheet etc.
- Departments/Sections of a Newspaper Organization Functions and responsibilities of the Editor Functions, duties and responsibilities of News Editor, Chief Sub-Editor, Sub- Editors and Reporters
- Types of magazines – based on format, periodicity and content

UNIT – II (20 Hours)

UNIT II: Genesis of the Press and Basics of Journalistic Writing

- Press in India–Before and after Independence
- Emergency Era and the contemporary issues
- Inverted pyramid style
- Leads- significance and types; Headlines- functions and types Sources of news, elements of news
- Editorial page-structure and content
- Features and article writing, Column Writing
- Writing for niche magazines and audiences
- Book reviews and Film reviews

UNIT – III (20 Hours)

UNIT III: Contemporary Issues in Print Media

- Editorial Freedom, Media Trial, Sting Operations
- Ethics of Journalism; Regulatory Body –PCI
- Objectivity, agenda setting, fake news

Practical component (if any) - Students will undertake assignments based on writing variety of stories for print media. They will also be required to create their own newsletter comprising of all the crucial elements of print journalism.

Essential/recommended readings

1. Editing: A Handbook for Journalists, T.J.S. George, IIMC, New Delhi, 1989
2. Professional Journalism: M.V. Kamath, Vikas Publications, 1980.
3. Groping for Ethics in Journalism: Eugene H. Goodwin, Iowa State Press, 1983.

4. Journalism: Critical Issues: Stuart Allan, Open University Press, 2005.
5. Modern Newspapers Practice: Hodgson F.W.Heinemann London, 1984.

Suggestive readings-

1. News Writing and Reporting: Bruce D.Itule and Douglas A.Anderson, McGraw Hill Publication, 2000.
2. News Writer's Handbook: An Introduction to Journalism: M.L.Stein, Susan Paterno & R. Christopher Burnett. Blackwell Publishing, 2006.
3. An Introduction to Journalism: Carole Flemming and Emma Hemmingway.Vistaar Publications, 2006.
4. The Newspaper's Handbook: Richard Keeble, Routledge Publication, 2006

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-8) Media Management

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-----------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GE-8 Media Management | 4 | 3 | 1 | 0 | Passed Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand the Media Economics, problems of finance, personnel, land, machinery etc. as business managers working in media organisations.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to various wings of media organization and role and responsibilities of people heading different sections.

SYLLABUS OF GE-8

UNIT – I (20 Hours)

Unit I: Media Management Concepts and Issues

- Concept, origin and growth of media management, fundamentals of management, management school of thought
- Changing phases of media management
- Challenges and issues: finance, personnel, land, machinery etc.
- Media industry as manufacturers- Manufacturing Consent, news and content management.
- Market Forces, performance evaluation (TAM, TRP, BARC and HITS) and Market shifts Changing Ownership patterns

UNIT – II (20 Hours)

Unit II: Media Economics

- Media Economics, Strategic Management and Marketing, Government-Media Interface Policies and regulations, FDI (policies & Practices)
- Issues of Paid news, lobbying, pressure group influence,
- Corporatization and Politicization of Media Capital inflow, Budgeting, Financial management, and personnel Management, Market forces

UNIT – III (20 Hours)

UNIT III: Media Market: Contemporary Scenario

- Ethico–legal perspectives in Media management
- Regional media industry
- Alternative media forums and their management
- Case Studies -Indian and International Media Giants

Practical component (if any) - NIL

Essential/recommended readings-

1. Vinita Kohli Khandekar, *Indian Media Business*, Sage, 2010.
2. Pradip Ninan Thomas, *Political Economy of Communications in India*, Sage, 2010.
3. Lucy Kung, *Strategic management in media*, SAGE, 2008.
4. Dennis F. Herrick, *Media Management in the age of Giants*, Surjeet Publications, 2012.

5. Jennifer Holt and Alisa Perren, (Edited) *Media Industries-History, Theory and Method*, Wiley- Blackwel, 2009.

Suggestive readings-

1. John M. lavine and Daniel B. Wackman, *Managing Media Organisations*, Longman Pub Group, 1988.

2. Robin Jeffrey, *India's Newspaper Revolution*, Oxford University Press, New Delhi, 2000

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-9) Documentary Production

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-----------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GE-9 Documentary Production | 4 | 3 | 1 | 0 | Passed Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To develop skills in documentary form; improve knowledge about language of documentary film, including shots composition and editing.
- To gain a better understanding of storytelling in documentary production.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to work as filmmakers/ documentary filmmakers.
- Students would be able to conceptualize and ideate through workshops and peer-review and use sound and visuals in film.

SYLLABUS OF GE-9

UNIT – I (20 Hours)

UNIT I: Understanding the Documentary

- Introduction to the debate on realism

- Modes of Documentaries
- Camcorder Cults, Documentary.
- Ethical Debates in the Documentary Encounter

UNIT – II (20 Hours)

UNIT II: Documentary Production

- Research for the Documentary
- Writing a Treatment, Proposal and Budgeting
- Structure and scripting the documentary
- Documentary Sound
- Documentary Cinematography
- Grammar of editing
- Use of editing in Transitions: Scenic Realism & Sound Effects and Visual Effects

UNIT – III (20 Hours)

UNIT III: Historical Context

- Documentary Movement of India: History, Evolution, Growth.
- Distribution and Exhibition Spaces (Traditional and Online)
- Funding of a documentary- Sponsors, Public service funding, Crowd funding

Practical component (if any) - NIL

Essential/recommended readings-

1. Charles Musser “Documentary” in Geoffrey Nowell Smith ed The Oxford History of World Cinema Oxford University Press: 1996, 322-333
2. Michael Renov “The Truth about Non-Fiction” and “Towards a Poetics of Documentary” in Michael Renov ed. Theorizing Documentary AFI Film Readers, New York and London: Routledge: 1993, 1-36
3. Trisha Das, How to Write a Documentary, Public Service Broadcasting Trust, 2007
4. A History of the Indian Documentary Film, [Sanjit Narwekar](#), 1996.
5. Double Take by PSBT
6. DOX: Documentary Film Magazine
7. Nichols, Bill (2001) Introduction to Documentary, Indiana University Press: Bloomington.
8. Lancaster, Kurt (2010) DSLR Cinema Crafting the Film Look with Video, Focal Press
9. Hampe, Barry (2007) Making Documentary Films and Videos, Holt Paperbacks
10. Fitzgerald, Jon (2017) Film making for Change, Michael Wiese Productions

Suggestive readings(screenings)-

1. Nanook of the North by Robert J Flaherty
2. Michael Moore: Roger and Me
3. Standard Operating Procedure by Errol Morris
4. I am 20 by SNS Sastry
5. Ram Ke Naam by Anand Patwardhan
6. Season Outside by Amar Kanwar
7. In The Forest Hangs A Bridge by Sanjay Kak
8. Q2P by Paromita Vohra
9. Gulabi Gang by Nishtha Jain
10. Pinch Of Skin by Priya Goswami
11. We Have Not Come Here to Die by Deepa Dhanraj
12. Films by PSBT
13. Human Flow by Ai Weiwei
14. Born Into Brothels by Zana Briski
15. Fire In the Blood by MSF
16. Dying laughing by Gravitas Ventures
17. The Out List by HBO

18. Celluloid Man by PK Nair

19. One representative film of each documentary mode as an example.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Department of Hindi

BA (Hons.) Hindi

Category-I

हिंदी कविता (आदिकाल एवं निर्गुणभक्ति काव्य)

Core Course - (DSC)-1

कोर कोर्स 1

| COURSE | Nature of the Course | Total Credit | Componets | | | Eligibility Criteria / Prerequisite |
|---|----------------------|--------------|-----------|----------|-----------|---|
| | | | Lecture | Tutorial | Practical | |
| हिंदी कविता : आदिकाल एवं निर्गुण भक्तिकाव्य | कोर कोर्स (DSC) 1 | 4 | 3 | 1 | .. | दिल्ली विश्वविद्यालय के नियम के अनुसार |

Course Objective (2-3)

1. हिंदी साहित्य के आदिकालीन और भक्तिकालीन साहित्य से अवगत कराना।
2. आदिकाल के दो प्रमुख कवियों – चंदबरदाई और विद्यापति की विषिष्ट भूमिका रही है। इससे विद्यार्थियों को अवगत कराना।
3. निर्गुणभक्ति काव्य के अंतर्गत – संतकाव्य एवं प्रेमाख्यानक काव्य के प्रमुख कवियों – कबीर, जायसी आदि का अध्ययन करना और हिंदी साहित्य में उनके योगदान की चर्चा करना।

Course learning outcomes

1. आदिकाल के परिवेश – राजनीतिक, सामाजिक सांस्कृतिक, धार्मिक परिस्थितियों से भली-भांति परिचित हो सकेंगे।
2. आदिकाल में चंदबरदाई के साहित्यिक और संगीत के क्षेत्र में योगदान से परिचित हो सकेंगे।
3. भक्तिकाल हिंदी साहित्य का स्वर्ण युग है। इसके अध्ययन से मानवीय और नैतिक मूल्यों का विकास होगा।
4. भक्तिकाल के साहित्य में सामंती व्यवस्था का विरोध हुआ, यह इस काव्य की विषिष्ट उपलब्धि है।

Unit 1

(15 घंटे)

चंदबरदाई – पृथ्वीराज रासो, सं. हजारी प्रसाद द्विवेदी, नामवर सिंह
(साहित्य भवन प्रा. लि. इलाहाबाद)

बानबेध समय
कवित्त (10-11)

- प्रथम मुक्किक दरबार। लज्ज संर सुरतानी।।

.....
किहि थान लोइ संभरि घनी। कहौ सुबत्त लज्जौ न लजि।।

बानबेध समय
दूहा (20-33, 49)

- हम अबुद्धि सुरतान इह। भट्ट भाष सुष काज।।

.....

प्रथम राज पासहु गयौ। जब रुक्कयौ दह हथ्य॥

- चवै चंद बरदाइ इम। सुति मीरन सुनतान॥
दे कमान चौहान कौं। साहि दियै कछु दान॥

बानबेध समय
पद्धरी (50-53)

- संगहें पान कम्मान राज। उम्भरे अंग अंतर विराज॥

निसुरति आनि दिय साहि हथ्य। तरकस्स तीर गोरी गुरथ्य॥

बानबेध समय
कवित्त (54,55,56)

- ग्रहिय तीर गोरिस्स। कीन बिन इच्छ अप्प कर॥

श्रृगार वीर करुना विभछ। भय अद्भुत इसंत सम॥

Unit 2

विद्यापति – सं. डॉ. शिवप्रसाद सिंह, (लोकभारती प्रकाशन, इलाहाबाद)

(15 घंटे)

वंशी माधुरी

- नन्दक नन्दन कदम्बेरि तरुतरे

वन्दह नन्दकिसोरा॥

रूप वर्णन

- देख-देख राधा-रूप अपार

करु अभिलाख मनहि पद-पंकज अहोनिषि कोर अगोरि।

पद-14

- चाँद-सार लए मुख घटना करु लोचन चकित चकोरे।

रूप नरायन ई रस जानथि सिबसिंघ मिथिला भूपे।

पद-24

- बदन चाँद तोर नयन चकोर मोर

रूपनरायन जाने॥

Unit 3

कबीर – कबीर – ग्रंथावली, संपादक – डॉ. श्यामसुंदर दास
(नागरी प्रचारिणी सभा वाराणसी)

साखी : गुरुदेव कौ अंग – 1 से 16 तक
विरह कौ अंग – 1 से 8, 21,22,23,44,45
पद संख्या – 378,400

(15 घंटे)

Unit 4

(15 घंटे)

जायसी – जायसी ग्रंथावली – (सं.) रामचंद्र शुक्ल
मानसरोदक खण्ड

References

- त्रिवेणी – रामचंद्र शुक्ल
- कबीर – हजारीप्रसाद द्विवेदी
- भक्ति आन्दोलन और सूरदास का काव्य – मैनेजर पांडेय
- हिंदी सूफीकाव्य की भूमिका – रामपूजन तिवारी
- सूफी कविता की पहचान – यष गुलाटी
- निर्गुण काव्य में नारी – अनिल राय

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

हिंदी साहित्य का इतिहास (आदिकाल एवं मध्यकाल)
Core Course - (DSC)-2
कोर कोर्स 2

| COURSE | Nature of the Course | Total Credit | Componets | | | Eligibility Criteria / Prerequisite |
|--|----------------------|--------------|-----------|----------|-----------|--|
| | | | Lecture | Tutorial | Practical | |
| हिंदी साहित्य का इतिहास (आदिकाल एवं मध्यकाल) | कोर कोर्स (DSC) 2 | 4 | 3 | 1 | .. | दिल्ली विश्वविद्यालय के नियम के अनुसार |

Course Objective (2-3)

- हिंदी साहित्य के इतिहास की जानकारी
- प्रमुख इतिहास ग्रन्थों की जानकारी
- आदिकाल, मध्यकाल के इतिहास की जानकारी

Course learning outcomes

- हिंदी साहित्य के इतिहास का ज्ञान
- इतिहास ग्रन्थों का विप्लेषण
- इतिहास निर्माण की पद्धति

Unit 1

(15 घंटे)

हिंदी साहित्य : इतिहास—लेखन

- हिंदी साहित्य के इतिहास—लेखन की परंपरा का परिचय
- हिंदी साहित्य : काल—विभाजन एवं नामकरण

Unit 2

आदिकाल

(15 घंटे)

- आदिकाल का राजनीतिक, सामाजिक, सांस्कृतिक परिवेश और साहित्यिक पृष्ठभूमि
- सिद्ध साहित्य, नाथ साहित्य, जैन साहित्य
- रासो काव्य
- लौकिक साहित्य

Unit 3

(15 घंटे)

भक्तिकाल (पूर्वमध्यकाल)

- भक्ति – आंदोलन और उसका अखिल भारतीय स्वरूप
- भक्ति साहित्य की दार्शनिक पृष्ठभूमि
- भक्तिकाल की धाराएँ :
 1. निर्गुण धारा (ज्ञानाश्रयी शाखा, प्रेममार्गी सूफी शाखा)
 2. सगुण धारा (रामभक्ति शाखा, कृष्णभक्ति शाखा)

Unit 4

(15 घंटे)

रीतिकाल (उत्तरमध्यकाल)

- युगीन पृष्ठभूमि (राजनीतिक, सामाजिक-सांस्कृतिक-आर्थिक परिवेश, साहित्य एवं संगीत आदि कलाओं की स्थिति)
- काव्य – प्रवृत्तियाँ
 1. रीतिबद्ध और रीतिसिद्ध
 2. रीतिमुक्त काव्य
 3. वीरकाव्य, भक्तिकाव्य, नीतिकाव्य

References

- हिंदी साहित्य का इतिहास – आचार्य रामचंद्र शुक्ल
- हिंदी साहित्य की भूमिका – आचार्य हजारीप्रसाद द्विवेदी
- आदिकालीन हिंदी साहित्य : अध्ययन की दिशाएँ : संपा, अनिल राय
- हिंदी साहित्य के इतिहास पर कुछ नोट्स – रसाल सिंह

Additional Resources:

- मध्यकालीन साहित्य और सौंदर्यबोध – मुकेश गर्ग
- भक्ति आंदोलन के सामाजिक आधार – संपा, गोपेश्वर सिंह
- हिंदी साहित्य और संवेदना का विकास – रामस्वरूप चतुर्वेदी
- हिंदी साहित्य : उद्भव और विकास – आचार्य हजारीप्रसाद द्विवेदी
- हिंदी साहित्य का इतिहास – संपा, डा. नगेन्द्र
- हिंदी साहित्य का आदिकाल – आचार्य हजारीप्रसाद द्विवेदी
- साहित्य का इतिहास दर्शन – नलिन विलोचन शर्मा
- साहित्य और इतिहास दृष्टि – मैनेजर पांडेय

Teaching learning process

कक्षा व्याख्यान सामूहिक चर्चा

- 1 से 3 सप्ताह – इकाई – 1
 4 से 6 सप्ताह – इकाई – 2
 7 से 9 सप्ताह – इकाई – 3

10 से 12 सप्ताह – इकाई – 4

13 से 14 सप्ताह सामूहिक चर्चा, विशेष व्याख्यान एवं आंतरिक मूल्यांकन संबंधी गतिविधियाँ

Assessment Methods

असाइनमेंट

इतिहास लेखन से जुड़े शब्द

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

हिंदी कहानी
Core Course - (DSC)-3
कोर कोर्स 2

| COURSE | Nature of the Course | Total Credit | Componets | | | Eligibility Criteria / Prerequisite |
|-------------|----------------------|--------------|-----------|----------|-----------|--|
| | | | Lecture | Tutorial | Practical | |
| हिंदी कहानी | कोर कोर्स (DSC) 3 | 4 | 3 | 1 | .. | दिल्ली विश्वविद्यालय के नियम के अनुसार |

Course Objective (2-3)

हिंदी कहानी के उद्भव और विकास की जानकारी

कहानी विप्लेषण की समझ

कथा साहित्य में कहानी की स्थिति का विप्लेषण

प्रमुख कहानियाँ और कहानीकार

Course learning outcomes

हिंदी कथा साहित्य का परिचय

कहानी लेखन और प्रभाव का विप्लेषण

प्रमुख कहानीकार और उनकी कहानी के माध्यम से कहानी की उपयोगिता और विप्लेषण की समझ

Unit 1

(15 घंटे)

उसने कहा था – गुलेरी

पंच परमेश्वर – प्रेमचंद

Unit 2

(15 घंटे)

तीसरी कसम – रेणु

चीफ की दावत – भीष्म साहनी

Unit 3

(15 घंटे)

वारिस – मोहन राकेश

वापसी – उषा प्रियंवदा

Unit 4

(15 घंटे)

दोपहर का भोजन – अमरकान्त

घुसपैठिए – ओमप्रकाश वाल्मीकि

References

कहानी : नयी कहानी – नामवर सिंह
नयी कहानी की भूमिका – कमलेश्वर
एक दुनिया समानान्तर – राजेंद्र यादव
हिंदी कहानी : अंतरंग पहचान – रामदरश मिश्र
हिंदी कहानी का इतिहास – गोपल राय
नई कहानी : संदर्भ और प्रकृति – देवीषंकर अवस्थी
हिंदी कहानी का विकास – मधुरेश
हिंदी कहानी : प्रक्रिया और पाठ – सुरेन्द्र चौधरी

Additional Resources:

साहित्य अकादेमी द्वारा प्रकाशित मोनोग्राफ – गुलेरी, प्रेमचंद, प्रसाद, जैनेन्द्र, रेणु, भीष्म साहनी, निर्मल वर्मा, अमरकान्त
कहानी का लोकतन्त्र – पल्लव
पत्रिकाएँ – पहल, हंस, नया ज्ञानोदय, समकालीन भारतीय साहित्य
ई पत्रिका – हिंदी समय, गद्य कोष

Teaching learning process

कक्षा व्याख्यान सामूहिक चर्चा, कहानी वाचन

- 1 से 3 सप्ताह – इकाई – 1
- 4 से 6 सप्ताह – इकाई – 2
- 7 से 9 सप्ताह – इकाई – 3
- 10 से 12 सप्ताह – इकाई – 4
- 13 से 14 सप्ताह सामूहिक चर्चा, विशेष व्याख्यान एवं आंतरिक मूल्यांकन संबंधी गतिविधियाँ

Assessment Methods

टेस्ट, असाइनमेंट

Keywords

कहानी

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

**Common Pool of Generic Elective (Courses) offered by
Department of Hindi
Category-IV**

हिंदी का वैश्विक परिदृश्य

Generic Elective – (GE) /Language

Core Course - (GE) Credits : 4

| COURSE | Nature of the Course | Total Credit | Components | | | Eligibility Criteria / Prerequisite |
|---------------------------|----------------------|--------------|------------|----------|-----------|--|
| | | | Lecture | Tutorial | Practical | |
| हिंदी का वैश्विक परिदृश्य | GE/ Language | 4 | 3 | 1 | .. | दिल्ली विश्वविद्यालय के नियम के अनुसार |

Course Objective (2-3)

- विद्यार्थी की भाषाई दक्षता और भाषाकौशल को बढ़ावा देना
- भाषा प्रयोगशाला के माध्यम से प्रायोगिक कार्य को प्रोत्साहन
- विश्व की प्रमुख भाषाओं से विद्यार्थी का परिचय कराना
- वैश्विक स्तर पर हिन्दी भाषा की स्थिति और स्वरूप से विद्यार्थी का परिचय कराना
- हिन्दी प्रयोग से जुड़े फील्ड वर्क आधारित विश्लेषण
- विद्यार्थी के लेखन कौशल को बढ़ावा देना

Course learning outcomes

भाषा के शुद्ध उच्चारण, रचनात्मक लेखन, औपचारिक लेखन तथा तकनीकी शब्दों से विद्यार्थी अवगत हो सकेगा

- स्नातक स्तर के विद्यार्थी को भाषायी सम्प्रेषण की समझ और संभाषण से सम्बन्धित विभिन्न पक्षों से अवगत हो सकेगा
- वार्तालाप भाषण संवाद समूह चर्चा, अनुवाद के माध्यम से विद्यार्थी में अभिव्यक्ति कौशल का विकास हो सकेगा
- समूह चर्चा, परियोजना के द्वारा विद्यार्थी में आलोचनात्मक क्षमता का विकास हो सकेगा

Unit 1

(15 घंटे)

- विश्व में बोली जाने वाली किन्हीं दो भाषाओं का संक्षिप्त परिचय ;मंदारिन, अंग्रेज़ी, हिन्दी, स्पेनिश, रूसी, जापानी

- वैश्विक स्तर पर हिन्दी का स्थान (संक्षिप्त परिचय)
- हिन्दी का अंतरराष्ट्रीय स्वरूप (मॉरीशस, सूरीनाम, फीजी में हिन्दी)

Unit 2

(15 घंटे)

- संयुक्त राष्ट्र संघ में हिन्दी का प्रयोग
- हिन्दी के विकास में विश्व हिन्दी सम्मलेन की भूमिका
- विश्व हिन्दी दिवस (संक्षिप्त परिचय)

Unit 3

(15 घंटे)

- किसी एक विश्व हिन्दी सम्मलेन की रिपोर्ट प्रस्तुति
- संयुक्त राष्ट्र संघ में हिन्दी के प्रयोग पर अनुच्छेद लेखन
- विश्व हिन्दी दिवस के मौके पर विज्ञापन के प्रारूप का निर्माण

Unit 4

(15 घंटे)

- विदेशों में हिन्दी भाषा की प्रमुख लोकप्रिय पुस्तकों की सूची बनाना
- विदेशों में हिन्दी की प्रमुख लोकप्रिय फिल्मों, गीत, संकलन
- वैश्विक स्तर पर हिन्दी की संभावनाएँ, समूह चर्चा पर रिपोर्ट प्रस्तुति

References

- हिन्दी भाषा की पहचान से प्रतिष्ठा तक (डॉ. हनुमानप्रसाद शुक्ल) लोकभारती प्रकाशन संस्करण 1994
- हिन्दी भाषा (हरदेव बाहरी) अभिव्यक्ति प्रकाशन, दिल्ली
- प्रयोजनमूलक हिन्दी (सिद्धांत और प्रयोग) दंगल झालटे, वाणी प्रकाशन, दिल्ली संस्करण 2010
- मानक हिन्दी का स्वरूप (भोलानाथ तिवारी) प्रभात प्रकाशन, दिल्ली संस्करण 2008
- रचनात्मक लेखन (सं रमेश गौतम) भारतीय ज्ञानपीठ, दिल्ली संस्करण 2016

भारतीय भाषा चिंतन की पीठिका (विद्यानिवास मिश्र) बिहार राष्ट्रभाषा परिषद् संस्करण 1978

Teaching learning process

कक्षा व्याख्यान

1 से 3 सप्ताह – इकाई – 1

- 4 से 6 सप्ताह – इकाई – 2
 7 से 9 सप्ताह – इकाई – 3
 10 से 12 सप्ताह – इकाई – 4
 13 से 14 सप्ताह सामूहिक चर्चा, विशेष व्याख्यान एवं आंतरिक मूल्यांकन संबंधी गतिविधियाँ

Assessment Methods

टेस्ट, असाइनमेंट

Keywords

पारिभाषित शब्दावली

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

हिंदी सिनेमा और उसका अध्ययन

Generic Elective – (GE) /Language

Core Course - (GE) Credits : 4

| COURSE | Nature of the Course | Total Credit | Componets | | | Eligibility Criteria / Prerequisite |
|-----------------------------|----------------------|--------------|-----------|----------|-----------|--|
| | | | Lecture | Tutorial | Practical | |
| हिंदी सिनेमा और उसका अध्ययन | GE/ Language | 4 | 3 | 1 | .. | दिल्ली विश्वविद्यालय के नियम के अनुसार |

Course Objective (2-3)

हिंदी सिनेमा जगत की जानकारी

सिनेमा के निर्माण, प्रसारण और उपभोग से संबंधित आलोचनात्मक चिंतन की समझ

Course learning outcomes

हिंदी सिनेमा, समाज और संस्कृति की समझ

सिनेमा निर्माण, प्रसार कैमरे की भूमिका आदि की व्यावहारिक समझ

Unit 1

(15 घंटे)

सिनेमा : सामान्य परिचय

1. जनमाध्यम के रूप में सिनेमा,
2. सिनेमा की इतिहास यात्रा
3. सिनेमा के प्रकार – व्यावसायिक सिनेमा, समानान्तर सिनेमा, क्षेत्रीय सिनेमा।

Unit 2

(15 घंटे)

सिनेमा अध्ययन

1. सिनेमा अध्ययन की दृष्टियाँ
2. हिंदी सिनेमा का राष्ट्रीय बाज़ार
3. हिंदी सिनेमा का अंतरराष्ट्रीय बाज़ार

Unit 3

(15 घंटे)

सिनेमा अंतर्वस्तु और तकनीक

1. पटकथा, अभिनय, संवाद, संगीत और नृत्य
2. कैमरा, लाइट, साउंड
3. सिनेमा और सेंसरबोर्ड

Unit 4

(15 घंटे)

सिनेमा अध्ययन की दिशाएँ

1. सिनेमा समीक्षा के विविध पहलू
2. हिंदी की महत्वपूर्ण फिल्मों की समीक्षा का व्यावहारिक ज्ञान (अछूत कन्या, मदर इंडिया, काबुलीवाला, शोले, सद्गति, अमर अकबर एंथनी, पीकू, मधुमती)
3. सिनेमा के दृश्य, तकनीक, कहानी, स्पेशल इफेक्ट, आइटम गीत, गीत, संगीत आदि की समीक्षा

References

1. फिल्म निर्देशन – कुलदीप सिन्हा
2. हिंदी सिनेमा का इतिहास – मनमोहन चड्ढा
3. नया सिनेमा – ब्रजेश्वर मदान
4. भारतीय सिने सिद्धांत – अनुपम ओझा
5. सिनेमा : कल, आज, कल – विनोद भारद्वाज
6. हिंदी सिनेमा के सौ वर्ष – प्रकाशन विभाग
7. हिंदी सिनेमा का समाजशास्त्र, जवरीमल पारख

Additional Resources:

विश्व सिनेमा में स्त्री विजय शर्मा

Teaching learning process

व्याख्यान, सामूहिक चर्चा, फिल्म प्रस्तुति और विमर्श

- 1 से 3 सप्ताह – इकाई – 1
- 4 से 6 सप्ताह – इकाई – 2
- 7 से 9 सप्ताह – इकाई – 3
- 10 से 12 सप्ताह – इकाई – 4
- 13 से 14 सप्ताह सामूहिक चर्चा, विशेष व्याख्यान एवं आंतरिक मूल्यांकन संबंधी गतिविधियाँ

Assessment Methods

टेस्ट, असाइनमेंट

Keywords

सिनेमा, हिंदी सिनेमा, फिल्म समीक्षा, फिल्म तकनीक, सेंसर बोर्ड

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

हिंदी में व्यावहारिक अनुवाद

Generic Elective – (GE) /Language

Core Course - (GE) Credits : 4

| COURSE | Nature of the Course | Total Credit | Componets | | | Eligibility Criteria / Prerequisite |
|-----------------------------|----------------------|--------------|-----------|----------|-----------|--|
| | | | Lecture | Tutorial | Practical | |
| हिंदी में व्यावहारिक अनुवाद | GE/ Language | 4 | 3 | 1 | .. | दिल्ली विश्वविद्यालय के नियम के अनुसार |

Course Objective (2-3)

अनुवाद की समझ विकसित करना
व्यावहारिक और क्षेत्र विशेष में अनुवाद गतिविधियों का परिचय देना

Course learning outcomes

अनुवाद की रोजगारपरक क्षमता विकसित होगी
क्षेत्र विशेष की माँग से परिचित होंगे

Unit 1

(15 घंटे)

भारत का भाषायी परिदृश्य और अनुवाद का महत्व
अनुवाद का स्वरूप
अनुवाद प्रक्रिया

Unit 2

(15 घंटे)

प्रयुक्ति की आधारभूत
अनुवाद और विविध प्रयुक्ति क्षेत्र
अनुवाद की व्यावसायिक संभावनाएँ

Unit 3

(15 घंटे)

अनुवाद व्यवहार –1 (अंग्रेजी से हिंदी तथा हिंदी से अंग्रेजी)
सर्जनात्मक साहित्य
ज्ञान-विज्ञान और तकनीकी साहित्य

Unit 4

(15 घंटे)

अनुवाद व्यवहार 2 (अंग्रेजी से हिंदी तथा हिंदी से अंग्रेजी)
जनसंचार
प्रशासनिक अनुवाद और बैंकिंग अनुवाद

References

अनुवाद विज्ञान : सिद्धांत और अनुप्रयोग – डॉ. नगेंद्र
अनुवाद के सिद्धांत – रामालु रेड्डी
अनुवाद (व्यवहार से सिद्धांत की ओर) – हेमचन्द्र पाण्डेय
कार्यालय प्रदीपिका – हरि बाबू कंसल

Additional Resources:

कम्प्यूटर के भाषिक अनुप्रयोग – विजय कुमार मल्होत्रा
सृजनात्मक साहित्य का अनुवाद – सुरेश सिंहल
काव्यानुवाद : सिद्धांत और समस्याएँ – नवीन चंद्र सहगल
कोष विषेषांक, भारतीय अनुवाद परिषद, नई दिल्ली – सं विमलेश कांति वर्मा
अनुवाद और तत्काल भाषांतरण – विमलेश कांति वर्मा
The theory and practice of Translation – Nida E.
Language, Structure & Translation – Nida E.
Routledge Encyclopedia of Translation – Baker, Mona
Translation Evaluation – House, Juliane
Machine Translation: Its Scope and Limits – Wilks, Vorick
Translation and Interpreting – Baker H.
Revising and Editing for Translators – Mossop B.
Introducing Translation Studies: Theories and applications – Munday J.
The Routledge Companion to Translation Studies – Munday J.
Comprehensive English – Hindi Dictionary – Raghubir
Oxford Hindi – English Dictionary – R.S. Mc Gregor
English- Hindi Dictionary – Hardeo Bahari

Teaching learning process

1 से 3 सप्ताह – इकाई – 1
4 से 6 सप्ताह – इकाई – 2
7 से 9 सप्ताह – इकाई – 3
10 से 12 सप्ताह – इकाई – 4
13 से 14 सप्ताह सामूहिक चर्चा, विशेष व्याख्यान एवं आंतरिक मूल्यांकन संबंधी गतिविधियाँ

Assessment Methods

टेस्ट, असाइनमेंट

Keywords

पारिभाषिक शब्दावली

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

बी.ए. आनर्स हिन्दी पत्रकारिता एवं जनसंचार
(B.A. Honours in Hindi Journalism & Mass Communication)

Category I

DISCIPLINE SPECIFIC CORE COURSE – 1: (जनसंचार माध्यम)

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| जनसंचार माध्यम | 4 | 3 | | 1 | | |

Learning Objectives

The Learning Objectives of this course are as follows:

- जनमाध्यमों की वृहद जानकारी प्रदान करना।
- जनमाध्यमों के द्वारा भारतीय ज्ञान-परम्परा का प्रसार करना।
- समाज पर प्रिंट- इलेक्ट्रॉनिक माध्यमों के प्रभाव का अध्ययन।
- जनमाध्यमों की कार्यशैली का परिचय कराना।

Learning outcomes

The Learning Outcomes of this course are as follows:

- जनमाध्यमों की तकनीक एवं प्रक्रिया संबंधी समझ विकसित होगी।
- छात्रों के संचार कौशल में वृद्धि होगी।
- सैद्धांतिक एवं प्रायोगिक कार्यो द्वारा रोजगारपरक संभावनाएँ बढ़ेंगी।
- भारतीय ज्ञान परम्परा की समझ से छात्रों के व्यक्तित्व का सर्वांगीण विकास होगा।

SYLLABUS OF DSC-1

UNIT – I संचार और जनसंचार

(12.5 hours)

- संचार- अर्थ परिभाषा, महत्व, संचार के प्रकार

- जनसंचार - अर्थ, स्वरूप, विशेषताएँ, संचार और जनसंचार का अंतर
- संचार की प्रक्रिया एवं प्रतिपुष्टि

UNIT – II जनमाध्यम

(12.5 hours)

- जनमाध्यम- अर्थ, परिभाषा और महत्व
- जनमाध्यमों के कार्य, प्रभाव और अपेक्षाएँ
- सामाजिक परिवर्तन और जनमाध्यम

UNIT – III मुद्रित माध्यम

(12.5 hours)

- मुद्रित माध्यम - सामान्य परिचय, समाचार पत्र और पत्रिकाओं का स्वरूप
- समाचार संकलन, प्रस्तुति एवं रिपोर्ट-लेखन
- मुद्रित माध्यमों का संगठन एवं स्वामित्व

UNIT – IV इलेक्ट्रॉनिक माध्यम

(12.5 hours)

- इलेक्ट्रॉनिक माध्यमों के विविध रूप - रेडियो, टेलीविजन, सिनेमा, इन्टरनेट आधारित मीडिया
- इलेक्ट्रॉनिक माध्यमों में प्रयुक्त पारिभाषिक शब्दावली - रेडियो, टेलीविजन, सिनेमा, इन्टरनेट आधारित मीडिया
- समाज और संस्कृति के विकास में इलेक्ट्रॉनिक माध्यमों की भूमिका

Practical component (25 hours)

- किसी विषय/ क्षेत्र से जुड़ी पत्रिका की सामग्री का अध्ययन।
- रेडियो के किसी कार्यक्रम के प्रभाव का अध्ययन।
- टेलीविजन के किसी एक कार्यक्रम का समीक्षात्मक विश्लेषण।
- ई-पत्र-पत्रिका अथवा न्यूज़ पोर्टल की सामग्री का अध्ययन।
- टेलीविजन के किसी एक कार्यक्रम का सामाजिक - सांस्कृतिक प्रभाव की दृष्टि से अध्ययन।

Essential/recommended readings

1. इंटरनेट पत्रकारिता, सुरेश कुमार, तक्षशिला प्रकाशन

2. पत्रकारिता का इतिहास एवं जनसंचार माध्यम, डॉ. संजीव भानावत, यूनिवर्सिटी पब्लिकेशन जयपुर
3. संचार सिद्धांत की रूपरेखा, डॉ. प्रेमचंद पातंजलि, के. एल. पचौरी प्रकाशन
4. पत्रकारिता के विविध रूप, रामचंद्र तिवारी, आलेख प्रकाशन
5. समाचार अवधारणा और लेखन प्रक्रिया, सुभाष धूलिया, आनंद प्रधान, भारतीय जनसंचार संस्थान प्रकाशन
6. दूरसंचार और सूचना प्रौद्योगिकी, डी. डी. ओझा, ज्ञानगंगा प्रकाशन
7. संचार माध्यमों का वर्ग चरित्र, रेमंड विलियम्स, ग्रंथ शिल्पी प्रकाशन
8. टेलीविजन की कहानी, श्याम कश्यप और मुकेश कुमार, वाणी प्रकाशन

DISCIPLINE SPECIFIC CORE COURSE – 2: हिंदी पत्रकारिता का इतिहास

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| हिंदी पत्रकारिता का इतिहास | 4 | 3 | | 1 | | |

Learning Objectives

The Learning Objectives of this course are as follows:

- हिंदी पत्रकारिता की ऐतिहासिक भूमिका के प्रति समझ विकसित करना।
- स्वतंत्रता संग्राम में हिंदी पत्र-पत्रिकाओं के योगदान से अवगत कराना।
- हिंदी पत्रकारिता के विभिन्न कालखंडों के मूल्यों से परिचित कराना।
- भारतीय बोध के विकास में हिंदी पत्रकारिता के महत्त्व की जानकारी देना।
- भारतीय स्वतंत्रता सेनानी पत्रकारों, साहित्यकारों और संपादकों के अवदान से परिचित कराना।

Learning outcomes

The Learning Outcomes of this course are as follows:

- हिंदी पत्रकारिता के इतिहास एवं विकास के प्रति समझ विकसित होगी।
- आज़ादी की लड़ाई में हिंदी पत्रकारिता के महत्त्व से परिचित होंगे।
- स्वतंत्रता पूर्व एवं पश्चात की पत्रकारिता में आए मूल्य परिवर्तन से अवगत होंगे।
- हिंदी पत्र-पत्रिकाओं के माध्यम से भारतीय बोध का ज्ञान होगा।

SYLLABUS OF DSC- 2

UNIT – I स्वतंत्रता पूर्व हिंदी पत्रकारिता (12.5 hours)

- स्वतंत्रता पूर्व की भारतीय पत्रकारिता का सामान्य परिचय
- स्वतंत्रता संग्राम और हिंदी पत्र-पत्रिकाओं की भूमिका एवं सामाजिक प्रभाव
- स्वतंत्रता पूर्व हिंदी पत्रकारिता की चुनौतियां

UNIT – II स्वतंत्रता पश्चात हिंदी पत्रकारिता (12.5 hours)

- स्वतंत्रता पश्चात हिंदी पत्रकारिता का विकास एवं स्वामित्व
- आजादी के बाद जनतंत्र व विकास की चुनौतियां
- आपातकाल : प्रेस और अभिव्यक्ति की स्वतंत्रता के सवाल

UNIT – III आपातकाल के बाद की हिंदी पत्रकारिता। (12.5 hours)

- राजनैतिक, सामाजिक एवं सांस्कृतिक परिवर्तन और हिंदी पत्र-पत्रिकाएं
- इलेक्ट्रॉनिक माध्यमों की हिंदी पत्रकारिता
- हिंदी पत्रकारिता की समाचार सामग्री

UNIT – IV भूमंडलीकरण के बाद की हिंदी पत्रकारिता (12.5 hours)

- भूमंडलीकरण और हिंदी पत्रकारिता - हिंदी पत्रकारिता के समक्ष चुनौतियां एवं ज्वलंत मुद्दे
- हिंदी पत्रकारिता का व्यवसायीकरण - विज्ञापन और पत्रकारिता का संबंध, पेड न्यूज़, ब्रेकिंग न्यूज़, इन्फोटेनमेंट
- डिजिटलीकरण, ऑनलाइन हिंदी पत्रकारिता का स्वरूप

Practical component (25 hours)

- स्वतंत्रता आंदोलन में हिंदी पत्रकारिता की भूमिका पर रिपोर्ट, फीचर, लेख तैयार करना।

- पत्रकारों, स्वतंत्रता सेनानियों और संपादकों पर रिपोर्ट, लेख, फीचर लेखन।
- स्वतंत्रता सेनानी पत्रकार, संपादकों पर ब्लॉग लेखन, यूट्यूब वीडियो, पॉडकास्ट, वृत्तचित्र तैयार करना।
- प्रेस के संदर्भ में अभिव्यक्ति की स्वतंत्रता और आपातकाल पर परियोजना कार्य।

Essential/recommended readings

1. हिंदी पत्रकारिता : विविध आयाम, डॉक्टर वेद प्रताप वैदिक, हिंदी बुक सेंटर
2. हिंदी पत्रिका का इतिहास, जगदीश प्रसाद चतुर्वेदी, प्रभात प्रकाशन
3. भारत में प्रेस, जी. एस. भार्गव, नेशनल बुक ट्रस्ट
4. भारत की समाचारपत्र क्रांति, रॉबिन जेफरी, भारतीय जनसंचार संस्थान
5. मीडिया और बाजारवाद, रामशरण जोशी, राधाकृष्ण प्रकाशन
6. अम्बेडकर, गांधी और हिंदी दलित पत्रिका, अनामिका प्रकाशन, श्यौराज सिंह बेचैन
7. हिंदी पत्रकारिता और भूमंडलीकरण, विजेंद्र कुमार, नटराज प्रकाशन
8. पत्रकारिता के नए परिप्रेक्ष्य, राजकिशोर, वाणी प्रकाशन
9. भारतीय पत्रकारिता का इतिहास, जे. नटराजन, प्रकाशन विभाग
10. भारत में जनसंचार, केवल जे. कुमार, जैको पब्लिकेशन हाउस
11. भारत में प्रेस, जी. सी. भार्गव, नेशनल बुक ट्रस्ट, दिल्ली

DISCIPLINE SPECIFIC CORE COURSE – 3: भारतीय समाज और संचार

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| भारतीय समाज और संचार | 4 | 3 | | 1 | | |

Learning Objectives

The Learning Objectives of this course are as follows:

- भारतीय समाज एवं संस्कृति की समझ विकसित करना।
- भारत की दर्शन, धर्म की विरासत से परिचित कराना
- भारतीय साहित्य एवं कला से अवगत कराना।
- भारतीय भाषाओं और भारतीय जनमानस के अंतरसंबंधों की पड़ताल करना।

Learning outcomes

The Learning Outcomes of this course are as follows:

- भारत की सामाजिक आर्थिक सांस्कृतिक पृष्ठभूमि की समझ विकसित होगी।
- छात्रों में भारतीय समाज की संरचना और मूल्य व्यवस्था के प्रति सकारात्मक दृष्टिकोण निर्मित होगा।
- भारतीय धर्म, दर्शन और कलाओं की विरासत से परिचित होंगे।
- विद्यार्थी भारत के भाषिक वैविध्य के ज्ञान एवं सौंदर्य से अभिभूत होंगे।

SYLLABUS OF DSC-3

UNIT – I भारतीय समाज

(12.5 hours)

- भारतीय समाज का स्वरूप
- भारतीय समाज की मूल्य-व्यवस्था- पारिवारिक, सामाजिक, राष्ट्रीय और मानवीय
- भारतीय समाज की चुनौतियां और संभावनाएं

UNIT – II भारतीय धर्म, दर्शन और संस्कृति

(12.5 hours)

- भारतीय संस्कृति की प्रमुख विशेषताएं
- प्रमुख धर्म : सामान्य परिचय
- प्रमुख भारतीय दर्शन

UNIT – III भाषा, साहित्य और कलाएँ

(12.5 hours)

- प्रमुख भारतीय भाषाओं का संक्षिप्त परिचय
- महाभारत और रामचरित मानस का सामान्य परिचय
- प्रमुख कलाएँ : वास्तुकला, मूर्तिकला, चित्रकला, संगीत

UNIT – IV संचार की भारतीय परंपरा

(12.5 hours)

- लोकगीत, लोककथा

- लोकनृत्य, लोकनाट्य
- पारंपरिक भारतीय जनसंचार (पर्व, मेले, नुक्कड़ नाटक, कठपुतली आदि)

Practical component (25 hours)

भारतीय धर्म और दर्शन से सम्बंधित महत्वपूर्ण ग्रंथों पर रिपोर्ट लेखन

1. किसी सांस्कृतिक कार्यक्रम की रिपोर्टिंग
2. किसी लोकनाट्य को देखना और उसका समीक्षात्मक लेखन
3. भारतीय समाज की किसी समस्या पर समाधानपरक मौलिक लेख लिखना
4. चयनित विषयों पर समूह चर्चा और परियोजना कार्य
5. प्रमुख कालजयी रचनाओं की प्रासंगिकता पर लेखन/समूह चर्चा
6. लोकनाट्य के रूप में रामलीला और रासलीला का जनसमाज पर पड़ने वाले प्रभाव का सर्वेक्षण एवं लेखन

Essential/recommended readings

1. संस्कृति के चार अध्याय, रामधारी सिंह दिनकर, साहित्य अकादमी
2. भारतबोध का नया समय, प्रो. संजय द्विवेदी, यश प्रकाशन, दिल्ली
3. भारतीय कला एवं संस्कृति, वासुदेव शरण अग्रवाल, प्रभात प्रकाशन
4. लोक साहित्य की भूमिका, कृष्णदेव उपाध्याय, साहित्य भवन प्राइवेट लिमिटेड, इलाहाबाद
5. मानवमूल्य और साहित्य, धर्मवीर भारती, भारतीय ज्ञानपीठ
6. संचार और विकास, श्यामाचरण दुबे, प्रकाशन विभाग, सूचना व प्रसारण मंत्रालय भारत सरकार
7. बुद्धिस्ट कम्युनिकेशन थ्योरी - एनसाइक्लोपीडिया ऑफ कम्युनिकेशन थ्योरी, सेज पब्लिकेशन
8. को-कल्चरल थ्योरी - एनसाइक्लोपीडिया ऑफ कम्युनिकेशन थ्योरी, सेज पब्लिकेशन

**COMMON POOL OF GENERIC ELECTIVES (GE) COURSES OFFERED BY THE
DEPARTMENT for HJMC Course**

Category - IV

GENERIC ELECTIVES (GE-1) संस्कृति, साहित्य और मीडिया

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Cr edi ts | Credit distribution of the course | | | Eligibility criteria | Pre- requisite of the course | Department offering the course |
|-----------------------------------|-----------------|--------------------------------------|----------|------------------------|-------------------------|---------------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| संस्कृति, साहित्य और मीडिया | 4 | 3 | | 1 | | | |

Learning Objectives

The Learning Objectives of this course are as follows:

- भारतीय संस्कृति, साहित्य और मीडिया की आपसी समझ विकसित करना।
- भूमंडलीकरण के पश्चात मीडिया में आए बदलावों की समीक्षा करना।
- राष्ट्रीय एवं अंतरराष्ट्रीय मुद्दों संबंधी मीडिया कवरेज का अध्ययन करना।
- विभिन्न भारतीय परिवेश, कल्चर, सत्ता एवं राजनीति की समझ पैदा करना।

Learning outcomes

The Learning Outcomes of this course are as follows:

- भारतीय पत्रकारिता के परिवेश की समझ विकसित होगी।
- समाज के विभिन्न पहलुओं से अवगत होंगे।
- राष्ट्रीय एवं अंतरराष्ट्रीय विचारों के प्रति समझ विकसित होगी।
- भारतीय संस्कृति, साहित्य और मीडिया के अंतरसंबंधों की समझ विकसित होगी।

SYLLABUS OF GE-1

UNIT – I संस्कृति अर्थ व अवधारणा**(12.5 hours)**

- संस्कृति की अवधारणा, सभ्यता और संस्कृति
- लोक संस्कृति, पॉपुलर कल्चर, संस्कृति और सत्ता, संस्कृति और राजनीति
- संस्कृति और हाशिये का समाज, इन्टरनेट और सूचना संस्कृति

UNIT – II प्रिंट मीडिया और साहित्य**(12.5 hours)**

- हिन्दी साहित्य और पत्रकारिता का अन्तर्संबंध
- हिंदी पत्र-पत्रिकाओं में साहित्य की स्थिति
- हिन्दी के प्रमुख साहित्यिक पत्रकारों का परिचय

UNIT – III हिन्दी मीडिया और संस्कृति**(12.5 hours)**

- मीडिया और संस्कृति के अन्तर्संबंध
- मीडिया का बाजार और संस्कृति
- विज्ञापन का सांस्कृतिक वर्चस्व और भाषायी संकट

UNIT – IV इलेक्ट्रॉनिक मीडिया और साहित्य**(12.5 hours)**

- रेडियो और टेलीविजन के साहित्य आधारित कार्यक्रम
- साहित्यिक कृतियों का सिनेमाई रूपान्तरण
- साहित्यिक ई-पत्रिकाएँ एवं साहित्यिक वेबसाइट्स

Practical component (25 hours)

- लोक संस्कृति की जानकारी के लिए किसी एक गाँव का सर्वे के आधार पर रिपोर्ट प्रस्तुत करना
- साहित्य आधारित किन्हीं दो फिल्मों का अध्ययन व उनकी समीक्षा
- साहित्य आधारित किसी टेलीविजन धारावाहिक की समीक्षा
- हिन्दी के प्रमुख साहित्यिक पत्रकारों की सूची व उनके अवदान पर एक परियोजना कार्य
- फिल्म पूरब-पश्चिम, मदर इंडिया, परदेश, मशाल, पेज-श्री, फिर भी दिल है हिन्दुस्तानी आदि का समीक्षात्मक विश्लेषण

Essential/recommended readings

1. संस्कृति के चार अध्याय, रामधारी सिंह दिनकर, लोक भारती प्रकाशन
2. मानव और संस्कृति, श्यामाचरण दुबे, राजकमल प्रकाशन
3. हिंदी सिनेमा आदि से अनंत, प्रहलाद अग्रवाल, साहित्य भंडारी
4. हिंदी साहित्य और सिनेमा, विवेक दुबे, संजय प्रकाशन
5. सिनेमा और संस्कृति, राही मासूम रजा, वाणी प्रकाशन
6. मीडिया में सामाजिक लोकतंत्र की तलाश, श्यौराज सिंह बेचैन, अनामिका प्रकाशन
7. संस्कृति, जनसंचार और बाज़ार, नन्द भारद्वाज, सामयिक प्रकाशन

GENERIC ELECTIVES (GE-2) फोटो पत्रकारिता

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department offering the course |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|--------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| फोटो पत्रकारिता | 4 | 3 | | 1 | | | |

Learning Objectives

The Learning Objectives of this course are as follows:

- फोटो पत्रकारिता की समझ विकसित करना।
- व्यावहारिक एवं सैद्धांतिक ज्ञान देना।
- फोटोग्राफी के रचनात्मक पहलुओं का ज्ञान कराना।
- विभिन्न जनसंचार माध्यमों में फोटो के उपयोग एवं महत्व से अवगत कराना।

Learning outcomes

The Learning Outcomes of this course are as follows:

- फ़ोटो पत्रकारिता का व्यावहारिक ज्ञान विकसित होगा।
- छात्रों में रोज़गार उन्मुख कौशल विकसित होगा।
- छात्र विषय, माध्यम एवं प्रकृति के अनुरूप फ़ोटोग्राफी सम्बन्धी तकनीकी कौशल विकसित होगा।
- छात्र 'प्रिंट और इलेक्ट्रॉनिक माध्यमों में फ़ोटो शूट प्रविधि में प्रशिक्षित होंगे।

SYLLABUS OF GE-2

UNIT – I फ़ोटो पत्रकारिता: परिचय (12.5 hours)

- फ़ोटो पत्रकारिता का स्वरूप एवं फ़ोटो पत्रकार के गुण
- फ़ोटोग्राफी के मूलभूत सिद्धांत
- फ़ोटो पत्रकारिता के क्षेत्र एवं संभावनाएँ

UNIT – II फ़ोटोग्राफी का तकनीकी पक्ष (12.5 hours)

- फ़ोटो शूट प्रविधि - प्रकाश - व्यवस्था स्टूडियो के अंदर और बाहर
- फ़ोटोग्राफी : कैमरा, सम्पादन, स्पैशल इफेक्ट्स
- शॉट्स के प्रकार - रोल कैमरा, फ्रेम, शॉट, कैमरा एंगल, वाइड शॉट, लॉन्ग शॉट, मिड शॉट, क्लोज शॉट, डिजीटल कैम क्लोज अप शॉट, एक्सट्रीम क्लोजअप शॉट, टू, शॉट, ओवर द शोल्डर शॉट, मूविंग शॉट, रिवर्स शॉट, ट्रैकिंग शॉट, जूम शॉट पेन शॉट, टिल्ट शॉट, टिल्ट एंड पैन शॉट, लो एंड हाई एंगल शॉट स्टॉक शॉट प्वाइंट ऑफ व्यू फेरिंग

UNIT – III फ़ोटोग्राफी का रचनात्मक पक्ष (12.5 hours)

- फ़ोटोग्राफी का कलात्मक रूप
- फ़ोटोग्राफी रिसर्च एवं समीक्षा
- फीचर, समाचार, रिपोर्टाज और डॉक्यूमेंट्री में फ़ोटोग्राफी का महत्व

UNIT – IV फ़ोटोग्राफी का क्षेत्र और संपादन (12.5 hours)

- विभिन्न माध्यमों के लिए फ़ोटोग्राफी
- फ़ोटोग्राफी के प्रकार
- फ़ोटोग्राफी और वीडियो सम्पादन

Practical component (13- 14 Week)

- खेल या पर्यटन से सम्बंधित 10 फ़ोटो का निर्माण।

- प्रिंट मीडिया के लिए फोटोशूट और कैप्शन तैयार करना।
- आउटडोर शूटिंग और पर्यटन डॉक्यूमेंट्री तैयार करना।
- किसी एक फोटो प्रदर्शनी का भ्रमण और साक्षात्कार के आधार पर एक परियोजना कार्य तैयार करना।
- किसी एक सामाजिक विषय पर फोटो डॉक्यूमेंट्री तैयार करना।

Essential/recommended readings

1. प्रसारण और फोटो पत्रकारिता, ओम गुप्ता, कनिष्क प्रकाशन
2. संचार और फोटो पत्रकारिता, रमेश मेहरा, तक्षशिला प्रकाशन
3. फोटो पत्रकारिता, नवल जायसवाल, सामयिक प्रकाशन
4. प्रकाश लेखन और फोटो पत्रकारिता, गुलाब कोठारी, पत्रिका प्रकाशन
5. फोटो जर्नलिज्म, बी. के. देशपांडे, सोनाली पब्लिकेशन
6. फोटो जर्नलिज्म एंड कम्युनिकेशन टेक्नोलॉजी, पंकज सेठी, नवयुग पब्लिशर्स एंड डिस्ट्रीब्यूटर

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BA (Prog.) Hindi

DSC-I

हिंदी भाषा और साहित्य का इतिहास

Course Objective (2-3)

हिंदी भाषा और साहित्य के इतिहास का परिचय प्राप्त होगा।

साहित्य इतिहास के विभिन्न कालों की प्रमुख प्रवृत्तियों की आलोचनात्मक समझ विकसित होगी।

Course Learning Outcomes

इतिहास के प्रति आलोचनात्मक-विश्लेषणात्मक ज्ञान के द्वारा हिंदी भाषा और साहित्य इतिहास को संतुलित रूप से प्रस्तुत किया जा सकेगा।

इकाई-1

(क) हिंदी भाषा का विकास : सामान्य परिचय

1. हिंदी भाषा का उद्भव
2. हिंदी भाषा की बोलियाँ
3. हिंदी भाषा का विकास : आदिकालीन हिंदी, मध्यकालीन हिंदी, आधुनिक हिंदी

(ख) हिंदी साहित्य का इतिहास : आदिकाल

1. आदिकाल : काल-विभाजन एवं नामकरण
2. आदिकाल की प्रमुख प्रवृत्तियाँ (रासो साहित्य, धार्मिक साहित्य, लौकिक साहित्य)

इकाई-2

हिंदी साहित्य का इतिहास : भक्तिकाल

1. भक्ति आंदोलन : उद्भव और विकास
2. भक्तिकाल की प्रमुख प्रवृत्तियाँ (संत काव्य, सूफी काव्य, राम काव्य, कृष्ण काव्य)

इकाई-3

हिंदी साहित्य का इतिहास : रीतिकाल

1. रीतिकाल : नामकरण विषयक विभिन्न मतों की समीक्षा
2. रीतिकाल की प्रमुख प्रवृत्तियाँ (रीतिबद्ध काव्य, रीतिसिद्ध काव्य, रीतिमुक्त काव्य)

इकाई-4

हिंदी साहित्य का इतिहास : आधुनिक काल

1. मध्यकालीन बोध तथा आधुनिक बोध (संक्रमण की परिस्थितियाँ)
2. आधुनिक हिंदी कविता की प्रमुख प्रवृत्तियाँ (भारतेंदु युग, द्विवेदी युग, छायावाद, प्रगतिवाद, प्रयोगवाद, नई कविता)
3. गद्य विधाओं का उद्भव एवं विकास : उपन्यास, कहानी, नाटक, निबंध

References

1. हिंदी भाषा : धीरेंद्र वर्मा
2. हिंदी भाषा की संरचना : भोलानाथ तिवारी
3. हिंदी साहित्य का इतिहास : आ. रामचंद्र शुक्ल
4. हिंदी साहित्य का इतिहास : सं. डॉ. नगेंद्र
5. हिंदी साहित्य के इतिहास पर कुछ नोट्स : डॉ. रसाल सिंह
6. हिंदी साहित्य का अतीत : विष्णुनाथ प्रसाद मिश्र
7. हिंदी का गद्य साहित्य : रामचंद्र तिवारी
8. हिंदी गद्य : विन्यास और विकास : रामस्वरूप चतुर्वेदी

Teaching Learning Process

व्याख्यान और सामूहिक चर्चा

1 से 3 सप्ताह : इकाई-1

4 से 6 सप्ताह : इकाई-2

7 से 9 सप्ताह : इकाई-3

10 से 12 सप्ताह : इकाई-4

13 से 14 सप्ताह : सामूहिक चर्चा, विशेष व्याख्यान एवं आंतरिक मूल्यांकन संबंधी गतिविधियाँ

Assessment Methods

टेस्ट और असाइनमेंट

Keywords

इतिहास, भाषा और आलोचना से जुड़ी शब्दावली

Discipline Specific Core-2

हिंदी सिनेमा और उसका अध्ययन

Course Objective (2-3)

सिनेमा के निर्माण और उपभोग या आलोचना की व्यावहारिक समझ विकसित करना

हिंदी सिनेमा के विकास अध्ययन

कुछ प्रमुख फिल्मों के माध्यम से सिनेमा में आ रहे बदलाव को समझना

Course Learning Outcomes

सिनेमा की व्यावहारिक और आलोचनात्मक समझ विकसित होगी।

सिनेमा के विकास के माध्यम से भारत के मनोरंजन जगत में आ रहे बदलाव को समझ सकेंगे।

इकाई-1

कला विधा के रूप में सिनेमा और उसकी सैद्धांतिकी

इकाई—2

हिंदी सिनेमा : उद्भव और विकास

इकाई—3

सिनेमा में कैमरे की भूमिका

इकाई—4

नयी तकनीक और सिनेमा : संभावनाएं और चुनौतियां
(संदर्भ : मुगलेआजम, मदर इंडिया, पीके)

References

1. हिंदी सिनेमा का इतिहास : मनमोहन चड्ढा
2. सिनेमा, नया सिनेमा : ब्रजेष्वर मदान
3. सिनेमा : कल, आज और कल : विनोद भारद्वाज
4. हिंदी का मौखिक परिदृश्य : करुणा षंकर उपाध्याय
5. हिंदी का मौखिक परिदृश्य : कौषल कुमार गोस्वामी

Teaching Learning Process

व्याख्यान, सामूहिक चर्चा, वीडियो क्लिप का अध्ययन और उसे बनाना, कैमरे का कक्षा के बाहर अध्ययन

1 से 3 सप्ताह : इकाई—1

4 से 6 सप्ताह : इकाई—2

7 से 9 सप्ताह : इकाई—3

10 से 12 सप्ताह : इकाई—4

13 से 14 सप्ताह : सामूहिक चर्चा, विशेष व्याख्यान एवं आंतरिक मूल्यांकन संबंधी गतिविधियाँ

Assessment Methods

टेस्ट और असाइनमेंट

Keywords

सिनेमाई शब्दावली

COMMON POOL OF GENERIC ELECTIVES (GE)
OFFERED BY DEPARTMENT OF HINDI

‘हिंदी-क’ (उन विद्यार्थियों के लिए जिन्होंने 12वीं कक्षा तक हिंदी पढ़ी है।)

हिंदी : भाषा और साहित्य

Course Objective (2-3)

हिंदी भाषा और साहित्य की सामान्य जानकारी विकसित करना।

राष्ट्रभाषा, राजभाषा और संपर्क भाषा के रूप में हिंदी की स्थिति का परिचय देना।

विशिष्ट कविताओं के अध्ययन-विश्लेषण के माध्यम से कविता-संबंधी समझ विकसित करना।

Course Learning Outcomes

हिंदी साहित्य और भाषा के विकास की स्पष्ट समझ विकसित होगी।

आधुनिक आवश्यकताओं के अनुरूप राष्ट्रभाषा, राजभाषा और संपर्क भाषा की जानकारी प्राप्त होगी।

इकाई-1

(क) हिंदी भाषा का उद्भव एवं विकास

(ख) राष्ट्रभाषा, राजभाषा और संपर्क-भाषा के रूप में हिंदी

इकाई-2

हिंदी साहित्य का इतिहास

(क) हिंदी साहित्य का इतिहास (आदिकाल, मध्यकाल) सामान्य परिचय

(ख) हिंदी साहित्य का इतिहास (आधुनिक काल) सामान्य परिचय

इकाई-3

(क) संत-काव्य (संग्रह) : परशुराम चतुर्वेदी; किताब महल, इलाहाबाद; 1952

संत रैदासजी

पद : 1, 4, और 19

(ख) भूषण – भूषण ग्रंथावली, सं. आचार्य विष्णुनाथ प्रसादमिश्र, वाणी प्रकाशन, दिल्ली, 1998;
कवित्त संख्या 409, 411, 412

(ग) बिहारी — बिहारी रत्नाकर, सं. जगन्नाथदास रत्नाकर बी.ए., प्रकाशन संस्थान, नई दिल्ली, सं. 2006, दोहा 1, 10, 13, 32

इकाई—4

- आधुनिक हिंदी कविता
- माखनलाल चतुर्वेदी : बेटी की विदाई
- जयशंकर प्रसाद : हिमाद्रि तुंग शृंग से
- नागार्जुन : बादल को घिरते देखा है

References

9. रामचंद्र शुक्ल : हिंदी साहित्य का इतिहास
10. हजारीप्रसाद द्विवेदी : हिंदी साहित्य की भूमिका
11. सं. डॉ. नगेंद्र : हिंदी साहित्य का इतिहास
12. रामस्वरूप चतुर्वेदी : हिंदी साहित्य और संवेदना का विकास
13. डॉ. रसाल सिंह : हिंदी साहित्य के इतिहास पर कुछ नोट्स

Teaching Learning Process

व्याख्यान, सामूहिक चर्चा, वीडियो आदि

- 1 से 3 सप्ताह : इकाई—1
- 4 से 6 सप्ताह : इकाई—2
- 7 से 9 सप्ताह : इकाई—3
- 10 से 12 सप्ताह : इकाई—4
- 13 से 14 सप्ताह : सामूहिक चर्चा, विशेष व्याख्यान एवं आंतरिक मूल्यांकन संबंधी गतिविधियाँ

Assessment Methods

टेस्ट और असाइनमेंट

‘हिंदी—‘ख’ (उन विद्यार्थियों के लिए जिन्होंने 10वीं कक्षा तक हिंदी पढ़ी है।)

हिंदी : भाषा और साहित्य

Course Objective (2-3)

हिंदी भाषा और साहित्य की सामान्य जानकारी विकसित करना।

विशिष्ट कविताओं के अध्ययन—विश्लेषण के माध्यम से कविता संबंधी समझ विकसित करना।

Course Learning Outcomes

हिंदी साहित्य और भाषा के विकास की स्पष्ट समझ विकसित होगी।
विषिष्ट कविताओं के अध्ययन से साहित्य की समझ विकसित होगी।

इकाई—1

हिंदी भाषा और साहित्य

हिंदी भाषा का उद्भव और विकास

हिंदी की प्रमुख बोलियों का परिचय

हिंदी साहित्य का इतिहास : संक्षिप्त परिचय (आदिकाल, मध्यकाल)

हिंदी साहित्य का इतिहास : संक्षिप्त परिचय (आधुनिक काल)

इकाई—2

भक्तिकालीन कविता :

(क) कबीर — कबीर ग्रंथावली, सं. श्यामसुंदर दास, नागरीप्रचारिणी सभा, वाराणसी 17वां संस्करण, सं. 2049 वि.

साखी : गुरुदेव कौ अंग — 24, 25, 26, 27, 28, 33, 34

(ख) तुलसी : 'रामचरितमानस' गीताप्रेस, गोरखपुर से 'केवटप्रसंग'

इकाई—3

— मैथिलीषरण गुप्त : नर हो न निराष करो

— सूर्यकांत त्रिपाठी 'निराला' — तोड़ती पत्थर

— केदारनाथ अग्रवाल : धूप

इकाई—4

आधुनिक कविता

— सुभद्रा कुमार चौहान : बालिका का परिचय

— निराला : तोड़ती पत्थर

References

1. रामचंद्र शुक्ल : हिंदी साहित्य का इतिहास
2. हजारीप्रसाद द्विवेदी : हिंदी साहित्य की भूमिका
3. सं. डॉ. नगेंद्र : हिंदी साहित्य का इतिहास
4. रामस्वरूप चतुर्वेदी : हिंदी साहित्य और संवेदना का विकास
5. आ. विष्णुनाथ प्रसाद मिश्र : भूषण ग्रंथावली
6. डॉ. रसाल सिंह : हिंदी साहित्य के इतिहास पर कुछ नोट्स

Teaching Learning Process

व्याख्यान, सामूहिक चर्चा

1 से 3 सप्ताह : इकाई-1

4 से 6 सप्ताह : इकाई-2

7 से 9 सप्ताह : इकाई-3

10 से 12 सप्ताह : इकाई-4

13 से 14 सप्ताह : सामूहिक चर्चा, विशेष व्याख्यान एवं आंतरिक मूल्यांकन संबंधी गतिविधियाँ

Assessment Methods

टेस्ट और असाइनमेंट

‘हिंदी-‘ग’(उन विद्यार्थियों के लिए जिन्होंने 8वीं कक्षा तक हिंदी पढ़ी है।)

हिंदी : भाषा और साहित्य

Course Objective (2-3)

हिंदी भाषा और साहित्य की सामान्य जानकारी विकसित करना।

विशिष्ट कविताओं के अध्ययन-विश्लेषण के माध्यम से कविता संबंधी समझ विकसित करना।

Course Learning Outcomes

हिंदी साहित्य और भाषा के विकास की स्पष्ट समझ विकसित होगी।

विशिष्ट कविताओं के अध्ययन से साहित्य की समझ विकसित होगी।

इकाई-1

हिंदी भाषा और साहित्य

(क) हिंदी भाषा का उद्भव एवं विकास

(ख) हिंदी का भौगोलिक विस्तार

(ग) हिंदी कविता का विकास (आदिकाल, मध्यकाल) : सामान्य विशेषताएँ

(घ) हिंदी कविता का विकास (आधुनिक काल) : सामान्य विशेषताएँ

इकाई-2

भक्तिकालीन हिंदी कविता :

कबीर : कबीर ग्रंथावली, सं. श्यामसुंदर दास, नागरीप्रचारिणी सभा, वाराणसी 17वां संस्करण,
सं. 2049 वि.

साखी : गुरुदेव कौ अंग — 19, 20, 21, 22, 23

सूरदास :

- मैया मैं नहिं माखन खायौ
- उधोमन न भए दस-बीस

इकाई-3

रीतिकालीन हिंदी कविता

(क) बिहारी :

- मेरी भव बाधा हरौ
- कनक कनक ते सौंगुनी
- कहत नटत रीझत खिजत

(ख) घनानंद :

- अति सूधो सनेह को मारग
- रावरे रूप की रीति अनूप

इकाई-4

आधुनिक हिंदी कविता

- सुमित्रा नंदन पंत : आह! धरती कितना देती है
- सर्वेष्पर दयाल सक्सेना : लीक पर वे चलें

References

1. कबीर : हजारीप्रसाद द्विवेदी
2. तुलसीकाव्य — मीमांसा : उदयभानु सिंह
3. हिंदी साहित्य का सरल इतिहास : विष्णुनाथ त्रिपाठी
4. बिहारी की वाग्विभूति : विष्णुनाथ प्रसाद मिश्र
5. हिंदी साहित्य का इतिहास : रामचंद्र शुक्ल
6. डॉ. रसाल सिंह : हिंदी साहित्य के इतिहास पर कुछ नोट्स

Teaching Learning Process

सीखने की इस प्रक्रिया में हिंदी साहित्य और हिंदी कविता को मजबूती प्रदान करना है। कालक्रम के विद्यार्थी युग बोध कोठी से जान सकेंगे। छात्र कविता के माध्यम से उसमें निहित मानवतावादी दृष्टिकोण को बेहतर तरीके से जान सकेंगे। हिंदी भाषा आज तेजी से वैश्वीकृत हो रही है। ऐसे में कविता की भूमिका और भी अधिक महत्वपूर्ण हो जाती है। साहित्य के आरंभ से ही कविता ने समय और समाज को प्रभावित किया है और मानवीय आचरण को संतुलित करने में महत्वपूर्ण भूमिका निभाई है। अतः शिक्षण में हिंदी कविता छात्रों

के दृष्टिकोण को और भी अधिक परिपक्व करेगी। प्रस्तुत पाठ्यक्रम को निम्नांकित सप्ताहों में विभाजित किया जा सकता है :

1 से 3 सप्ताह : इकाई-1

4 से 6 सप्ताह : इकाई-2

7 से 9 सप्ताह : इकाई-3

10 से 12 सप्ताह : इकाई-4

13 से 14 सप्ताह : सामूहिक चर्चा, विशेष व्याख्यान एवं आंतरिक मूल्यांकन संबंधी गतिविधियाँ

Assessment Methods

टेस्ट और असाइनमेंट

Assessment Methods

टेस्ट और असाइनमेंट

Pool of Generic Elective Courses

Offered by Department of Hindi

बी.कॉम. (प्रोग्राम) पाठ्यक्रम

CATEGORY-IV

‘हिंदी-क’ (उन विद्यार्थियों के लिए जिन्होंने 12वीं कक्षा तक हिंदी पढ़ी है।)

हिंदी भाषा और साहित्य का उद्भव और विकास

Course Objective (2-3)

हिंदी में रुचि विकसित करना

हिंदी साहित्य एवं प्रमुख साहित्यकारों का परिचय

हिंदी भाषा को समझना और उसके आधुनिक प्रयोग को जानना

Course Learning Outcomes

हिंदी भाषा और साहित्य का परिचय

प्रमुख साहित्यकारों का अध्ययन

इकाई-1

हिंदी भाषा

(क) हिंदी भाषा का उद्भव एवं विकास

(ख) हिंदी की उपभाषाएँ

इकाई-2

हिंदी साहित्य का इतिहास

(क) हिंदी साहित्य का इतिहास (आदिकाल, मध्यकाल) सामान्य परिचय

(ख) हिंदी साहित्य का इतिहास (आधुनिक काल) सामान्य परिचय

इकाई-3

(क) कबीर : कबीर ग्रंथावली, संपा. श्यामसुंदरदास, नागरी प्रचारिणी सभा, वाराणसी, 17वाँ संस्करण, सं. 2049 वि.

साखी : गुरुदेव कौ अंग — 11, 12, 13, 14, 15, 16, 17

(ख) मीराबाई की पदावली, संपा. आ. परशुराम चतुर्वेदी; हिंदी साहित्य सम्मेलन, प्रयाग; 14वाँ संस्करण, 1892. सन् 1970 ई.; पद 1, 4, 5, 6

(ग) बिहारी : बिहारी रत्नाकर; संपा. जगन्नाथ दास रत्नाकर बी.ए.; प्रकाशन संस्थान, नई दिल्ली; सं. 2006; दोहा 381, 435, 438, 439, 491

इकाई-4

आधुनिक हिंदी कविता

— मैथिलीषरण गुप्त : भारत भारती (हमारे पूर्वज अंश)

— जयधनकर प्रसाद : हिंमाद्रि तुंग शृंग से

— नागार्जुन : अकाल और उसके बाद

References

1. हिंदी भाषा : धीरेन्द्र वर्मा
2. हिंदी भाषा की संरचना : भोलानाथ तिवारी
3. हिंदी साहित्य का इतिहास : आ. रामचंद्र शुक्ल
4. हिंदी साहित्य का इतिहास : सं. डॉ. नगेंद्र

5. हिंदी साहित्य के इतिहास पर कुछ नोट्स : डॉ. रसाल सिंह
6. हिंदी साहित्य का अतीत : विष्णुनाथ प्रसाद मिश्र
7. हिंदी साहित्य : उद्भव और विकास : हजारीप्रसाद द्विवेदी
8. कबीर : हजारीप्रसाद द्विवेदी
9. मीरा का काव्य : विष्णुनाथ त्रिपाठी
10. प्रसाद का काव्य : प्रेमचंद

Teaching Learning Process

कक्षा व्याख्यान, सामूहिक चर्चा

- 1 से 3 सप्ताह : इकाई-1
- 4 से 6 सप्ताह : इकाई-2
- 7 से 9 सप्ताह : इकाई-3
- 10 से 12 सप्ताह : इकाई-4
- 13 से 14 सप्ताह : सामूहिक चर्चा, विशेष व्याख्यान एवं आंतरिक मूल्यांकन संबंधी गतिविधियाँ

Assessment Methods

टेस्ट और असाइनमेंट

‘हिंदी-ख’ (उन विद्यार्थियों के लिए जिन्होंने 10वीं कक्षा तक हिंदी पढ़ी है।)

हिंदी भाषा और साहित्य का उद्भव और विकास

Course Objective (2-3)

हिंदी भाषा और साहित्य के इतिहास की समझ विकसित होगी।

प्रमुख कविताओं की आलोचनात्मक समझ विकसित होगी।

Course Learning Outcomes

हिंदी भाषा के विकास और साहित्य के इतिहास की स्पष्ट समझ विकसित होगी।

इकाई-1

हिंदी का उद्भव और विकास

हिंदी की प्रमुख बोलियों का परिचय

हिंदी साहित्य का इतिहास : संक्षिप्त परिचय (आदिकाल, मध्यकाल)

हिंदी साहित्य का इतिहास : संक्षिप्त परिचय (आधुनिक काल)

इकाई-2

(क) कबीर : कबीर ग्रंथावली, संपा. श्यामसुंदरदास, नागरी प्रचारिणी सभा, वाराणसी, 17वां संस्करण; सं. 2049 वि.

- पोथी पढ़ि पढ़ि जग मुआ.....
- कस्तूरी कुंडलि बसै
- यह तन विष की बेलरी, गुरु अमृत की खान
- सात समुन्दर की मसि करूँ
- साधू ऐसा चाहिए
- सतगुरु हमसुँ रीझकर

(ख) तुलसी : रामचरितमानस – केवट प्रसंग

इकाई-3

(क) बिहारी

- बतरस लालच लाल की
- या अनुरागी चित्त की

(ख) भूषण

— इंद्र जिमि जंभ पर

— साजि चतरंग सैन

इकाई-4

आधुनिक कविता

— जयपंकर प्रसाद : अरुण यह मधुमय देश हमारा

— हरिवंश राय 'बच्चन' : अग्निपथ

References

1. हिंदी साहित्य का इतिहास : रामचंद्र शुक्ल
2. कबीर : हजारीप्रसाद द्विवेदी
3. तुलसी काव्य-मीमांसा : उदयभानु सिंह
4. बिहारी की वाग्विभूति : विष्णुनाथ प्रसाद त्रिपाठी
5. निराला की साहित्य साधना : रामविलास शर्मा
6. हिंदी साहित्य का सरल इतिहास : विष्णुनाथ त्रिपाठी

Teaching Learning Process

व्याख्यान और सामूहिक चर्चा

1 से 3 सप्ताह : इकाई-1

4 से 6 सप्ताह : इकाई-2

7 से 9 सप्ताह : इकाई-3

10 से 12 सप्ताह : इकाई-4

13 से 14 सप्ताह : सामूहिक चर्चा, विशेष व्याख्यान एवं आंतरिक मूल्यांकन संबंधी गतिविधियाँ

Assessment Methods

टेस्ट और असाइनमेंट

‘हिंदी-ग’ (उन विद्यार्थियों के लिए जिन्होंने 8वीं कक्षा तक हिंदी पढ़ी है।)

हिंदी भाषा और साहित्य का उद्भव और विकास

Course Objective (2-3)

हिंदी भाषा और साहित्य की सामान्य जानकारी विकसित करना।

राष्ट्रभाषा, राजभाषा और संपर्क भाषा के रूप में हिंदी की स्थिति का परिचय देना।

विशिष्ट कविताओं के अध्ययन-विश्लेषण के माध्यम से कविता-संबंधी समझ विकसित करना।

Course Learning Outcomes

हिंदी साहित्य और भाषा के विकास की स्पष्ट समझ विकसित होगी।

विशिष्ट कविताओं के अध्ययन से साहित्य की समझ विकसित होगी।

इकाई-1

हिंदी भाषा और साहित्य

हिंदी भाषा का सामान्य परिचय

हिंदी की प्रमुख बोलियों का सामान्य परिचय

हिंदी साहित्य का इतिहास : आदिकाल और मध्यकाल की सामान्य विशेषताएँ

हिंदी साहित्य का इतिहास : आधुनिककाल की सामान्य विशेषताएँ

इकाई-2

भक्तिकालीन कविता

कबीर

- गुरु गोविन्द दोउ खड़े
- निन्दक नियरे राखिए
- कबीर संगति साधु की
- माला फेरत जुग भया
- पाहन पूजै हरि मिले
- वृच्छ कबहूँ न फल भखें

सूरदास

- मैया मैं नहिं माखन खायो
- उधो मन न भए दस—बीस

इकाई—3

बिहारी

- मेरी भव बाधा हरौं
- कनक कनक ते सौं गुनी
- थोड़े ही गुन रीझते
- कहत नटत रीझत खिझत

घनानंद

- अति सूधो सनेह को मारग
- रावरे रूप की रीति अनूप

इकाई—4

- माखनलाल चतुर्वेदी : पुष्प की अभिलाषा
- धूमिल : रोटी और संसद

References

1. हिंदी साहित्य का इतिहास : रामचंद्र शुक्ल
2. कबीर : हजारीप्रसाद द्विवेदी
3. बिहारी रत्नाकर : जगन्नाथदास रत्नाकर
4. हिंदी साहित्य के इतिहास पर कुछ नोट्स : डॉ. रसाल सिंह
5. त्रिवेणी : रामचंद्र शुक्ल
6. भक्ति आंदोलन और सूरदास का काव्य : मैनेजर पाण्डेय
7. समकालीन बोध और धूमिल का काव्य : डॉ. हुकुमचंद राजपाल
8. समकालीन साहित्य : एक दृष्टि : इन्द्रनाथ मदान

Teaching Learning Process

व्याख्यान और सामूहिक चर्चा

1 से 3 सप्ताह : इकाई-1

4 से 6 सप्ताह : इकाई-2

7 से 9 सप्ताह : इकाई-3

10 से 12 सप्ताह : इकाई-4

13 से 14 सप्ताह : सामूहिक चर्चा, विशेष व्याख्यान एवं आंतरिक मूल्यांकन संबंधी गतिविधियाँ

Assessment Methods

टेस्ट और असाइनमेंट

5. Amendment to Appendix -II-A to the Ordinance V (2-A) of the Ordinances of the University vide EC Resolution 18-1-3 dated 18.08.2022 regarding Syllabi of 1st Semester of Departments under Faculty of Science

Add the following:

Syllabi of Semester-I of the following departments under Faculty of Science based on Under Graduate Curriculum Framework -2022 to be implemented from the Academic Year 2022-23.

FACULTY OF SCIENCE

DEPARTMENT OF BOTANY

BSc. (Hons.) Botany
Category-I

DISCIPLINE SPECIFIC CORE COURSE – 1: Plant Diversity and Evolution

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------------------|--------------|-----------------------------------|----------|---------------------|--|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Plant Diversity and Evolution | DSC-1 | 2 | 0 | 2 | 10+2 from any recognized Board with Biology & Candidates must appear in CUET in the following subject combination: Physics+ Chemistry+ Biology/Biotechnology | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

- To make students aware about the diversity of plants and microbes present on the planet and how are they possibly related to each other in light of evolution.

Learning outcomes

The Learning Outcomes of this course are as follows:

By studying this course students will gain basic knowledge on

- The diversity of plants and microbes
- Their general characteristics
- Various groups of plants and their evolutionary relationships
- Basic principles and concepts of evolution that contribute to plant diversity

SYLLABUS OF DSC-1

Unit1: Origin of life

Hours: 6

Principles and concepts of evolution, Tree of Life, and classification (upto six kingdoms)

Unit2: Bacteria

Hours: 4

General characteristic features, cell structure, asexual reproduction and modes of gene transfer (conjugation, transformation and transduction), brief introduction to Archaeobacteria.

Unit3: Viruses

Hours: 4

General characteristic features, replication, RNA virus (structure of TMV), DNA virus (structure of T-phage), Lytic and Lysogenic life cycle (Lambda phage).

Unit4: Algae

Hours: 6

General characteristic features, cell structure, range of thallus, methods of reproduction and evolutionary classification (only upto groups). Brief account of *Spirogyra*, *Sargassum*.

Unit5: Fungi

Hours: 8

General characteristic features, reproduction and broad classification. Myxomycetes and their similarities with fungi, plants and animals, Brief account of *Rhizopus*, *Agaricus*. Introduction to lichens.

Unit6: Bryophytes

Hours: 8

General characteristic features and reproduction, adaptation to land habit, broad classification, evolutionary trends in Bryophytes. Brief account of *Marchantia*, *Funaria*.

Unit7: Pteridophytes**Hours: 8**

General characteristic features and reproduction, broad classification, evolutionary trends in Pteridophytes, affinities with Bryophytes. Brief account of *Adiantum*, *Selaginella*.

Unit8: Gymnosperms**Hours: 8**

General characteristic features and reproduction, broad classification, evolutionary trends in Gymnosperm, affinities with Pteridophytes. Brief account of *Gnetum*, *Ephedra*.

Unit9: Angiosperms**Hours: 8**

General characteristic features and reproduction, Concept of natural, artificial and phylogenetic system of classification. Affinities with Gymnosperms.

Practical component (60 Hours)

1. To study structure of TMV and Bacteriophage (electronmicrographs/models). (01)
2. To study morphology of *Volvox*, *Oedogonium*, *Chara*, *Fucus* and *Polysiphonia* (Temporary preparation/specimens/slides). (02)
3. To study *Rhizopus*, *Penicillium*, *Alternaria* (Temporary preparations), symptoms of rust of wheat, white rust of crucifer (specimen). (02)
4. To study *Marchantia* (morphology, WM of rhizoids and scales), *Anthoceros* (morphology), *Sphagnum* (morphology, WM of leaf), *Funaria* (morphology WM of rhizoid and leaf). (02)
5. To study *Selaginella* (morphology, WM of strobilus and spores), *Equisetum* (morphology, WM of spores), *Pteris* (morphology, tease mount of sporangia and spores). (03)
6. To study *Cycas* (morphology, leaf, leaflet anatomy, coralloid root, bulbils, megasporophyll and microsporophyll); *Pinus* (morphology of dwarf shoot, needle anatomy, male and female cones, WM pollen grains). (02)
7. To study variation in leaf venations in dicots and monocots (at least two specimens each). (01)
8. To study the types of inflorescences in angiosperms (through specimens).(01)
9. To study the types of fruits in angiosperms (through specimens). (01)

Essential/recommended readings

- Campbell,N.A.,Reece,J.B.(2008.)Biology,8thedition,PearsonBenjaminCummings,San Francisco.
- Evert,RF.,Eichhorn,S.E.(2012).RavenBiologyofPlants,8thedition, NewYork,NY: W.H.Freeman and Company.
- Bhatnagar,S.P.,Moitra,A.(1996).Gymnosperms.NewDelhi,Delhi:NewAgeInternational(P)

Ltd Publishers.

- Kumar, H.D. (1999). Introductory Phycology, 2nd edition. Delhi, Delhi: Affiliated East-West Press Pvt. Ltd.
- Pelczar, M.J. (2001). Microbiology, 5th edition. New Delhi, Delhi: Tata McGraw-Hill Co.
- Puri, P. (1985). Bryophytes. New Delhi, Delhi, Atma Ram and Sons.
- Sethi, I.K. and Walia, S.K. (2018). Textbook of Fungi and Their Allies. (2nd Edition), Medtech Publishers, Delhi.
- Tortora, G.J., Funke, B.R., Case, C.L. (2007). Microbiology. San Francisco, U.S.A: Pearson Benjamin Cummings.
- Vashishta, P.C., Sinha, A.K., Kumar, A. (2010). Pteridophyta. New Delhi, Delhi: S. Chand & Co Ltd.
- Singh, G. (2019) Plant Systematics- An Integrated Approach. 4th edition. CRC Press, Taylor and Francis Group.
- Blackmore, S., Crane, P. (2019) How Plants Work – Form, Diversity, Survival, Princeton University Press; Illustrated edition
- Ingrouille, M., Eddie, B. (2006) Plants: Evolution and Diversity. Cambridge University Press.

Suggestive readings

- Parihar, N.S. (1991). An Introduction to Embryophyta. Vol. II. Pteridophytes. Prayagraj: U.P. : Central Book Depot.
- Singh, V., Pandey, P.C., Jain, D.K. (2001). A Text Book of Botany. Meerut, UP: Rastogi and Co.
- Webster, J., Weber, R. (2007). Introduction to Fungi. Cambridge, Cambridge University Press.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2: Cell Biology: Organelles and

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|---|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Cell Biology: Organelles and Biomolecules | DSC-2 | 2 | 0 | 2 | 10+2 from any recognized Board with Biology & Candidates must appear in CUET in the following subject combination: Physics+Chemistry+ Biology/ Biotechnology | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

- Cell as a structural and functional unit of life.
- Types of biomolecules (proteins, carbohydrates, lipids and nucleic acids) and their roles in cell structure and function.
- Structures of different organelles and their role in fundamental metabolic processes of a cell.

Learning outcomes

The Learning Outcomes of this course are as follows:

By studying this course students will gain basic knowledge on

- The relationships between the properties of macromolecules, their cellular activities and biological functions.
- Physico-chemical composition of organelles and their functional organization.
- Basic principles and concepts of evolution that contribute to plant diversity.

SYLLABUS OF DSC-2

Unit 1: Biomolecules**Hours: 10**

Types of chemical bonds and their biological significance. Structure and biological roles of carbohydrates, lipids, proteins and nucleic acids. ATP: structure and its role as an energy currency molecule.

Unit 2: The Cell**Hours: 04**

Cell as a unit of structure and function; Characteristics of prokaryotic and eukaryotic cells; Origin of eukaryotic cell (Endosymbiotic theory).

Unit 3: Cell Wall and Plasma Membrane**Hours: 06**

Chemistry, structure and function of Plant Cell Wall. Singer and Nicolson's fluid mosaic model of cell membrane.

Unit 4: Cell Organelles: Structure and function of the following Organelles**Hours: 11**

Nucleus: Structure and function (nuclear envelope, nuclear pore complex, nuclear lamina); types of chromatins; nucleolus.

Chloroplast and Mitochondria: Structural organization; Function; Semi- autonomous nature of mitochondria and chloroplast.

Endomembrane system: Endoplasmic Reticulum – Structure and function of RER and SER, protein folding, processing in ER, export of proteins and lipids; Golgi Apparatus Organization, protein glycosylation, protein sorting and export from Golgi Apparatus. Introduction to post- translational modifications.

Peroxisome and Lysosomes: Structure and function.

Cytoskeleton: Role and structure of microtubules, microfilaments, intermediary filament and motor proteins.

Unit 5: Cell division**Hours: 08**

Eukaryotic cell cycle, mitosis and meiosis; regulation of cell cycle.

Practical component (60 Hours):

1. Study of cell and its organelles with the help of electron micrographs and other digital resources. (02)
2. Study of plant cell structure with the help of epidermal peel mount of *Allium/Rhoeo/Crinum*. (01)
3. Microchemical tests for carbohydrates (reducing, non-reducing sugars and starch), lipids and proteins. (02)
4. Separation of chloroplast pigments by paper chromatography/ Thin Layer Chromatography. (01)
5. Separation of amino acids by paper chromatography. (01)
6. Study the effect of organic solvent and temperature on membrane permeability. 02
7. Demonstration of the phenomenon of protoplasmic streaming in *Hydrilla* leaf. (01)
8. Demonstration of the phenomenon of plasmolysis and deplasmolysis. (01)
9. Demonstration of separation of biomolecules by dialysis. (01)

Essential/recommended Readings:

- Hardin, J. and Lodolce, J.P. (2022). *Becker's World of the cell*, 10th edition, Pearson
- Berg, J.M., Tymoczko, J.L., Stryer, L. (2011). *Biochemistry*. New York, NY: W. H. Freeman and Company.
- Campbell, N. A. (2020). *Biology: A Global Approach*, 12th Edition, Pearson
- Campbell, P.N., Smith, A.D. (2011). *Biochemistry Illustrated*, 4th edition. London, UK: Churchill Livingstone.

Suggested readings:

1. Cooper, G.M., Hausman, R.E. (2019). *The Cell: A Molecular Approach*, 7th edition. Sinauer/OUP.
2. Iwasa, J, Marshall, W. (2020). *Karps's Cell Biology*, 9th edition, New Jersey, U.S.A.: John Wiley & Sons.
3. Majumdar, R., Sisodia, R. (2019). *Laboratory Manual of Cell Biology*, with reference to Plant Cells. New Delhi, Delhi: Prestige Publication.
4. Nelson, D.L., Cox, M.M. (2021). *Lehninger Principles of Biochemistry*, 8th edition. New York, NY: W.H. Freeman and Company.
5. Reven, F.H., Evert, R.F., Eichhorn, S.E. (1992). *Biology of Plants*. New York, NY: W.H. Freeman and Company.
6. Tymoczko, J.L., Berg, J.M., Stryer, L. (2012). *Biochemistry: A short course*, 2nd edition. New York, NY: W.H. Freeman and Company.

Note: Examination scheme and modes shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 3: Basic Laboratory and Field Skills in

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|--------------|-----------------------------------|----------|---------------------|--|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Laboratory and Field Skills in Plant Biology | DSC-3 | 2 | 0 | 2 | 10+2 from any recognized Board with Biology & Candidates must appear in CUET in the following subject combination: Physics+ Chemistry+ Biology/ Biotechnology | Nil |

Learning Objectives

The course will help students gain knowledge about:

- To learn fundamental skills important for performing laboratory and field experiments

Learning outcomes

This course will be able to demonstrate basic knowledge and understanding of:

- Good laboratory practices, management of laboratory waste, understanding hazards and risks to ensure a safe laboratory environment.
- Basics of measurements, units and common mathematical calculations, sampling and data collection.
- Operation and maintenance of instruments
- Presentation, analysis of data and interpretation of results.

SYLLABUS OF DSC-3

Unit 1: Lab safety and good lab practices

Hours: 08

General laboratory safety, good laboratory practices, biosafety measures (first-aid practices to be followed in case of burn, acid spills and injury), safety symbols, lab safety equipments (fire extinguisher, fume hood, safety glasses), classes of laboratory chemicals, maintenance and handling of chemicals (Labels, Quality - LR/ AR/ Molecular biology grade/ HPLC grade; Expiry date; Precautions for use), Disinfectants, Biocontainment, Disposal of hazardous chemicals, radioactive and biological waste, Laboratory waste management.

Unit 2: Use and maintenance of Laboratory equipment

Hours: 08

Weighing balance (Top loading and Analytical), pH meter (calibration and use), magnetic stirrer, pipettes and micropipettes, autoclave, laminar airflow, BOD incubator, incubator shaker, micrometer, haemocytometer, spectrophotometer, Agarose gel electrophoresis unit, SDS PAGE unit, centrifuge, distillation unit, conductivity meter, Lux meter.

Unit 3: Microscopy, sample and slide preparation

Hours: 05

Microscopes (Dissecting, Compound and Electron microscopes), Fixation and Preservation (for light and electron microscopy); staining, mounting; basic introduction to other types of microscopes (Confocal, Fluorescence)

Unit 4: Measurements and calculations

Hours: 04

Units of measurements and conversion from one unit to another, measurement of volumes of liquids, Weighing, calculations: scientific notations, powers, logarithm and fractions.

Unit 5: Solutions and Buffers

Hours: 04

Molarity, Molality, Normality, percent solution, stock solution, standard solution, dilution, dilution series, pH, acids and bases, buffers - phosphate, Tris- acetate, Tris- Cl and Citrate buffer.

Unit 6: Basic culturing techniques**Hours: 06**

Basic culture media (LB, YEB, MS)- liquid and solid, Culture techniques: plating (streak, spread & pour), replica plating, serial dilution.

Unit 7: Data collection, statistical analysis and interpretation**Hours: 08**

Fundamentals of data collection, data types - primary and secondary, methods of data collection, sample, sampling methods - merits and demerits, technical and biological replicates, classification - tabulation and presentation of data, Descriptive statistics - Mean, Mode, Median, Variance, Standard Deviation, Standard error, Coefficient of Variation, difference between sample mean and population mean.

Unit 8: Basic computer skills for biology**Hours: 08**

MS-Word, PowerPoint, Excel, introduction to biological databases.

Unit 9: Field Skills**Hours: 04**

Identification, collection, cataloguing and preservation of plant specimens, Herbarium and Museum.

Practical component (60 Hours):

1. Preparation of solutions- molar, molal, normal, percentage, stock, standard and serial dilution (01)
2. Determining pH of solutions (pH paper, Universal indicator, pH meter) and preparation of buffers (Phosphate, Tris-Cl, Electrophoresis buffers - TBE/TAE) (01)
3. Working of instruments -light microscope, autoclave, laminar air flow, spectrophotometer, centrifuge, gel electrophoresis unit (Agarose & Poly acrylamide). (01)
4. Temporary peel mount slide preparation and staining (safranin and acetocarmine). (01)
5. Calculate cell size using micrometer. (01)
6. Calculate number of cells (pollen/spores) using haemocytometer. (01)
7. Preparation of LB medium, growth and maintenance of bacterial cultures (liquid -serial dilution method; and semi-solid cultures - streak, spread and pour plates) (02)
8. Isolation of genomic DNA from *E. coli* and plant leaf material, Agarose gel electrophoresis (01)
9. Calculation of mean, mode, median, standard deviation using data set (collected from experiments 5,6). (01)
10. Using software to draw tables, graphs and calculating descriptive statistics (Microsoft Excel) (01)
11. Laboratory safety equipment (Fire extinguisher, Fume hood, safety glasses) (01)
12. Mounting of a properly dried and processed plant specimen with herbarium label. (01)

Essential/recommended Readings:

- Evert, R. F., Eichhorn, S. E., Perry, J.B. (2012). Laboratory Topics in Botany. W.H. Freeman and Company.
- Mesh, M.S., Kebede-Westhead, E. (2012). Essential Laboratory Skills for Biosciences. John Wiley & Sons, Ltd.
- Mu, P., Plummer, D. T. (2001). Introduction to practical biochemistry. Tata McGraw-Hill Education.
- Mann, S. P. (2016). Introductory Statistics, 9th edition. Hoboken, NJ, John Wiley and Sons Inc.
- Danniel, W.W. (1987). Biostatistics. New York, NY: John Wiley Sons.
- Jones, A.M., Reed, R., Weyers, J. (2016). Practical Skills in Biology, 6th Edition, Pearson
- Bisen, P.S. (2014). Laboratory Protocols in Applied Life Sciences, 1st edition. CRC Press.

Suggested readings:

- Zar, Z. H. (2010). Biostatistical Analysis, 5th edition, Pearson Prentice Hall, New Jersey, USA.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES
Offered by Department of Botany
Category-IV

GENERIC ELECTIVES (GE-1)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-----------------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Plant Diversity and Human Welfare | 4 | 2 | 0 | 2 | 12 th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

Build awareness about the different groups of plants and their roles in supporting human life.

Learning outcomes

After studying this course the student will gain knowledge about:

- the diversity of various groups of plants, their characteristics and identification.
- different phytogeographic zones in India.
- the basic principles of conservation of Biodiversity and Sustainable Development Goals (SDG).
- the role of plants in human welfare.

SYLLABUS OF GE-1

Unit 1: Understanding biodiversity

Hours: 06

Understanding biodiversity - definition of key terms; plant diversity in India; assigning value to plant diversity; economic and ecological importance of algae, bryophytes, pteridophytes and gymnosperms; insights into flowering plant diversity with special focus on

agrobiodiversity.

Unit 2: Crop diversity

Hours: 08

Crop diversity in various phytogeographic regions in India and their traditional importance as food (including cereals, pulses, oil crops, spices, beverages, fruits and nuts, vegetables, condiments), medicines (Ashwagandha and Sarpagandha) and adornments

Unit 3: Role of forests

Hours: 06

Forests, woodlands, and vegetation stands: diversity and their importance in ecological, aesthetic, and overall well-being; social dimensions of plant diversity; commercial value and utilization of plant wealth.

Unit 4: Cash Crops

Hours: 5

Crops of high economic value (tobacco, sugarcane, cotton, basmati rice, sandalwood, saffron); Petro crops: the future industry (*Jatropha* sp., corn and sugarcane).

Unit 5: Conservation of biodiversity

Hours: 3

Conservation of biodiversity using community driven conservation strategies, sustainable utilization keeping Sustainable Development Goals (SDGs) in mind, Innovative approaches and traditional methods of biodiversity utilization and waste minimization during product formation.

Unit 6: Policy issues in conservation of Biodiversity

Hours: 02

National and International initiatives and programmes/schemes focussing on Plant Diversity and human welfare (Tribal Rights Bill, Convention on Biological Diversity (CBD), International Union for Conservation of Nature (IUCN), Protection of Plant Varieties and Farmers' Rights Authority (PPVFRA).

Practicals: (60 Hours)

1. To study local plant diversity (common algae, bryophytes, pteridophytes, gymnosperms

- (any two of each) in and around the campus; and understand their ecological and economic importance.
2. Microchemical tests for carbohydrates, proteins and oils.
 3. To study (any three) commonly found tree species in the vicinity and understand their role in human welfare.
 4. To prepare an inventory of common medicinal plants in your campus (identify to the family level, list their uses in Indian System of Medicines)
 5. To visit the local parks and list the trees planted. Also assess some for their dust pollution mitigation capacity using standard procedures.
 6. Industrial visit to see how the drugs are extracted from plants (report to be submitted for evaluation).

Essential/recommended readings

1. Bilgrami, K. S. (1998). Phytodiversification and Human Welfare: Dedicated to Late Prof. KS Bilgrami, FNA (1933-96). MD Publications Pvt. Ltd.
2. Utting, P. (2013). Trees, People and Power. Routledge.
3. Manoharachary, C., Nagaraju, D. (2016). Medicinal plants for human health and welfare. Ann. Phytomed, 5(1), 24-34.

Suggestive reading

Myers, N. (2019). A wealth of wild species: storehouse for human welfare. Routledge

GENERIC ELECTIVES (GE-2)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Biofertilizers | 4 | 2 | | 2 | 12 th Pass | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

- To develop an understanding of biological systems used as fertilizers and build skills in handling microbial inoculants.
- To understand the optimum conditions for growth and multiplication of useful microbes such as *Rhizobium*, cyanobacteria, mycorrhizae, *Azotobacter* etc.
- To understand the role of microbes in mineral cycling and nutrition of plants.
- To gain expertise in various methods of decomposition of biodegradable waste, conversion into compost and apply this knowledge and skill in their daily life.

Learning outcomes

On successful completion of this course, a student will be able to:

- visualize and identify different types of microorganisms with a compound microscope.
- understand the classification of microorganisms according to their shape/ structure for morphological identification. Prepare and sterilize different types of culture media.
- isolate of microorganisms from the environmental samples and culture in aseptic conditions.

SYLLABUS OF GE-2

Unit 1: Introduction

Hours: 7

Introduction to microbial inoculants or biofertilizers, macro and micro nutrition of plants, chemical fertilizers versus biofertilizers; Methods and steps in mass multiplication of biofertilizers: stock culture, broth culture, growth medium, fermentation, blending with the carrier, packaging, and quality check, ISI standard specification for biofertilizers; scope of biofertilizers in India.

Unit 2: Microbial Inoculants

Hours: 08

Study of important microbial inoculants: *Rhizobium*, *Azospirillum*, *Azotobacter*, Actinorhizae; Characteristics, isolation, identification, and crop response.

Unit 3: Role of Cyanobacteria

Hours: 02

Role of Cyanobacteria (blue-green algae) in rice cultivation; *Azolla* and *Anabaena azollae* association, nitrogen fixation, and factors affecting growth.

Unit 4: Mycorrhizal association

Hours: 08

Types of mycorrhizal association, taxonomy, occurrence and distribution; Role of Arbuscular mycorrhizal fungi in phosphorus nutrition, growth and yield of crop plants; AMF – methods in isolation (wet sieving and decanting), identification (morphological and molecular methods). Methods of inoculum production (Pot culture and root culture).

Unit 5: Organic farming

Hours: 5

Introduction to organic farming, recycling of biodegradable municipal (domestic), agricultural and industrial waste; green manuring, bio-composting, vermicomposting and their field application.

Practicals: (60 Hours)

1. Study of *Rhizobium* from root nodules of leguminous plants by Gram staining method. **Hours: 01**
2. Observation of arbuscular mycorrhizal fungi from plant roots. **Hours: 02**
3. Isolation of arbuscular mycorrhizal spores from rhizosphere soil. **Hours: 01**
4. Isolation of *Anabaena* from *Azolla* leaf. **Hours: 01**
5. Study of Earthworm, *Azolla*, AMF: Arbuscules-vesicles through specimen /digital resources. **Hours: 01**
6. Study of Biocontrol methods and their application -Pheromone trap, *Trichoderma*, *Pseudomonas*, Neem etc. through digital resources. **Hours: 01**
7. Rapid test for pH, NO_3^- , SO_4^{2-} , Cl^- and organic matter of different composts. **Hours: 02**
8. Projects on any one of the following topics: *Rhizobium* technology, AMF technology, Organic farming, Bio composting, Vermicomposting, *Azolla* culture etc. (The design of the project should be such that it includes a continuous work of at least 6 Hours and a dissertation submission). **Hours:06**

Essential/recommended readings

- Kumaresan, V. (2005). Biotechnology. New Delhi, Delhi: Saras Publication.
- Sathe, T.V. (2004). Vermiculture and Organic Farming. New Delhi, Delhi: Daya publishers.
- Subha Rao, N.S. (2020). Soil Microbiology, 5th edn. New Delhi, Delhi: Oxford & IBH Publishers.
- Reeta Khosla (2017). Biofertilizers and Biocontrol Agents for Organic Farming, Kojo Press

Suggestive readings

- *Azotobacter* - Isolation and characterization - <https://youtu.be/1Z1VhgJ2h6U>
- *Rhizobium* - Identification and characterization - <https://youtu.be/jELlo-pMvc4>.
- 3-Days Online Workshop On Arbuscular Mycorrhizal Fungi - Biodiversity, Taxonomy and Propagation 19-2 (2022-01-20 at 02_27 GMT-8) - <https://youtu.be/LKzK4IuSRc4>.
- Vayas, S.C, Vayas, S., Modi, H.A. (1998). Bio-fertilizers and organic Farming. Nadiad, Gujarat: Akta Prakashan.

GENERIC ELECTIVES (GE-3)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Protected Agriculture – Hydroponics and Organic Cultivation | 4 | 2 | | 2 | 12 th Pass | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

- To provide knowledge and expertise of various aspects of hydroponics, aquaponics and organic cultivation to the students.
- To make students economically self-reliant by growing and marketing organic herbs, vegetables, microgreens and fruits.

Learning outcomes

- The Learning Outcomes of this course are as follows:
- Students will develop a thorough understanding of the concept of Hydroponics, Aquaponics and Organic farming.
- Students will be trained in establishing hydroponic facility. Students will learn the development of various organic products such as biopesticides, biofertilizers and biogrowth promoters.
- Students will understand various government policies in marketing of hydroponic and organic produce.
- Understand Good Agricultural Practices associated with protected agriculture.

SYLLABUS OF GE-3

Unit 1: Introduction to Protected Agriculture

Hours: 02

Protected Agriculture types (hydroponics, aquaponics and organic farming), definition history, terminology, importance and advantages over traditional agriculture, limitations and challenges.

Unit 2: Plant Growth Requirements and Media formulations

Hours: 5

Physical parameters - light (quality and quantity) artificial light, light balancers; pH, conductivity, salinity (Dissolved Oxygen-DO, Total Dissolved Solid - TDS) and temperature; Chemical parameters- mineral nutrient requirements, deficiencies, toxicities, growth regulators (auxins, gibberellins, cytokinins and abscisic acids); Growth media- types, properties, uses, nutrient formulae, preparation of solutions, solid Media and nutrient film.

Unit 3: Hydroponic growing systems

Hours: 7

Basic concepts and designs (closed and open systems techniques Nutrient Film Technique (NFT), Deep Water Culture (DWC), Dutch Bucket and other small-scale systems), systems layout. Strengths and weaknesses of various systems, site considerations, componentry, nutrient delivery, pumping

Unit 4: Hydroponics associated pest and diseases

Hours: 06

Hydroponics associated pest - mites, thrips, whiteflies, leaf miners; Identification and management of diseases -bacterial, fungal and viral diseases; safety practices (Good Agricultural Practices (GAP) and Integrated Pest Management (IPM).

Unit 5: Organic farming and its management

Hours: 06

Organic farming and associated management practices (nutritional requirements, pest, diseases, weeds); use of biofertilizers, biopesticides, bioherbicides, biocontrol agents (plant growth promoting rhizobacteria (PGPR), pheromone trapping, *Trichoderma*, *Pseudomonas*, neem oil, garlic etc.) in management.

Unit 6: Marketing and Policies

Hours: 04

Marketing of the produce and government institutes and policies related to protected farming (hydroponics and organic farming).

Practicals: (60 Hours)

1. Study of various instruments used in hydroponics.
2. Preparation of growth media for hydroponics.
3. Estimation of NPK, DO, TDS, pH of growing media
4. Demonstration of different irrigation techniques in hydroponics.
5. Demonstration of construction of a sustainable hydroponic unit.
6. Perform rapid tests for estimation of NPK in different soil samples (at least three).
7. Bulk density and porosity of soilless media e.g. coco-peat, perlite, vermiculite, expanded clay, rockwool (any two media).

8. Demonstration of growing a leafy vegetable/fruity vegetable/ medicinal herb/aromatic plant in Hydroponics solution.
9. Study of traditional organic inputs and formulation of biofertilizer.
10. Preparation of biopesticides, plant health promoters like *Panchgavya*, *Beejamrut* etc. Field visit to organic farm/hydroponic farm and submission of visit report.

Essential/recommended readings

- Schwarz, M. (1995). Soilless Culture Management. Advanced Series in Agricultural Sciences, vol. 24. Springer, Berlin, Heidelberg. https://doi.org/10.1007/978-3-642-79093-5_2.
- Hasan, M., Sabir, N., Singh, A.K., Singh, M.C., Patel, N., Khanna, M., Rai, T., Pragnya, P. (2018). Hydroponics Technology for Horticultural Crops, Tech. Bull. TB-ICN 188/2018. Publ. by I.A.R.I., New Delhi-110012 INDIA.
- Misra S., Misra S., Misra R.L. (2017). Soilless Crop production. Daya Publishing House, Astral International (P) Ltd., New Delhi.
- Palaniappan S. P., Annadurai K. (2018). Organic Farming: Theory & Practice. Scientific Publisher.
- Goddek, S., Joyce, A., Kotzen, B., Burnell, G.M. (2019). Aquaponics Food Production Systems. Springer, Cham.

Suggestive readings

- Jones, J. B. (2014). Complete Guide for Growing Plants Hydroponically. CRC Press.
- Vayas, S.C, Vayas, S., Modi, H.A. (1998). Bio-fertilizers and organic Farming. Akta Prakashan, Nadiad.

GENERIC ELECTIVES (GE-4)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Laboratory and Field Skills in Plant Biology | 4 | 2 | | 2 | 12 th Pass | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

To learn fundamental skills important for performing laboratory and field experiments.

Learning outcomes

After completion of this course the student will learn:

- Good Lab Practices, management of laboratory waste, understanding hazards and risks to ensure a safe laboratory environment.
- Basics of measurements, units and common mathematical calculations, sampling and data collection.
- Handling and maintenance of instruments
- Presentation, analysis and interpretation of results.

SYLLABUS OF GE-4

Unit 1: Lab safety and good lab practices

Hours: 04

General laboratory safety, good laboratory practices, biosafety measures (first-aid practices to be followed in case of burn, acid and injury), safety symbols, lab safety equipments (Fire extinguisher, fume hood, safety glasses), classes of laboratory chemicals, maintenance and handling of chemicals (Labels, Quality - LR/ AR/ Molecular biology grade/ HPLC grade; Expiry date; Precautions for use), Disinfectants, Biocontainment, Disposal of hazardous chemicals, radioactive and biological waste, Laboratory waste management

Unit 2: Use and maintenance of Laboratory equipments

Hours: 04

Weighing balance (Top loading and Analytical), pH meter (calibration and use), magnetic stirrer, pipettes, autoclave, laminar airflow, BOD incubator, incubator shaker, micrometer, haemocytometer, spectrophotometer, Agarose gel electrophoresis unit, SDS PAGE unit, centrifuge, distillation unit, conductivity meter, Lux meter.

Unit 3: Microscopy, sample and slide preparation:

Hours: 5

Microscopes (Dissecting, compound, electron microscope), Fixation and Preservation (for light and electron microscopy); staining, mounting; basic introduction to other types of

microscopes (confocal, fluorescence)

Unit 4: Measurements and calculations

Hours: 02

Units of measurements and conversion from one unit to another, measurement of volumes of liquids, Weighing, calculations: scientific notations, powers, logarithms and fractions

Unit 5: Solutions and Buffers

Hours: 02

Molarity, Molality, Normality, percent solution, stock solution, standard solution, dilution, dilution series, pH, acid and bases, buffers- Phosphate, Tris- acetate, Tris-Cl and Citrate buffer

Unit 6: Basic culturing techniques

Hours: 03

Basic culture media (LB, YEB, MS)- Liquid and solid, Culture techniques : plating (streak, spread & pour), replica plating , serial dilution

Unit 7: Data collection, statistical analysis and interpretation

Hours: 04

Fundamentals of data collection, data types - primary and secondary, methods of data collection, sample, sampling methods - merits and demerits, technical and biological replicates, classification - tabulation and presentation of data, Descriptive statistics - Mean, mode, median, Variance, Standard Deviation, Standard error, Coefficient of Variation, difference between sample and population mean.

Unit 8: Basic computer skills for biology

Hours: 04

MS- Word, PowerPoint, Excel, introduction to biological databases

Unit 9: Field Skills

Hours: 02

Identification, collection, cataloguing and preservation of plant specimens, Herbarium and Museum

Practicals: (60 Hours)

1. Preparation of solution- molar, molal, normal, percentage, stock, standard and serial dilution
2. Determining pH of solutions (pH paper, Universal indicator, pH meter) and preparation of buffers (Phosphate, Tris-Cl, Electrophoresis buffers- TBE/TAE)
3. Working of instruments - light microscope, autoclave, laminar air flow, spectrophotometer, centrifuge, gel electrophoresis unit (Agarose & Poly acrylamide gels)
4. Temporary peel mount slide preparation and staining (safranin and acetocarmine).
5. Calculate cell size using micrometer.
6. To calculate number of cells using haemocytometer per unit volume (using pollen/spores)
7. Preparation of LB medium, growth and maintenance of bacterial cultures (liquid -serial dilution method; and semi-solid cultures - streak, spread and pour plates)
8. Isolation of genomic DNA from *E. coli* and plant leaf material, Agarose gel electrophoresis.
9. Calculation of mean, mode, median, standard deviation using data set (collected from experiments 5,6).
10. Using software to draw tables, graphs and calculating descriptive statistics (Microsoft Excel)
11. Laboratory safety equipments (Fire extinguisher, Fume hood, safety glasses)
12. Mounting of a properly dried and processed plant specimen with herbarium label

Essential/recommended readings

- Evert, R. F., Eichhorn, S. E., Perry, J.B. (2012). Laboratory Topics in Botany. W.H. Freeman and Company.
- Mesh, M.S., Kebede-Westhead, E. (2012). Essential Laboratory Skills for Biosciences. John Wiley & Sons, Ltd.
- Mu, P., Plummer, D. T. (2001). Introduction to practical biochemistry. Tata McGraw-Hill Education.
- Mann, S. P. (2016). Introductory Statistics, 9th edition. Hoboken, NJ, John Wiley and Sons Inc.
- Danniel, W.W. (1987). Biostatistics. New York, NY: John Wiley Sons.

- Jones, A., Reed, R., Weyers, J. (2016) Practical Skills in Biology, 6th Edition, Pearson.
- Bisen, P.S. (2014). Laboratory Protocols in Applied Life Sciences (1st edition). CRC Press.

Suggestive readings

Zar, Z. H. (2010). Biostatistical Analysis, 5th edition, Pearson Prentice Hall, New Jersey, USA.

GENERIC ELECTIVES (GE-5)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Green Belt Development and Urban Management for Smart Cities | 4 | 2 | | 2 | 12 th Pass | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

- Green Belt Development is a major step in the development of a sustainable ecosystem, particularly under the Smart Cities Program for urban development (Government of India).
- To introduce students with one of the key green skill development programs under the Skill India mission by the Government of India.
- To acquaint students with various methods and techniques used in development of green infrastructure for smart cities

Learning outcomes

Students will gain as the:

- Course familiarizes students with green skills that contribute to preserving or restoring the environment for a sustainable future that protect ecosystems and biodiversity, reduce energy and minimize waste and pollution.
- This course will help students understand the role of green belt in capturing the

transient emissions, prevent soil erosion and degradation, containing water run-offs and recharging ground water, attenuate the noise generated and improve the aesthetics.

- Students would be well trained (knowledge & skills) to contribute to Green Sector Skill program.

SYLLABUS OF GE-5

Unit 1: Introduction

Hours: 02

Definition, History and Concept of Green Belt; Aesthetics and Importance; Recommended Guidelines for green belt development for industries; Advantages and Applications.

Unit 2: Pollution and Carbon emission

Hours: 04

Type and various source of Emissions; Methods of estimation and monitoring of pollutants; Mechanism of deposition; Regulatory standards for major pollutants.

Unit 3: Plant-Pollutant Interaction

Hours: 04

Methods of sampling and screening local flora, Native and Exotic Plants, Various indicators (Morphological, Anatomical, Physiological and Biochemical) for selection of pollution mitigating plants; Sensitive/indicator, Resistant/ Tolerant Plant Species for different pollutants (air, water, land and sound). Factors effecting plant regeneration and growth.

Unit 4: Structural and Functional Aspects of Green Belt

Hours: 06

Methods of Planting and Propagation, Various approaches for green belt development, Theoretical Models; Site specific ecological requirements, parameters involved that effect landscape design, Methods to evaluate the effectiveness of green belt. Various tools for assessment and monitoring of green belt (GIS and Remote Sensing)

Unit 5: Green Belt for Mitigating Climate change

Hours: 04

Objectives of UNFCCC for mitigating greenhouses gases in urban sectors, Green Finance

and Green Infrastructure development, Methods to Evaluate total carbon sequestered; Carbon stocks and credits.

Unit 6: Waste water treatment through constructed wetlands

Hours: 06

Introduction: Wetlands values and functions, natural and constructed wetlands for wastewater treatments; Life forms in wetlands: microbes and vegetation in wetlands, plants adapted to pollutants and flooding, Role of macrophytes in constructed wetlands; physical and chemical characteristics of freshwater wetlands, constructed wetlands: types, role and management including key parameters for assessment.

Unit 7: Economics of Green Infrastructure

Hours: 04

Understanding of key plants for green economy - NFTP (Non-Forest timber products), biodiesel plants, herbal garden; Evaluating the cost and benefits of green belt development with type studies, Environmental accounting, Ecosystem services and constituents of wellbeing. Environmental Impact Assessment

Practicals: (60 Hours)

1. Methods of Vegetation Sampling and calculation of importance value index.
2. Measuring Tree Height and Cover to estimate green cover of an area.
3. Estimation of total carbon of an area.
4. Methods for selection of plants according to pollutant load both air and water (includes field survey)
5. Open Sources Software for mapping the GPS points and generating a cover map.
6. Measurement of Dissolved Oxygen (DO) from treated waste water.
7. Measurement of BOD and TDS from intake and treated pond.

Suggested Readings:

- Vesilind, P. A., Peirce, J. J., Weiner, R., (1998). Environmental Pollution and Control Netherlands: Elsevier Science.
- Burnwal, K., Jagwani, D. (2013). Air Pollution Abatement through Trees & Green Belt Development. LAP Lambert Academic Publishing.

- CPCB (2000). Guidelines for Green Belt development, CPCB, MoEF, GoI, New Delhi.
- Zhou, S. W. W., Zhou, S. W. W. (2020). Carbon Management for a Sustainable Environment. Germany: Springer International Publishing.
- Yunus, M., Singh, N. de Kok, L.J. (2013). Environmental Stress: Indication, Mitigation and Eco-conservation. Netherlands: Springer Netherlands
- Acar, S., Yeldan, A.E. (2019). Handbook of Green Economics Netherlands: Elsevier Science.
- Stefanakis, A., (2018). Constructed Wetlands for Industrial Wastewater Treatment United Kingdom, Wiley.
- Kröpfelová, L., Vymazal, J., Kröpfelová, L., Vymazal, J. (2008). Wastewater Treatment in Constructed Wetlands with Horizontal Sub-Surface Flow. Czechia: Springer Netherlands.

Suggestive readings

Amati, M. (2016). Urban Green Belts in the Twenty-first Century (Urban Planning and Environment) 1st Edition. Routledge publishers

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DEPARTMENT OF ZOOLOGY

BSC (Hons.) Zoology

Category-I

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|---|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Nonchordata – Protists to Pseudocoelomates | 4 | 2 | 0 | 2 | Class X II pass with Biology as one of the papers in Class XII | - |

Learning Objectives

The course would provide an insight to the learner about the existence of different life forms on the earth and appreciate the diversity of animal life. It will help the students to understand the features of non-chordates and their systematic organization based on evolutionary relationships, structural and functional affinities. The course will also make the students aware about the characteristic morphological and anatomical features of diverse animals; the economic, ecological, and medical significance of various animals in human life; and will create interest among them to explore the animal diversity in nature.

Learning outcomes

Upon completion of the course, students should be able to:

- Learn about the importance of systematics, taxonomy, and structural organization of non-chordates.
- Appreciate the diversity of non-chordates living in varied habits and habitats
- Understand evolutionary history and relationships of different non-chordates through functional and structural affinities.
- Critically analyse the organization, complexity and characteristic features of nonchordates.
- Recognize the life functions and the ecological roles of the animals belonging to different phyla.
- Enhance collaborative learning and communication skills through practical sessions, teamwork, group discussions, assignments, and projects.

SYLLABUS OF DSC-1

Unit I: Introduction to Non-chordates (2 Hours)

General characteristics of non-chordates and basis of classification.

Unit II: Protista (07 Hours)

General characteristics and classification; Life cycle of *Plasmodium vivax*; Locomotion and reproduction in Protista.

Unit III: Porifera (05 Hours)

Introduction to Parazoa; General characteristics and classification; Canal system in sponges.

Unit IV: Cnidaria and Ctenophora (8 Hours)

Introduction to Metazoa; General characteristics and classification; Polymorphism in Cnidaria; Corals and coral reefs.

Unit V: Platyhelminthes and Nemathelminthes (8 Hours)

General characteristics and classification; Parasitic adaptations of Helminthes; Life cycle of *Taenia solium* and *Ascaris lumbricoides*.

Note: Outline classification up to classes to be followed from “Ruppert, Fox and Barnes (2004). Invertebrate Zoology: A Functional Evolutionary Approach”. VII Edition, Cengage Learning, India

Practical component

1. Study of whole mount of Euglena, Amoeba, Noctiluca, Paramecium, Binary fission in Paramecium and Conjugation in Paramecium.
2. Examination of pond water collected from different places to observe diversity in Protista.
3. Study of Sycon, Hyalonema, Euplectella, Spongilla, T.S. of Sycon, L.S. of Sycon.
4. Study of *Obelia*, *Physalia*, *Millepora*, *Aurelia*, *Tubipora*, *Corallium*, *Alcyonium*, *Gorgonia*, *Metridium/Adamsia*, *Pennatula*, *Fungia*, *Meandrina*, *Madrepora*.
5. Specimen/slide of any one Ctenophore.
6. Study of adult *Fasciola hepatica*, *Taenia solium* and their life stages (Slides/microphotographs).
7. Study of adult *Ascaris lumbricoides* and its life stages (Slides/microphotographs).
8. To submit a Project Report on the life cycle of any one parasite or pathogen/corals/coral reefs.
9. Examination of soil samples collected from different places to observe diversity in nematodes.

Essential readings

1. Ruppert, Fox and Barnes (2004). Invertebrate Zoology. VII Edition, Cengage Learning, India.
2. Pechenik, J. A. (2015). Biology of the Invertebrates. VII Edition, McGraw-Hill Education.
3. Barnes, R.S.K., Calow, P., Olive, P.J.W., Golding, D.W. and Spicer, J.I. (2002). The Invertebrates: A New Synthesis. III Edition, Blackwell Science.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2) Biology of Cell: Structure

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|---|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Biology of Cell: Structure and Function | 4 | 2 | -- | 2 | Class X II pass with Biology as one of the papers in Class XII | - |

Learning Objectives

The objective of the course is to help the students to learn and develop an understanding of a cell as a basic unit of life. This course is designed to enable them to understand the functions of cellular organelles and how a cell carries out and regulates cellular functions.

Learning outcomes

Upon completion of the course, students should be able to:

- Understand the fundamental principles of cell biology.
- Explain the structure and functions of cell organelles involved in diverse cellular processes.
- Appreciate how cells grow, divide, survive, die, and regulate these important processes.
- Comprehend the process of cell signaling and its role in cellular functions.
- Have an insight into how defects in the functioning of cell organelles and regulation of cellular processes can develop into diseases. Learn the advances made in the field of cell biology and their applications

SYLLABUS OF DSC- 2

Unit I: Overview of Cells and Plasma membrane (05 Hours)

Prokaryotic and Eukaryotic cells; Various models of plasma membrane structures, Transport across membranes: active and passive transport, facilitated transport; Cell-cell junctions, structures, and functions: Tight junctions, adherens junctions, gap junctions.

Unit II: Endomembrane System (10 Hours)

Structure and Functions: Endoplasmic Reticulum (ER), Golgi apparatus, Signal hypothesis, Vesicular transport from ER to Golgi apparatus, Protein sorting and transport from Golgi apparatus, Coated Vesicles, Lysosomes, Peroxisomes. Structure of Mitochondria, Semiautonomous nature, Endosymbiotic hypothesis; Respiratory chain, Chemiosmotic hypothesis, ATP Synthase.

Unit III: Cytoskeleton (2 Hours)

Structure and Functions: Microtubules, Microfilaments and Intermediate filaments.

Unit IV: Nucleus (4 Hours)

Structure of Nucleus, Nuclear envelope, nuclear pore complex, Transport of molecules across nuclear membrane, nucleosome, nucleolus; Chromatin: euchromatin, heterochromatin.

Unit V: Cell Division (4 Hours)

Mitosis, Meiosis, Cell cycle and its regulation.

Unit VI: Introduction to Cell Signaling (05 Hours)

Cell Signaling through G-protein coupled receptor (GPCR) and role of secondary messenger: cAMP and protein kinase A.

Practical component (60 Hours)

1. Microscopy: Compound microscope: principle, components and handling; Phase contrast microscope; Electron microscope; Differential Interference Contrast (DIC) Microscope.
2. Principle and types of cell fixation and staining; Cell fractionation.
3. To study prokaryotic cells by Gram staining and eukaryotic cell (cheek cells) by hematoxylin/methylene blue.
4. To study the effect of hypotonic, isotonic, and hypertonic solutions on cell permeability.
5. Preparation of a temporary slide of squashed and stained onion root tip to study various stages of mitosis.
6. Study the effect of colchicine on mitosis at 24 hrs and 48 hrs.
7. Study of various stages of meiosis through permanent slides.
8. Preparation of stained mount to show the presence of Barr body in human female blood cells/cheek cells.
9. Cytochemical demonstration of:
 - a. DNA by Feulgen reaction
 - b. Mucopolysaccharides by PAS reaction
 - c. Proteins by Mercuric Bromophenol Blue/Acid Fast Green

Essential readings

1. Cooper, G.M., Hausman, R.E. (2019) The Cell: A Molecular Approach. VIII Edition, ASM Press and Sinauer Associates.
2. Becker, Kleinsmith, and Hardin (2018) The World of the Cell, IX Edition, Benjamin Cummings Publishing, San Francisco.
3. Karp, G. (2015). Cell and Molecular Biology: Concepts and Experiments, VIII Edition, John Wiley & Sons Inc.
4. Renu Gupta, Seema Makhija and Ravi Toteja (2018). Cell Biology Practical Manual, Prestige Publishers, New Delhi
5. VK Sharma (1991). Techniques in Microscopy and Cell Biology, Tata McGraw-Hill Publishing Company Limited, New Delhi

DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-3) Concepts of Ecology**Credit distribution, Eligibility and Pre-requisites of the Course**

| Course | Credits | Credit distribution of the course | Eligibility | Pre-requisite |
|--------|---------|-----------------------------------|-------------|---------------|
|--------|---------|-----------------------------------|-------------|---------------|

| title & Code | | Lecture | Tutorial | Practical/ Practice | criteria | of the course(if any) |
|--------------------|---|---------|----------|---------------------|--|-----------------------|
| Concept of Ecology | 4 | 2 | 0 | 2 | Class X II pass with Biology as one of the papers in Class XII | NIL |

Learning Objectives

The primary aim of this course is to develop a scientific understanding of the diverse aspects of the field of ecology. The students will be familiarized with the interactions between the organisms and their physical environment. Additionally, various attributes of populations and communities with help of theoretical concepts and field examples will be discussed. It provides a platform to understand the varied forces that lead to variations among populations of a species.

Learning outcomes

Upon completion of the course, the students should be able to:

- Demonstrate an understanding of the basic concepts of the subject
- Explain the characteristics, dynamics, and growth of populations
- Understand the characteristics of the community, ecosystem development and climax theories
- Gain knowledge about the relationship of the evolution of various species and the environment they live in.
- Design basic field studies, collect data and interpret it
- Carry out population and community studies

SYLLABUS OF DSC-3

Unit I: Introduction to Ecology (03 Hours)

Autecology and Synecology, Laws of limiting factors, Study of physical factors: Temperature and Light.

Unit II: Population (07 Hours)

Unitary and Modular populations; Unique and group attributes of population: density, natality, mortality, life tables, fecundity tables, survivorship curves, age ratio, sex ratio, dispersal and dispersion; Exponential and logistic growth, equations and patterns, r and k strategies; Intraspecific population regulation: density-dependent and independent factors.

Unit III: Species Interactions (06 Hours)

Types of species interactions, Interspecific competition: Lotka-Volterra model of competition, Gause's Principle with laboratory and field examples, Niche concept; Predation: Lotka-Volterra equations, Functional and numerical responses, predator defence mechanisms, Resource partitioning.

Unit IV: Community (05 Hours)

Community characteristics: species richness, dominance, diversity, abundance, guilds, ecotone and edge effect; Ecological succession with examples and types.

Unit V: Ecosystem (6 Hours)

Types of Ecosystems: Terrestrial ecosystem, vertical stratification in tropical forest; Food chain: detritus and grazing food chains, linear and Y-shaped food chains, food web; Energy flow through the ecosystem; Ecological pyramids and Ecological efficiencies; Biogeochemical cycle- nitrogen cycle.

Unit VI: Applied Ecology (03 Hours)

Ecology in wildlife conservation and management, Protected areas: National Parks, Biosphere reserves and Sanctuaries; Restoration ecology, Principles of Environmental impact assessment.

Practical components (60 Hours)

1. Study of life tables and plotting of survivorship curves of different types from hypothetical/ real data
2. Determination of population density in a natural or a hypothetical community by quadrat method and calculation of Shannon-Weiner diversity index.
3. Study of an aquatic ecosystem:
 - a) Phytoplankton and zooplankton
 - b) Measurement of temperature, turbidity/penetration of light, determination of pH
 - c) Dissolved oxygen content (Winkler's method), chemical oxygen demand
 - d) Free carbon dioxide and alkalinity
4. Study of ten endemic animals of India with slides/pictures/videos.
5. Report on a visit to a National Park/Biodiversity Park/Wildlife Sanctuary.

Essential readings

1. Odum, E.P. and Barrett G. W. (2008). Fundamentals of Ecology. Indian Edition (5th). Publisher: Brooks/Cole.
2. Smith T. M. and Smith R. L. (2015). Elements of Ecology. 9th International Edition. Publisher: Benjamin Cummings.
3. Saha G.K. and Mazumdar S. (2020) Wildlife Biology, An Indian Perspective. Publisher: PHI Learning Private Limited
4. Zimmer C. and Emlen D. J., (2013) 1st Edition. Evolution: Making Sense of Life, Roberts & Co.
5. Futuyma, Douglas and Mark, Kirkpatrick (2017) 3rd Edition. Evolutionary Biology, Oxford University Press

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES
Offered by Department of Zoology
Category-IV

GENERIC ELECTIVES (GE-1): Human Physiology

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department offering the course |
|-------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|--------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| Human Physiology | 4 | 2 | - | 2 | 12 th Pass | Nil | Zoology |

Learning Objectives

This course offers an overview of the concepts of normal biological functions in the human body. The fundamentals of human physiology and histological structures will be correlated. The concept of homeostasis in response to changes in the external environment will be introduced. Further, students will be provided with knowledge that can be applied in everyday life. The students will be encouraged to pursue further studies in physiology and related fields as well as multidisciplinary subjects that require an understanding of the physiology of humans.

Learning outcomes

Upon completion of the course, students will be able to:

- Understand the principles of normal biological function in the human body.
- Outline basic human physiology and correlate it with histological structures.
- Understand the homeostasis in animals in response to changes in their external environment.

SYLLABUS OF GE-1

Unit I: Tissues (05 Hours)

Types of Tissues; Structure and Function of Epithelial, Connective, Muscular and Nervous tissues.

Unit II: Functioning of Excitable Tissue (Nerve and Muscle) (05 Hours)

Propagation of nerve impulse (myelinated and non-myelinated nerve fibre); Mechanism of muscle contraction (Sliding filament theory).

Unit III: Digestion and Absorption of Food (05 Hours)

Structure and function of digestive system; Digestion and absorption of carbohydrates, fats and proteins.

Unit IV: Respiratory Physiology (04 Hours)

Structure and function of respiratory tract and lungs; Ventilation, External and Internal respiration; Transport of oxygen and carbon dioxide in blood.

Unit V: Cardiovascular System (04 Hours)

Structure of heart, Cardiac cycle, Composition of blood

Unit VI: Renal Physiology (03 Hours)

Functional anatomy of kidney

Unit VII: Reproductive Physiology (04 Hours)

Structure of testis and ovary; Spermatogenesis and Oogenesis.

Practical component (if any) (60 Hours)

1. Preparation of temporary mount of neurons and blood cells (blood film preparation).
2. Preparation of haemin and haemochromogen crystals.
3. Haemoglobin estimation using Sahli's haemoglobinometer.
4. Determination of ABO Blood group.
5. Recording of blood pressure using a Sphygmomanometer.
6. Examination and detailed study of permanent histological sections of mammalian Stomach, Duodenum, Liver, Lung, Kidney, Pancreas, Testis and Ovary.

Essential readings

1. Tortora, G.J. and Derrickson, B.H. (2012). Principles of Anatomy and Physiology. XIIIth Edition, John Wiley and Sons, Inc.
2. Widmaier E, Raff H and Strang K. (2013). Vander's Human Physiology: The Mechanism of Body Functions. XIIIth Edition, McGraw-Hill Education.
3. Guyton, A.C. and Hall, J.E. (2011) Textbook of Medical Physiology. XII Edition, Harcourt Asia Pvt. Ltd/ W.B. Saunders Company.
4. Kesar, S. and Vashisht, N. (2007) Experimental Physiology. Heritage Publishers.
5. Prakash, G. (2012) Lab Manual on Blood Analysis and Medical Diagnostics. S. Chand and Company Ltd.

GENERIC ELECTIVES (GE-2): Nature and Wildlife Studies

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department offering the course |
|------------------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|--------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| Nature and Wildlife Studies | 4 | 2 | - | 2 | 12 th Pass | Nil | Zoology |

Learning Objectives

The course is designed to acquaint students with varied aspects of wildlife conservation, including its importance, major threats, and management of habitats and populations. The emphasis will be on developing interest and invoking a sense of responsibility among students towards wildlife conservation. The course also explores different techniques, perspectives, and approaches to both identify and achieve wildlife management goals. Further, students will be motivated to pursue careers in the field of wildlife conservation and management..

Learning outcomes

By studying the course the students will develop:

- Understanding about wild life
- Evaluation and Management of Wildlife
- Wild life resources and protection

SYLLABUS OF GE-2

Unit I: Conservation of Nature and Wildlife (06 Hours)

Values of wildlife - positive and negative; Conservation ethics; Importance of conservation; Causes of depletion; World conservation strategies: Wildlife Conservation Society (WCS), Convention on Biological Diversity (CBD), Agenda 21 of United Nations.

Unit II: Evaluation and Management of Wildlife (06 Hours)

Habitat analysis: a) Physical parameters: Topography, Geology, Soil and water; b) Biological Parameters: food, cover, forage; Census method

Unit III: Management of Natural Habitats (04 Hours)

Setting back succession: Grazing logging, Mechanical treatment, Advancing the successional process.

Unit IV: Management Planning of Wildlife in Protected Areas (04 Hours)

Human-wildlife conflict, Captive Breeding, Ecotourism.

Unit V: Wildlife Health and Management (04 Hours)

Care of injured and diseased animals, Quarantine; Zoonotic diseases: Ebola, Salmonellosis, Rabies, Foot and Mouth Disease, MonkeyPox, SARS, Bovine and Avian Flu.

Unit VI: Protected Areas (06 Hours)

National parks and sanctuaries, Biosphere reserves, Conservation and Community reserve, Important features of protected areas in India, Tiger conservation , management and challenges.

Practical component (if any) (60 Hours)

1. Identification of mammalian fauna, avian fauna, herpeto-fauna through direct and indirect evidences seen on a field trip to a wildlife conservation site.
2. Demonstration of basic equipment needed in wildlife studies use, care and maintenance (Compass, Binoculars, Spotting scope, Range Finders, Various types of Cameras and lenses).
3. Familiarization and study of animal evidences in the field: Identification of animals
4. through pug marks, hoof marks and scats.

5. To study the various animal tracking system: Global Positioning System, Remote Sensing and Biotelemetry.
6. Trail / transect monitoring for abundance and diversity estimation of mammals and bird (direct and indirect evidences).
7. A report based on a visit to National Park/ Wildlife Sanctuary/ Biodiversity Park or any other wildlife conservation site.

Essential readings

1. Saha, G.K. and Mazumdar, S. (2017). Wildlife Biology: An Indian Perspective. PHI learning Pvt. Ltd. ISBN: 8120353137, 978-812035313
2. A.R.E. Sinclair, J.M. Fryxell and G. Caughley (2006). Wildlife Ecology, Conservation and Management. Wiley-Blackwell, Oxford, UK.
3. S.K. Singh (2005). Textbook of Wildlife Management. IBDC, Lucknow.
4. K. Banerjee (2002). Biodiversity conservation in managed and protected areas. Agrobios, India.
5. B.D. Sharma (1999). Indian Wildlife Resources Ecology and Development. Daya Publishing House, Delhi.
6. R.B. Primack (1998). Essentials of Conservation Biology. Sinauer Associates, Inc. Sunderland, MA.
7. B. B. Hossetti (1997). Concepts in Wildlife Management. Daya Publishing House, Delhi.

ACBR

BSc (H) Biomedical Science *Category-I*

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------|----------|-----------------------------------|----------|---------------------|--|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| BIOORGANIC CHEMISTRY | 4 | 3 | - | 1 | Student should have studied science (Biological science/ physical sciences) | - |

Learning Objectives

The Learning Objectives of this course are as follows:

Bioorganic Chemistry is a discipline that integrates organic chemistry and biochemistry. It aims at understanding the relevance of biological processes using the fundamental concepts of organic chemistry. This course includes basic principles of organic chemistry like concepts of stereochemistry and their importance in understanding various bio-molecular reactions along with introduction to biomolecules.

Learning outcomes

The Learning Outcomes of this course are as follows:

The students will be able:

- Identify, assess and analyze different types of stereoisomers and their properties in organic compounds and biomolecules.
- Explain the structures and function of biomolecules (carbohydrates, amino acids, lipids and nucleotide).
- To understand the mechanism of biologically significant name reaction and their role in biological systems.

SYLLABUS OF DSC-1

UNIT – I Stereochemistry

(9

Hours)

Optical isomerism: Optical activity, specific rotation, enantiomerism, D and L designation, racemic modification, R and S sequence rules, diastereoisomers.

Conformational isomers: conformation of ethane and butane, interconversion of projection formula, cyclohexane (mono- and di-substituted), resolution, optical purity.

Geometrical isomerism: Definition, nomenclature– E and Z.

UNIT – II Introduction to Biomolecules I (12 Hours)

Carbohydrates:

Monosaccharides- cyclization of aldoses and ketoses, conformations, concept of mutarotation, anomers, epimers.

Disaccharides- structure, reducing and non-reducing sugars. Polysaccharides- Starch, glycogen and cellulose.

Lipids:

Fatty acids, triacylglycerols, phospholipids, lipid bilayer formation, steroids (cholesterol)

UNIT – III Introduction to Biomolecules II (12 Hours)

Amino Acids:

Structure and classification of amino acids, ionization, chemistry of peptide bond, non-ribosomal peptide bond formation, essential and non-essential amino acids, amino acids as precursors of other bioactive compounds, zwitterion, isoelectric point, optical properties of amino acids, Definition of a peptide, peptide unit, peptide group, bond length, cis and trans conformation, primary, secondary (alpha helix, beta sheet, beta turn, collagen helix), tertiary and quaternary structures (with examples).

Nucleotides:

Sugars and Bases, conformation of sugar phosphate backbone, hydrogen bonding and tautomerism in nucleic acid bases Effect of structure on reactivity of biomolecules.

UNIT – IV Biologically Significant Name Reactions (12 Hours)

Aldol (Glucogenesis), retro-aldol (Glycolysis), benzoin condensation (umpolung decarboxylation of pyruvate in the presence of TPP), Claisen condensation (synthesis of fatty acids), Michael addition (Dehydrases), Cannizzaro (Sugar metabolism), Bayer Villiger reaction (FAD dependent ketone synthesis), Pinacol-pinacolone rearrangement (1,2-carbon carbon shift)

Practical component (12 Sessions x 2 hrs) – 30 Hours

(Wherever wet lab experiments are not possible the principles and concepts can be demonstrated through any other material or medium including videos/virtual labs etc.)

1. Qualitative tests for carbohydrates to identify the given unknown carbohydrate solution: Mohlisch, Barfoed, Fehling/ Tollen/ Benedict tests
2. Qualitative tests for carbohydrates to identify the given unknown carbohydrate solution: Iodine test, Selvinoff, Osazone, Bial's tests
3. Qualitative tests for Amino acids and Proteins: Ninhydrin, Xanthoproteic, Million's, Lead Acetate, Biuret test
4. Qualitative test for Fats
5. To determine the Iodine number of the given oil/fat.
6. To find pKa value of acetic acid
7. To study the titration curve of glycine
8. Absorption spectrum of Protein
9. Absorption spectrum of DNA
10. Estimation of a Reducing sugar in a given sample.

Essential readings

1. Berg, J. M., Tymoczko J. L. and Stryer L. (2019) 9th Edition, International edition
2. Biochemistry. New York, USA: W. H. Freeman and Co. ISBN-9781319114671
3. Campbell, M. K. and Farrel, S. O. (2012) 7th Edition. Biochemistry. Boston, USA: Brooks/Cole Cengage Learning. ISBN: 13:978-1-111-42564-7
4. Textbook of Biochemistry with Clinical Correlations (2011) 7th ed., Devlin, T.M., John Wiley & Sons, Inc. (New York), ISBN:978-0-470-28173-4
5. Morrison, R.N., Boyd, R.N., Bhattacharjee, S.K. (2010), Organic Chemistry, 7th Edition,
6. Dorling Kindersley (India) Pvt. Ltd. (Pearson Education). ISBN 10:8131704815 ISBN 13:9788131704813
7. Eliel, L. (1975). 1st Edition. Stereochemistry of carbon compounds, New York, USA: Tata McGraw Hill. ISBN-13: 9780070992900
8. Finar, I.L. (2002), Organic Chemistry (Volume 1), 6th Edition, Dorling Kindersley (India) Pvt. Ltd. (Pearson Education). ISBN-13: 978-0582305601
9. Dugas, H. (1999) 3rd Edition. Bioorganic chemistry. New York, USA: Springer Verlag. ISBN-13: 978- 0387989105

Suggestive readings:

- Nelson, D. L. and Michael M. Cox (2021) 8th Edition. Lehninger Principles of Biochemistry. New Jersey, USA: Prentice Hall Publishers. ISBN-13:978-1319228002.
- Nasipuri, D. (2020), Stereochemistry of Organic Compounds: Principles and Applications, 4 th Edition, New Age International. ISBN 10: 9389802474
- Solomons, T. W. G.; Fryhle, C. B.; Snyder, S. A. (2017), Organic Chemistry, 12th Edition, Wiley. ISBN: 978-1-119-24897-2
- Plummer, D. (2017) An Introduction to Practical Biochemistry, 3rd edition. McGraw-Hill College; ISBN-13: 978-0070841659.
- Hoffman, A. 8th Edition (2018). Wilson And Walker's Principles and Techniques of Biochemistry and Molecular Biology. Cambridge: Cambridge University Press. ISBN13: 9781316677056

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2): CELL BIOLOGY

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|---|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| CELL BIOLOGY | 4 | 3 | - | 1 | Student should have studied science (Biological science/ physical sciences) | - |

Learning Objectives

The Learning Objectives of this course are as follows:

Structure and functions of various cellular compartments and organelles

- Fundamentals of transport of biomolecules inside the cell and its cytoskeleton
- Cell growth, cell-division and cell-cycle control mechanisms.
- Cell to cell communication and participation of signal transduction pathways, in driving cell response mechanics

Learning outcomes

The Learning Outcomes of this course are as follows:

- Students will learn about how the cell has evolved and the basic types of cells present.
- Students will acquire insights into the composition and structure of cell membrane by navigating through various proposed cell models. Students will also learn the functions in detail about the processes of transport across cell membranes.
- Students will learn about the structure and function of various cellular compartments and organelles along with the concept of protein sorting and distribution in unique ways.
- Students will understand the association between cells through unique types of communication and developing junctions for attachment between neighbouring cells.
- Students will understand various cytoskeleton elements and their participation in maintaining cell shape and integrity. Students will gain knowledge about an overview of cell response to its environment, and involvement of cell- cell signalling mechanisms and to study signal transduction pathways.

SYLLABUS OF DSC- 2

UNIT – I The Cell

(3 Hours)

Historical background, significant landmarks, cell theory, structure of prokaryotic and eukaryotic cells

UNIT – II Cell Membrane and Membrane Transport

(6 Hours)

Functions, different models of membrane structure, types of membrane lipids, membrane proteins: types, methods to study membrane proteins (detergents, RBC ghosts), RBC membrane as a model, membrane carbohydrates, membrane asymmetry and fluidity, lipid rafts.

A. Transport of small molecules: Passive transport (simple diffusion and facilitated diffusion) and active transport and their types (P, V, F and ABC transporter) with example of Na⁺/K⁺ pump.

B. Transport of macromolecules: Endocytosis (pinocytosis, phagocytosis), exocytosis

UNIT – III Cell Organelles

(15

Hours)

Structure and functions of various organelles:

- Nucleus: Different components, nuclear envelope- its structure, pore complex, nucleocytoplasmic, interaction (NLS and NES), nucleolus- structure and functions.
- Endoplasmic reticulum: RER- Biosynthesis and processing of proteins, co-translational and post-translational transport of proteins, signal hypothesis, protein sorting. SER- detoxification, biosynthesis of membrane, carbohydrate metabolism, steroid synthesis.
- Golgi apparatus: Golgi stack (cis, trans and medial cisternae), flow of proteins through Golgi body, glycosylation and protein sorting.

- Lysosomes: Development of different forms of lysosomes, role in cellular digestion, lysosomal storage diseases- Hurler syndrome, Hunter syndrome, Tay-Sachs disease and Inclusion cell disease (I-cell disease).
- Peroxisomes: Assembly, functions- H₂O₂ metabolism, oxidation of Fatty acids, glyoxysomes
- Mitochondria: Detailed structure, endosymbiotic theory, its genome and functions in brief
- Chloroplast: Detailed structure, its genome and functions in brief

UNIT – IV Cell -Cell communication

(9 Hours)

Structures and functions of different types of anchoring junctions (desmosomes and hemidesmosomes), tight junctions, and communication junctions (gap junction and plasmodesmata).

UNIT – V Cytoskeletal Elements

(6 Hours)

Structure, assembly and functions of:

- A. Microtubules: Axonemal and cytoplasmic microtubules (cilia, flagella, centrioles, basal bodies).
- B. Microfilaments: Globular and filamentous actin, general idea about myosin.
- C. Intermediate filaments: Different classes.

Unit VI: Cell Signaling and Cell Cycle

(6 Hours)

Signaling molecules and their receptors (extracellular and intracellular), functions of extracellular receptors; Intracellular signal transduction pathways (cAMP, cGMP, steroid hormone response element). Different phases of cell cycle and their significance, mitosis and meiosis, checkpoints and regulation of cell cycle.

Practical component (30 Hours)

(Wherever wet lab experiments are not possible, the principles and concepts can be demonstrated through any other material or medium including videos/virtual labs etc.)

1. Light microscopy: Principle, construction and types. Study of positive and negative staining using photomicrographs.
2. Fluorescence microscopy: principle and applications. Concept of GFP
3. Electron microscopy: Principle, construction and types. Study of positive and negative staining, freeze fracture, freeze etching, shadow casting, endocytosis, exocytosis and phagocytosis using electron micrographs
4. To explain mitosis and meiosis using permanent slides.
5. To measure cell size using a stage micrometer.
6. To cytochemically demonstrate presence of total and basic proteins in cheek cells or onion peel using mercuric bromophenol blue or fast green.
7. To cytochemically demonstrate presence of carbohydrates in cheek cells or onion peel using periodic acid Schiff's reagent.
8. To cytochemically demonstrate presence of DNA in cheek cells or onion peel using Feulgen reagent.
9. To study the effect of isotonic, hypotonic and hypertonic solutions on cell.

Essential readings

- Cooper, G. M. and Hausman, R. E. (2013). 6th Edition. The cell: A molecular approach. Massachusetts, USA: Sinauer Associates. ISBN-13:978-1605351551

- Hardin, J. Bertoni, G. P. Kleinsmith, L.J. and Becker, W.M. (2008). 7th Edition. The world of the cell. San Francisco, USA: Benjamin Cummings Publishers, ISBN-13: 978 0805393934.
- Karp, G. (2013). 7th Edition. Cell and molecular biology: Concepts and experiments. New Jersey, USA: Wiley Publishers. ISBN-978-0470483374.
- Alberts, B et al. (2014). 6th edition. Molecular Biology of the Cell. W. W. Norton & Company. ISBN-13 : 978-0815345244
- Lodish H et al. (2003). 5th Revised edition. Molecular Cell Biology. W.H.Freeman & Co Ltd; ISBN13 : 978-0716743668

Suggestive readings

- Cooper, G. M. (2018). 8th Edition. The cell: A molecular approach. Massachusetts, USA: Sinauer Associates. ISBN-13:978-1605357072
- Hardin, J. Bertoni, G. P. Kleinsmith, L.J. and Becker, W.M. (2016). 9th Edition. The world of the cell. San Francisco, USA: Benjamin Cummings Publishers, ISBN-13: 978 -0321934925.
- Karp, G. (2019). 9th Edition. Cell and molecular biology: New Jersey, USA: Wiley Publishers. ISBN-978—1-119-59816-9.

DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-3): HUMAN PHYSIOLOGY

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------------------|----------|-----------------------------------|----------|---------------------|--|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| HUMAN PHYSIOLOGY AND ANATOMY-I | 4 | 3 | - | 1 | Student should have studied science (Biological science/ physical sciences) | |

Learning Objectives

The Learning Objectives of this course are as follows:

- The course curriculum is a systematic presentation of physiological concepts to ensure appropriate depth and breadth of basic functioning of the human body and its interrelations with respect to heart, lung, kidney, gonads, endocrine glands and digestive system.
- It would give students exposure of physiological concepts needed as foundations for further studies in pharmacology, pathology and pathophysiology etc.
- It would provide a base to understand body defenses and the mechanisms of deranged function of human body
- The curricular objectives are focused primarily on normal body function. Accordingly, wherever possible clinical examples have been illustrated to the underlying physiological

principles.

Learning outcomes

The Learning Outcomes of this course are as follows:

Having successfully completed this course, students shall be able to learn and appreciate:

- The usefulness of dividing the human body in different anatomical planes and sections, cavities, along with the role of feedback system in maintaining homeostasis. Functional anatomy of the epithelial and connective tissues while focusing on integumentary and skeletal system. Overview of structure, types and function of cartilage, bone and joints.
- Structure, function and regulation of components/different formed elements of blood and the mechanism of clotting. Students would be able to understand different blood groups, basis of their classification, their importance in blood transfusions and tissue grafting and basic concepts of blood and bleeding disorders
- Student would be able to understand neurons their role and significance and how as a part of the brain they help in brain physiology. Appreciation of basic concepts of action potential/ graded potential in the conduction of nerve impulse. Action and significance of different neurotransmitters at the synapse along with the mechanism of synaptic transmission using different ligand gated ion channels, G protein coupled receptors and their ligands as example.
- Students would learn organization of brain, with identification of structures and function of different brain regions. Identify different neural pathways and explain their significance. They would understand the innate responses and conditioned response of day today life by studying autonomic nervous system and effect of its stimulation on different organs.
- The five senses which help an individual to perceive the world would be studied in detail. Stimulus modality, sensory adaptation and the role of generator potential in the sensory physiology of touch, gustation, olfaction, hearing and vision. They would recognize and explain the common disorders related to the senses.
- Students would be able to describe and distinguish between the structure, mechanism and regulation of contraction of skeletal, cardiac and smooth muscles. Enlist the energy requirements, characteristic features of different muscle fibers and their role in generating muscle tension. Demonstrate the concept of muscle fatigue, adaptation to physical training, and muscle degeneration and associated disorders.

SYLLABUS OF DSC-3

UNIT – I Body organization and Integumentary system Hours)

(6

General Anatomy of the body, Introduction to various kinds of body planes, cavities and their membranes, Tissues level of organization (Types, origin, function & repair). Structure and functions of human skin.

UNIT – II Blood

(6 Hours)

Composition and Function of Blood and its components (RBC, WBC, platelets and plasma). Hematopoiesis, Hemoglobin structure, function and abnormal hemoglobin. Basic concepts about Anemia and types. Blood Hemostasis (blood coagulation/ clotting, platelet function and role of endothelium).

UNIT – III Nerve physiology

(6 Hours)

Structure, function and types of neuron, conduction of nerve impulse, Resting membrane potential, Action and graded potential. Synapse its types, Synaptic Transmission, Neurotransmitters and their receptors; types and function

UNIT – IV Nervous System I: Organization of nervous system (6 Hours)

Structure, function and organization of Central nervous system, Peripheral nervous system and Autonomic nervous system. Motor physiology: Reflexes, types and reflex arch

UNIT – V Nervous System II: Sensory Physiology (6 Hours)

Concept of receptors in the body and their types, structure, functional anatomy, regulation and common disorders of the following sensations: Vision, Hearing, Taste, Smell and other senses (Touch, Pain, Temp).

UNIT – VI Muscular system (9 Hours)

Functional anatomy of muscular system, types of muscles, neuromuscular junction structure property and transmission, General characteristics, molecular mechanism and properties of skeletal muscle excitation and contraction, energetics and characteristics of whole muscle contraction.

Unit- VII Skeletal System (6 Hours)

Cartilage: structure, types and function. Bones: structure, function, location and types. Joints: structure, function and types

Practical components (30 Hours)

(Wherever wet lab experiments are not possible, the principles and concepts can be demonstrated through any other material or medium including videos/virtual labs etc.)

1. Estimation of haemoglobin (Sahli's method)
2. Determination of total erythrocyte count.
3. Determination of total leukocyte count.
4. Preparation of blood smears and identifying various WBC
5. To perform differential leukocyte count of blood.
6. To study a simple reflex arc
7. To study the sensation of taste, touch and smell.
8. To study different human organs and their sections through permanent histological slides T.S. of brain, spinal cord, skeletal fibres, cardiac muscles, skeletal muscles, cartilage joints and different tissues. (Minimum 8 slides covering the systems mentioned in theory.)

Essential readings

- Guyton and Hall Textbook of Medical Physiology, 12th edition (2011), J. E. Hall; W B Saunders and Company, ISBN: 978-1-4160-4574-8 International Edition: 978-08089-2400-5
- Human Physiology, 12th edition (2011), Stuart I. Fox; Tata McGraw Hill, ISBN 978007-337811-4/MHID 0-07-337811-9.

Suggestive readings

- Principles of Anatomy and Physiology, 16th edition (2020), Gerard J. Tortora and Bryan H. Derrickson; Wiley and Sons, ISBN: 978-1-119-66268-6.(e book), ISBN: 978-1-119-70438-6 (for print book).

- Ganong's Review of Medical Physiology, 26th edition (2019), K.E. Barrett, S.M. Barman, S. Boitano and H. Brooks; Tata McGraw Hill, ISBN 978-1-260-12240-4 (for print book) ISBN: 978-1-26-012241-1 (for eBook)
- Textbook of Practical Physiology, 9th edition (2018), CL Ghai; Jaypee Publication, ISBN13: 978-9352705320 ISBN-10: 9352705327

Common Pool of Generic Electives (GE) Courses Offered by ACBR *Category-IV*

Note: Examination scheme and modes shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-1): CONCEPTS IN BIOTECHNOLOGY

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|----------------------------------|----------|-----------------------------------|----------|----------------------|--|-----------------------------|
| | | Lecture | Tutorial | Practical / Practice | | |
| CONCEPTS IN BIOTECHNOLOGY | 4 | 3 | - | 1 | The student should have studied science (Biological science/physical sciences) | NA |

Learning Objectives

The Learning Objectives of this course are as follows:

The purpose of this course is to introduce students to importance of Biotechnology in allied fields. It will enable students from diverse backgrounds to understand basic concepts in Gene Cloning and DNA Analysis, and appreciate applications of Biotechnology in everyday life. The course will provide students with an insight into the various molecular biology techniques commonly used in Biotechnology, and some of the relevant bio-safety issues and ethical concerns.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Learn about basic biotechnology techniques and key concepts that are used in isolation and characterization of biomolecules (DNA and proteins).
- Develop basic understanding of the robust techniques with wide applications (such as PCR, DNA sequencing) and appreciate their contribution in development of biotechnology.
- Comprehend the importance of gene cloning in biotechnology and learn the intricacies of gene cloning using plasmids and bacteriophages as cloning vectors.

- Understand the importance of construction of genomic libraries and their specialized screening methods to identify gene of interest.
- Learn the concept and application of DNA fingerprinting, recombinant protein expression, biopharmaceutical protein production, and gene therapy.
- Gain an insight of safe handling of GMO's, their environmental release and ethical practices.

SYLLABUS OF GE-1

UNIT – I Techniques Used in Biotechnology (12 Hours)

Brief history of biotechnology and its importance. Isolation and purification of plasmid DNA. Agarose and Polyacrylamide gel electrophoresis (Native and SDS). Southern and Western hybridization. Polymerase Chain Reaction (PCR): Principle, DNA polymerases in PCR, Primer Designing, Types of PCR - Hot Start, Multiplex and Reverse Transcription and their Applications. Sequencing: Enzymatic (Sanger's dideoxy) method, Introduction to Automated Sequencing.

UNIT – II Process of Gene Cloning, Expression and Protein Purification (15 Hours)

Restriction endonucleases: Restriction and Modification Systems, Nomenclature and Types of Restriction Enzymes (Type I-IV), Recognition of Restriction Sites. Joining of DNA Molecules: Sticky End and Blunt End Ligations, Role of DNA Ligase, Adaptors, Linkers, Homopolymer Tailing. Vectors: Plasmids (pUC Vectors), Bacteriophage (Lambda Phage Derived Replacement And Insertion Vectors), Cosmids, In Vitro Packaging, Expression Vectors (One example each of prokaryotic and eukaryotic expression vectors). Bacterial Transformation, Antibiotic Selection and Blue/White Screening of Transformants. Challenges in Expression of Eukaryotic Proteins in Prokaryotic Hosts

UNIT – III Genomic and cDNA Libraries (18 Hours)

Construction of Genomic and cDNA Libraries, their Screening by Nucleic Acid Hybridization (Colony and Plaque Hybridization).

UNIT – IV Applications of Biotechnology (6 Hours)

DNA Fingerprinting. Using the Example of Human Insulin learn the Importance of Various Applications of Biotechnology: Recombinant Protein Expression, Biopharmaceutical Protein Production and Gene Therapy.

UNIT – V Biosafety and Ethical Issues (6 Hours)

Safe Handling and Disposal of GMOs and Relevant Ethical Issues. Impact of GMOs on the Environment (Bt. Toxin).

Practical component- (12 Sessions x 2 = 24 hrs)

(Wherever wet lab experiments are not possible, the principles and concepts can be demonstrated through any other material or medium including videos/virtual labs etc.)

1. To prepare laboratory reagents.
2. To perform plasmid DNA isolation.
3. To perform agarose gel electrophoresis of isolated plasmid DNA.
4. To perform restriction digestion of plasmid DNA.
5. To perform agarose gel electrophoresis of digested DNA.
6. To study restriction mapping.
7. To amplify DNA using PCR.
8. To perform agarose gel electrophoresis of amplified DNA

Essential readings

- Cantor, C. R. and Smith, C. L. (2004). 1st Edition. Genomics: The science and technology behind the human genome project. New York, USA: John Wiley and Sons. ISBN-13: 978-0471461869.
- Old, R. W. and Primrose, S. B. (1994). 7th Edition. Principles of Gene Manipulation: an Introduction to Genetic Engineering. Boston: Wiley. ISBN-13: 978-0632037124.
- Joseph Sambrook, E.F. Fritsch, T. Maniatis. (1989). 2nd Edition. Molecular Cloning: A Laboratory Manual. New York, USA: Cold Spring Harbor Laboratory. Press ISBN- 978-0879693732.

Suggestive readings

- Glick, B. R. and Patten, C. L. (2022). 6th Edition. Molecular Biotechnology: Principles and Applications of Recombinant DNA. USA: ASM press, ISBN-13: 978-1683673668.
- Brown, T. A. (2020). 8th Edition. Gene cloning and DNA analysis: An introduction. New York, USA: John Wiley and Sons, ISBN-13: 978-1119640783.
- Karp, G. (2016). 8th Edition. Cell and Molecular Biology: Concepts and Experiments. United states: Wiley. ISBN-13: 9781538832462.
- Primrose, S. B. and Twyman, R. B. (2014). 7th Edition. Principles of Gene Manipulation and Genomics. New York, USA: John Wiley and Sons. ISBN-13: 978-1118653883.
- Green, M. R. and Sambrook, J. (2012). 4th Edition. Molecular Cloning: A Laboratory Manual (three-volume set). New York, USA: Cold Spring Harbor Laboratory Press ISBN-13: 978-1936113422

GENERIC ELECTIVES (GE-2): LANDMARK DISCOVERIES IN SCIENCE

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|----------|-----------------------------------|----------|---------------------|---|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| LANDMARK DISCOVERIES IN SCIENCE | 4 | 3 | - | 1 | The student should have studied science (Biological science/physical sciences) | NA |

Learning Objectives

The Learning Objectives of this course are as follows:

The objective of the course is to ensure students appreciate the convenience and comfort that they have is all because of discoveries and inventions of the past. Meticulous execution of historical experiments in very little resources would also motivate them towards doing valuable research with enormous facilities that they have. The historical accounts of science provide grounds for interpretation and may be useful in arousing appreciation of science. The course would provide: Detailed analysis of classically designed and executed experiments in Life Sciences over the years. It will provide a foundation of biology by uncovering various players in the machinery of biological processes. It will also be helpful in technical, scientific analysis with historical background for a robust understanding of various discoveries. Critical

analysis of the history of biology would surely help students comprehend futuristic scientific discoveries.

Learning outcomes

The Learning Outcomes of this course are as follows:

The students will be able:

- Students will be able to learn how was light manipulated during the past to peer into previously invisible world—those too small or too far away to be seen by the naked eye.
- Students will learn about experiments that had fundamental contribution to our present understanding of key molecular elements of life. They will understand how to examine microbial cells and colonies, using various techniques to manipulate color, size, and contrast in ways that helped Scientists to identify species and diagnose disease.
- Studying this unit, students would come to know that there were three group of Naturalists working simultaneously to find answers to inheritance, evolution and basic composition of life. Students will be divulged with hereditary aspects of life. They will get familiar with genes and their roles in living organisms.
- Having understood the relationship of genes and inheritance, students would find interesting to learn the mystical molecule that make up these genes. Sequential study of these experiments would step by step unravel the mystery of genetic material.
- Students at this point of course would be curious to know the structure of molecule that forms the genetic material. They would learn how the information present on DNA manifests itself as specific characteristic features and help in diversity among organisms.
- Students will be explained how the in depth knowledge about became the most important tool for in vitro research, modification and applications thereof.
- Students will be briefed about some landmark discoveries which helped the field of medicine to grow tremendously and played a significant role in improving the overall health of the human population.
- Students can be given small projects to write discoveries done in conventional way.
- They will be required to provide a descriptive view of the topics assigned to them. Students should highlight the research topic with reference to current understanding.

SYLLABUS OF GE-2

UNIT – I View of the invisible Biology

(6 Hours)

Rudimentary microscopes to magnify objects; Use of eye glasses as simplest microscopes - Flea or fly glasses; Observing nature in the new world under lens; Book of Optics; Scientific use of Microscopes; Importance of Malphigi microscope that used field lens; Compound Microscope; Robert Hooke's observations in Micrographia; Foldscope by Manu Prakash

UNIT – II Origin of Life – A question

(6 Hours)

Spontaneous generation versus biogenesis; Problem of spores; Microbiology and Medicine - Germ theory of Disease; Recognition of agents of infection – Koch's Postulates.

UNIT – III Understanding Biology by observations

(6 Hours)

A) Study of evolution of life: Darwins Theory (B) Study of Inheritance of Life: classical era with contributions of Aristotle, Epicurus, and others; Modern genetics: Gregor Johann Mendel, his work on pea plants, theory of Mendelian inheritance (C) Study of composition of Life : Levels of cellular and molecular organization; Cells, tissues and organs in our body; Pioneers of chromosome studies; Discovery of nucleic acids; Nuclein verified as a distinct chemical entity; Early identification of purines and pyrimidines; building blocks of Nucleic

acids and proteins; Chemistry of Nucleic acids; Levene's tetranucleotide hypothesis.

UNIT – IV DNA as the hereditary material – An experimental view (4.5 Hours)

Transformation: Classic work of Frederick Griffith; DNA as the Pneumococcal Transforming Factor; In vitro Transformation system; Announcement that the transforming Principle was DNA; Mirsky's Criticism; The Avery, MacLeod and McCarty proclamation; Additional experiments that supported DNA as the transforming principle; Hershey and Chase clinched the role of DNA as the Genetic Material

UNIT – V Solving the puzzle of DNA structure (4.5 Hours)

Early studies of diffraction of X Rays by DNA fibers – contributions of Rosalind Franklin; Use of X – rays in medicines and research; Erwin Chargaff's discovery of base complementarity in DNA; Watson and Crick model of DNA; Contribution of Linus Pauling; DNA is replicated in Semi-conservative Fashion; Deciphering the Genetic Code; One Gene One Enzyme Edict.

UNIT – VI Technical advancements in biology (6 Hours)

Polymerase Chain Reaction – a revolution in modern biology; DNA Manipulations using Restriction enzymes; Discovery of reverse transcriptase leading to development of RT-PCR for RNA amplification; Work of Stanley Cohen and Herbert Boyer; Advent of gene cloning - History and current applications

UNIT – VII Research as a backbone of modern medicine (6 Hours)

(A) Discovery of antimicrobial agents; Contribution of Joseph Lister and later by Alexander Flemming leading to Discovery of Magic bullets; (B) Control of Infectious Diseases – Variolation, mithridatism and vaccination from the view of Edward Jenner; Vaccine production strategies – with examples of BCG and SARS-CoV2 vaccines; Historical timeline of vaccination strategies; (C) Marie Curie – Use of radiation in medicine.

UNIT – VIII Project Work [On any one topic] (6 Hours)

Study historical research papers and provide a descriptive view of research that was carried out by Scientists as Minor Project.

(A) Ancient system of medicine

(B) Contribution of any one Indian Scientists in Biology

(C) Contribution of any Physicists or Chemists in Biology (for topics listed above)

Practical component (if any) - (30 Hours)

(Wherever wet lab experiments are not possible, the principles and concepts can be demonstrated through any other material or medium including videos/virtual labs etc.)

1. Comparison of invisible life under the view of microscopes versus foldscope.
2. Cells as a unit of life and observation under the microscopes.
3. How do the cells divide – a view under the microscope: (mount of an onion root tip, onion bud cells or grasshopper testis).
4. Mendel's laws of inheritance – clues from nature.
5. Extraction of genomic DNA
6. Use of electric field to analyse DNA and other biomolecules.
7. Sneak Peek through the discovery of Polymerase chain reaction (PCR): Demonstration of original method and comparison with today's sophistication.
8. To test Flemming's hypothesis that the mold killed the bacteria.
9. Group Discussion on Research Topics assigned to students.

Essential readings

- Alberts, B et al. (2014). 6th edition. Molecular Biology of the Cell. W. W. Norton & Company. ISBN-13 : 978-0815345244
- Bryson, B. (2003) A short history of nearly everything. Transworld Publishers. London W5 5SA. A Random House Group Company. ISBN: 9780552997041.
- Lodish H et al. (2003). 5th Revised edition. Molecular Cell Biology. W.H.Freeman& Co Ltd; ISBN-13 : 978-0716743668
- Green, M. R. and Sambrook, J. (2012). 4th Edition. Molecular Cloning: A Laboratory Manual, New York, United States: Cold Spring Harbor Laboratory Press, ISBN-13:978-1936113422.
- Kornberg, A. (2005). 2nd Edition. DNA Replication. California, United States: University Science Books, ISBN-13: 978-1891389443.

Suggestive readings -

- Watson, J. D. (2011) The Double Helix – A personal account of the discovery of the structure of DNA. Scribner. ISBN 9780743219174.
- Cooper, G. M. and Hausman, R. E. (2013). 6th Edition. The cell: A molecular approach. Massachusetts, USA: Sinauer Associates. ISBN-13:978-1605351551
- Karp, G. (2013). 7th Edition. Cell and molecular biology: Concepts and experiments. New Jersey, USA: Wiley Publishers. ISBN-978-0470483374.
- Cox, M. M. Doudna J. A. and Donnell, M. O. (2012). 1st Edition. Molecular Biology: Principles and Practice. London, United Kingdom: W H Freeman & Co Publishers, ISBN-13: 978-0-716-7998-8.
- Watson, J. D. Baker T. A. Bell, S. P. Gann, A. Levine, M. and Losick, R. (2013). 7th Edition. Molecular Biology of the Gene. New York, United States: Cold Spring Harbor Laboratory Press, ISBN-13: 978-0-321-76243-6.

GENERIC ELECTIVES (GE-3): TOXIC SUBSTANCES AND HUMAN HEALTH

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-----------------------------------|---------|-----------------------------------|----------|---------------------|------------------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| TOXIC SUBSTANCES AND HUMAN HEALTH | 4 | 3 | - | 1 | Open to Students from all subjects | NA |

Learning Objectives

The Learning Objectives of this course are as follows:

In daily life, humans are exposed to several toxic substances. Many household products, medicines, cosmetic products, paints, and even food and water may contain toxic substances.; Frequent or improper use of many consumer products or exposure to higher amounts than prescribed, may cause serious health problems. This paper introduces the common toxic substances to which humans are routinely exposed; and health related issues in case of toxicity.

Learning outcomes

The Learning Outcomes of this course are as follows:

After studying, students will be able to:

- Introduction to the various toxic substances and how humans come in contact with toxic hazards. Definitions of various terminologies used in toxicology, and methods of assessment of toxicity of a substance are also covered.
- Upon contact with humans, toxic compounds may be absorbed in the body, and distributed to various organs to show toxic effects. Toxic compounds, once inside the body, are also metabolized or chemically altered. In most cases, after metabolism, the physicochemical properties of toxicants are altered, which helps in their speedy removal from the body.
- Many household products contain substances/ingredients which, if properly not used or applied on the body in excess, can cause serious health effects. These substances include cleaners, household pesticides, cosmetics, disposable utensils, paints, polish, etc. Students will be introduced to few such ingredients and their harmful effects.
- In addition to nutrients, our food also contains several substances which are unavoidable or added unintentionally. These substances and food adulterants, if taken for long time can cause adverse effects.
- Drugs are used to treat diseases. However, if taken at high dose (such as overdosing), drugs act as potential toxic substances. Moreover, several drugs have side effects even at prescribed dose or if used for prolonged duration.
- Anthropogenic activity and natural causes in some cases leads to contamination of soil, water and air with several potential toxicants. These toxicants enter human body via air that we breathe, drinking water and food. With examples of a few toxic substances, students will be introduced how toxicants enter the body from the environment and the adverse health effects caused by them.

SYLLABUS OF GE-3

UNIT – I Introduction to toxic substances and assessment of toxicity (9 Hours)

Types of toxic substances, human contact/exposure with toxic substances (occupational, intentional, accidental etc.); various definitions (toxin, toxicants, xenobiotics, exposure, acute toxicity, chronic toxicity etc); Dose Response Relationship, efficacy, potency, LD50, TD50, NOAEL, ADI; selective toxicity.

UNIT – II Movement of toxic substances inside the body (6 Hours)

Brief introduction to absorption of toxicants via various routes, concept of bioavailability, first pass metabolism, distribution and excretion.

UNIT – III Household toxicants (9 Hours)

Route of exposure, mechanism of toxicity and health effects of common household toxicants:

- i). Cleaners, disinfectants, air fresheners (sodium hypochlorite, ammonia, phenol, naphthalene, 1, 4-Dichlorobenzene, methanol).
- ii). Garden products, and home mosquito repellents and rat kills (pesticides: organophosphates, pyrethroids, aluminium and zinc phosphide).
- iii). Cosmetic products (metals: lead, cadmium; solvents: toluene, acetone).
- iv). Other products: disposable utensils (styrene), antifreezing agents (ethylene glycol), Volatile Organic Compounds (VOCs).

UNIT – IV Toxicants and toxins in food**(6 Hours)**

Mechanism of toxicity and health effects of:

- i. Pesticide residues (DDT, lindane)
- ii. Toxins (amatoxin, muscarine, bacterial toxins)

Brief discuss on food preservatives, colouring agents and flavouring agents etc, and food adulterants.

UNIT – V Drugs as toxicants**(6 Hours)**

Brief introduction of drugs as toxicants with examples; adverse effects of drugs at therapeutic doses, and overdosing.

UNIT – VI Environmental toxicants**(9 Hours)**

Route of exposure, mechanism of toxicity and health effects of:

- i. Industrial chemicals (mercury, Polycyclic Aromatic Hydrocarbons, dioxins).
- ii. Gaseous air pollutants (nitrogen oxides, sulfur dioxide, carbon monoxide).
- iii. Particulate matter (PM).

Practical component - (30 Hours)

(Wherever wet lab experiments are not possible, the principles and concepts can be demonstrated through any other material or medium including videos/virtual labs etc.)

1. Calculation of LD50 value of an insecticide from the data provided.
2. To estimate formaldehyde content in the given sample.
3. To detect presence of paracetamol in the given sample.
4. Analysis of sodium hypochlorite content in various household products.
5. To detect primary alcohol in sample/ household products.
6. To detect aromatic amines in the sample/ household products.
7. To study various toxic substances in terms of exposure, health effects, from various online resources (such as <https://www.atsdr.cdc.gov/> , TOXNET or other sources)
8. To separate a mixture of naphthol and naphthalene by solvent extraction method.

Essential readings

- Klaassen, C.D. (2018). 9th Edition. Casarett and Doull's Toxicology, The Basic
- Science of the Poisons. McGraw Hill. ISBN-13: 978-1259863745.
- Stine, K.E. and Brown T.M (2015). 3rd Edition. Principles of Toxicology.
- Florida, USA: CRC Press. ISBN-13: 9781466503434.
- Timbrell. J. (2001). 3rd Edition. Introduction to Toxicology. CRC Press. ISBN13: 978-0415247634.

Suggestive readings

- <https://www.atsdr.cdc.gov/>
- <https://www.cdc.gov/>
- Klaassen, C.D and Watkins, J.B. (2015). 3rd Edition. Casarett and Doull's
- Essentials of Toxicology. McGraw Hill Education. ISBN-13:978-0071847087.
- Klaassen, C.D and Watkins, J.B. (2021). 4th Edition. Casarett and Doull's
- Essentials of Toxicology. McGraw Hill, ISBN-13: 978-1260452297.

DEPARTMENT OF GEOLOGY

BSC (Hons.) Geology *Category-I*

DISCIPLINE SPECIFIC CORE COURSE – 1 (DSC-1) Earth System Science

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------|---------|-----------------------------------|----------|---------------------|-----------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Earth System Science | 4 | 3 | 0 | 1 | B.Sc. Hons. Geology students only | NIL |

Learning Objectives

Introduction to the subject Geology. Holistic understanding of Earth as a planet in the Solar System and its relationships with other terrestrial planets. Understanding of the processes occurring in lithosphere, hydrosphere, biosphere, and atmosphere

Learning outcomes

After completion of this course, students will be able to understand and comprehend the connectivity and dynamics of the atmosphere, lithosphere, and hydrosphere of the Earth. A thorough understanding of Geology, its various branches and the overall scope of Earth Science will be possible through this course.

SYLLABUS OF DSC-1

Unit 1:

(12 Hours)

Holistic understanding of dynamic planet 'Earth' and its orbital parameters. Introduction to various branches of Earth Sciences. General characteristics and theories about the origin of the Universe including our Solar System and its planets. The terrestrial and Jovian planets. Interior of the Earth. Meteorites and Asteroids. Earth's origin, size, shape, mass, density, rotational and revolution parameters. Methods to determine age of the Earth. Earth's Magnetic Field and Palaeomagnetism. Applications of paleomagnetism.

Unit 2:

(9 Hours)

Plate Tectonics: Concept of plate tectonics, sea-floor spreading and continental drift. Earthquake and earthquake belts; Volcanoes- types, products and distribution of volcanic belts.

Unit 3:

(9 Hours)

Hydrosphere and Atmosphere: Layers of the Atmosphere. Various cells of the atmospheric circulation. World surface oceanic currents and their distribution. Earth's heat budget. Orogeny and epeirogeny. Major mountain belts of the world.

Unit 4:

(15 Hours)

Understanding the past from geologic records; Nature of geologic records; Standard Geological time scale and introduction to the concept of time in geological studies; Introduction to geochronological methods and their application in geological studies. History of development in concepts of uniformitarianism, catastrophism, and Neptunism, Physiographic divisions of India.

Practical (30 Hours)

1. Study of major geomorphic features and their relationships with outcrops through physiographic models.
2. Detailed study of topographic sheets and preparation of physiographic description of an area
3. Study of distribution of major dams on map of India and their impact on river systems
4. Study of major ocean currents of the World
5. Study of different rock types
6. Study of fossils and their application
7. Study of physiographic map of earth during different Geological ages

Essential readings

- Cesare Emiliani, 1992; Planet Earth: Cosmology, Geology, and the Evolution of Life and Environment
- Arthur Holmes, 197; Holmes Principles Of Physical Geology, by John Wiley & Sons

Suggestive readings (if any)

- Physical Geology, 15th Edition, Charles C. Plummer, Diane H. Carlson, Lisa Hammersley McGraw-Hill Education- 2016
- Essentials of Geology, 13th Edition Frederick K. Lutgens, Edward J. Tarbuck, Dennis G. Tasa- Pearson Publications 2016
- Emiliani, C. (1992). Planet earth: cosmology, geology, and the evolution of life and environment. Cambridge University Press.
- Gross, M. G. (1977). Oceanography: A view of the earth.
- Duff, P. M. D. & Duff, D. (Eds.). (1993). Holmes's principles of physical geology. Taylor & Francis.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2) : Mineral Science

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------|----------|-----------------------------------|----------|---------------------|--|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Mineral Science | 4 | 3 | 0 | 1 | B.Sc. Hons. Geology students only | NIL |

Learning Objectives

Major objectives for this course are to understand:

1. the characteristics of major mineral groups in hand specimen and thin section
2. phase equilibria, formation environments and associations of rock-forming minerals
3. crystal symmetry, crystallography, and atomic structure

Learning outcomes

At the end of this course, you will be able to:

1. identify common rock-forming minerals in hand specimens and in thin sections using diagnostic physical, optical, and chemical properties.
2. infer something about the formation environment of a silicate mineral using only its formula;
3. read a phase diagram;
4. predict the physical properties of a substance from its symmetry content;
5. plot crystal faces on a stereo projection

SYLLABUS OF DSC- 2

Unit 1: Chemical and Physical Fundamentals

- Importance of minerals, the definition of a mineral, atoms, ions, periodic table, bonding in minerals, compositional variations in minerals. **(6 Hours)**
- Crystallization, crystal imperfections (defects, zoning, twinning), crystal precipitation, mineral classification schemes, and physical properties of minerals (appearance, crystal shape, strength, density, magnetism, reaction with acid). **(6 Hours)**
- Polarized light, refractive index, uniaxial and biaxial indicatrices, interference figures. **(3 Hours)**

Unit 2: Rock-forming minerals

- Igneous minerals (silicates), phase relations **(6 Hours)**
- Sedimentary minerals (zeolites, clays, sulfates, halides, oxides, carbonates), weathering processes. **(6 Hours)**
- Metamorphic minerals, textures, reactions, phase equilibria. **(3 Hours)**

- Economic minerals (magmatic, hydrothermal, and sedimentary ores; native metals, sulfides and sulfosalts, oxides and hydroxides, gemstones) **(3 Hours)**

Unit 3: Symmetry, Crystallography, and Atomic Structure

- Symmetry, stereo diagrams, forms and crystal morphology. **(3 Hours)**
- Unit cells and lattices in two dimensions and three dimensions, Bravais lattices, unit cell symmetry and crystal symmetry, crystal structures, crystal habit and crystal faces. **(6 Hours)**
- Ionic radii, coordination number, packing, Pauling's rules, silicate structures, substitutions, structures of non-silicates. **(3 Hours)**

Practical:

1. Study of physical properties of minerals in hand specimen
Silicates: Olivine, Garnet, Kyanite, Staurolite, Tourmaline, Serpentine, Talc, Muscovite, Biotite, Quartz, Orthoclase, Plagioclase, Microcline, Nepheline, Sodalite. Quartz varieties: Chert, Flint, Chalcedony, Agate, Jasper, Amethyst, Rosequartz, Smoky quartz, Rock crystal. Native Metals/non-metals, Sulfides, Oxides-Copper, Sulfur, Graphite, Pyrite, Corundum, Magnetite Hydroxides, Halides, Carbonates, Sulfates, Phosphates: Psilomelane, Fluorite, Calcite, Malachite, Gypsum, Apatite.
2. Study of some key silicate minerals under an optical microscope and their characteristic properties.
3. Mineral stoichiometry related numerical.
4. Numericals related to parameters and indices of crystals faces.
5. Stereographic projection of crystal faces.

Essential readings

- Cornelis Klein and Barbara Dutrow, The manual of Mineral Science, Wiley Publication 2007
- Nesse W. D., Introduction to Optical mineralogy.2008, Oxford University Press.
- Deer W. A., Howie.R. A. and Zussman, J., An introduction to the rock-forming minerals 1992

Suggestive readings

1. Cornelis Klein and Barbara Dutrow, The manual of Mineral Science, Wiley Publication 2007
2. Nesse W. D., Introduction to Optical mineralogy.2008, Oxford University Press.
3. Deer W. A., Howie.R. A. and Zussman, J., An introduction to the rock-forming minerals 1992

DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-3) Concepts of Stratigraphy

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course(if any) |
|--------------------------|---------|-----------------------------------|----------|---------------------|-----------------------------------|-------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Concepts of Stratigraphy | 4 | 3 | 0 | 1 | B.Sc. Hons. Geology students only | NIL |

Learning Objectives

This is to introduce students with the fundamental concepts of stacking of sediments in both space and time based on principles of stratigraphy and sedimentation.

Learning outcomes

Students will be able to learn the distribution of sedimentary rocks in both space and time and appreciate the stacking of sediments following the fundamental concepts of stratigraphy

SYLLABUS OF DSC-3

Unit 1: Principles of stratigraphy, geological time scale **(3 Hours)**

Unit 2: Stratigraphic units: lithostratigraphic, chronostratigraphic and biostratigraphic units **(2 weeks)**

Unit 3: Stratigraphic classification and correlation. Methods of collecting stratigraphic data, identification of stratigraphic contacts and unconformities. **(6 Hours)**

Unit 4: Facies concept in stratigraphy. Applications of lithostratigraphy **(3 Hours)**

Unit 5: Fossils and stratigraphy; Evolutionary trends, Biozones and zone fossils **(3 Hours)**

Unit 6: Biostratigraphy in relation to other stratigraphic techniques **(6 Hours)**

Unit 7: Radiometric dating (K-Ar, Rb-Sr, U-Pb) and correlation techniques **(6 Hours)**

Unit 8 : Basic principles of magnetostratigraphy, seismic stratigraphy and sequence stratigraphy. **(6 Hours)**

Unit 9: Concept of Stratotypes. Global Stratotype Section and Point (GSSP). International and Indian code for stratigraphic classification. **(6 Hours)**

Practical (30 Hours)

Preparation and study of stratigraphic maps:

- Correlation diagrams using lithologs of fossiliferous and non-fossiliferous stratigraphic units. Geophysical logs.
- Examination of isopach and isofacies maps.

c) Exercises related to stratigraphic classification and correlation.

Essential readings

- Blatt, H., Berry, W.B. and Brande, S., 1991. Principles of stratigraphic analysis. Blackwell scientific publications, Oxford
- Nicols G., 2009 Sedimentology and Stratigraphy 2nd Edition, Wiley-Blackwell
- Brookfield, M.E., 2016 Principles of stratigraphy, Wiley India

Suggestive readings

1. Blatt, H., Berry, W.B. and Brande, S., 1991. Principles of stratigraphic analysis. Blackwell scientific publications, Oxford Annexure-III Page 24 of 25
2. Nicols G., 2009 Sedimentology and Stratigraphy 2nd Edition, Wiley-Blackwell
3. Brookfield, M.E., 2016 Principles of stratigraphy, Wiley India

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES

Offered by Department of Geology

Category-IV

GENERIC ELECTIVES (GE-1): Essentials of Geology

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-----------------------|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Essentials of Geology | 4 | 4 | 0 | 0 | 12 th Pass | Nil |

Learning Objectives

1. Interactive and interdisciplinary nature of geology
2. Interplanetary scope of geology
3. Introduction to atmosphere, hydrosphere, biosphere and lithosphere

Learning outcomes

1. Earth, its origin and concept of geological time
2. Formation of planets and solar system
3. Composition of inner as well as surficial components of planet earth
4. Major geomorphic features, and compositions of various parts of earth and major earth processes
5. Earth Resources

SYLLABUS OF GE-1

Unit 1: Introduction to geology, scope, sub-disciplines and relationship with other branches of sciences Solar system and its origin: Terrestrial and Jovian planets; Nebular hypothesis. Earth's size, shape, mass, density, rotational and evolutionary parameters Earth in comparison to other bodies in the solar system. (16

Hours)

Unit 2: Internal constitution of the earth - core, mantle and crust (Chemical and mechanical differentiation) Convections in the earth's core and production of magnetic field; Concept of Plate Tectonics as a unifying theory. (16 Hours)

Unit 3: Origin and composition of hydrosphere and atmosphere; Origin of biosphere; Origin of oceans, continents and mountains. (12 Hours)

Unit 4: Geological Time Scale Radioactivity dating and its application in determining the age of the rocks. Earth Resources and their sustainable use. (16 Hours)

Essential readings

- Holmes, A. (1992). Principles of Physical Geology, 1992, Chapman and Hall.
- Emiliani, C. (1992). Planet Earth, Cosmology, Geology and the Evolution of Life and Environment, Cambridge University Press.

Suggestive readings

1. Holmes, A. (1992). Principles of Physical Geology, 1992, Chapman and Hall.
2. Emiliani, C. (1992). Planet Earth, Cosmology, Geology and the Evolution of Life and Annexure-IV Page 25 of 25 Environment, Cambridge University Press.
3. Gross, M.G. (1977). Oceanography: A view of the Earth, Prentice Hall.
4. Grotzinger, J.P. & Jordan, T.H. (2020) Understanding Earth. 8th Edition, W.H. Freeman and Company

DEPARTMENT OF PHYSICS

BSc. (Hons.) Physics

Category-I

DISCIPLINE SPECIFIC CORE COURSE – 1 (DSC-1) Mathematical Physics I

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|------------------------|---------|-----------------------------------|----------|---------------------|--|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Mathematical Physics I | 4 | 3 | 0 | 1 | Class XII pass with Physics and Mathematics as main subjects | Physics and Mathematics syllabus of class XII |

Learning Objectives

The emphasis of the course is on applications in solving problems of interest to physicists. The course will teach the students to model a physics problem mathematically and then solve those numerically using computational methods. The course will expose the students to fundamental computational physics skills enabling them to solve a wide range of physics problems. The skills developed during course will prepare them not only for doing fundamental and applied research but also for a wide variety of careers.

Learning Outcomes

After completing this course, student will be able to,

- Draw and interpret graphs of various elementary functions and their combinations.
- Understand the vector quantities as entities with Cartesian components which satisfy appropriate rules of transformation under rotation of the axes.
- Use index notation to write the product of vectors in compact form easily applicable in computational work.
- Solve first and second order differential equations and apply these to physics problems.
- Understand the functions of more than one variable and concept of partial derivatives.
- Understand the concept of scalar field, vector field, gradient of scalar field and divergence and curl of vector fields.
- Perform line, surface and volume integration and apply Green's, Stokes' and Gauss's theorems to compute these integrals and apply these to physics problems
- Understand the properties of discrete and continuous distribution functions.

In the laboratory course, the students will learn to,

- Prepare algorithms and flowcharts for solving a problem.
- Design, code and test simple programs in Python/C++ to solve various problems.

- Perform various operations of 1-d and 2-d arrays.
- Visualize data and functions graphically using Matplotlib/Gnuplot

SYLLABUS OF DSC – 1

THEORY COMPONENT

Unit 1 (18 Hours)

Functions: Plotting elementary functions and their combinations, Interpreting graphs of functions using the concepts of calculus, Taylor's series expansion for elementary functions.

Ordinary Differential Equations: First order differential equations of degree one and those reducible to this form, Exact and Inexact equations, Integrating Factor, Applications to physics problems

Higher order linear homogeneous differential equations with constant coefficients, Wronskian and linearly independent functions. Non-homogeneous second order linear differential equations with constant coefficients, complimentary function, particular integral and general solution, Determination of particular integral using method of undetermined coefficients and method of variation of parameters, Cauchy-Euler equation, Initial value problems. Applications to physics problems

Unit 2 (12 Hours)

Vector Algebra: Transformation of Cartesian components of vectors under rotation of the axes, Introduction to index notation and summation convention. Product of vectors - scalar and vector product of two, three and four vectors in index notation using δ_{ij} and ϵ_{ijk} (as symbols only – no rigorous proof of properties). Invariance of scalar product under rotation transformation.

Vector Differential Calculus: Functions of more than one variable, Partial derivatives, chain rule for partial derivatives. Scalar and vector fields, concept of directional derivative, the vector differential operator $\vec{\nabla}$, gradient of a scalar field and its geometrical interpretation. Divergence and curl of a vector field and their physical interpretation. Laplacian operator. Vector identities.

Unit 3 (15 Hours)

Vector Integral Calculus: Integrals of vector-valued functions of single scalar variable. Multiple integrals, Jacobian, Notion of infinitesimal line, surface and volume elements. Line, surface and volume integrals of vector fields. Flux of a vector field. Gauss divergence theorem, Green's and Stokes' Theorems (no proofs) and their applications

Probability Distributions: Discrete and continuous random variables, Probability distribution functions, Binomial, Poisson and Gaussian distributions, Mean and variance of these distributions.

PRACTICAL COMPONENT (Hours)

(30

The aim of this lab is not just to teach computer programming and numerical analysis but to emphasize its role in solving problems in Physics. The course will consist of practical sessions and lectures on the related theoretical aspects of the laboratory. Assessment is to be done not only on the programming but also on the basis of formulating the problem.

- Every student must perform at least 6 programs covering each unit.
- The list of recommended programs is suggestive only. Students should be encouraged to do more practice. Emphasis should be given to assess student's ability to formulate a physics problem as mathematical one and solve by computational methods.
- The implementation can be either in Python or C++. Accordingly, the instructor can choose section A or B respectively from Unit 1 and 2. The list of programs is common for both sections. If C++ is used, then for all plotting programs, Gnuplot has to be used.

Basics of scientific computing (Mandatory):

- (a) Binary and decimal arithmetic, Floating point numbers, single and double precision arithmetic, underflow and overflow, numerical errors of elementary floating point operations, round off and truncation errors with examples.
- (b) Introduction to Algorithms and Flow charts. Branching with examples of conditional statements, for and while loops.

Unit 1

Section A:

Basic Elements of Python: The Python interpreter, the print statement, comments, Python as simple calculator, objects and expressions, variables (numeric, character and sequence types) and assignments, mathematical operators. Strings, Lists, Tuples and Dictionaries, type conversions, input statement, list methods. List mutability, Formatting in the print statement.

Control Structures: Conditional operations, if, if-else, if-elif-else, while and for loops, indentation, break and continue, List comprehension. Simple programs for practice like solving quadratic equations, temperature conversion etc.

Functions: Inbuilt functions, user-defined functions, local and global variables, passing functions, modules, importing modules, math module, making new modules. Writing functions to perform simple operations like finding largest of three numbers, listing prime numbers, etc., Generating pseudo random numbers.

OR

Section B:

Introduction to C++: Basic idea of Compilers. Structured programming. Idea of Headers, Data Types, Enumerated Data, Conversion and casting, constants and variables, Mathematical, Relational, Logical and Bit wise Operators. Precedence of Operators, Expressions and Statements, Scope and Visibility of Data, block, Local and Global variables, Auto, static and External variables. Input and output statements. I/O

manipulations, iostream and cmath header files, using namespace.

Control Statements: The if-statement, if-else statement, Nested if Structure, If - Else if – else block, Ternary operator, Goto statement, switch statement, Unconditional and Conditional looping, While loop, Do-while loop, For loop, nested loops, break and continue statements. Simple programs for practice like solving quadratic equations, temperature conversion etc.

Functions: Inbuilt functions. User-defined functions, function declaration, function definition, function prototype, void functions and function arguments, return statement. Local and global variables. The main function. Passing parameter by value and by reference. Inline functions. Function overloading. Writing functions to perform simple operations like finding largest of three numbers, listing prime numbers etc., Generating pseudo random numbers.

Recommended List of Programs (At least Two)

- (a) Make a function that takes a number N as input and returns the value of factorial of N. Use this function to print the number of ways a set of m red and n blue balls can be arranged.
- (b) Generate random numbers (integers and floats) in a given range and calculate area and volume of regular shapes with random dimensions.
- (c) Generate data for coordinates of a projectile and plot the trajectory. Determine the range, maximum height and time of flight for a projectile motion.

Unit 2

Section A:

NumPy Fundamentals: Importing Numpy, Difference between List and NumPy array, Adding, removing and sorting elements, creating arrays using ones(), zeros(), random(), arange(), linspace(). Basic array operations (sum, max, min, mean, variance), 2-d arrays, matrix operations, reshaping and transposing arrays, savetxt() and loadtxt().

Plotting with Matplotlib: matplotlib.pyplot functions, Plotting of functions given in closed form as well as in the form of discrete data and making histograms.

OR

Section B:

Arrays: Array definition, passing arrays to functions, Finding sum, maximum, minimum, mean and variance of given array. 2-d arrays, matrix operations (sum, product, transpose etc). Saving data generated by a C++ program in a file.

Gnuplot: Introduction to Gnuplot. Visualization of discrete data and plotting functions given in closed form and data for graphical visualization. Plotting data from the output file created by a C++ program, making histogram.

Recommended List of Programs (At least Three)

- (a) To plot the displacement-time and velocity-time graph for the un-damped, under-damped

critically damped and over-damped oscillator using matplotlib (or Gnuplot) using given formulae.

- (b) To compute the left, right and central approximations for derivative of a function given in closed form. Plot both the function and derivative on the same graph. Plot (using matplotlib/Gnuplot) the error as a function of step size on a log-log graph, study the behaviour of the plot as step size decreases and hence discuss the effect of round off error.
- (c) To generate array of N random numbers drawn from a given distribution (uniform, binomial, poisson and gaussian) and plot them using matplotlib/Gnuplot for increasing N to verify the distribution. Verify the central limit theorem.
- (d) To implement the transformation of physical observables under Galilean, Lorentz and Rotation transformation

Unit 3

Recommended List of Programs (At least one)

- (a) To find value of π and to integrate a given function using acceptance-rejection method.
- (b) To perform linear fitting of data using the inbuilt function `scipy.stats.linregress` in Python or using Gnuplot. Plot the data points and the fitted line on the same graph.

References (for Laboratory Work):

- 1) Documentation at the Python home page (<https://docs.python.org/3/>) and the tutorials there (<https://docs.python.org/3/tutorial/>).
- 2) Documentation of NumPy and Matplotlib : <https://numpy.org/doc/stable/user/> and <https://matplotlib.org/stable/tutorials/>
- 3) Schaum's Outline of Programming with C++, J. Hubbard, 2000, McGraw-Hill Education.
- 4) C++ How to Program, Paul J. Deitel and Harvey Deitel, Pearson (2016).
- 5) Computational Physics, Darren Walker, 1st Edn., Scientific International Pvt. Ltd (2015).
- 6) Elementary Numerical Analysis, K. E. Atkinson, 3rd Edn., 2007, Wiley India Edition.
- 7) An Introduction to Computational Physics, T. Pang, Cambridge University Press (2010).
- 8) Introduction to Numerical Analysis, S. S. Sastry, 5th Edn., 2012, PHI Learning Pvt. Ltd.
- 9) Applied numerical analysis, Cutis F. Gerald and P. O. Wheatley, Pearson Education, India (2007).

Essential/Recommended Readings

REFERENCES FOR THEORY COMPONENT

- 1) An introduction to ordinary differential equations, E.A. Coddington, 2009, PHI learning.
- 2) Differential Equations, George F. Simmons, 2007, McGraw Hill.
- 3) Mathematical methods for Scientists and Engineers, D.A. McQuarrie, 2003, Viva Book.
- 4) Advanced Engineering Mathematics, D.G. Zill and W.S. Wright, 5 Ed., 2012, Jones and Bartlett Learning.

- 5) Advanced Engineering Mathematics, Erwin Kreyszig, 2008, Wiley India.
- 6) Probability and Statistics, Murray R Spiegel, John J Schiller and R Alu Srinivasan, 2018, McGraw Hill Education Private Limited.
- 7) Essential Mathematical Methods, K.F.Riley and M.P.Hobson, 2011, Cambridge Univ. Press.
- 8) Vector Analysis and Cartesian Tensors, D.E. Bourne and P.C. Kendall, 3 Ed. , 2017, CRC Press.
- 9) Vector Analysis, Murray Spiegel, 2 Ed., 2017, Schaum's outlines series.
- 10) John E. Freund's Mathematical Statistics with Applications, I. Miller and M. Miller, 7th Ed., 2003, Pearson Education, Asia.

.Suggestive readings:

- 1) Mathematical Methods for Physicists, G.B. Arfken, H.J. Weber, F.E. Harris, 7 Ed., 2013, Elsevier.
- 2) Introduction to Electrodynamics, Chapter 1, David J. Griffiths, 4 Ed., 2017, Cambridge University Press.
- 3) The Feynman Lectures on Physics, Volume II, Feynman, Leighton and Sands, 2008, Narosa Publishing House.
- 4) Introduction to Vector Analysis, Davis and Snider, 6 Ed., 1990, McGraw Hill.
- 5) Differential Equations, R. Bronson and G.B. Costa, Schaum's outline series.
- 6) Mathematical Physics, A.K. Ghatak, I.C. Goyal and S.J. Chua, Laxmi Publications Private Limited (2017)
- 7) Mathematical Tools for Physics, James Nearing, 2010, Dover Publications.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC - 2) MECHANICS

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|------------------------------------|----------|-----------------------------------|----------|---------------------|--|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Mechanics DSC – 2 | 4 | 3 | 0 | 1 | Class XII pass with Physics and Mathematics as main subjects | Physics and Mathematics syllabus of class XII |

Learning Objectives

This course reviews the concepts of mechanics learnt at school from a more advanced perspective and goes on to build new concepts. It begins with Newton's Laws of Motion and ends with the Fictitious Forces and Special Theory of Relativity. The students will learn the collisions in the centre of mass frame, rotational motion and central forces. They will be able to apply the concepts learnt to several real world problems. In the laboratory part of the course, the students will learn to use various instruments, estimate the error for

every experiment performed and report the result of experiment along with the uncertainty in the result up to correct significant figures.

Learning Outcomes

Upon completion of this course, students will be able to,

- Learn the Galilean invariance of Newton's laws of motion.
- Understand translational and rotational dynamics of a system of particles.
- Apply Kepler's laws to describe the motion of planets and satellite in circular orbit.
- Understand Einstein's postulates of special relativity.
- Apply Lorentz transformations to describe simultaneity, time dilation and length contraction
- Use various instruments for measurements and perform experiments related to rotational dynamics, elastic properties, fluid dynamics, acceleration due to gravity, collisions, etc.
- Use propagation of errors to estimate uncertainty in the outcome of an experiment and perform the statistical analysis of the random errors in the observations.

SYLLABUS OF DSC- 2

THEORY COMPONENT

Unit 1: (14 Hours)

Fundamentals of Dynamics: Inertial and Non-inertial frames, Newton's Laws of Motion and their invariance under Galilean transformations. Momentum of variable mass system: motion of rocket. Dynamics of a system of particles. Principle of conservation of momentum. Impulse. Determination of Centre of Mass of discrete and continuous objects having cylindrical and spherical symmetry. Differential analysis of a static vertically hanging massive rope

Work and Energy: Work and Kinetic Energy Theorem. Conservative forces and examples (Gravitational and electrostatic), non-conservative forces and examples (velocity dependent forces e.g. frictional force, magnetic force), Potential Energy. Energy diagram. Stable, unstable and neutral equilibrium. Force as gradient of the potential energy. Work done by non-conservative forces.

Collisions: Elastic and inelastic collisions between two spherical bodies. Kinematics of 2 → 2 scattering in centre of mass and laboratory frames.

Unit 2: (12 Hours)

Rotational Dynamics: Angular momentum of a particle and system of particles. Torque. Principle of conservation of angular momentum. Rotation about a fixed axis. Determination of moment of inertia of symmetric rigid bodies (rectangular, cylindrical and spherical) using parallel and perpendicular axes theorems. Kinetic energy of rotation. Motion involving both translation and rotation.

Non-Inertial Systems: Non-inertial frames and fictitious forces. Uniformly rotating frame. Centrifugal force. Coriolis force and its applications.

Unit 3: (7 Hours)

Central Force Motion: Central forces, Law of conservation of angular momentum for

central forces, Two-body problem and its reduction to equivalent one-body problem and its solution. Concept of effective potential energy and stability of orbits for central potentials of the form kr^n for $n = 2$ and -1 using energy diagram, discussion on trajectories for $n=-2$. Solution of the Kepler Problem, Kepler's Laws for planetary motion, orbit for artificial satellites

Unit 4: (12 Hours)

Relativity: Postulates of Special Theory of Relativity, Lorentz Transformations, simultaneity, length contraction, time dilation, proper length and proper time, life time of a relativistic particle (for example muon decay time and decay length). Space-like, time-like and light-like separated events, relativistic transformation of velocity and acceleration, variation of mass with velocity, mass-energy equivalence, transformation of energy and momentum.

PRACTICAL COMPONENT (30 Hours)

Introductory Concepts and related activities (Mandatory)

- **Use of Basic Instruments**

Determination of least count and use of instruments like meter scale, vernier callipers, screw gauge and travelling microscope for measuring lengths.

- **Errors**

- (a) Types of errors in measurements (instrumental limitations, systematic errors and random errors), accuracy and precision of observations, significant figures.
- (b) Introduction to error estimation, propagation of errors and reporting of results along with uncertainties with correct number of significant figures.
- (c) Statistical analysis of random errors, need for making multiple observations, standard error in the mean as estimate of the error.

- **Graph Plotting**

Pictorial visualisation of relation between two physical quantities, Points to be kept in mind while plotting a graph manually.

- **Data Analysis**

Principle of least square fitting (LSF) and its application in plotting linear relations, estimation of LSF values of slope, intercept and uncertainties in slope and intercept.

Mandatory Activities

- Determine the least count of meter scale, vernier callipers, screw gauge and travelling microscope, use these instruments to measure the length of various objects multiple time, find the mean and report the result along with the uncertainty up to appropriate number of significant digits.
- Take multiple observations of the quantities like length, radius etc. for some spherical, cylindrical and cubic objects, find mean of these observations and use them to

determine the surface area and volume of these objects. Estimate the uncertainties in the outcome using law of propagation of errors. Report the result to appropriate number of significant figures.

- Given a data (x, y) corresponding to quantities x and y related by a relation $y = f(x)$ that can be linearised, plot the data points (manually) with appropriate choice of scale, perform least square fitting to determine the slope and intercept of the LSF line and use them to determine some unknown quantity in the relation. Determine the uncertainties in slope and intercept and use these to estimate the uncertainty in the value of unknown quantity.

Every student must perform at least 4 experiments from the following list.

- 1) To study the random errors in observations. It is advisable to keep observables of the order of least count of the instruments.
- 2) To determine the moment of inertia of a symmetric as well as asymmetric flywheel
- 3) To determine coefficient of viscosity of water by Capillary Flow Method (Poiseuille's method).
- 4) To determine g and velocity for a freely falling body using Digital Timing Technique.
- 5) To determine the Young's Modulus of a Wire by Optical Lever Method.
- 6) To determine the vertical distance between two given points using sextant.
- 7) To determine the coefficients of sliding and rolling friction experienced by a trolley on an inclined plane.
- 8) To verify the law of conservation of linear momentum in collisions on air track.

Suggested additional activities:

- 1) Virtual lab collision experiments on two dimensional elastic and inelastic collisions (for example available on following suggested links
 - a) <https://archive.cnx.org/specials/2c7acb3c-2fbd-11e5-b2d9-e7f92291703c/collision-lab/#sim-advanced-sim>
 - b) <https://phet.colorado.edu/en/simulations/collision-lab>
- 2) Amrita Virtual Mechanics Lab: <https://vlab.amrita.edu/?sub=1&brch=74>

References (for Laboratory Work):

- 1) Advanced Practical Physics for students, B. L. Flint and H. T. Worshnop, 1971, Asia Publishing House.
- 2) Engineering Practical Physics, S. Panigrahi and B. Mallick, 2015, Cengage Learning India Pvt. Ltd.
- 3) Practical Physics, G. L. Squires, 2015, 4/e, Cambridge University Press.
- 4) A Text Book of Practical Physics, Vol I, Prakash and Ramakrishna, 11/e, 2011, Kitab Mahal.
- 5) An introduction to Error Analysis: The study of uncertainties in Physical Measurements, J.

R. Taylor, 1997, University Science Books

Essential readings:

FOR THEORY COMPONENT

- 1) An Introduction to Mechanics (2/e), Daniel Kleppner and Robert Kolenkow, 2014, Cambridge University Press.
- 2) Mechanics Berkeley Physics Course, Vol. 1, 2/e: Charles Kittel, et. al., 2017, McGraw Hill Education
- 3) Classical Mechanics by Peter Dourmashkin, 2013, John Wiley and Sons.
- 4) Theory and Problems of Theoretical Mechanics, Murray R. Spiegel, 1977, McGraw Hill Education.
- 5) Introduction to Classical Mechanics With Problems and Solutions, David Morin, 2008, Cambridge University Press.
- 6) Fundamentals of Physics, Resnick, Halliday and Walker 10/e, 2013, Wiley.
- 7) Introduction to Special Relativity, Robert Resnick, 2007, Wiley.

Suggestive Link:

[https://phys.libretexts.org/Bookshelves/Classical_Mechanics/classical_Mechanics_\(Dourmashkin\)/](https://phys.libretexts.org/Bookshelves/Classical_Mechanics/classical_Mechanics_(Dourmashkin)/)

Suggestive readings:

- 1) Feynman Lectures, Vol. 1, R. P. Feynman, R. B. Leighton, M. Sands, 2008, Pearson Education.
- 2) University Physics, H. D. Young, R. A. Freedman, 14/e, 2015, Pearson Education.
- 3) Classical Mechanics, H. Goldstein, C. P. Poole, J. L. Safko, 3/e, 2002, Pearson Education.
- 4) Newtonian Mechanics, A.P. French, 2017, Viva Books.

DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC – 3) WAVES AND OSCILLATIONS

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|----------|-----------------------------------|----------|---------------------|--|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Waves and Oscillations DSC – 3 | 4 | 2 | 0 | 2 | Class XII pass with Physics and Mathematics as main subjects | Physics and Mathematics syllabus of class XII |

Learning Objectives

This course reviews the concepts of waves and oscillations learnt at school from a more advanced perspective and goes on to build new concepts. It begins with explaining ideas of free oscillations and superposition of harmonic motion leading to physics of damped and forced oscillations. The course will also introduce students to coupled oscillators, normal

modes of oscillations and free vibrations of stretched strings. Concurrently, in the laboratory component of the course students will perform experiments that expose them to different aspects of real oscillatory systems.

Learning Outcomes

On successful completion of this course, the students will have the skill and knowledge to,

- Understand simple harmonic motion
- Understand superposition of N collinear harmonic oscillations
- Understand superposition of two perpendicular harmonic oscillations
- Understand free, damped and forced oscillations
- Understand coupled oscillators and normal modes of oscillations
- Understand travelling and standing waves, stretched strings

SYLLABUS OF DSC – 3

THEORY COMPONENT

Unit 1: Simple Harmonic Motion (12 Hours)

Differential equation of simple harmonic oscillator, its solution and characteristics, energy in simple harmonic motion, linearity and superposition principle, rotating vector representation of simple harmonic oscillation, motion of simple and compound pendulum (Bar and Kater's pendulum), loaded spring.

Superposition of N collinear harmonic oscillations with (1) equal phase differences and (2) equal frequency differences, Beats

Superposition of two perpendicular harmonic oscillations: Graphical and Analytical Methods. Lissajous Figures with equal and unequal frequencies, effect of variation of phase

Unit 2: Damped and Forced Oscillations (8 Hours)

Damped Oscillations: Equation of motion, dead beat motion, critically damped system, lightly damped system: relaxation time, logarithmic decrement, quality factor

Forced Oscillations: Equation of motion, complete solution, steady state solution, resonance, sharpness of resonance, power dissipation, quality factor

Unit 3: Coupled Oscillations (6 Hours)

Coupled oscillators, normal coordinates and normal modes, energy relation and energy transfer, di-atomic molecules, representation of a general solution as a linear sum of normal modes, normal modes of N coupled oscillators.

Unit 4: Wave Motion (4 Hours)

One dimensional plane wave, classical wave equation, standing wave on a stretched string (both ends fixed), normal modes. Travelling wave solution

PRACTICAL COMPONENT (60 Hours)

Every student must perform at least 5 experiments

- 1) Experiments using bar pendulum:
 - a) Estimate limits on angular displacement for SHM by measuring the time period at different angular displacements and compare it with the expected value of time period for SHM.
 - b) Determine the value of g using bar pendulum.
 - c) To study damped oscillations using bar pendulum
 - d) Study the effect of area of the damper on damped oscillations. Plot amplitude as a function of time and determine the damping coefficient and Q factor for different dampers.
- 2) To determine the value of acceleration due to gravity using Kater's pendulum for both the cases (a) $T_1 \approx T_2$ and (b) $T_1 \neq T_2$ and discuss the relative merits of both cases by estimation of error in the two cases.
- 3) Understand the applications of CRO by measuring voltage and time period of a periodic waveform using CRO. And study the superposition of two perpendicular simple harmonic oscillations using CRO (Lissajous figures)
- 4) Experiments with spring and mass system
 - a) To calculate g , spring constant and mass of a spring using static and dynamic methods.
 - b) To calculate spring constant of series and parallel combination of two springs.
- 5) To study normal modes and beats in coupled pendulums or coupled springs.
- 6) To determine the frequency of an electrically maintained tuning fork by Melde's experiment and to verify $\lambda^2 - T$ Law.
- 7) To determine the current amplitude and phase response of a driven series LCR circuit with driving frequency and resistance. Draw resonance curves and find quality factor for low and high damping.

References (For Laboratory Work):

- 1) Advanced Practical Physics for students, B. L. Flint and H. T. Worsnop, 1971, Asia Publishing House.
 - 2) Engineering Practical Physics, S. Panigrahi and B. Mallick, 2015, Cengage Learning India Pvt. Ltd.
 - 3) Practical Physics, G. L. Squires, 2015, 4/e, Cambridge University Press.
 - 4) A Text Book of Practical Physics, Vol I and II, Prakash and Ramakrishna, 11/e, 2011, Kitab Mahal.
 - 5) An Introduction to Error Analysis: The study of uncertainties in Physical Measurements, J. R. Taylor, 1997, University Science Books
- List of experiments

Essential Readings:

FOR THEORY COMPONENT

- 1) Vibrations and Waves by A. P. French. (CBS Pub. and Dist., 1987)

- 2) The Physics of Waves and Oscillations by N.K. Bajaj (Tata McGraw-Hill, 1988)
- 3) Fundamentals of Waves and Oscillations By K. Uno Ingard (Cambridge University Press, 1988)
- 4) An Introduction to Mechanics by Daniel Kleppner, Robert J. Kolenkow (McGraw-Hill, 1973)
- 5) Waves: BERKELEY PHYSICS COURSE by Franks Crawford (Tata McGrawHill, 2007).
- 6) Classical Mechanics by Peter Dourmashkin, John Wiley and Sons
- 7) [https://phys.libretexts.org/Bookshelves/Classical_Mechanics/classical_Mechanics_\(Dourmashkin\)](https://phys.libretexts.org/Bookshelves/Classical_Mechanics/classical_Mechanics_(Dourmashkin))

Suggestive Readings:

- 1) Fundamentals of Physics, Resnick, Halliday and Walker 10/e, 2013, Wiley.
- 2) Feynman Lectures, Vol. 1, R. P. Feynman, R. B. Leighton, M. Sands, 2008, Pearson Education.
- 3) University Physics, H. D. Young, R. A. Freedman, 14/e, 2015, Pearson Education.

BSc. Physical Sciences

Multidisciplinary

DISCIPLINE SPECIFIC CORE COURSE – 1 (PHYSICS DSC - 1) MECHANICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-----------------------------------|---------|-----------------------------------|----------|---------------------|--|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Mechanics Physics DSC 1 | 4 | 2 | 0 | 2 | Class XII pass with Physics and Mathematics as main subjects | Physics and Mathematics syllabus of class XII |

Learning Objectives

This course reviews the concepts of mechanics learnt at school from a more advanced perspective and goes on to build new concepts. It begins with dynamics of a system of particles and ends with the special theory of relativity. Students will appreciate the concept of rotational motion, gravitation and oscillations. The students will be able to apply the concepts learnt to several real world problems.

Learning outcomes:

Upon completion of this course, students are expected to understand the following concepts.

- Laws of motion and their application to various dynamical situations.
- Conservation of momentum, angular momentum and energy. Their application to basic problems.
- Particle collision (elastic and in-elastic collisions)
- Motion of simple pendulum
- Postulates of special theory of relativity, inertial and non-inertial frame of reference and their transformation, relativistic effects on the mass and energy of a moving body.

In the laboratory course, after acquiring knowledge of how to handle measuring instruments (like screw gauge, vernier calliper and travelling microscope) student shall embark on verifying various principles and associated measurable quantities.

SYLLABUS OF PHYSICS DSC – 1

THEORY COMPONENT

Unit 1: Review of vectors and ordinary differential equation (4 Hours)

Gradient of a scalar field, divergence and curl of vectors field, polar and axial vectors
Second order homogeneous ordinary differential equations with constant coefficients
(Operator Method Only).

Unit 2: Fundamentals of Dynamics (7 Hours)

Dynamics of a system of particles, centre of mass, determination of centre of mass for discrete and continuous systems having spherical symmetry
Conservation of momentum and energy, Conservative and non-Conservative forces, work – energy theorem for conservative forces, force as a gradient of potential energy.
Particle collision (Elastic and in-elastic collisions)

Unit 3: Rotational Dynamics and Oscillatory Motion (8 Hours)

Angular momentum, torque, conservation of angular momentum, Moment of inertia, Theorem of parallel and perpendicular axes (statements only). Calculation of moment of inertia of discrete and continuous objects (1-D and 2-D).
Idea of simple harmonic motion, differential equation of simple harmonic motion and its solution, Motion of simple pendulum, damped harmonic oscillator

Unit 4: Gravitation (3 Hours)

Newton's Law of Gravitation, Motion of a particle in a central force field, Kepler's Laws (statements only)

Unit 5: Special Theory of Relativity (8 Hours)

Frames of reference, Galilean transformations, inertial and non-inertial frames, Michelson Morley's Experiment, postulates of special theory of relativity, length contraction, time dilation, relativistic transformation of velocity, relativistic variation of mass.

References:

Essential Readings:

- 1) Vector Analysis – Schaum's Outline, M.R. Spiegel, S. Lipschutz, D. Spellman, 2nd Edn., 2009, McGraw- Hill Education.
- 2) An Introduction to Mechanics (2/e), Daniel Kleppner and Robert Kolenkow, 2014, Cambridge University Press.
- 3) Mechanics Berkeley Physics Course, Vol. 1, 2/e: Charles Kittel, et. al., 2017, McGraw Hill Education
- 4) Mechanics, D. S. Mathur, P. S. Hemne, 2012, S. Chand.
- 5) Intermediate Dynamics, Patrick Hamill, 2010, Jones and Bartlett Publishers.

Additional Readings:

- 1) Feynman Lectures, Vol. 1, R. P. Feynman, R. B. Leighton, M. Sands, 2008, Pearson Education.
- 2) University Physics, Ronald Lane Reese, 2003, Thomson Brooks/Cole.
- 3) University Physics, H. D. Young, R. A. Freedman, 14/e, 2015, Pearson Education.
- 4) Fundamentals of Physics, Resnick, Halliday and Walker 10/e, 2013, Wiley.
- 5) Engineering Mechanics, Basudeb Bhattacharya, 2/e, 2015, Oxford University Press.
- 6) Physics for Scientists and Engineers, Randall D Knight, 3/e, 2016, Pearson Education.

PRACTICAL COMPONENT (60 Hours)

The teacher is expected to give basic idea and working of various apparatus and instruments related to different experiments. Students should also be given knowledge of recording and analysing experimental data.

Every student should perform at least 06 experiments from the following list.

- 1) Measurement of length (or diameter) using vernier calliper, screw gauge and travelling microscope.
- 2) Study the random error in observations.
- 3) Determination of height of a building using a sextant.
- 4) Study of motion of the spring and calculate (a) spring constant and, (b) acceleration due to gravity
- 5) Determination of moment of inertia of a flywheel.
- 6) Determination of g and velocity for a freely falling body using digital timing technique.
- 7) Determination of modulus of rigidity of a wire using Maxwell's needle.
- 8) Determination of elastic constants of a wire by Searle's method.
- 9) Determination of value of g using bar pendulum.
- 10) Determination of value of g using Kater's pendulum.

References (for Laboratory Work):

- 1) Advanced Practical Physics for students, B. L. Flint and H. T. Worsnop, 1971, Asia Publishing House.
- 2) Engineering Practical Physics, S. Panigrahi and B. Mallick, 2015, Cengage Learning India Pvt. Ltd.
- 3) Practical Physics, G. L. Squires, 2015, 4/e, Cambridge University Press.
- 4) A Textbook of Practical Physics, I. Prakash and Ramakrishna, 11/e, 2011, Kitab Mahal.
- 5) B. Sc. Practical Physics, Geeta Sanon, R. Chand and Co., 2016.

BSc. Physical Sciences with Electronics

Multidisciplinary

DISCIPLINE SPECIFIC CORE COURSE – 1 (PHYSICS DSC - 1) MECHANICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|----------------------------|---------|-----------------------------------|----------|---------------------|--|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Mechanics Physics DSC 1 | 4 | 2 | 0 | 2 | Class XII pass with Physics and Mathematics as main subjects | Physics and Mathematics syllabus of class XII |

Learning Objectives

This course reviews the concepts of mechanics learnt at school from a more advanced perspective and goes on to build new concepts. It begins with dynamics of a system of particles and ends with the special theory of relativity. Students will appreciate the concept of rotational motion, gravitation and oscillations. The students will be able to apply the concepts learnt to several real world problems.

Learning Outcomes

Upon completion of this course, students are expected to understand the following concepts.

- Laws of motion and their application to various dynamical situations.
- Conservation of momentum, angular momentum and energy. Their application to basic problems.
- Particle collision (elastic and in-elastic collisions)
- Motion of simple pendulum
- Postulates of special theory of relativity, inertial and non-inertial frame of reference and their transformation, relativistic effects on the mass and energy of a moving body.

In the laboratory course, after acquiring knowledge of how to handle measuring instruments (like screw gauge, vernier calliper and travelling microscope) student shall embark on verifying various principles and associated measurable quantities.

SYLLABUS OF PHYSICS DSC-1

THEORY COMPONENT

Unit 1: Review of vectors and ordinary differential equation (04 Hours)

Gradient of a scalar field, divergence and curl of vectors field, polar and axial vectors
Second order homogeneous ordinary differential equations with constant coefficients (Operator Method Only).

Unit 2: Fundamentals of Dynamics (07 Hours)

Dynamics of a system of particles, centre of mass, determination of centre of mass for discrete and continuous systems having spherical symmetry
Conservation of momentum and energy, Conservative and non-Conservative forces, work – energy theorem for conservative forces, force as a gradient of potential energy.
Particle collision (Elastic and in-elastic collisions)

Unit 3: Rotational Dynamics and Oscillatory Motion (08 Hours)

Angular momentum, torque, conservation of angular momentum, Moment of inertia, Theorem of parallel and perpendicular axes (statements only). Calculation of moment of inertia of discrete and continuous objects (1-D and 2-D).
Idea of simple harmonic motion, differential equation of simple harmonic motion and its solution, Motion of simple pendulum, damped harmonic oscillator

Unit 4: Gravitation (03 Hours)

Newton's Law of Gravitation, Motion of a particle in a central force field, Kepler's Laws (statements only)

Unit 5: Special Theory of Relativity (08 Hours)

Frames of reference, Galilean transformations, inertial and non-inertial frames, Michelson Morley's Experiment, postulates of special theory of relativity, length contraction, time dilation, relativistic transformation of velocity, relativistic variation of mass.

References:

Essential Readings:

- 1) Vector Analysis – Schaum's Outline, M.R. Spiegel, S. Lipschutz, D. Spellman, 2nd Edn., 2009, McGraw- Hill Education.
- 2) An Introduction to Mechanics (2/e), Daniel Kleppner and Robert Kolenkow, 2014, Cambridge University Press.
- 3) Mechanics Berkeley Physics Course, Vol. 1, 2/e: Charles Kittel, et. al., 2017, McGraw Hill Education
- 4) Mechanics, D. S. Mathur, P. S. Hemne, 2012, S. Chand.
- 5) Intermediate Dynamics, Patrick Hamill, 2010, Jones and Bartlett Publishers.

Additional Readings:

- 1) Feynman Lectures, Vol. 1, R. P. Feynman, R. B. Leighton, M. Sands, 2008, Pearson Education.
- 2) University Physics, Ronald Lane Reese, 2003, Thomson Brooks/Cole.
- 3) University Physics, H. D. Young, R. A. Freedman, 14/e, 2015, Pearson Education.
- 4) Fundamentals of Physics, Resnick, Halliday and Walker 10/e, 2013, Wiley.
- 5) Engineering Mechanics, Basudeb Bhattacharya, 2/e, 2015, Oxford University Press.
- 6) Physics for Scientists and Engineers, Randall D Knight, 3/e, 2016, Pearson Education.

PRACTICAL COMPONENT (60 Hours)

The teacher is expected to give basic idea and working of various apparatus and instruments related to different experiments. Students should also be given knowledge of recording and analysing experimental data.

Every student should perform at least 06 experiments from the following list.

- 1) Measurement of length (or diameter) using vernier calliper, screw gauge and travelling microscope.
- 2) Study the random error in observations.
- 3) Determination of height of a building using a sextant.
- 4) Study of motion of the spring and calculate (a) spring constant and, (b) acceleration due to gravity
- 5) Determination of moment of inertia of a flywheel.
- 6) Determination of g and velocity for a freely falling body using digital timing technique.
- 7) Determination of modulus of rigidity of a wire using Maxwell's needle.
- 8) Determination of elastic constants of a wire by Searle's method.
- 9) Determination of value of g using bar pendulum.
- 10) Determination of value of g using Kater's pendulum.

References (for Laboratory Work):

- 1) Advanced Practical Physics for students, B. L. Flint and H. T. Worsnop, 1971, Asia Publishing House.
- 2) Engineering Practical Physics, S. Panigrahi and B. Mallick, 2015, Cengage Learning India Pvt. Ltd.
- 3) Practical Physics, G. L. Squires, 2015, 4/e, Cambridge University Press.
- 4) A Textbook of Practical Physics, I. Prakash and Ramakrishna, 11/e, 2011, Kitab Mahal.
- 5) B. Sc. Practical Physics, Geeta Sanon, R. Chand and Co., 2016.

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC - 2) Network Analysis and Analog Electronics

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|--|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Network Analysis and Analog Electronics Physics DSC 2 | 4 | 2 | 0 | 2 | Class XII pass with Physics and Mathematics as main subjects | Physics and Mathematics syllabus of class XII |

Learning Objectives

This course offers the basic knowledge to students to design and analyse the network circuit analysis and analog electronics. It gives the concept of voltage, current sources and various electrical network theorems, physics of semiconductor devices including junction diode, bipolar junction transistors, unipolar devices and their applications are discussed in detail. This also develops the understanding of amplifier and its applications.

Learning Outcomes

At the end of this course, students will be able to achieve the following learning outcomes.

- To understand the concept of voltage and current sources, Network theorems, Mesh Analysis.
- To develop an understanding of the basic operation and characteristics of different type of diodes and familiarity with its working and applications.
- Become familiar with Half-wave, Full-wave centre tapped and bridge rectifiers. To be able to calculate ripple factor and efficiency.
- To be able to recognize and explain the characteristics of a PNP or NPN transistor.
- Become familiar with the load-line analysis of the BJT configurations and understand the hybrid model (h- parameters) of the BJT transistors.
- To be able to perform small signal analysis of Amplifier and understand its classification.
- To be able to perform analysis of two stage R-C coupled Amplifier.
- To understand the concept of positive and negative feedback along with applications in case of oscillators.
- To become familiar with construction, working and characteristics of JFET and UJT.

SYLLABUS OF PHYSICS DSC – 2

THEORY COMPONENT

Unit 1: (8 Hours)

Circuit Analysis: Concept of Voltage and Current Sources (ideal and practical). Kirchhoff's Laws. Mesh Analysis, Node Analysis. Star and Delta networks and their Conversion. Superposition Theorem. Thevenin's Theorem. Norton's Theorem. Reciprocity Theorem. Maximum Power Transfer Theorem.

Unit 2: (5 Hours)

Semiconductor Diode: PN junction diode (Ideal and practical), Diode equation (Qualitative only) and I-V characteristics. Idea of static and dynamic resistance, Zener diode working. Rectifiers: Half wave rectifier (Qualitative only), Full wave rectifiers (center tapped and bridge): circuit diagrams, working and waveforms, ripple factor and efficiency.

Filter circuits: Shunt capacitance and series Inductance filter (no derivation).

Regulation: Zener diode as voltage regulator for load and line regulation.

Unit 3: (7 Hours)

Bipolar Junction Transistor: Review of the characteristics of transistor in CE and CB configurations, Regions of operation (active, cut off and saturation), Current gains α and β . Relations between α and β . dc load line and Q point.

Amplifiers: Transistor biasing and Stabilization circuits - Voltage Divider Bias. Thermal runaway, stability (Qualitative only). Transistor as a two-port network, h-parameter equivalent circuit. Small signal analysis of single stage CE amplifier. Input and Output impedance, Current and Voltage gains. Class A, B and C Amplifiers.

Unit 4:

(10

Hours)

Cascaded Amplifiers: Two stage RC Coupled Amplifier and its frequency response.

Sinusoidal Oscillators: Concept of feedback (negative and positive feedback), Barkhausen criterion for sustained oscillations. Phase shift and Colpitt's oscillator. Determination of frequency and condition of oscillation

Unipolar Devices: JFET. Construction, working and I-V characteristics (output and transfer), Pinch-off voltage. UJT, basic construction, working, equivalent circuit and I-V characteristics. UJT Oscillator.

References:

Essential Readings:

- 1) Network, Lines and Fields, J. D. Ryder, Prentice Hall of India
- 2) Integrated Electronics, J. Millman and C.C. Halkias, Tata McGraw Hill (2001)
- 3) Electric Circuits, S. A. Nasar, Schaum Outline Series, Tata McGraw Hill (2004)
- 4) Electric Circuits, K.A. Smith and R. E. Alley, Cambridge University Press(2014)
- 5) 2000 Solved Problems in Electronics, J. J. Cathey, Schaum Outline Series, Tata McGraw Hill (1991)

Additional Readings:

- 1) Microelectronic Circuit, A. S. Sedra, K.C. Smith, A. N. Chandorkar, 6th Edition (2014), Oxford University Press
- 2) Electronic Circuits: Discrete and Integrated, D. L. Schilling and C. Belove, Tata McGraw Hill.
- 3) Electronic Devices and Circuits, David A. Bell, 5th Edition 2015, Oxford University Press.
- 4) Electrical Circuits, M. Nahvi and J. Edminister, Schaum Outline Series, Tata McGraw Hill (2005)

PRACTICAL COMPONENT (60 Hours)

At least 06 experiments from the following.

- 1) To familiarize with basic electronic components (R, L, C, diodes, transistors), digital Multimeter, Function Generator and Oscilloscope
- 2) Verification of
 - a. Thevenin's theorem and
 - b. Norton's theorem.
- 3) Verification of
 - a. Superposition Theorem and
 - b. Reciprocity Theorem
- 4) Verification of the Maximum Power Transfer Theorem.
- 5) Study of the I-V Characteristics of
 - a. p-n junction Diode, and
 - b. Zener diode.

- 6) Study of
 - a. Half wave rectifier and
 - b. Full wave rectifier (FWR).
- 7) Study the effect of
 - a. C- filter and L- filter and
 - b. Zener regulator.
- 8) Study of the I-V Characteristics of UJT and design relaxation oscillator.
- 9) Study of the output and transfer I-V characteristics of common source JFET.
- 10) Study of Voltage divider bias configuration for CE transistor.
- 11) Design of a Single Stage CE amplifier of given gain.
- 12) Study of the RC Phase Shift Oscillator.

References (For Laboratory Work):

- 1) Electronic Devices and Circuits, Allen Mottershead, Goodyear Publishing Corporation.
- 2) Electrical Circuits, M. Nahvi and J. Edminister, Schaum Outline Series, Tata McGraw Hill (2005)
- 3) Network, Lines and Fields, J. D. Ryder, Prentice Hall of India
- 4) Integrated Electronics, J. Millman and C.C. Halkias, Tata McGraw Hill (2001)

BSc. (HONOURS)
IN ANALYTICAL CHEMISTRY
&
IN INDUSTRIAL CHEMISTRY
Multidisciplinary

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|----------|-----------------------------------|----------|---------------------|---|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Mechanics DSC - 1 | 4 | 2 | 0 | 2 | Class XII pass with Physics and Mathematics as main subjects | Physics and Mathematics syllabus of class XII |

Learning Objectives

This course reviews the concepts of mechanics learnt at school from a more advanced perspective and goes on to build new concepts. It begins with a review of vector algebra and ordinary differential equations. The students will learn Newton's laws of motion, conservation of momentum, conservation of energy, concept of simple harmonic motion, Newton's laws of gravitation, elasticity and the Special Theory of Relativity. They will be able to apply the concepts learnt to several real world problems.

Learning Outcomes

Upon completion of this course, students will be able to,

- Learn the laws of motion and their application to various dynamical situations.
- Understand the concept of conservation of momentum, angular momentum and energy. Their application to basic problems.
- Understand the motion of simple pendulum
- Understand the laws of gravitation and basic idea of global positioning system
- Understand the elastic properties
- Postulates of special theory of relativity, inertial and non-inertial frame of reference and their transformation, relativistic effects on the mass and energy of a moving body.

SYLLABUS OF DSC – 1

Vectors: Review of vector algebra. Scalar and vector product

(2 Hours)

Ordinary Differential Equations: First order homogeneous differential equations, second order homogeneous differential equation with constant coefficients

(4 Hours)

Brief review of Newton's laws of motion, dynamics of a system of particles, centre of mass, determination of centre of mass for continuous systems having spherical symmetry. Conservation of momentum and energy, work – energy theorem for conservative forces,

force as a gradient of potential energy, angular momentum, torque, conservation of angular momentum

(9 Hours)

Idea of simple harmonic motion, differential equation of simple harmonic motion and its solution, kinetic energy and potential energy, total energy and their time average for a body executing simple harmonic motion

(4 Hours)

Newton's law of gravitation, motion of a particle in a central force field, Kepler's laws, weightlessness, geosynchronous orbit, basic idea of global positioning system

(4 Hours)

Elasticity: Concept of stress and strain, Hooke's law, elastic moduli, twisting torque on a wire, tensile strength, relation between elastic constants, Poisson's ratio, rigidity modulus

(3 Hours)

Postulates of special theory of relativity, Lorentz transformation relations, length contraction, time dilation, relativistic transformation of velocity

(4 Hours)

PRACTICAL COMPONENT (60 Hours)

Every student should perform at least 06 experiments from the following list.

- 1) Measurements of length (or diameter) using vernier calliper, screw gauge and travelling microscope.
- 2) Determination of height of a building using a sextant.
- 3) Study of motion of the spring and calculate (a) spring constant and, (b) acceleration due to gravity (g)
- 4) Determination of moment of inertia of a flywheel.
- 5) Determination of Young's modulus of a wire by Optical Lever Method.
- 6) Determination of modulus of rigidity of a wire using Maxwell's needle.
- 7) Determination of elastic constants of a wire by Searle's method.
- 8) Determination of value of g using bar pendulum.
- 9) Determination of value of g using Kater's pendulum.

References (for Laboratory Work):

- 1) Advanced practical physics for students, B. L. Flint and H. T. Worsnop, 1971, Asia Publishing House.
- 2) Engineering practical physics, S. Panigrahi and B. Mallick, 2015, Cengage Learning India
- 3) Practical physics, G. L. Squires, 2015, 4/e, Cambridge University Press.
- 4) A text book of practical physics, I. Prakash and Ramakrishna, 11/e, 2011, Kitab Mahal.
- 5) B. Sc. practical physics, Geeta Sanon, R. Chand, 2016

Essential Readings:

FOR THEORY COMPONENT

- 1) Schaum's Outline of Vector Analysis, 2nd Edn., Murray Spiegel, Seymour Lipschutz, Tata McGraw-Hill, (2009)
- 2) An Introduction to Mechanics (2/e), Daniel Kleppner and Robert Kolenkow, 2014, Cambridge University Press.
- 3) Mechanics Berkeley Physics Course, Vol. 1, 2/e, Charles Kittel, et. al., 2017, McGrawHill Education
- 4) Mechanics, D. S. Mathur and P. S. Hemne, 2012, S. Chand.

.Suggestive Readings:

- 1) University Physics, Ronald Lane Reese, 2003, Thomson Brooks/Cole.
- 2) University Physics, H. D. Young and R. A. Freedman, 14/e, 2015, Pearson Education.
- 3) Fundamentals of Physics, Resnick, Halliday and Walker 10/e, 2013, Wiley.
- 4) Engineering Mechanics, Basudeb Bhattacharya, 2/e, 2015, Oxford University Press.

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES
Offered by Department of Physics
Category-IV

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES

Note: Examination scheme and modes shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE – 1): MECHANICS

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department offering the course |
|---------------------------------|----------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|---------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| Mechanics GE 1 | 4 | 3 | 0 | 1 | Class XII pass | NIL | Physics and Astrophysics |

Learning Objectives

This course reviews the concepts of mechanics learnt at school in a more advanced perspective and goes on to build new concepts. It begins with dynamics of a system of particles and ends with the special theory of relativity. Students will appreciate the concept of rotational motion, gravitation and oscillations. The students will be able to apply the concepts learnt to several real world problems. A brief recapitulation of vector algebra and differential equations is also done to familiarize students with basic mathematical concepts which are necessary for a course on mechanics.

Learning Outcomes

Upon completion of this course, students are expected to understand the following concepts.

- Laws of motion and their application to various dynamical situations. And their applications to conservation of momentum, angular momentum and energy.
- Motion of a simple and compound pendulum
- Application of Kepler's laws to describe the motion of satellites in circular orbit.
- The concept of geosynchronous orbits
- Concept of stress and strain and relation between elastic constants
- Postulates of Special Theory of Relativity, Lorentz transformation, relativistic effects on the mass and energy of a moving body.

In the laboratory course, after acquiring knowledge of how to handle measuring

instruments (like vernier calliper, screw gauge and travelling microscope) student shall embark on verifying various principles and associated measurable quantities.

SYLLABUS OF GE – 1

THEORY COMPONENT

Unit 1: Recapitulation of Vectors and Ordinary Differential Equation (8 Hours)

Vector algebra, scalar and vector product, gradient of a scalar field, divergence and curl of vectors field

Ordinary Differential Equations: First order homogeneous differential equations, second order homogeneous differential equation with constant coefficients

Unit 2: Fundamentals of Dynamics (10 Hours)

Review of Newton's laws of motion, dynamics of a system of particles, centre of mass, determination of centre of mass for discrete and continuous systems having spherical symmetry, Conservation of momentum and energy, Conservative and non-Conservative forces, work – energy theorem for conservative forces, force as a gradient of potential energy.

Unit 3: Rotational Dynamics and Oscillatory Motion (14 Hours)

Angular velocity, angular momentum, torque, conservation of angular momentum, Moment of inertia, Theorem of parallel and perpendicular axes, Calculation of moment of inertia of discrete and continuous objects (1-D and 2-D).

Idea of simple harmonic motion, Differential equation of simple harmonic motion and its solution, Motion of a simple pendulum and compound pendulum

Unit 4: Gravitation (5 Hours)

Newton's Law of Gravitation, Motion of a particle in a central force field, Kepler's Laws (statements only), Satellite in circular orbit and applications, geosynchronous orbits

Unit 5: Elasticity (3 Hours)

Concept of stress and strain, Hooke's law, elastic moduli, twisting torque on a wire, tensile strength, relation between elastic constants, Poisson's ratio, rigidity modulus

Unit 6: Special Theory of Relativity (5 Hours)

Postulates of Special Theory of Relativity, Lorentz transformation, length contraction, time dilation, relativistic transformation of velocity, relativistic variation of mass, mass-energy equivalence

PRACTICAL COMPONENT (30 Hours)

The teacher is expected to give basic idea and working of various apparatus and instruments related to different experiments. Students should also be given knowledge of recording and analyzing experimental data.

Every student should perform at least 06 experiments from the following list.

- 1) Measurement of length (or diameter) using vernier calliper, screw gauge and travelling microscope.
- 2) Study the random error in observations.
- 3) Determination of height of a building using a sextant.
- 4) Study of motion of the spring and calculate (a) spring constant and, (b) acceleration due to gravity (g)
- 5) Determination of moment of inertia of a flywheel.
- 6) Determination of g and velocity for a freely falling body using digital timing technique.
- 7) Determination of modulus of rigidity of a wire using Maxwell's needle.
- 8) Determination of elastic constants of a wire by Searle's method.
- 9) Determination of value of g using bar pendulum.
- 10) Determination of value of g using Kater's pendulum.

References (for Laboratory Work):

- 1) Advanced practical physics for students, B. L. Flint and H. T. Worsnop, 1971, Asia Publishing House.
- 2) Engineering practical physics, S. Panigrahi and B. Mallick, 2015, Cengage Learning India Pvt. Ltd.
- 3) Practical physics, G. L. Squires, 2015, 4/e, Cambridge University Press.
- 4) A text book of practical physics, I. Prakash and Ramakrishna, 11/e, 2011, Kitab Mahal.
- 5) B. Sc. practical physics, Geeta Sanon, R. Chand and Co., 2016.

Essential readings:

FOR THEORY COMPONENT

- 1) Vector Analysis – Schaum's Outline, M.R. Spiegel, S. Lipschutz, D. Spellman, 2nd Edn., 2009, McGraw- Hill Education.
- 2) An Introduction to Mechanics (2/e), Daniel Kleppner and Robert Kolenkow, 2014, Cambridge University Press.
- 3) Mechanics Berkeley Physics Course, Vol. 1, 2/e: Charles Kittel, et. al., 2017, McGraw Hill Education
- 4) Mechanics, D. S. Mathur, P. S. Hemne, 2012, S. Chand.
- 5) Fundamentals of Physics, Resnick, Halliday and Walker 10/e, 2013, Wiley.

Suggestive readings

- 1) Feynman Lectures, Vol. 1, R. P. Feynman, R. B. Leighton, M. Sands, 2008, Pearson Education.
- 2) University Physics, Ronald Lane Reese, 2003, Thomson Brooks/Cole.
- 3) University Physics, H. D. Young, R. A. Freedman, 14/e, 2015, Pearson Education.
- 4) Engineering Mechanics, Basudeb Bhattacharya, 2/e, 2015, Oxford University Press
- 5) Physics for Scientists and Engineers, Randall D Knight, 3/e, 2016, Pearson Education.

GENERIC ELECTIVES (GE - 2): MATHEMATICAL PHYSICS

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-----------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Mathematical Physics GE – 2 | 4 | 3 | 1 | 0 | Class XII pass | NIL |

Learning Objectives

The emphasis of course is to equip students with the mathematical tools required in solving problem of interest to physicists. The course will expose students to fundamental computational physics skills and hence enable them to solve a wide range of physics problems.

Learning Outcomes

At the end of this course, the students will be able to,

- Understand functions of several variables.
- Represent a periodic function by a sum of harmonics using Fourier series and their applications in physical problems such as vibrating strings etc.
- Obtain power series solution of differential equation of second order with variable coefficient using Frobenius method.
- Understand properties and applications of special functions like Legendre polynomials, Bessel functions and their differential equations and apply these to various physical problems such as in quantum mechanics.
- Learn about gamma and beta functions and their applications.
- Solve linear partial differential equations of second order with separation of variable method.
- Understand the basic concepts of complex analysis and integration.
- During the tutorial classes, students' skill will be developed to solve more problems related to the concerned topics.

SYLLABUS OF GE – 2

THEORY COMPONENT

Unit 1:

(6 Hours)

Fourier series: Periodic functions. Orthogonality of sine and cosine functions, Convergence of Fourier series and Dirichlet Conditions (Statement only). Expansion of periodic functions in a series of sine and cosine functions and determination of Fourier coefficients. Even and odd functions and their Fourier expansions (Fourier Cosine Series and Fourier Sine Series).

Unit 2: (10 Hours)

Frobenius Method and Special Functions: Singular Points of Second Order Linear Differential Equations and their importance. Frobenius method and its applications to differential equations. Legendre and Bessel Differential Equations.

Unit 3: (14 Hours)

Some Special Integrals: Beta and Gamma Functions and Relation between them. Expression of integrals in terms of Gamma Functions.

Partial Differential Equations: Multivariable functions, Partial derivatives, Functions Solutions to partial differential equations, using separation of variables: Laplace's Equation in problems of rectangular geometry, Solution of 1D wave equation.

Unit 4: (15 Hours)

Complex Analysis: Functions of complex variable, limit, continuity, Analytic function, Cauchy-Riemann equations, singular points, Cauchy Goursat Theorem, Cauchy's Integral Formula, Residues, Cauchy's Residue Theorem.

Essential readings:

- 1) Advanced Engineering Mathematics, Erwin Kreyszig, 2008, Wiley India.
- 2) Complex Variables and Applications, J. W. Brown and R. V. Churchill, 7th Ed. 2003, Tata McGraw-Hill
- 3) Advanced Mathematics for Engineers and Scientists: Schaum Outline Series, M. R Spiegel, 2009, McGraw Hill Education.
- 4) Applied Mathematics for Engineers and Physicists, L.A. Pipes and L.R. Harvill, 2014, Dover Publications.
- 5) Mathematical Methods for Physics and Engineers, K.F Riley, M.P. Hobson and S. J. Bence, 3rd Ed., 2006, Cambridge University Press.

Suggestive readings

- 1) Mathematical Physics, A. K. Ghatak, I. C. Goyal and S. J. Chua, 2017, Laxmi Publications Private Limited.
- 2) Advanced Engineering Mathematics, D. G. Zill and W. S. Wright, 5 Ed., 2012, Jones and Bartlett Learning.
- 3) An introduction to ordinary differential equations, E. A. Coddington, 2009, PHI Learning.
- 4) Differential Equations, George F. Simmons, 2007, McGraw Hill.
- 5) Mathematical methods for Scientists and Engineers, D. A. Mc Quarrie, 2003, Viva Books

GENERIC ELECTIVES (GE – 3): WAVES AND OPTICS

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Waves and Optics GE 3 | 4 | 3 | 0 | 1 | Class XII pass | NIL |

Learning Objectives

This coursework reviews the concept of waves and optics learnt at school level from a more advanced perspective and builds new concepts. This course is divided into two main parts. The first part deals with vibrations and waves. The second part pertains to optics and provides the details of interference, diffraction and polarization.

Learning Outcomes

After the completion of this course, the students will have learnt the following.

- Simple harmonic motion, superposition principle and its application to find the resultant of superposition of harmonic oscillations.
- Concepts of vibrations in strings.
- Interference as superposition of waves from coherent sources.
- Basic concepts of Diffraction: Fraunhofer and Fresnel Diffraction.
- Elementary concepts of the polarization of light.

SYLLABUS OF GE – 3

THEORY COMPONENT

Unit 1: (10 Hours)

Superposition of Harmonic Oscillations: Simple harmonic motion (SHM). Linearity and Superposition Principle. Superposition of two collinear harmonic oscillations having (1) equal frequencies and (2) different frequencies (Beats). Superposition of two perpendicular harmonic oscillations: Graphical and Analytical Methods. Lissajous Figures (1:1 and 1:2) and their uses.

Unit 2: (5 Hours)

Waves Motion: Types of waves: Longitudinal and Transverse (General idea). Travelling waves in a string, wave equation. Energy density. Standing waves in a string - modes of vibration. Phase velocity.

Unit 3: (12 Hours)

Interference of Light: Electromagnetic nature of light. Definition and properties of wave front. Huygens Principle. Interference: Division of amplitude and division of wave front. Young's Double Slit experiment. Fresnel's Biprism. Phase change on reflection: Stoke's treatment. Interference in Thin Films: parallel and wedge-shaped films. Newton's Rings: measurement of wavelength and refractive index.

Unit 4: (12 Hours)

Diffraction: Fraunhofer diffraction - Single slit, Double slit and Diffraction grating. Fresnel Diffraction - Half-period zones, Zone plate, Fresnel Diffraction pattern of a straight edge using half-period zone analysis.

Unit 5: (6 Hours)

Polarization: Transverse nature of light waves. Plane polarized light. Production and detection of linearly polarized light. Malus's Law. Idea of circular and elliptical polarization.

PRACTICAL COMPONENT (30 Hours)

Every student must perform at least 05 experiments out of the list following experiments.

- 1) To determine the frequency of an electrically maintained tuning fork by Melde's experiment and to verify $\lambda^2 - T$ Law.
- 2) To study Lissajous Figures.
- 3) Familiarization with Schuster's focusing and determination of the angle of prism.
- 4) To determine the refractive index of the material of a prism using sodium light.
- 5) To determine the dispersive power of a prism using mercury light.
- 6) To determine wavelength of sodium light using Newton's rings.
- 7) To determine wavelength of sodium light using a plane diffraction grating.
- 8) To verify Malus's Law.
- 9) To determine the wavelength of Laser light using single slit diffraction. (Due care should be taken not to see Laser light source directly as it may cause injury to eyes.)

References (for Laboratory Work):

- 1) Advanced Practical Physics for students, B. L. Flint and H. T. Worsnop, Asia Publishing House
- 2) A Text Book of Practical Physics, Indu Prakash and Ramakrishna, Kitab Mahal
- 3) An advanced course in practical physics, D. Chattopadhyay and P. C. Rakshit, New Central Book Agency

Essential readings:

FOR THEORY COMPONENT

- 1) The Physics of Waves and Oscillations: N K Bajaj, Tata Mcgraw Hill
- 2) Optics: Ajoy Ghatak, Seventh edition, Mcgraw Hill
- 3) Principle of Optics: B. K. Mathur and T. P. Pandya, Gopal Printing Press
- 4) Optics: Brij Lal and N. Subramanyam, S. Chand
- 5) The Fundamentals of Optics: A. Kumar, H. R. Gulati and D. R. Khanna, R. Chand

Suggestive readings:

- 1) Vibrations and Waves: A. P. French, CRC
- 2) The physics of Vibrations and Waves: H. J. Pain, Wiley
- 3) Fundamentals of Optics: Jenkins and White, McGraw Hill
- 4) Optics: E. Hecht and A R. Ganesan, Pearson, India
- 5) Introduction to Optics: F. Pedrotti, L. M. Pedrotti and L. S. Pedrotti, Pearson, India

GENERIC ELECTIVES (GE - 6): INTRODUCTORY ASTRONOMY**Credit distribution, Eligibility and Pre-requisites of the Course**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|----------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introductory Astronomy GE 6 | 4 | 3 | 1 | 0 | Class XII pass | NIL |

Learning Objectives

This course is meant to introduce undergraduate students to the wonders of the Universe. Students will understand how astronomers over millennia have come to understand mysteries of the universe using laws of geometry and physics, and more recently chemistry and biology. They will be introduced to the Indian contribution to astronomy starting from ancient times up to the modern era. They will learn about diverse set of astronomical phenomenon, from the daily and yearly motion of stars and planets in the night sky which they can observe themselves, to the expansion of the universe deduced from the latest observations and cosmological models. Students will also be introduced to internet astronomy and the citizen science research platform in astronomy. The course presupposes school level understanding of mathematics and physics.

Learning Outcomes

- After completing this course, student will gain an understanding of,
- Different types of telescopes, diurnal and yearly motion of astronomical objects, astronomical coordinate systems and their transformations
- Brightness scale for stars, types of stars, their structure and evolution on HR diagram
- Components of solar system and its evolution
- Current research in detection of exoplanets
- Basic structure of different galaxies and rotation of the Milky Way galaxy
- Distribution of chemical compounds in the interstellar medium and astrophysical conditions necessary for the emergence and existence of life
- Internet based astronomy and the collaborative citizen astronomy projects

- India's contribution to astronomy, both in ancient times and in modern era.

SYLLABUS OF GE – 6

Unit 1: (8 Hours)

Introduction to Astronomy and Astronomical Scales: History of astronomy, wonders of the Universe, overview of the night sky, diurnal and yearly motions of the Sun, size, mass, density and temperature of astronomical objects, basic concepts of positional astronomy: Celestial sphere, Astronomical coordinate systems, Horizon system and Equatorial system

Unit 2: (6 Hours)

Basic Parameters of Stars: Stellar energy sources, determination of distance by parallax method, aberration, proper motion, brightness, radiant flux and luminosity, apparent and absolute magnitude scales, distance modulus, determination of stellar temperature and radius, basic results of Saha ionization formula and its applications for stellar astrophysics, stellar spectra, dependence of spectral types on temperature, luminosity classification, stellar evolutionary track on Hertzsprung-Russell diagram

Unit 3: (8 Hours)

Astronomical Instruments: Observing through the atmosphere (Scintillation, Seeing, Atmospheric Windows and Extinction). Basic Optical Definitions for Telescopes: Magnification, Light Gathering Power, Limiting magnitude, Resolving Power, Diffraction Limit. Optical telescopes, radio telescopes, Hubble space telescope, James Web space telescope, Fermi Gamma ray space telescope.

Astronomy in the Internet Age: Overview of Aladin Sky Atlas, Astrometrica, Sloan Digital Sky Survey, Stellarium, virtual telescope

Citizen Science Initiatives: Galaxy Zoo, SETI@Home, RAD@Home India

Unit 4: (8 Hours)

Sun and the solar system: Solar parameters, Sun's internal structure, solar photosphere, solar atmosphere, chromosphere, corona, solar activity, origin of the solar system, the nebular model, tidal forces and planetary rings

Exoplanets: Detection methods and characterization

Unit 5: (12 Hours)

Physics of Galaxies: Basic structure and properties of different types of Galaxies, Nature of rotation of the Milky Way (Differential rotation of the Galaxy), Idea of dark matter

Cosmology and Astrobiology: Standard Candles (Cepheids and SNe Type Ia), Cosmic distance ladder, Olber's paradox, Hubble's expansion, History of the Universe, Chemistry of life, Origin of life, Chances of life in the solar system

Unit 6: (4 Hours)

Astronomy in India: Astronomy in ancient, medieval and early telescopic era of India, current Indian observatories (Hanle-Indian Astronomical Observatory, Devasthal Observatory, Vainu Bappu Observatory, Mount Abu Infrared Observatory, Gauribidanur Radio Observatory, Giant Metre-wave Radio Telescope, Udaipur Solar Observatory, LIGO -

India) (qualitative discussion), Indian astronomy missions (Astrosat, Aditya)

Essential readings:

- 1) Seven Wonders of the Cosmos, Jayant V Narlikar, Cambridge University Press
- 2) Fundamental of Astronomy, H. Karttunen et al. Springer
- 3) Modern Astrophysics, B.W. Carroll and D.A. Ostlie, Addison-Wesley Publishing Co.
- 4) Introductory Astronomy and Astrophysics, M. Zeilik and S.A. Gregory, Saunders College Publishing.
- 5) The Molecular Universe, A.G.G.M. Tielens (Sections I, II and III), Reviews of Modern Physics, Volume 85, July-September, 2013
- 6) Astronomy in India: A Historical Perspective, Thanu Padmanabhan, Springer

Useful websites for astronomy education and citizen science research platform

- 1) <https://aladin.u-strasbg.fr/>
- 2) <http://www.astrometrica.at/>
- 3) <https://www.sdss.org/>
- 4) <http://stellarium.org/>
- 5) <https://www.zooniverse.org/projects/zookeeper/galaxy-zoo/>
- 6) <https://setiathome.berkeley.edu/>
- 7) <https://www.radathomeindia.org/>

Suggestive readings:

- 1) Explorations: Introduction to Astronomy, Thomas Arny and Stephen Schneider, McGraw Hill
- 2) Astrophysics Stars and Galaxies K D Abhyankar, Universities Press
- 3) Textbook of Astronomy and Astrophysics with elements of cosmology, V.B. Bhatia, Narosa Publication.
- 4) Baidyanath Basu, An introduction to Astrophysics, Prentice Hall of India Private Limited.
- 5) The Physical Universe: An Introduction to Astronomy, F H Shu, University Science Books

DEPARTMENT OF CHEMISTRY

BSc. (Hons.) Chemistry

Category-I

DISCIPLINE SPECIFIC CORE COURSE -1 (DSC-1): Atomic Structure & Chemical Bonding

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Atomic Structure & Chemical Bonding (DSC-1: Inorganic Chemistry -I) | 04 | 03 | — | 01 | Physics, Chemistry, Mathematics | -- |

Learning Objectives

The course reviews the structure of the atom, which is a necessary pre-requisite in understanding the nature of chemical bonding in compounds. It provides basic knowledge about ionic and covalent bonding, and explains that chemical bonding is best regarded as a continuum between the two cases. It discusses the periodicity in properties with reference to the s and p block, which is necessary in understanding their group chemistry. The student will also learn about the fundamentals of acid-base and redox titrimetric analysis.

Learning outcomes

By the end of the course, the students will be able to:

- Solve the conceptual questions using the knowledge gained by studying the quantum mechanical model of the atom, quantum numbers, electronic configuration, radial and angular distribution curves, shapes of s, p, and d orbitals, and periodicity in atomic radii, ionic radii, ionization enthalpy and electron affinity of elements.
- Draw the plausible structures and geometries of molecules using radius ratio rules, VSEPR theory and MO diagrams (homo- & hetero-nuclear diatomic molecules).
- Understand the concept of lattice energy using Born-Landé and Kapustinskii equation.
- Calibrate the apparatus used in titrimetric analysis and prepare standard solutions for titration
- Understand the theory and application of various acid-base and redox titrations.
- Comprehend the theory of acid-base indicators

SYLLABUS OF DSC-1

UNIT – I (15 Hours)

Unit 1: Atomic Structure

Recapitulation of concept of atom in ancient India, Bohr's theory & its limitations, atomic spectrum of hydrogen atom.

de Broglie equation, Heisenberg's Uncertainty Principle and its significance. Postulates of wave mechanics, Time independent Schrödinger's wave equation, well behaved wave function, significance of ψ and ψ^2 . Quantum mechanical treatment of H- atom, Quantum numbers and their significance. Normalized and orthogonal wave functions. Sign of wave functions. Radial and angular wave functions for hydrogen atom. Radial function plots, radial probability distribution plots, angular distribution curves. Shapes of *s*, *p*, and *d* orbitals, Relative energies of orbitals.

Pauli's Exclusion Principle, Hund's rule of maximum spin multiplicity, Aufbau principle and its limitations.

UNIT – II (6 Hours)

Unit 2: Periodic properties of Elements & Periodic Trends

Brief discussion of the following properties of the elements, with reference to *s*- & *p*-block and their trends:

- Effective nuclear charge, shielding or screening effect and Slater's rules
- Atomic and ionic radii
- Ionization enthalpy (Successive ionization enthalpies)
- Electron gain enthalpy
- Electronegativity, Pauling's scale of electronegativity. Variation of electronegativity with bond order and hybridization.

UNIT – III (12 Hours)

Unit 3: Ionic bond

General characteristics, types of ions, size effects, radius ratio rule and its limitations. Packing of ions in crystals. Lattice energy, Born-Landé equation with derivation, Madelung constant, importance of Kapustinskii equation for lattice energy. Born-Haber cycle and its applications.

Covalent character in ionic compounds, polarizing power and polarizability. Fajan's rules and consequences of polarization.

UNIT – IV (12 Hours)

Unit 4: Covalent bond

Valence shell electron pair repulsion (VSEPR) theory, shapes of the following simple molecules and ions containing lone pairs and bond pairs of electrons: H₂O, NH₃, PCl₃, PCl₅,

SF₆, ClF₃, I₃, BrF₂⁺, PCl₆⁻, ICl₂⁻, ICl₄⁻, and SO₄²⁻. Application of VSEPR theory in predicting trends in bond lengths and bond angles.

Valence Bond theory (*Heitler-London* approach). Hybridization, equivalent and non-equivalent hybrid orbitals, Bent's rule.

Ionic character in covalent compounds: Bond moment and dipole moment. Percentage ionic character from dipole moment and electronegativity difference.

Molecular orbital diagrams of homo & hetero diatomic molecules [N₂, O₂, C₂, B₂, F₂, CO, NO] and their ions; HCl (idea of s-p mixing and orbital interaction to be given).

Practical component

Practicals: Inorganic Chemistry-I

(30 Hours)

(Laboratory periods: 15 classes of 2 hours each)

1. Titrimetric Analysis:

- (i) Calibration and use of apparatus
- (ii) Preparation of solutions of different Molarity/Normality.

2. Acid-Base Titrations: Principles of acid-base titrations to be discussed.

- (i) Estimation of oxalic acid using standardized NaOH solution
- (ii) Estimation of sodium carbonate using standardized HCl.
- (iii) Estimation of carbonate and hydroxide present together in a mixture.
- (iv) Estimation of carbonate and bicarbonate present together in a mixture.

3. Redox Titration: Principles of oxidation-reduction titrations to be discussed.

- (i) Estimation of oxalic acid using standardized KMnO₄ solution
- (ii) Estimation of water of crystallization in Mohr's salt by titrating with KMnO₄.
- (iii) Estimation of oxalic acid and sodium oxalate in a given mixture.

Essential/recommended readings

References:

Theory :

1. Lee, J.D. (2010), **Concise Inorganic Chemistry**, Wiley India.
2. Huheey, J.E.; Keiter, E.A.; Keiter, R. L.; Medhi, O.K. (2009), **Inorganic Chemistry-Principles of Structure and Reactivity**, Pearson Education.
3. Douglas, B.E.; McDaniel, D.H.; Alexander, J.J. (1994), **Concepts and Models of Inorganic Chemistry**, John Wiley & Sons.
4. Atkins, P.W.; Overton, T.L.; Rourke, J.P.; Weller, M.T.; Armstrong, F.A. (2010), **Shriver and Atkins Inorganic Chemistry**, 5th Edition, Oxford University Press.
5. Pfennig, B. W. (2015), **Principles of Inorganic Chemistry**. John Wiley & Sons.
6. Housecroft, C. E.; Sharpe, A. G., (2018), **Inorganic Chemistry**, 5th Edition, Pearson.
7. Wulfsberg, G (2002), **Inorganic Chemistry**, Viva Books Private Limited.
8. Miessler, G.L.; Fischer P.J.; Tarr, D. A. (2014), **Inorganic Chemistry**, 5th Edition, Pearson.

- Shriver, D.; Weller, M.; Overton, T.; Rourke, J.; Armstrong, F. (2014), **Inorganic Chemistry**, 6th Edition, Freeman & Company
- Das, A. K.; Das, M. (2014), **Fundamental Concepts of Inorganic Chemistry**, 1st Edition, Volume CBS Publishers & Distributors Pvt. Ltd.

Practicals:

- Jeffery, G.H.; Bassett, J.; Mendham, J.; Denney, R.C. (1989), **Vogel's Textbook of Quantitative Chemical Analysis**, John Wiley and Sons.
- Harris, D. C.; Lucy, C. A. (2016), **Quantitative Chemical Analysis**, 9th Edition, Freeman and Company

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2): Basic Concepts and Aliphatic Hydrocarbons

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Concepts and Aliphatic Hydrocarbons (DSC-2: Organic Chemistry-I) | 04 | 03 | -- | 01 | Physics, Chemistry, Mathematics | -- |

Learning Objectives

The core course Organic Chemistry I is designed in a manner that it forms a cardinal part of the learning of organic chemistry for the subsequent semesters. The course is infused with the recapitulation of fundamental concepts of organic chemistry and the introduction of the concept of visualizing the organic molecules in a three-dimensional space. To establish the applications of these concepts, the functional groups-alkanes, alkenes, alkynes are introduced. The constitution of the course strongly aids in the paramount learning of the concepts and their applications.

Learning outcomes

On completion of the course, the student will be able to:

- Understand and explain the electronic displacements and reactive intermediates and their applications in basic concepts.
- Formulate the mechanistic route of organic reactions by recalling and correlating the fundamental concepts.

- Identify and comprehend mechanism for free radical substitution, electrophilic addition, nucleophilic substitution and elimination reactions.
- Understand the fundamental concepts of stereochemistry.
- Understand and suitably use the chemistry of hydrocarbons

SYLLABUS OF DSC- 2

UNIT – I (9 Hours)

Unit I: Basic Concepts of Organic Chemistry

Electronic displacements and their applications: inductive, electromeric, resonance and mesomeric effects and hyperconjugation. Dipole moment, acidity and basicity.

Homolytic and heterolytic fissions with suitable examples. Types, shape and relative stability of carbocations, carbanions, carbenes and free radicals.

Electrophiles & nucleophiles, and introduction to types of organic reactions: addition, elimination and substitution reactions.

UNIT – II (18 Hours)

Unit II: Stereochemistry

Stereoisomerism: Optical activity and optical isomerism, asymmetry, chirality, enantiomers, diastereomers. specific rotation; Configuration and projection formulae: Newman, Sawhorse, Fischer and their interconversion. Chirality in molecules with one and two stereocentres; meso configuration.

Racemic mixture and their resolution. Relative and absolute configuration: D/L and R/S designations (CIP rules).

Geometrical isomerism: *cis-trans*, *syn-anti* and *E/Z* notations.

Conformational Isomerism: Alkanes (Conformations, relative stability and energy diagrams of Ethane, Propane and butane). Relative stability of cycloalkanes (Baeyer strain theory), Cyclohexane conformations with energy diagram. Conformations of monosubstituted cyclohexanes.

UNIT – III (18)

Unit III: Aliphatic Hydrocarbons

Alkanes: Preparation, Halogenation of alkanes, Concept of relative reactivity v/s selectivity.

Alkenes and Alkynes: Methods of preparation of alkenes using Mechanisms of E1, E2, E1cb reactions, Saytzeff and Hoffmann eliminations. Electrophilic additions, mechanism with suitable examples, (Markownikoff/Anti-markownikoff addition), *syn* and *anti*-addition; addition of H₂, X₂, oxymercuration-demercuration, hydroboration-oxidation, ozonolysis, hydroxylation, reaction with NBS, Reactions of alkynes; acidity, Alkylation of terminal alkynes, electrophilic addition: hydration to form carbonyl compounds, Relative reactivity of alkenes and alkynes, 1,2-and 1,4-addition reactions in conjugated dienes, Diels Alder reaction (excluding stereochemistry)

Practical component

Practical (30 Hours)
Credits: 01

(Laboratory periods: 15 classes of 2 hour each)

Note: *Students should be provided with handouts prior to the practical class*

1. Calibration of a thermometer and determination of the melting points of the organic compounds using any one of the following methods-Kjeldahl method, electrically heated melting point apparatus and BODMEL).
2. Concept of melting point and mixed melting point.
3. Concept of recrystallisation using alcohol/water/alcohol-water systems (Any two).
4. Determination of boiling point of liquid compounds (boiling point lower than and more than 100 °C by distillation, capillary method and BODMEL method)
5. Separation of a mixture of two amino acids/sugars by radial/ascending paper chromatography.
6. Separation of a mixture of *o*-and *p*-nitrophenol or *o*-and *p*-aminophenol by thin layer chromatography (TLC).
7. Detection of extra elements

Essential/recommended readings

References:

Theory

1. Morrison, R.N., Boyd, R.N., Bhattacharjee, S.K. (2010), **Organic Chemistry**, 7th Edition, Dorling Kindersley (India) Pvt. Ltd., Pearson Education.
2. Finar, I.L. (2002), **Organic Chemistry**, Volume 1, 6th Edition, Dorling Kindersley (India) Pvt. Ltd., Pearson Education.
3. Eliel, E.L., Wilen, S.H. (1994), **Stereochemistry of Organic Compounds**; Wiley: London.

Practicals

1. Mann, F.G., Saunders, B.C. (2009), **Practical Organic Chemistry**, 4th Edition, Pearson Education.
2. Ahluwalia, V.K., Dhingra, S. (2004), **Comprehensive Practical Organic Chemistry: Qualitative Analysis**, University Press.
3. Furniss, B.S., Hannaford, A.J., Smith, P.W.G.; Tatchell, A.R (2004), **Vogel's Textbook of Practical Organic Chemistry**, Pearson.
4. Leonard, J., Lygo, B., Procter, G. (2013) **Advanced Practical Organic Chemistry**, 3rd Edition, CRC Press.
5. Pasricha, S., Chaudhary, A. (2021), **Practical Organic Chemistry: Volume-I**, I K International Publishing house Pvt. Ltd, New Delhi

Suggestive readings

Additional Resources:

1. Solomons, T.W.G., Fryhle, C.B., Snyder, S.A. (2017), **Organic Chemistry**, 12th Edition, Wiley.
2. Bruice, P.Y. (2020), **Organic Chemistry**, 8th Edition, Pearson.
3. Clayden, J., Greeves, N., Warren, S. (2014), **Organic Chemistry**, Oxford.
4. Nasipuri, D. (2018), **Stereochemistry of Organic Compounds: Principles and Applications**, 4th Edition, New Age International.
5. Gunstone, F.D. (1975), **Guidebook to Stereochemistry**, Prentice Hall Press.
6. Gupta, S.S. (2018), **Basic Stereochemistry of Organic Molecules**, 2nd Edition, Oxford University Press.

DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-3): Gaseous and Liquid

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Gaseous and Liquid State (DSC-3: Physical Chemistry-I) | 04 | 02 | -- | 02 | Physics, Chemistry, Mathematics | -- |

Learning Objectives

The objective of this course is to develop basic and advance concepts regarding gases and liquids. It aims to study the similarity and differences between the two states of matter and reasons responsible for these. The objective of the practicals is to develop skills for working in physical chemistry laboratory. The student will perform experiments based on the concepts learnt in Physical chemistry-I course.

Learning outcomes

By the end of the course, the students will be able to:

- Derive mathematical expressions for different properties of gas and liquid and understand their physical significance.
- Apply the concepts of gas equations and liquids while studying other chemistry courses and every-day life.
- Handle stalagmometer and Ostwald viscometer properly.
- Determine the density of aqueous solutions.
- Dilute the given solutions as per required concentrations.
- Data reduction using numerical and graphical methods.

SYLLABUS OF DSC-3

UNIT – I (24 Hours)

Gaseous state

Kinetic theory of gases- postulates and derivation of kinetic gas equation, Maxwell distribution of molecular velocities and its use in evaluating average, root mean square and most probable velocities and average kinetic energy. Definition, expression, applications and temperature and pressure dependence of each one of the following properties of ideal gases: Collision frequency, Collision diameter, Mean free path. Coefficient of viscosity, definition, units and origin of viscosity of gases, relation between mean free path and coefficient of viscosity, temperature and pressure dependence of viscosity of a gas, calculation of molecular diameter from viscosity

Barometric distribution law, its derivation and applications, alternative forms of barometric distribution law in terms of density and number of molecules per unit volume, effect of height, temperature and molecular mass of the gas on barometric distribution

Behaviour of real gases- Compressibility factor, Z , Variation of compressibility factor with pressure at constant temperature (*plot of Z vs P*) for different gases (H_2 , CO_2 , CH_4 and NH_3), Cause of deviations from ideal gas behaviour and explanation of the observed behaviour of real gases in the light of molecular interactions

van der Waals (vdW) equation of state, Limitations of ideal gas equation of state and its modifications in the form of derivation of van der Waal equation, Physical significance of van der Waals constants, application of van der Waal equation to explain the observed behaviour of real gases.

Isotherms of real gases- Critical state, relation between critical constants and van der Waals constants, correlation of critical temperature of gases with intermolecular forces of attraction, Continuity of states, Limitations of van der Waals equation, Reduced equation of state and law of corresponding states (statement only).

Virial equation of state-Physical significance of second and third virial coefficients, van der Waals equation expressed in virial form, Relations between virial coefficients and van der Waals constants

UNIT – II (6 Hours)

Liquid state

Nature of liquid state, qualitative treatment of the structure of the liquid state

Physical properties of liquids-vapour pressure, its origin and definition, Vapour pressure of liquids and intermolecular forces, and boiling point

Surface tension, its origin and definition, Capillary action in relation to cohesive and adhesive forces, determination of surface tension by (i) using stalagmometer (drop number and drop mass method both) and (ii) capillary rise method, Effects of addition of sodium chloride, ethanol and detergent on the surface tension of water and its interpretation in terms of molecular interactions, Role of surface tension in the cleansing action of detergents

Coefficient of viscosity and its origin in liquids, Interpretation of viscosity data of pure liquids (water, ethanol, ether and glycerol) in the light of molecular interactions, Effects of addition of sodium chloride, ethanol and polymer on the viscosity of water, relative viscosity, specific viscosity and reduced viscosity of a solution, comparison of the origin of viscosity of liquids and gases, effect of temperature on the viscosity of a liquid and its comparison with that of a gas.

Practical component

Practicals

60 Hours

(Laboratory periods: 15 classes of 4 hours each)

1. Gases

- To verify the Charles law using Charles law apparatus
- To determine the value of universal gas constant R using the reaction
$$\text{Mg(s)} + 2\text{HCl (aq)} \rightarrow \text{MgCl}_2 \text{ (aq)} + \text{H}_2 \text{ (g)}$$

2. Surface tension measurements using stalagmometer

- Determine the surface tension of a liquid by drop number method.
- Determine the surface tension of a liquid by drop weight method.
- Study the variation of surface tension with different concentration of detergent solutions. Determine CMC.
- Study the effect of the addition of solutes on the surface tension of water at room temperature and explain the observations in terms of molecular interactions:
 - sugar
 - ethanol
 - sodium chloride
- Study the variation of surface tension with different concentration of sodium chloride solutions.

3. Viscosity measurement using Ostwald's viscometer

- Determination of co-efficient of viscosity of two unknown aqueous solution.
- Study the variation of viscosity with different concentration of sugar solutions.
- Study the effect of the addition of solutes such as (i) polymer (ii) ethanol (iii) sodium chloride on the viscosity of water at room temperature and explain the observations in terms of molecular interactions

- d. Study the variation of viscosity of water with the amounts of a solute and calculate the intrinsic viscosity at room temperature.
- e. Determine the viscosity average molecular mass of the polymer (PVA) using viscosity measurements.

Essential/recommended readings

References:

Theory:

1. Atkins, P.W.; Paula, J.de. (2014), **Atkin's P hysical C hemistry E d.**, 10th Edition, Oxford University Press.
2. Ball, D. W. (2017), **Physical Chemistry**, 2nd Edition, Cengage Learning, India.
3. Castellan, G. W. (2004), **Physical Chemistry**, 4th Edition, Narosa.
4. Kapoor, K.L. (2015), **A T extbook of P hysical C hemistry**, Vol 1, 6th Edition, McGraw Hill Education.

Practical:

- Khosla, B.D.; Garg, V.C.; Gulati, A. (2015), **Senior Practical Physical Chemistry**, R. Chand & Co, New Delhi.
- Kapoor, K.L. (2019), **A T extbook of P hysical C hemistry**, Vol.7, 1st Edition, McGraw Hill Education.
- Garland, C. W.; Nibler, J. W.; Shoemaker, D. P. (2003), **Experiments in Physical Chemistry**, 8th Edition, McGraw-Hill, New York.

Suggestive readings

Additional Resources:

1. Moore, W.J. (1972), **Physical Chemistry**, 5th Edition, Longmans Green & Co. Ltd.
- Glasstone, S. (1948), **Textbook of P hysical C hemistry**, D. Van Nostrand company, New York.

BSc. IN ANALYTICAL CHEMISTRY
Multidisciplinary

DISCIPLINE SPECIFIC CORE COURSE (DS C1-AC1): Basic Principles and Laboratory Operations

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|------------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Principles and Laboratory Operations (DSC1-AC1) | 04 | 02 | 00 | 02 | Physics, Chemistry and Mathematics | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- make students aware about the SI Units, concentration terms, various analytical methods, and safe usage of chemicals and its waste.

Learning outcomes

The Learning Outcomes of this course are as follows:

- The students will be able to Understand SI units
- The students will be able to Learn the use of analytical equipment
- The students will be able to Know the types of errors in chemical analysis
- The students will be able to handle statistical tests of data

SYLLABUS OF DSC1-AC1

UNIT – I: Basic Concepts (6 Hours)

A. SI Units

- Definitions of the Seven Base Units
- Derived units
- Conversion between units
- Significant figures

B. Chemical concentrations

- Mole, molar mass (calculations in grams and moles)
- Solutions and their concentrations

- Molar concentration
- Analytical molarity
- Equilibrium molarity of a particular species
- Percent concentration
- Parts per million/billion (ppm, ppb)
- Volume ratios for dilution procedures
- p-functions.

UNIT – II: Introduction to Analytical Chemistry and Analytical Methods (4 Hours)

1. General steps in chemical analysis.
2. Introduction to methods of detecting analytes
 - a) Physical
 - b) Electromagnetic radiations
 - c) Electric charge.

UNIT – III: Errors in Chemical Analysis (20 Hours)

- Types of errors
- Accuracy and Precision, Absolute and relative uncertainty, propagation of uncertainty
- The Gaussian distribution
- Mean and standard deviation
- Confidence intervals
- Statistical tests of data (F test, t test, Q test for bad data)
- Method of least squares
- Calibration curve
- Safety with chemicals and waste

Practical component 60 Hours (Credits: 02; Laboratory Periods: 60; 15 Classes of 4 hours each)

1. Description, Use and Calibration of Common Laboratory Apparatus I: Glassware: Volumetric flasks, Burettes, Pipettes, Weighing bottles, Drying ovens.
2. Description, Use and Calibration of Common Laboratory Apparatus II: Different types of Funnels, Chromatographic columns, Chromatographic jars, Desiccators, Filter crucibles, Rubber policeman.
3. Preparing Solutions: Standard solutions (acids and bases), primary standards & secondary standards, and to find out their concentration by any suitable methods.
4. Determination of strength of given strong acid using strong base volumetrically
5. Estimation of sodium carbonate by titrating with hydrochloric acid.
6. Use and maintenance of pH meter. Determination of pH of given dilute solutions of shampoos, soaps, fruit juices, and different soft drinks.
7. Determination of cell constant of a conductometric cell using standard KCl solutions.
8. To check the conductivity of various water samples (*Collect at least four samples*).

Essential/recommended readings

- Higson, S. P.J. (2003), Analytical Chemistry, Oxford University Press.

- Skoog, D.A.; West, D.M. (2003), Fundamentals of Analytical Chemistry, Brooks/Cole.
- Christian, G.D. (2004), Analytical Chemistry, 6th Edition, John Wiley & Sons, New York.
- Fifield, F.W.; Kealey, D. (2000), Principles and Practice of Analytical Chemistry, Wiley.
- Harris, D. C. (2007), Exploring Chemical Analysis, W.H. Freeman and Co.

Suggestive readings

- Day. R. A.; Underwood, A. L. (1991), Quantitative Analysis, Prentice Hall of India.
- Gordus, A. A. (1985), Schaum's Outline of Analytical Chemistry, Tala McGraw-Hill.
- Dean J. A. (1997), Analytical Chemistry Handbook, McGraw Hill.
- Jeffery, G.H.; Bassett, J.; Mendham, J.; Denney, R.C. (1989), Vogel's Textbook of Quantitative Chemical Analysis, John Wiley and Sons.

Note: Examination scheme and modes shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC2-C1): Fundamentals of Organic Chemistry, Stereochemistry and Hydrocarbons

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|------------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Fundamentals of Organic Chemistry, Stereochemistry and Hydrocarbons (DSC2-C1) | 04 | 02 | 00 | 02 | Physics, Chemistry and Mathematics | - |

Learning Objectives

The Learning Objectives of this course are as follows:

- The course is infused with the recapitulation of fundamentals of organic chemistry and visualizing the organic molecules in a three-dimensional space.
- To establish the applications of these concepts different class of mechanism is included.
- The constitution of the course strongly aids in the paramount learning of the concepts and their applications.

Learning outcomes

By the end of the course, the students will be able to:

- Understand and explain the differential behaviour of organic compounds based on fundamental concepts learnt.
- Understand the stereochemistry of aliphatic and aromatic hydrocarbons
- Formulate the mechanism of organic reactions by recalling and correlating the fundamental properties of the reactants involved.
- Learn and identify many organic reaction mechanisms including electrophilic addition, nucleophilic addition, nucleophilic substitution, and electrophilic substitution.
- Understand the mechanism of reactions of hydrocarbons

SYLLABUS OF DSC2-C1

UNIT – I: Fundamentals of Organic Chemistry (4 Hours)

Introduction to carbon compounds, an overview of Fundamentals (Electronic displacement-Inductive effect, Resonance effect, Hyperconjugation, Electromeric Effect). Reactive intermediates and their stability: carbocations, free radicals, carbanions, benzyne, carbene.

Acidity and basicity in carbon compounds (comparison of carboxylic acids, alcohols, phenols, primary, secondary and tertiary aliphatic amines, aniline and its derivative).

UNIT – II: Stereochemistry (8 Hours)

Types of projection formulas of carbon compound - Flying Wedge Formula, Newmann, Sawhorse and Fischer representations and their interconversion.

Stereoisomerism: the concept of chirality (upto two carbon atoms). Configurational Isomerism: geometrical and optical isomerism; enantiomerism, diastereomerism and meso compounds). Threo and erythro; D and L; cis-trans nomenclature; CIP Rules: R/ S (for upto 2 chiral carbon atoms) and E / Z nomenclature (for upto two C=C systems).

Conformational isomerism with respect to ethane, butane and cyclohexane.

UNIT – III: Aliphatic Hydrocarbons (12 Hours)

Functional group approach for the following reactions: preparations, physical property & chemical reactions to be studied with the mechanism in context to their structure.

Alkanes: Preparation: catalytic hydrogenation, Wurtz reaction, Kolbe's synthesis, Grignard reagent. Reactions: Free radical substitution: Halogenation.

Alkenes: Preparation: Elimination reactions: Dehydration of alcohols and dehydrohalogenation of alkyl halides (Saytzeff's rule); cis alkenes (Partial catalytic hydrogenation) and trans alkenes (Birch reduction). Reactions: cis-addition (alk. KMnO_4) and trans-addition (bromine), the addition of HX (Markownikoff's and anti-Markownikoff's addition), Hydration, Ozonolysis, oxymercuration-demercuration, Hydroboration oxidation.

Alkynes: Preparation: Acetylene from CaC_2 and conversion into higher alkynes; by dehalogenation of tetrahalides and dehydrohalogenation of vicinal-dihalides. Reactions: formation of metal acetylides and acidity of alkynes, the addition of bromine and alkaline

KMnO₄, ozonolysis and oxidation with hot alk. KMnO₄. Hydration to form carbonyl compounds.

UNIT – IV: Aromatic Hydrocarbons (6 Hours)

Aromaticity: benzenoids and Hückel's rule. Structure and aromatic character of benzene.

Preparation: methods of preparation of benzene from phenol, benzoic acid, acetylene and benzene sulphonic acid. Reactions: electrophilic substitution reactions in benzene citing examples of nitration, halogenation, sulphonation and Friedel-Craft's alkylation and acylation with emphasis on carbocationic rearrangement, side-chain oxidation of alkylbenzenes.

Practical component (60 Hours) (Credits: 02; Laboratory Periods: 60; 15 C lasses of 4 hours each)

1. Purification of organic compounds by crystallization using the following solvents:
 - a. Water
 - b. Alcohol
 - c. Water + alcohol
2. Determination of the melting points of organic compounds using Kjeldahl method and electrically heated melting point apparatus.
3. To study the effect of impurities on the melting point.
4. To identify the organic compounds using mixed melting point experiment. (*Identify at least two organic compounds*).
5. Determination of boiling point of liquid organic compounds using both distillation and capillary method.
6. Detection of extra elements present in an organic compounds (*Upto two extra elements*).
7. Organic Preparations:
 - a. Bromination of acetanilide, phenol and aniline
 - b. Nitration of nitrobenzene and bromobenzene

Essential/recommended readings

- Sykes, P.(2005), A Guide Book to Mechanism in Organic Chemistry, Orient Longman.
- Eliel, E. L. (2000), Stereochemistry of Carbon Compounds, Tata McGraw Hill.
- Morrison, R. N.; Boyd, R. N. (2010) Organic Chemistry, Dorling Kindersley (India) Pvt. Ltd. (Pearson Education), 7th Edition.
- Bahl, A; Bahl, B. S. (2012), Advanced Organic Chemistry, S. Chand.
- Furniss, B.S.; Hannaford, A.J.; Smith, P.W.G.; Tatchell, A.R. (2012), Vogel's Textbook of Practical Organic Chemistry, Pearson.
- Mann, F.G.; Saunders, B.C.(2009), Practical Organic Chemistry, Pearson Education.
- Dhingra, S; Ahluwalia V.K., (2017), Advanced Experimental Organic Chemistry, Manakin Press.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BSc. In Industrial Chemistry
Multidisciplinary

**DISCIPLINE SPECIFIC CORE COURSE (DSC-IC 1): INDUSTRIAL
CHEMICALS AND ENVIRONMENT**

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE
COURSE**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|------------------------|-----------------------------|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Industrial Chemicals and Environment, DSC- IC 1 | 04 | 02 | - | 02 | Chemistry+Physics +Maths | NA |

Industrial Chemicals and Environment, DSC- IC 1

Learning Objectives

The Learning Objectives of this course are as follows:

- The objective of this course is to teach the Chemistry of the general industrial separation and purification techniques.
- Production, uses and hazards associated with different industrial gases and chemicals.
- Air pollution, air pollutants, pollutants control procedures, greenhouse effect, global warming,
- Water pollution, water pollutants, industrial effluents and their treatment.
- Water quality parameters and water purification techniques.

Learning outcomes

The Learning Outcomes of this course are as follows:

By the end of the course, the students will be able to:

- Know the various separation and purification techniques used in industries like distillation, solvent extraction, absorption, adsorption etc.
- Know the production, uses and hazards of important gases like oxygen, helium, argon, hydrogen, acetylene, ammonia etc.

- Know the production, uses and hazards of important inorganic chemicals like hydrochloric acid, sulphuric acid, nitric acid, sodium hydroxide, potassium hydroxide etc.
- Learn about air pollution, air pollutants, their control procedure, global warming, ozone depletion, water pollution, water pollutants, effluents from different industries, their treatment, water quality parameters and water purification techniques like reverse osmosis, electrodialysis and ion exchange.

SYLLABUS OF DSC- IC-1

UNIT – I (06 Hours)

Unit 1: General industrial processes

Basic principles of distillation, solvent extraction, solid-liquid leaching and liquid-liquid extraction, separation by absorption and adsorption

UNIT – II (12 Hours)

Unit 2: Industrial Gases and Inorganic Chemicals

(a) *Industrial Gases*: Production, uses and hazards in handling of the following gases: oxygen,

nitrogen, argon, neon, helium, hydrogen, acetylene, chlorine, fluorine and ammonia.

(b) *Inorganic Chemicals*: Production, uses and hazards in handling the following chemicals: hydrochloric acid, nitric acid, sulphuric acid, sodium hydroxide, potassium hydroxide, bleaching

powder, hydrogen peroxide, potash alum, chrome alum, potassium dichromate and potassium permanganate.

UNIT – III (12 Hours)

Unit 3: Environment

(a) *Air Pollution*: Pollutants and their sources, pollution by SO₂, CO, NO_x. Methods of estimation of CO, NO_x, SO_x and their control procedures. Greenhouse effect and global warming, Ozone depletion by oxides of nitrogen, chlorofluorocarbons and halogens, Particulate matter and its types.

(b) *Water Quality Standards and Water pollution*: Water quality parameters like pH, alkalinity, DO, BOD, COD, chloride, sulphate, available chlorine etc. Water treatment and purification processes (reverse osmosis, electro dialysis, ion exchange). Pollutants and their sources. Effluent treatment (primary, secondary and tertiary treatment). Industrial effluents from the following industries and their treatment: textile, tannery, dairy and petrochemicals and agrochemicals.

Practical component (60 Hours)

Practical

(Credits: 02, Laboratory periods: 60)

1. Determination of dissolved oxygen in water.
2. Determination of Chemical Oxygen Demand (COD).
3. Determination of Biological Oxygen Demand (BOD).

4. Measurement of chloride and sulphate ions of water samples by simple titration method. (With AgNO₃ and potassium chromate).
5. Measurement of salinity of water samples by simple titration method. (With AgNO₃ and potassium chromate).
6. Estimation of total alkalinity of water samples (CO₃²⁻, HCO₃⁻) using double titration method.
7. Determination of Percentage of available chlorine in bleaching powder.
8. Isolation of compounds using solvent extraction method.

Essential/recommended readings

References (Theory):

1. Stocchi, E. (1990), **Industrial Chemistry**, Vol-I, Ellis Horwood Ltd. UK.
2. Kent, J. A. (ed.) (1997), **Riegel's Handbook of Industrial Chemistry**, CBS Publishers, New Delhi.
3. Austin, G.T (2012), **Shreve's Chemical Process Industries**, Tata McGraw-Hill Education Private Limited.
4. Girard, J.E, (2011), **Principles of Environmental Chemistry**, Jones & Bartlett India Pvt. Limited.
5. Sodhi, G.S. ((2013), **Fundamental Concepts of Environmental Chemistry**, Narosa Publishing House.
6. Vermani, O.P; Narula, A.K. (2012), **Industrial Chemistry**, Galgotia Publishing Pvt. Limited.
7. Sharma, B.K. (2011), **Industrial Chemistry**, Goel Publishing House.
8. Pani, B. (2017), **Textbook of Environmental Chemistry**, I.K. International Publishing House.
9. De, A. K. (2015), **Environmental Chemistry**, New Age International Pvt, Ltd, New Delhi.
10. Khopkar, S.M. (2012), **Environmental Pollution Analysis**, New Age International Publisher.

References (Practical):

1. Bassett, J.; Denney, R.C.; Jeffery, G.H.; Mendham, J. (1996) **Vogel Textbook of quantitative inorganic analysis**, 7th edition, ELBS edition. Prentice Hall Publications.
2. Furniss, B. S; Hannaford, A. J.; Smith, Peter W. G.; Tatchell, A. R; **Vogel's Text Book of Practical Organic Chemistry**, 5th Edition, Longman Scientific and Technical, Longman Group Ltd.
3. Mittal, K.; Chandra, L. (2013) **Experiments in organic chemistry**, Anne Books Pvt. Limited.
4. Gulati, S.; Sharma, J.L.; Manocha, S. (2017) **Practical Inorganic Chemistry**. CBS, Publications.
5. Rogers, A. (2015) **Laboratory Guide of Industrial chemistry**, Palala Press.

Suggestive readings (if any)

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-C 1): Basic Concepts of Organic Chemistry

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Concepts of Organic Chemistry, DSC- C1 | 04 | 02 | - | 02 | NA | NA |

Basic Concepts of Organic Chemistry, DSC- C1

Learning Objectives

The Learning Objectives of this course are as follows:

- The course is infused with the recapitulation of fundamentals of organic chemistry and the introduction of the concept of visualizing the organic molecules in a three-dimensional space. To establish the applications of these concepts, a study of diverse reactions through mechanisms is included.
- The constitution of the course strongly aids in the paramount learning of the basic concepts and their applications.

Learning outcomes

By the end of the course, the students will be able to:

- Understand and explain the differential behaviour of organic compounds based on fundamental concepts learnt.
- Understand the fundamental concepts of stereochemistry.
- Formulate the mechanism of organic reactions by recalling and correlating the fundamental properties of the reactants involved.
- Learn and identify many organic reactions and their mechanisms including electrophilic addition, nucleophilic addition, nucleophilic substitution, electrophilic substitution and rearrangement reactions.

SYLLABUS OF DSC- C 1

UNIT – I (6 Hours)

Unit 1: Fundamentals of organic chemistry

Types of Electronic displacements: Inductive effect, Resonance effect, Hyperconjugation, Electromeric Effect. Reactive intermediates and their stability: carbocations, free radicals, carbanions, benzyne, carbenes.

Acidity and basicity in organic compounds (comparison of carboxylic acids, alcohols, phenols, primary, secondary and tertiary aliphatic amines, aniline and its derivatives)

UNIT – II (8 Hours)

Unit 2: Stereochemistry

Types of projection formulae: Flying Wedge Formula, Newmann, Sawhorse and Fischer representations and their interconversion.

Stereoisomerism: Concept of chirality (upto two carbon atoms). Configurational isomerism: geometrical and optical isomerism; enantiomerism, diastereomerism and meso compounds). Threo and erythro; D and L; *Cis-trans* nomenclature; CIP Rules: R/ S (for upto 2 chiral carbon atoms) and *E/Z* nomenclature (for upto two C=C systems).

Conformational isomerism with respect to ethane, butane and cyclohexane.

UNIT – III (16 Hours)

Unit 3: Types of Organic Reactions (Including reactions of alkenes, alkyl and aryl halides, alcohols, aldehydes, ketones) Lectures: 18

Electrophilic addition reactions

Electrophilic addition reaction (with respect to propene, propyne, 3,3-dimethyl-1-butene): Hydration,

Addition of HX in the absence and presence of peroxide, Hydroboration oxidation, Addition of bromine (with stereochemistry).

Nucleophilic addition reactions

Nucleophilic addition reaction of carbonyl compounds: Addition of HCN, ammonia derivatives

(Hydroxylamine, Hydrazine, Semicarbazide and 2,4-DNP), the addition of carbanion (Aldol condensation, Claisen Schmidt, Benzoin condensation, Perkin reaction, reactions involving Grignard reagent).

Elimination and Nucleophilic substitution reactions

Nucleophilic substitution reaction (SN1 and SN2) in alkyl halides (mechanisms with stereochemical aspect), alcohols (with nucleophiles like ammonia, halides, thiols, ambident nucleophiles (cyanide and nitrite ion)), ethers (Williamson ether synthesis), Elimination reaction (E1 & E2), elimination *vs* substitution (*w.r.t.* potassium t-butoxide and KOH); Nucleophilic aromatic substitution in aryl

halides-elimination addition reaction *w.r.t.* chlorobenzene, including the effect of nitro group (on the ring) on the reaction. relative reactivity and strength of C-X bond in alkyl, allyl, benzyl, vinyl and aryl halides towards substitution reactions

Electrophilic substitution reactions

Electrophilic Aromatic substitution with mechanism (benzene)- sulphonation, nitration, halogenation, Friedel craft acylation :*o*-, *m*- and *p*- directive influence giving examples of toluene/nitrobenzene/ phenol/ aniline/ chlorobenzene.

Reactive intermediates and Rearrangement Reactions

Free radicals (Birch Reduction); *Carbocations* (Pinacol-Pinacolone, Wagner-Meerwein, Rearrangement, and Beckmann rearrangement); *Carbanions* (Michael Addition); *Carbenes* (Reimer Tiemann)

Practical component (60 Hours)

Practical

(Credits: 02, Laboratory periods: 60)

1. Purification of an organic compound by crystallization (from water and alcohol) and distillation, Criteria of purity: Determination of M.P.
2. Determination of boiling point of liquid compounds. (Boiling point lower than and more than 100 °C by distillation and capillary method)
3. Detection of extra element
4. Preparations: (Mechanism of various reactions involved to be discussed).
 - a. Bromination of phenol/aniline.
 - b. 2,4-Dinitrophenylhydrazone of aldehydes and ketones
 - c. Semicarbazone of aldehydes/ ketones
 - d. Aldol condensation reaction using green method.
 - e. Bromination of Stilbene.
 - f. Acetanilide to p-Bromoacetanilide.

The above derivatives should be prepared using 0.5-1g of the organic compound. The solid samples must be collected and may be used for recrystallization and melting point.

Essential/recommended readings

References (Theory):

1. Sykes, P.(2003), **A Guide Book to Mechanism in Organic Chemistry**, 6 th Edition Pearson Education.
2. Eliel, E. L. (2001), **Stereochemistry of Carbon Compounds**, Tata McGraw Hill.
3. Morrison, R. N.; Boyd, R. N., Bhattacharjee, S.K. (2010), **Organic Chemistry**, 7th Edition, Pearson Education.
4. Bahl, A; Bahl, B. S. (2019), **Advanced Organic Chemistry**, 22nd Edition, S. Chand.

References (Practical):

1. Furniss, B.S.; Hannaford, A.J.; Smith, P.W.G.; Tatchell, A.R. (2012), **Vogel's Textbook of**

Practical Organic Chemistry, Pearson.

2. Mann, F.G.; Saunders, B.C. (2009), **Practical Organic Chemistry**, Pearson Education.
3. Dhingra, S; Ahluwalia V.K., (2017), **Advanced Experimental Organic Chemistry**, Manakin Press.
4. Pasricha, S., Chaudhary, A. (2021), **Practical Organic Chemistry: Volume I**, I K International Publishing House Pvt. Ltd., New Delhi.

DISCIPLINE SPECIFIC CORE COURSE – 3 (DSC-MP 1): Calculus

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Calculus, DSC-MP 1 | 04 | 02 | - | 02 | NA | NA |

Course Code: Mathematics DSC-MP 1

Course Title: Calculus

Learning Objectives

The Learning Objectives of this course are as follows:

Course Objectives: The primary objective of this course is to introduce the basic tools of calculus which are helpful in understanding their applications in many real-world problems. Students will be able to understand/create various mathematical models in everyday life.

Learning outcomes

The Learning Outcomes of this course are as follows:

This course will enable the students to:

- i) Understand continuity and differentiability in terms of limits and graphs of certain functions.
- ii) Describe asymptotic behaviour in terms of limits involving infinity.
- iii) Use of derivatives to explore the behaviour of a given function locating and classify its extrema and graphing the function.
- iv) Apply the concepts of asymptotes, and inflexion points in tracing of cartesian curves.
- v) Compute the reduction formulae of standard transcendental functions with applications.

SYLLABUS OF DSC- MP 1

UNIT – I (10 Hours)

Unit 1: Limits, Continuity and Differentiability

Limit of a function, ε - δ definition of a limit, Infinite limits, Continuity and types of discontinuities; Differentiability of a function, Successive differentiation: Calculation of the n th derivatives, Leibnitz theorem; Partial differentiation, Euler's theorem on homogeneous functions.

UNIT – II (10 Hours)

Unit 2: Mean Value Theorems and its Applications

Rolle's theorem, Mean value theorems and applications to monotonic functions and inequalities; Taylor's theorem, Taylor's series, Maclaurin's series expansions of e^x , $\sin x$, $\cos x$, $\log x$ and $\ln x$; Indeterminate forms.

UNIT – III (10 Hours)

Unit 3: Tracing of Curves and Reduction Formulae

Asymptotes (parallel to axes and oblique), Concavity and inflexion points, Singular points, Tangents at the origin and nature of singular points, Curve tracing (cartesian and polar equations). Reduction formulae for $\int \sin^m x \, dx$, $\int \cos^n x \, dx$, and $\int \sin^m x \cos^n x \, dx$ and their applications.

Essential/recommended readings

References:

1. Prasad, Gorakh (2016). *Differential Calculus* (19th ed.). Pothishala Pvt. Ltd. Allahabad.
2. Prasad, Gorakh (2015). *Integral Calculus*. Pothishala Pvt. Ltd. Allahabad.

Additional Readings:

- i. Apostol, T. M. (2007). *Calculus: One-Variable Calculus with An Introduction to Linear Algebra* (2nd ed.). Vol. 1. Wiley India Pvt. Ltd.
- ii. Ross, Kenneth. A.(2013). *Elementary Analysis: The Theory of Calculus* (2nd ed.). Undergraduate Texts in Mathematics, Springer. Indian reprint.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BSc. Life Sciences
Multidisciplinary

DISCIPLINE SPECIFIC CORE COURSE (DSC-1): Basic Concepts of Organic

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-------------------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Concepts of Organic Chemistry | 04 | 02 | - | 02 | 12 th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- The course is infused with the recapitulation of fundamentals of organic chemistry and the introduction of the concept of visualizing the organic molecules in a three-dimensional space.
- To establish the applications of these concepts, a study of diverse reactions through mechanisms is included.
- The constitution of the course strongly aids in the paramount learning of the basic concepts and their applications

Learning outcomes

The Learning Outcomes of this course are as follows:

- Understand and explain the differential behavior of organic compounds based on fundamental concepts learned.
- Understand the fundamental concepts of stereochemistry.
- Formulate the mechanism of organic reactions by recalling and correlating the fundamental properties of the reactants involved.
- Learn and identify many organic reactions and their mechanisms including electrophilic addition, nucleophilic addition, nucleophilic substitution, electrophilic substitution and rearrangement reactions.

SYLLABUS OF DSC-1

UNIT – I Fundamentals of organic chemistry (6 Hours)

Types of Electronic displacements: Inductive effect, Resonance effect, Hyperconjugation, Electromeric Effect. Reactive intermediates and their stability: carbocations, free radicals, carbanions, benzyne, carbenes. Acidity and basicity in organic compounds (comparison of

carboxylic acids, alcohols, phenols, primary, secondary and tertiary aliphatic amines, aniline and its derivatives)

UNIT – II Stereochemistry (6 Hours)

Types of projection formulae: Flying Wedge Formula, Newmann, Sawhorse and Fischer representations and their interconversion.

Stereoisomerism: Concept of chirality (upto two carbon atoms). Configurational isomerism: geometrical and optical isomerism; enantiomerism, diastereomerism and meso compounds). Threo and erythro; D and L; *Cis-trans* nomenclature; CIP Rules: R/ S (for upto 2 chiral carbon atoms) and *E/Z* nomenclature (for upto two C=C systems).

Conformational isomerism with respect to ethane, butane and cyclohexane.

UNIT – III Types of Organic Reactions (Including reactions of alkenes, alkyl and aryl halides, alcohols, aldehydes, ketones) (18 Hours)

Electrophilic addition reactions

Electrophilic addition reaction (with respect to propene, propyne, 3,3-dimethyl-1-butene): Hydration, Addition of HX in the absence and presence of peroxide, Hydroboration oxidation, Addition of bromine (with stereochemistry).

Nucleophilic addition reactions

Nucleophilic addition reaction of carbonyl compounds: Addition of HCN, ammonia derivatives (Hydroxylamine, Hydrazine, Semicarbazide and 2,4-DNP), the addition of carbanion (Aldol condensation, Claisen Schmidt, Benzoin condensation, Perkin reaction, reactions involving Grignard reagent).

Elimination and Nucleophilic substitution reactions

Nucleophilic substitution reaction (S_N1 and S_N2) in alkyl halides (mechanisms with stereochemical aspect), alcohols (with nucleophiles like ammonia, halides, thiols, ambident nucleophiles (cyanide and nitrite ion)), ethers (Williamson ether synthesis), Elimination reaction ($E1$ & $E2$), elimination vs substitution (*w.r.t.* potassium *t*-butoxide and KOH); Nucleophilic aromatic substitution in aryl halides-elimination addition reaction *w.r.t.* chlorobenzene, including the effect of nitro group (on the ring) on the reaction. relative reactivity and strength of C-X bond in alkyl, allyl, benzyl, vinyl and aryl halides towards substitution reactions

Electrophilic substitution reactions

Electrophilic Aromatic substitution with mechanism (benzene)- sulphonation, nitration, halogenation, Friedel craft acylation :*o*-, *m*- and *p*- directive influence giving examples of toluene/nitrobenzene/ phenol/ aniline/ chlorobenzene.

Reactive intermediates and Rearrangement Reactions

Free radicals (Birch Reduction); *Carbocations* (Pinacol-Pinacolone, Wagner-Meerwein, Rearrangement, and Beckmann rearrangement); *Carbanions* (Michael Addition); *Carbenes* (Reimer-Tiemann).

Practical component (60 Hours)

1. Purification of an organic compound by crystallization (from water and alcohol) and distillation, Criteria of purity: Determination of M.P.
2. Determination of boiling point of liquid compounds. (Boiling point lower than and more than 100 °C by distillation and capillary method)
3. Detection of extra element
4. Preparations: (Mechanism of various reactions involved to be discussed).
 - a. Bromination of phenol/aniline.
 - b. 2,4-Dinitrophenylhydrazone of aldehydes and ketones
 - c. Semicarbazone of aldehydes/ ketones
 - d. Aldol condensation reaction using green method.
 - e. Bromination of Stilbene.
 - f. Acetanilide to p-Bromoacetanilide.

The above derivatives should be prepared using 0.5-1g of the organic compound. The solid samples must be collected and may be used for recrystallization and melting point.

Essential/recommended readings

Theory:

1. Sykes, P.(2003), **A Guide Book to Mechanism in Organic Chemistry**, 6th Edition Pearson Education.
2. Eliel, E. L. (2001), **Stereochemistry of Carbon Compounds**, Tata McGraw Hill.
3. Morrison, R. N.; Boyd, R. N., Bhattacharjee, S.K. (2010), **Organic Chemistry**, 7th Edition, Pearson Education.

Practical:

1. Furniss, B.S.; Hannaford, A.J.; Smith, P.W.G.; Tatchell, A.R. (2012), **Vogel's Textbook of Practical Organic Chemistry**, Pearson.
2. Mann, F.G.; Saunders, B.C. (2009), **Practical Organic Chemistry**, Pearson Education.
3. Dhingra, S; Ahluwalia V.K., (2017), **Advanced Experimental Organic Chemistry**, Manakin Press.

Suggestive readings

Theory:

1. Bahl, A; Bahl, B. S. (2019), **Advanced Organic Chemistry**, 22nd Edition, S. Chand.

Practical:

1. Pasricha, S., Chaudhary, A. (2021), **Practical Organic Chemistry: Volume I**, I K International Publishing House Pvt. Ltd., New Delhi.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BSc. Physical Sciences

DISCIPLINE SPECIFIC CORE COURSE (DSC-1): Basic Concepts of Organic Chemistry

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-------------------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Concepts of Organic Chemistry | 04 | 02 | - | 02 | 12 th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- The course is infused with the recapitulation of fundamentals of organic chemistry and the introduction of the concept of visualizing the organic molecules in a three-dimensional space.
- To establish the applications of these concepts, a study of diverse reactions through mechanisms is included.
- The constitution of the course strongly aids in the paramount learning of the basic concepts and their applications

Learning outcomes

The Learning Outcomes of this course are as follows:

- Understand and explain the differential behavior of organic compounds based on fundamental concepts learned.
- Understand the fundamental concepts of stereochemistry.
- Formulate the mechanism of organic reactions by recalling and correlating the fundamental properties of the reactants involved.
- Learn and identify many organic reactions and their mechanisms including electrophilic addition, nucleophilic addition, nucleophilic substitution, electrophilic substitution and rearrangement reactions.

SYLLABUS OF DSC-1

UNIT – I Fundamentals of organic chemistry (6 Hours)

Types of Electronic displacements: Inductive effect, Resonance effect, Hyperconjugation, Electromeric Effect. Reactive intermediates and their stability: carbocations, free radicals, carbanions, benzyne, carbenes.

Acidity and basicity in organic compounds (comparison of carboxylic acids, alcohols, phenols, primary, secondary and tertiary aliphatic amines, aniline and its derivatives)

UNIT – II Stereochemistry (6 Hours)

Types of projection formulae: Flying Wedge Formula, Newmann, Sawhorse and Fischer representations and their interconversion.

Stereoisomerism: Concept of chirality (upto two carbon atoms). Configurational isomerism: geometrical and optical isomerism; enantiomerism, diastereomerism and meso compounds). Threo and erythro; D and L; *Cis-trans* nomenclature; CIP Rules: R/ S (for upto 2 chiral carbon atoms) and *E/Z* nomenclature (for upto two C=C systems).

Conformational isomerism with respect to ethane, butane and cyclohexane.

UNIT – III Types of Organic Reactions (Including reactions of alkenes, alkyl and aryl halides, alcohols, aldehydes, ketones) (18 Hours)

Electrophilic addition reactions

Electrophilic addition reaction (with respect to propene, propyne, 3,3-dimethyl-1-butene): Hydration, Addition of HX in the absence and presence of peroxide, Hydroboration oxidation, Addition of bromine (with stereochemistry).

Nucleophilic addition reactions

Nucleophilic addition reaction of carbonyl compounds: Addition of HCN, ammonia derivatives (Hydroxylamine, Hydrazine, Semicarbazide and 2,4-DNP), the addition of carbanion (Aldol condensation, Claisen Schmidt, Benzoin condensation, Perkin reaction, reactions involving Grignard reagent).

Elimination and Nucleophilic substitution reactions

Nucleophilic substitution reaction (S_N1 and S_N2) in alkyl halides (mechanisms with stereochemical aspect), alcohols (with nucleophiles like ammonia, halides, thiols, ambident nucleophiles (cyanide and nitrite ion)), ethers (Williamson ether synthesis), Elimination reaction ($E1$ & $E2$), elimination *vs* substitution (*w.r.t.* potassium *t*-butoxide and KOH); Nucleophilic aromatic substitution in aryl halides-elimination addition reaction *w.r.t.* chlorobenzene, including the effect of nitro group (on the ring) on the reaction. relative reactivity and strength of C-X bond in alkyl, allyl, benzyl, vinyl and aryl halides towards substitution reactions

Electrophilic substitution reactions

Electrophilic Aromatic substitution with mechanism (benzene)- sulphonation, nitration, halogenation, Friedel craft acylation :*o*-, *m*- and *p*- directive influence giving examples of toluene/nitrobenzene/ phenol/ aniline/ chlorobenzene.

Reactive intermediates and Rearrangement Reactions

Free radicals (Birch Reduction); *Carbocations* (Pinacol-Pinacolone, Wagner-Meerwein, Rearrangement, and Beckmann rearrangement); *Carbanions* (Michael Addition); *Carbenes* (Reimer-Tiemann).

Practical component (60 Hours)

1. Purification of an organic compound by crystallization (from water and alcohol) and distillation, Criteria of purity: Determination of M.P.
2. Determination of boiling point of liquid compounds. (Boiling point lower than and more than 100 °C by distillation and capillary method)
3. Detection of extra element
4. Preparations: (Mechanism of various reactions involved to be discussed).
 - a. Bromination of phenol/aniline.
 - b. 2,4-Dinitrophenylhydrazone of aldehydes and ketones
 - c. Semicarbazone of aldehydes/ ketones
 - d. Aldol condensation reaction using green method.
 - e. Bromination of Stilbene.
 - f. Acetanilide to p-Bromoacetanilide.

The above derivatives should be prepared using 0.5-1g of the organic compound. The solid samples must be collected and may be used for recrystallization and melting point.

Essential/recommended readings

Theory:

1. Sykes, P.(2003), **A Guide Book to Mechanism in Organic Chemistry**, 6th Edition Pearson Education.
2. Eliel, E. L. (2001), **Stereochemistry of Carbon Compounds**, Tata McGraw Hill.
3. Morrison, R. N.; Boyd, R. N., Bhattacharjee, S.K. (2010), **Organic Chemistry**, 7th Edition, Pearson Education.

Practical:

1. Furniss, B.S.; Hannaford, A.J.; Smith, P.W.G.; Tatchell, A.R. (2012), **Vogel's Textbook of Practical Organic Chemistry**, Pearson.
2. Mann, F.G.; Saunders, B.C. (2009), **Practical Organic Chemistry**, Pearson Education.
3. Dhingra, S; Ahluwalia V.K., (2017), **Advanced Experimental Organic Chemistry**, Manakin Press.

Suggestive readings

Theory:

1. Bahl, A; Bahl, B. S. (2019), **Advanced Organic Chemistry**, 22nd Edition, S. Chand.

Practical:

1. Pasricha, S., Chaudhary, A. (2021), **Practical Organic Chemistry: Volume I**, I K International Publishing House Pvt. Ltd., New Delhi.

Note: Examination scheme and modes shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES
OFFERED BY DEPARTMENT OF CHEMISTRY FOR ODD SEMESTER

GE 1: Chemistry: Atomic Structure and Chemical Bonding

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|----------|-----------------------------------|----------|---------------------|----------------------|-------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Atomic Structure and Chemical Bonding (GE-1) | 4 | 2 | | 2 | | Basic knowledge of Chemistry |

Learning Objectives

The Learning Objectives of this course are as follows:

- To discuss the structure of atom as a necessary pre-requisite in understanding the nature of chemical bonding in compounds.
- To provide basic knowledge about ionic and covalent bonding.

Learning Outcomes

By the end of the course, the students will be able to:

- Solve the conceptual questions using the knowledge gained by studying the quantum mechanical model of the atom, quantum numbers, electronic configuration, radial and angular distribution curves, and shapes of s, p, and d orbitals
- Understand the concept of lattice energy and solvation energy.
- Draw the plausible structures and geometries of molecules using radius ratio rules, VSEPR theory and MO diagrams (homo- & hetero-nuclear diatomic molecules).

SYLLABUS OF GE 1

Theory:

Unit – 1: Atomic Structure

(14 Hours)

Review of: Bohr's theory and its limitations, Heisenberg uncertainty principle, Dual behaviour of matter and radiation, De-Broglie's relation, Hydrogen atom spectra, need of a new approach to atomic structure. Time independent Schrodinger equation and meaning of various terms in it. Significance of ψ and ψ^2 , Schrödinger equation for hydrogen atom, radial

and angular parts of the hydrogen wave functions (atomic orbitals) and their variations for 1s, 2s, 2p, 3s, 3p and 3d orbitals (Only graphical representation), radial and angular nodes and their significance, radial distribution functions and the concept of the most probable distance with special reference to 1s and 2s atomic orbitals. Significance of quantum numbers, orbital angular momentum and quantum numbers m_l and m_s . Shapes of s, p and d atomic orbitals, nodal planes, discovery of spin, spin quantum number (s) and magnetic spin quantum number (m_s). Rules for filling electrons in various orbitals, electronic configurations of the atoms, stability of half-filled and completely filled orbitals, concept of exchange energy, relative energies of atomic orbitals, anomalous electronic configurations.

Unit – 2: Chemical Bonding and Molecular Structure

(16 Hours)

Ionic Bonding: General characteristics of ionic bonding, energy considerations in ionic bonding, lattice energy and solvation energy and their importance in the context of stability and solubility of ionic compounds, statement of Born-Landé equation for calculation of lattice energy (no derivation), Born Haber cycle and its applications, covalent character in ionic compounds, polarizing power and polarizability, Fajan's rules. Ionic character in covalent compounds, bond moment, dipole moment and percentage ionic character. **Covalent bonding:** VB Approach: Shapes of some inorganic molecules and ions on the basis of VSEPR (H_2O , NH_3 , PCl_5 , SF_6 , ClF_3 , SF_4) and hybridization with suitable examples of linear, trigonal planar, square planar, tetrahedral, trigonal bipyramidal and octahedral arrangements. Concept of resonance and resonating structures in various inorganic and organic compounds. **MO Approach:** Rules for the LCAO method, bonding and antibonding MOs and their characteristics for ss, s-p and p-p combinations of atomic orbitals, nonbonding combination of orbitals, MO treatment of homonuclear diatomic molecules of 1st and 2nd periods (including idea of s-p mixing) and heteronuclear diatomic molecules such as CO, NO and NO^+ .

Practicals:

(60 Hours)

(Laboratory Periods: 60)

1. Acid-Base Titrations: Principles of acid-base titrations to be discussed.

- (i) Estimation of sodium carbonate using standardized HCl.
- (ii) Estimation of carbonate and hydroxide present together in a mixture.
- (iii) Estimation of carbonate and bicarbonate present together in a mixture.
- (iv) Estimation of free alkali present in different soaps/detergents

2. Redox Titrations: Principles of oxidation-reduction titrations (electrode potentials) to be discussed.

- (i) Estimation of oxalic acid by titrating it with KMnO_4 .
- (ii) Estimation of Mohr's salt by titrating it with KMnO_4 .
- (iii) Estimation of oxalic acid and sodium oxalate in a given mixture.
- (iv) Estimation of Fe (II) ions by titrating it with $\text{K}_2\text{Cr}_2\text{O}_7$ using internal indicator (diphenylamine/ N-phenylanthranilic acid).

References:

Theory:

1. Lee, J.D.; (2010), **Concise Inorganic Chemistry**, Wiley India.
2. Huheey, J.E.; Keiter, E.A.; Keiter, R. L.; Medhi, O.K. (2009), **Inorganic Chemistry- Principles of Structure and Reactivity**, Pearson Education.
3. Douglas, B.E.; McDaniel, D.H.; Alexander, J.J. (1994), **Concepts and Models of Inorganic Chemistry**, John Wiley & Sons.
4. Atkins, P.W.; Overton, T.L.; Rourke, J.P.; Weller, M.T.; Armstrong, F.A. (2010), **Shriver and Atkins Inorganic Chemistry**, 5th Edition, Oxford University Press.

Practicals:

- Jeffery, G.H.; Bassett, J.; Mendham, J.; Denney, R.C. (1989), **Vogel's Textbook of Quantitative Chemical Analysis**, John Wiley and Sons.

Additional Resources:

1. Wulfsberg, G (2002), **Inorganic Chemistry**, Viva Books Private Limited.
2. Miessler, G.L.; Fischer P.J.; Tarr, D. A. (2014), **Inorganic Chemistry**, 5th Edition, Pearson.

GE 3: Chemistry: Bioinorganic Chemistry

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Bioinorganic Chemistry (GE-3) | 4 | 2 | | 2 | | Basic knowledge of Chemistry |

Learning Objectives

The Learning Objectives of this course are as follows:

- To introduce students to bioinorganic chemistry, currently a frontier area of chemistry providing an interface between organic chemistry, inorganic chemistry and biology.
- To make students learn about the importance of inorganic chemical species, especially metals, in biological systems, through discussions on topics such as the sodium-potassium pump, the applications of iron in physiology, including iron transport and storage system, role of magnesium in energy production and chlorophyll, toxicity of heavy metal ions and their antidotes.

Learning Outcomes

By the end of the course, the students will be able to:

- Classify metal ions in biological systems as essential, non-essential, trace & toxic.
- Diagrammatically explain the working of the sodium-potassium pump in organisms and the factors affecting it
- Understand the role of metal ions such as Mg, Ca and Fe in biological systems.
- Understand the toxicity of heavy metal ions (Hg, Pb, Cd and As) in the physiological system
- Explain the use of chelating agents in medicine

SYLLABUS OF GE-3

Theory:

Unit 1: Introduction

(6 Hours)

A brief introduction to bio-inorganic chemistry. Metal ions present in biological systems and their classification on the basis of action (essential, non-essential, trace & toxic). Classification of metallobiomolecules (enzymes, transport and storage proteins and non-proteins). Brief idea about membrane transport, channels, pumps.

Unit 2: Role of s-block Elements in Biological System

(8 Hours)

Role of metal ions present in biological systems with special reference to Na^+ , K^+ and Mg^{2+} and Ca^{2+} ions: Na/K pump; Ca pump, role of Mg^{2+} ions in energy production and chlorophyll. Role of calcium in bone formation.

Unit 3: Role of iron in Biological System

(8 Hours)

Role of iron in oxygen transport and storage (haemoglobin and myoglobin), Perutz mechanism, Cooperative effect, Bohr effect, comparison of oxygen saturation curves of haemoglobin and myoglobin, carbon monoxide. Storage and transport of iron in humans (ferritin and transferrin).

Unit 4: Toxicity of Heavy Metal Ions

(8 Hours)

Toxicity of heavy metal ions (Hg, Pb, Cd and As), reasons for toxicity and their antidotes

Practicals:

(60 Hours)

WEEKS)

(Laboratory Periods: 60)

1. Spectrophotometric estimation:

- Verify Lambert-Beer's law and determine the concentration of $\text{CuSO}_4/\text{KMnO}_4/\text{K}_2\text{Cr}_2\text{O}_7/\text{CoSO}_4$ in a solution of unknown concentration
- Spectrophotometric estimation of Fe^{2+} ions by using 1, 10-phenanthroline

(iii) Determination of the composition of the Fe^{3+} - salicylic acid complex in solution by Job's method.

2. Complexometric titrations using disodium salt of EDTA:

- Estimation of Zn^{2+} using EBT / Xylenol orange as indicator
- Estimation of Mg^{2+}
- Estimation of Ca^{2+} by substitution method
- To estimate the concentration of Ca in commercially available medicines.
- To estimate the Mg present in multivitamins.

References:

Theory:

- Huheey, J.E.; Keiter, E.A., Keiter; R. L.; Medhi, O.K. (2009), **Inorganic Chemistry- Principles of Structure and Reactivity**, Pearson Education.
- Shriver, D.D.; Atkins, P.; Langford, C.H. (1994), **Inorganic Chemistry** 2nd Ed., Oxford University Press.
- Cotton, F.A.; Wilkinson, G.; Gaus, P.L. **Basic Inorganic Chemistry**, 3rd Edition, Wiley India.
- Crichton, R.R. (2008), **Biological Inorganic Chemistry: An Introduction**. Amsterdam, Elsevier.
- Kaim, W., B. Schwederski and A. Klein. (2014), **Bioinorganic Chemistry: Inorganic Elements in the Chemistry of Life: An Introduction and Guide**. 2nd Edition, Wiley.

Practical:

- Jeffery, G.H.; Bassett, J.; Mendham, J.; Denney, R.C. (1989), **Vogel's Textbook of Quantitative Chemical Analysis**, John Wiley and Sons.

Additional Resources:

- Lippard, S.J.; Berg, J.M. (1994), **Principles of Bioinorganic Chemistry**, Panima Publishing Company.
- Greenwood, N.N.; Earnshaw, A. (1997), **Chemistry of the Elements**, 2nd Edition, Elsevier

GE 4: Chemistry: Basic Concepts of Organic Chemistry

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Concepts of Organic Chemistry (GE-4) | 4 | 2 | | 2 | | |

Learning Objectives

The Learning Objectives of this course are as follows:

- To teach the fundamentals of organic chemistry and the introduction of a new concept of visualizing the organic molecules in a three- dimensional space.
- To establish the applications of these concepts, different types of organic reactions are introduced.

Learning Outcomes

By the end of the course, the students will be able to:

- Understand and explain the differential behavior of organic compounds based on fundamental concepts learnt.
- Formulate the mechanism of organic reactions by recalling and correlating the fundamental properties of the reactants involved.
- Learn and identify many organic reaction mechanisms including free radical substitution, electrophilic addition and electrophilic aromatic substitution.
- Differentiate between various types of organic reactions possible on the basis of reaction conditions

SYLLABUS OF GE-4

Theory:

Unit 1: Basic Concepts

(6 Hours)

Electronic displacements and their applications: Inductive, electromeric, resonance and mesomeric effects and hyperconjugation. Dipole moment, acidity and basicity. Homolytic and heterolytic fissions with suitable examples. Types, shape and relative stability of carbocations, carbanions and free radicals. Electrophiles and nucleophiles
Concept of Aromaticity: Huckel's rule

Unit 2: Stereochemistry

(10 Hours)

Stereoisomerism: Optical activity and optical isomerism, asymmetry, chirality, enantiomers, diastereomers. specific rotation; Configuration and projection formulae: Newmann, Sawhorse, Fischer and their interconversion. Chirality in molecules with one and two stereocentres; meso configuration.
CIP rules: Erythro/Threo, D/L and R/S designations.
Geometrical isomerism: *cis-trans*, *syn-anti* and *E/Z* notations.

Unit 3: Types of Organic Reactions

(14 Hours)

Introduction to substitution, addition, elimination, isomerization, rearrangement, oxidation and reduction reactions.
Free radical substitutions (Halogenation), concept of relative reactivity v/s selectivity. Free radical reactions in the biological reactions

Mechanisms of E1, E2, Saytzeff, Hoffmann eliminations and Cope elimination. Biological dehydration reactions

Electrophilic Additions reactions of alkenes and alkynes: mechanism with suitable examples, (Markownikoff/Antimarkownikoff addition), syn and anti-addition; addition of H₂, X₂, hydroboration-oxidation, ozonolysis, hydroxylation.

Nucleophilic substitution reactions – S_N1 and S_N2 mechanisms with stereochemical aspects and effect of solvent; nucleophilic substitution vs. elimination. Biological methylating agents

Electrophilic aromatic substitution: halogenation, nitration, sulphonation, Friedel Crafts alkylation/ acylation with their mechanism. Directing effects of groups in electrophilic substitution.

Practicals:

(60 Hours)

(Laboratory Periods: 60)

1. Calibration of a thermometer and determination of the melting points of the organic compounds (Kjeldahl method, electrically heated melting point apparatus and BODMEL)
2. Purification of the organic compounds by crystallization using the following solvents:
3. a. Water b. Alcohol c. Alcohol-Water
4. Determination of boiling point of liquid compounds. (Boiling point lower than and more than 100 °C by distillation, capillary method and BODMEL)
5. Acetylation of one of the following compounds: amines (aniline, *o*-, *m*-, *p*- toluidines and *o*-, *m*-, *p*-anisidine) and phenols (β -naphthol, salicylic acid) either by conventional or green method.
6. Bromination of acetanilide/aniline/phenol either by conventional or green method.
7. Nitration of chlorobenzene/nitrobenzene.

References:

Theory:

1. Sykes, P. (2005), **A Guide Book to Mechanism in Organic Chemistry**, Orient Longman.
2. Eliel, E. L. (2000), **Stereochemistry of Carbon Compounds**, Tata McGraw Hill.
3. Morrison, R. N.; Boyd, R. N., Bhattacharjee, S.K. (2010), **Organic Chemistry**, 7th Edition, Dorling Kindersley (India) Pvt. Ltd. (Pearson Education).
4. **Mehta B.; Mehta M. (2015)**, Organic Chemistry, **PHI Learning Private Limited**
5. **Bahl, A; Bahl, B. S. (2012)**, Advanced Organic Chemistry, **S. Chand.**

Practicals:

1. Furniss, B.S.; Hannaford, A.J.; Smith, P.W.G.; Tatchell, A.R. (2012), **Vogel's Textbook of Practical Organic Chemistry**, Pearson.
2. Mann, F.G.; Saunders, B.C. (2009), **Practical Organic Chemistry**, Pearson Education.

GE 7: Chemistry: States of Matter

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| States of Matter (GE-7) | 4 | 2 | | 2 | | |

Learning Objectives

The Learning Objectives of this course are as follows:

- To make students learn about the properties of ideal and real gases deviation from ideal behaviour, properties of liquid, types of solids with details about crystal structure.
- To make student learn about the reaction rate, order, activation energy and theories of reaction rates.

Learning Outcomes

By the end of the course, the students will be able to:

- Derive ideal gas law from kinetic theory of gases and explain why the real gases deviate from ideal
- behaviour.
- Explain Maxwell-Boltzmann distribution, critical constants and viscosity of gases.
- Explain the properties of liquids especially surface tension and viscosity.
- Explain symmetry elements, crystal structure specially NaCl, KCl and CsCl
- Define rate of reactions and the factors that affect the rates of reaction.
- Understand the concept of rate laws e.g., order, molecularity, half-life and their determination
- Learn about various theories of reaction rates and how these account for experimental observations.

SYLLABUS OF GE-7

Theory:

Unit 1: Kinetic Theory of Gases

(12 Hours)

Postulates of kinetic theory of gases and derivation of the kinetic gas equation, deviation of real gases from ideal behaviour, compressibility factor, causes of deviation, van der Waals

equation of state for real gases. Boyle temperature (derivation not required), critical phenomena, critical constants and their calculation from van der Waals equation, Andrews isotherms of CO₂, Maxwell Boltzmann distribution laws of molecular velocities and molecular energies (graphic representation – derivation not required) and their importance. Temperature dependence of these distributions, most probable, average and root mean square velocities (no derivation), collision cross section, collision number, collision frequency, collision diameter and mean free path of molecules, viscosity of gases and effect of temperature and pressure on coefficient of viscosity (qualitative treatment only).

Unit 2: Liquids State

(6 Hours)

Surface tension and its determination using stalagmometer, Viscosity of a liquid and determination of coefficient of viscosity using Ostwald viscometer, effect of temperature on surface tension and coefficient of viscosity of a liquid (qualitative treatment only). Effect of addition of various solutes on surface tension and viscosity. Explanation of cleansing action of detergents.

Unit 3: Solid State

(12 Hours)

Forms of solids, symmetry elements, unit cells, crystal systems, Bravais lattice types and identification of lattice planes. Laws of crystallography - law of constancy of interfacial angles. Law of rational indices, Miller indices. X-ray diffraction by crystals, Bragg's law and powder XRD. Powder diffraction patterns of NaCl, CsCl and KCl (qualitative treatment only), defects in crystals. Glasses and liquid crystals.

Practicals:

(60 Hours)

(Laboratory periods: 60)

1. Surface tension measurement (use of organic solvents excluded): Determination of the surface tension of a liquid or a dilute solution using a stalagmometer.
2. Viscosity measurement (use of organic solvents excluded):
 - a) Determination of the relative and absolute viscosity of a liquid or dilute solution using an Ostwald viscometer.
 - b) Study of the variation of viscosity of an aqueous solution with concentration of solute.
3. Solid State: Powder XRD
 - c) Differentiate and classify the given set of the diffraction pattern as crystalline materials or amorphous (Glass) substance.
 - d) Carry out analysis of a given set of powder XRD and determine the type of the cubic crystal structure
 - e) Determination of approximate crystal size from a given set of powder XRD

References:

Theory:

1. Atkins, P.W.; Overton, T.L.; Rourke, J.P.; Weller, M.T.; Armstrong, F.A. (2010), **Shriver and Atkin's Inorganic Chemistry**, Oxford.
2. Miessler, G. L.; Tarr, D.A. (2014), **Inorganic Chemistry**, Pearson.
3. Castellan, G. W. (2004), **Physical Chemistry**, Narosa.

- Kapoor, K.L. (2015), **A Textbook of Physical Chemistry**, Vol.1, 6th Edition, McGraw Hill Education.
- Kapoor, K.L. (2015), **A Textbook of Physical Chemistry**, Vol.5, 3rd Edition, McGraw Hill Education.

Practicals:

- Khosla, B.D.; Garg, V.C.; Gulati, A. (2015), **Senior Practical Physical Chemistry**, R. Chand & Co.

GE 9: Chemistry: Conductance and Electrochemistry

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|---------|-----------------------------------|----------|---------------------|----------------------|------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Conductance and Electrochemistry (GE-9) | 4 | 2 | | 2 | | Basic knowledge of Chemistry |

Learning Objectives

The Learning Objectives of this course are as follows:

- To make students learn about conductance, its measurement and applications.
- To make students learn the principles of electrochemical cells: Electrolytic and Galvanic cell, measurement of, measurement of emf and its applications.

Learning outcomes

By the end of the course, the students will be able to:

- Explain the factors that affect conductance, migration of ions and application of conductance measurement.
- Understand different types of galvanic cells, their Nernst equations, measurement of emf, calculations of thermodynamic properties and other parameters from the emf measurements.
- Understand applications of Emf measurements in relation to determination of activity coefficients, pH of a solution and Potentiometric titrations.

SYLLABUS OF GE-9

Theory:

Unit 1: Conductance

(10 Hours)

Quantitative aspects of Faraday's laws of electrolysis. Arrhenius theory of electrolytic dissociation. Conductivity: equivalent and molar conductivity and their variation with dilution for weak and strong electrolytes, Kohlrausch Law of independent migration of ions. Wein Effect and Debye–Falkenhagen Effect.

Transference number and its experimental determination using Hittorf and moving boundary methods, Ionic mobility, applications of conductance measurements: determination of degree of ionization of weak electrolytes, solubility and solubility products of sparingly soluble salts, ionic product of water, hydrolysis constant of a salt. Conductometric titrations (only acid-base).

Unit 2: Electrochemistry

(20 Hours)

Reversible and irreversible cells with Examples, concept of EMF of a cell, measurement of EMF of a cell, Nernst equation and its importance, types of electrodes, standard electrode potential (reduction Potential) and its application to Gas-ion half-cell. Electrochemical series. Thermodynamics of a reversible cell, calculation of thermodynamic properties: G, H and S from EMF data. Calculation of equilibrium constant from EMF data. Concentration cells with transference and without transference, liquid junction potential; determination of activity coefficients and salt bridge, pH determination using hydrogen electrode. Potentiometric titrations-qualitative treatment (acid-base and oxidation-reduction only).

Practicals:

(60 Hours)

(Laboratory periods: 60)

1. Conductance

- (i) Determination of cell constant.
- (ii) Determination of equivalent conductance, degree of dissociation and dissociation constant of a weak acid.
- (iii) Perform the following conductometric titrations:
 - a) Strong acid vs strong base
 - b) Weak acid vs strong base.

2. Potentiometry

Perform the potentiometric titrations of (i) Strong acid vs strong base, (ii) Weak acid vs strong base and (iii) Mohr's salt vs KMnO_4 .

References:

Theory:

1. Castellan, G.W. (2004), **Physical Chemistry**, Narosa.
2. Kapoor, K.L. (2015), **A Textbook of Physical Chemistry**, Vol 1, 6th Edition, McGraw Hill Education.
3. Kapoor, K.L. (2013), **A Textbook of Physical Chemistry**, Vol 3, 3rd Edition, McGraw Hill Education.

Practicals:

1. Khosla, B.D.; Garg, V.C.; Gulati, A. (2015), **Senior Practical Physical Chemistry**, R. Chand & Co.

GE 11: Chemistry: Chemistry of Food Nutrients

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|----------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Chemistry of Food Nutrients (GE-11) | 4 | 2 | | 2 | | |

Learning Objectives

The Learning Objective of this course is as follows:

- To help the students develop a basic understanding of the components of food, their source, properties and interactions as well as changes that occur during processing, storage, and utilization.

Learning Outcomes

On completion of the course, the student will be able to:

- Build a strong understanding of chemistry of food: composition of food, role of each component.
- Understand some of the reactions and changes in individual food components which occur during processing, handling and storage

SYLLABUS OF GE-11

Theory:

Unit 1: Carbohydrates

(6 Hours)

Introduction, sources, functions, classification: monosaccharide, oligosaccharide and polysaccharide, structure and importance of polysaccharides in food chemistry (pectin, cellulose, starch, gums), chemical reactions of sugar: mutarotation, caramelisation; non enzymic browning and its prevention, role of carbohydrates as sweeteners in food.

Unit 2: Lipids

(8 Hours)

Introduction, sources, classification (fatty acids, phospholipids, fats & oils, waxes), common fatty acids present in oils and fats, Omega- 3&6 fatty acids, trans fats, chemical properties- Reichert Meissel value, Polenski value, iodine value, peroxide value, saponification value,

effect of frying on fats, changes in fats and oils- rancidity, lipolysis, flavor reversion, auto-oxidation and its prevention.

Unit 3: Proteins

(8 Hours)

Introduction, sources, classification (simple, conjugated, derived), structure of protein (primary, secondary and tertiary), physico-chemical & functional properties of proteins, protein denaturation.

Unit 4: Vitamins & Minerals

(8 Hours)

Vitamins: Introduction, classification: fat-soluble vitamins & water-soluble vitamins.

Minerals: Introduction, classification: macrominerals (Ca, P, Mg) & microminerals (Se, Fe, I, Co, Zn, Cu, Se, Cr).

Physiological importance of vitamins and minerals, effect of food processing on vitamins and minerals.

Practicals:

(60 Hours)

(Laboratory periods: 60)

1. Determination of moisture in food products by hot air oven-drying method.
2. Colorimetric determination of Iron in vitamin / dietary tablets.
4. 2, 6-Dichlorophenol indophenol method for estimation of vitamin C in a given solution/ lemon Juice/chillies.
5. Estimation of total soluble sugar content by ferricyanide method (volumetric analysis).
6. Determination of saponification value of the given fat/oil.
7. Determination of iodine value of the given fat/oil.
8. Qualitative tests for proteins and carbohydrates.
9. Qualitative estimation of cholesterol by Liebermann Burchard method.

References:

Theory:

1. deMan, J.M., Finley, J.W., Hurst, W.J., Lee, C.Y. (2018), **Principles of Food Chemistry**, 4th Edition, Springer.
2. Msagati, T.A.M. (2013), **Chemistry of Food Additives and Preservatives**, Wiley-Blackwell.
3. Fennema, O.R. (2017), **Food Chemistry**, 5th Edition, CRC Press.
4. Attokaran, M. (2017), **Natural Food Flavors and Colorants**, 2nd Ed., Wiley-Blackwell.
5. Potter, N.N., Hotchkiss, J.H, (1995) **Food Science**, 5th Ed., Chapman & Hall.

6. Brannen, D., Davidsin, P.M., Salminen, T. Thorngate III, J.H. (2002), **Food Additives**, 2nd Edition, CRC Press.
7. Coultate, T. (2016), **Food: The Chemistry of its Components**, 6th Edn., Royal Society of Chemistry.
8. Belitz, H. D.; Grosch, W. (2009), **Food Chemistry**, Springer.
10. Course: FOOD CHEMISTRY (iasri.res.in)

Practical:

1. Ranganna, S. (2017). **Handbook of analysis and quality control for fruits and vegetable products**, 2nd Edn., McGraw Hill Education
2. Sawhney, S.K., Singh, R. (2001), **Introductory Practical Biochemistry**, Narosa Publishing House

GE 12: Chemistry: Statistical Methods and Data Analysis

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|----------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Chemistry: Statistical Methods and Data Analysis (GE-12) | 4 | 2 | | 2 | | |

Learning Objectives

The Learning Objectives of this course are as follows:

- To give the students insight about the statistical treatment on the chemical analysis data along with illustration about the analysis of collected analytical data that will help them to take up a job of technician, scientist and laboratory manager.
- To explain the presentation of data in different form such as “Table, Graph, Bar Diagram, Pie Chart, Venn diagram” along with their reliability and validity.

Learning Outcomes

At the end of this course student will be:

- Familiar with interpretation and use of analytical data collected by different techniques, significance of different analytical techniques and their applications, reliability and presentation of data for reporting to different forum.

SYLLABUS OF GE-12

Theory:

Unit 1: Basics of Chemical Analysis (4 Hours)

Analytical Chemistry, Qualitative and quantitative analysis, Analytical methodology. Calibration of glass wares, recording laboratory data.

Unit 2: Different Methods of Chemical Analysis (8 Hours)

Titrimetric method: volumetric titrimetry, standard solution, titrimetric curve, calculation; Gravimetric method: precipitation gravimetry, calculation and applications of gravimetry; and Spectrometric methods: introduction, principle and instrument, working quantitative aspects absorbance, applications in chemical analysis

Unit 3: Statistical Method of Chemical Analysis (8 Hours)

Accuracy and Precision, Comparison of precision, Errors, Distribution of random errors, propagation of errors, measurement of errors, significant figure, inter laboratory error, methods of least square analysis of variance, Q test, Z test, T test, statistical treatment of finite sample, recommendations for treating outliers. Minimising errors in analytical procedure.

Unit 4: Data Analysis and Validation (4 Hours)

Confidence interval, Testing of hypothesis, plotting of data, least square method, Figures of merit: sensitivity, detection limit, linear dynamic range, control test, upper control limit and lower control limit, Validation, reporting analytical results and significant figures

Unit 5: Sampling, Standardisation, Labelling and Calibration (6 Hours)

Analytical samples, sample size, constituent sample, real samples, sample, sample handling, preparing laboratory samples, automated sample handling, lab on chip and General laboratory principles, recording laboratory data, standards, comparison of standards, internal standard, external standards calibration, least square method, and multivariant calibration.

Practicals: (60 Hours)

(Laboratory periods: 60)

1. Calibrate the volume of laboratory glass wares i.e. volumetric flask, beaker, burette and calibration constant.
2. Demonstrate the good laboratory practices like effect of dilution, temperature, taking observation, personal and apparatus safety.
3. Determine the quantitative presence of heavy metals like copper, chromium and iron in natural and laboratory samples using volumetric and gravimetric titration.
4. Determine the presence of magnesium ion in heavy water by EDTA method and prepare calibration curve.
5. Evaluate the absolute and method errors in a set of data collected during determination of nitrogen in an organic compound.
6. Calculate the standard deviation and predict precision of analytical results.

- Determine the concentration of pollutant in natural sample after using external standards methods.
- Compare the inter laboratory error of a spectroscopic results.
- Evaluate the limit of detection for colorimetric analysis of dyes and coloured metals in wastes water samples.
- Demonstrate the control of interference by masking by complexation.
- Report the ten analytic results in significant numbers along with standard deviation.
- Determine the confidence limit and interval for a laboratory instrument like breath alcohol analyser
- Demonstrate the internal standard method for calibration of metal estimation.
- Estimate the comparative effectiveness of different types of graphs like line, pi chart and bar graph.
- Demonstrate the working of lab on chip like glucose sensor.

References:

- Dey, R. A. and Underwood, A. L., **Quantitative Analysis**, 6th Edition, Pearson.
- Skoog, D. A., West, D. M., Holler, F. J., Crouch, S. R., **Fundamental analytical chemistry**, Thomson Asia Ltd.
- Encyclopaedia of analytical chemistry: Applications, Theory, and Instrumentation, R A Meyor (Eds) Wiley and Sons (2000).

GE 13: Chemistry: Medicines in Daily Life

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Medicines in Daily Life (GE-13) | 4 | 2 | | 2 | | |

Learning Objectives

The Learning Objectives of this course are as follows:

- To make students study the basic details about various medicines of general uses, which are crucial for the various diseases.
- To make students learn about the active pharmaceutical ingredient in some medicines, their synthesis; therapeutic effect and side effects on human physiology.

- To make students aware about the positive and negative effects of medicines those are essential for a healthy day-to-day life.

Learning Outcomes

By the end of the course, the students will be able to:

- Understand the role of different medicines on human physiology.
- Gain the knowledge of active pharmaceutical ingredient and their roles in different disease.
- Learn the proper use of different medicines and their effect and side effects.
- Learn the techniques of administering blood group, pulse rate, blood pressure and may other general diagnostic applications.

SYLLABUS OF GE-13

Theory:

Unit 1: General Introduction

(8 Hours)

Introduction-Health, disease, drugs, chemotherapy, approaches in drug designing, classification of drugs and their origin.

Unit 2: Different class of medicines

(22 Hours)

Structure of active ingredients, uses, dosage, side effects and their natural remedies:

Analgesics and antipyretics- Aspirin, paracetamol, ibuprofen, morphine, codeine

Antibiotics- Amoxicillin, norfloxacin, ciprofloxacin

Antihistamines or antiallergics- Cetirizine and Levocetirizine (role of stereoisomers)

Antiparasitic- Albendazole

Antidiabetics- Insulin, Glipizide and metformin

Antihypertensive – Amlodipine and its natural remedies- Rauwolfia.

Diuretic- Lasix

Antidepressant- Zoloft and its natural treatment

Antifungal – fluconazole, Itraconazole

Antacids- Ideal properties of antacids, combinations of antacids, Sodium 40 Bicarbonate, ranitidine, milk of magnesia, aluminium hydroxide gel

Anticoagulants/antiplatelet drugs- Warfarin, heparin and Ecosprin

Anaesthetics- Atracurium, Desflurane

Poison and Antidote: Sodium thiosulphate, Activated charcoal, Sodium nitrite

Astringents: Zinc Sulphate, Potash Alum

Supplements- zinc and calcium, vitamins

Synthesis of small molecule drugs like aspirin and paracetamol

Practicals:

(60 Hours)

(Laboratory periods: 60)

1. Determination of heart rate and pulse rate, blood pressure and discussion on medicines affecting them.
2. Identification test- Magnesium hydroxide, Sodium bicarbonate, Calcium gluconate.

3. Preparation of inorganic pharmaceuticals- Boric acid Potash alum
4. Determination of sugar content in the given solution.
5. Estimation of zinc and calcium in a given solution.
6. Qualitative analysis of carbohydrates (Glucose, Fructose, Lactose, Maltose, Sucrose).
7. Qualitative tests for Proteins
8. Qualitative analysis of vitamin C.
9. Isolation of paracetamol (API) from a commercial tablet
10. Isolation of aspirin (API) from tablet and recording of melting point (synthesis needs discussion)

References:

Theory:

1. Patrick, G. L. (2001) **Introduction to Medicinal Chemistry**, Oxford University Press.
2. Lemke, T. L. & William, D. A. (2002), **Foye's Principles of Medicinal Chemistry**, 5th Ed., USA,
3. Singh H.; Kapoor V.K. (1996), **Medicinal and Pharmaceutical Chemistry**, Vallabh Prakashan.
4. Chatwal, G.R. (2010), **Pharmaceutical chemistry**, inorganic (vol. 1), Himalayan publishing house
5. <https://go.drugbank.com/>

Practicals:

1. Jeffery, G.H., Bassett, J., Mendham, J., Denney, R.C. (1989), **Vogel's Textbook of Quantitative Chemical Analysis**, John Wiley and Sons.
2. Ahluwalia, V.K., Dhingra, S. (2004), **Comprehensive Practical Organic Chemistry: Qualitative Analysis**, University Press.
3. Munwar, S., Ammaji, S.(2019), **Comprehensive Practical Manual of Pharmaceutical Chemistry**, Educreation Publishing.
4. Mondal, P., Mondal, S.(2019), **Handbook of Practical Pharmaceutical Organic, Inorganic and Medicinal chemistry**, Educreation Publishing.

GE 15: Chemistry and Society

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Chemistry and Society (GE-15) | 4 | 2 | | 2 | | |

Learning Objectives

The Learning Objectives of this course are as follows:

- To expand the literacy of chemistry, and increase general awareness, background of chemistry and its importance among the non-chemistry student even arts as well as commerce.
- To make a common student understand the importance and role of chemistry in development of civilization, societal issues related to chemistry and their expected solutions.

Learning Outcomes

At the end of this course the student will be able to:

- Increase the literacy of chemistry even in non-science students
- Understand the basic concept, principle and importance of chemistry
- Realize the importance of chemistry in daily life and future requirement

SYLLABUS OF GE-15

Theory:

Unit 1: Basics of chemistry (4 Hours)

Periodic table, Atom and molecules, chemical bonding, properties and chemical reactions with simple examples and illustration.

Unit 2: Chemistry in Heritage (8 Hours)

Extraction and uses of metals like iron and stone in ancient times, metals in ornaments, medicines, weapons and chemistry for preservatives, basics of preservation and few examples of preservatives.

Unit 3: Chemistry in Life (10 Hours)

Edible and non- edible molecules, biochemistry of foods and medicine with examples: Aspirin, Paracetamol. Ibuprofen and Penicillin, Cephalosporin, Chemistry for industry: Artificial sweeteners, Soaps and detergents and cosmetics, Polymer and Plastics: Uses and environmental issues.

Unit 4: Chemical pollution and Toxicity (2 Hours)

Chemical source of water, air and soil pollution, biomagnification and metal toxicity with example and illustrations. monitoring of air pollution.

Unit 5: Testing of chemicals (2 Hours)

Flame test, solubility test, qualitative and quantitative identification of ions in natural samples like metal copper, iron and chromium ores and adulterant in foods.

Unit 6: Future of chemistry (4 Hours)

Basics of green chemistry, Reuse and recycling of by-products, zero waste chemistry and Alternate fuel and energy providing chemicals: biodiesel, natural gas and hydrogen.

Practicals/Hands-on Training:**(60 Hours)****(Laboratory periods: 60)**

1. Determine the calcium and magnesium contents in water samples using EDTA methods.
2. Determine the organic contents and pH of soil sample.
3. Estimate the food adulterants in edible items
4. Quantify the presence metals by flame test method
5. Demonstrate the conversion of PET into bottle into value added products.
6. Determine the quantitative presence of heavy metals like copper and chromium in natural sample like ore.
7. Demonstrate the exothermic and endothermic reaction in laboratory
8. Preparation aspirin and paracetamol as well as identify.
9. Compare the fuel efficiency of biodiesel and petrol.
10. Preparation of representative compound using microwave
11. Demonstrate the biodegradability of natural and synthetic plastics.
12. Demonstrate the protection of rusting of iron after surface spray coating.
13. Estimate the protein contents in edible samples using chemical methods.
14. Small working project on heritage chemistry like bio compatibility of metals and medicinal importance of metals like iron, gold and silver.

References:

1. Lee, J. D., **Concise Inorganic Chemistry**, Wiley India Pvt. Ltd.
2. Sharma, B. K., **Industrial chemistry**, Goel Publishing House, India
3. Christian, Gary D., Dasgupta, Purnendu K., Schug, Kevin A., **Analytical chemistry**, Wiley
4. V. Subramanian, **A text book of Environmental chemistry**, Wiley

GE 19: Radio-chemistry in Energy, Medicine and Environment**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|----------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Radio-chemistry in Energy, Medicine and Environment (GE-19) | 4 | 3 | | 1 | | |

Learning Objectives

The Learning Objectives of this course is as follows:

- To give an introduction to nuclear and radiochemical concepts to the students.
- To help students gain fundamental knowledge about the radioisotopes and their real-world applications in medicine, diagnostic techniques, energy, research and environment.

Learning Outcomes

By the end of the course, the students will:

- Learn about radioisotopes, radioactive decay
- Use of radiochemistry in various fields
- Effect of radiations on health
- Learn about nuclear energy and nuclear pollution

SYLLABUS OF GE-19

Theory:

Unit 1: Introduction

(9 Hours)

Atoms, composition of nucleus, mass number, isotopes, nuclear stability, radioactive decay, radioactivity in nature: natural and artificial radioisotopes, elementary particles, radioactive decay (α , β and γ decay), half-life period, types of nuclear reactions: nuclear fission and nuclear fusion.

Unit 2: Nuclear power generation

(6 Hours)

Nuclear Power generation from uranium ore (energy production and nuclear waste), introduction to nuclear reactors for energy and nuclear weapons

Unit 3: Applications of radiochemistry

(15 Hours)

C 14 decay and radioactive dating, irradiation of food, radiotracers for studying chemical reactions (photosynthesis, metabolic studies of drugs, metabolism of organisms, fundamental properties of genetic material), medicinal application of radio chemicals in radiotherapy (use in cancer, hyperthyroidism, blood disorders), radio-pharmaceuticals, diagnostic procedures: CT, PET

Unit 4: Environment radioactivity

(6 Hours)

Natural radioactivity, natural process that release radioactive material in environment, man-made events like Chernobyl disaster, bomb test, use of radiotracers in environmental studies.

Unit 5: Nuclear pollution and safety management

(9 Hours)

Radiation protection standards, basics of radiation hazards, international guidelines on radiation protection, disposal of nuclear waste, nuclear disaster and its managements, Effect of radiation on health: Biological effects of radiation, radiation monitors, dose limits for workers and public,

Practicals:

(30 Hours)

(Laboratory periods: 30)

1. Study the background radiation in different places and identify the probable source. (Data to be provided).
2. Survey the diagnostic procedures involving radio-chemistry in different diagnostic laboratories.
3. Write a report on the radio isotopes used in various diagnostic procedures.
4. Write a report on safety measures taken in diagnostic labs.
5. Write a report on any two nuclear and radiation accidents focusing on their impact on human life, environment and economy.

References:

1. Nuclear and radiochemistry, Konya J., Nagy N. 2nd Edition, Elsevier
2. Radiochemistry and Nuclear Chemistry, 4th Edition, Choppin G., Lilijenzin J-O, Rydberg J., Ekberg C. Elsevier.

GE 21: Chemistry in Indology and Physical & Mental Well Being

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|--|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | | Lecture | Tutorial | Practical/ Practice | | |
| Chemistry in Indology and Physical & Mental Well Being (GE-21) | 4 | | 3 | | 1 | | |

Learning Objectives

The Learning Objectives of this course is as follows:

- To illuminate the students about the scientific basis and approaches related to the practices that promote physical and mental health/balance, that includes meditation,

sports, Yoga and nutrition. The chemical/biochemical mechanisms that underscore the various states of the mind and body, which drives the general homeostasis or anomalies thereof, shall also be illustrated.

- To make students aware about role of metals in ancient and medieval India
- To make students aware of how Alchemists used metals, chemicals, compounds and ores in medicines
- To make students aware of the different types of instruments used in the ancient and medieval India
- To make students aware of the life and work of ancient and medieval scientists/chemists.

Learning Outcomes:

By the end of the course, the students will:

- Understand about the scientific basis and approaches that promote physical and mental health.
- Know about the chemical/biochemical mechanisms that underline the states of the mind and body
- Understand the role of metals in ancient and medieval India
- Understand how alchemists used metals and chemical compounds in medicines
- Know about the life and contributions of ancient scientists and chemists

SYLLABUS OF GE-21

Theory:

Unit 1: Physical Health Practices

(9 Hours)

Principles of Physical Education, Body composition with respect to health and fitness and different methods of body composition analysis, Calculation of energy expenditure (at rest and during exercise), VO_2 and calculation of VO_2 max, respiratory exchange ratio, blood pressure, Means of fitness development- aerobic and anaerobic exercises, yoga and physical fitness, Exercises and their intensities related to heart rate zone, Different fitness levels for different age groups and gender, Kinesiology, Physiology of Exercise

Unit 2: Mind-body Practices

(6 Hours)

States of mind and types of brain waves, mindfulness meditation in clinical psychology and psychiatry, Desbordes' recent studies on brain activities (Harvard's studies), MRI & functional MRI studies.

Types of meditations- focused attention meditation (FA), open monitoring meditation (OM), transcendental meditation (TM), loving-kindness meditation (LKM), mindfulness meditation (MM) and body-mind meditation (B-M).

Biochemical alterations, such as changes in activity/production of hormones, cytokines, chemokines, interferons, etc., oxygen saturation/desaturation, redox-condition and oxidative balance, progression/regression of certain diseases/health conditions, in response to various states of physical and mental well-being.

Unit 3: Nutrition for Mind/body Homeostasis

(6 Hours)

Role of nutrition in physical and mental health. Nutrients: carbohydrates, Protein, Fat, Vitamins, Minerals, Water-their functions, role of hydration (water balance) during exercise, daily caloric requirement and expenditure.

Metabolism: An overview of ATP release in glycolysis, TCA cycle, electron transport chain. basic concept of balanced diet vs. fad diet (Atkins, ketogenic etc.), Concept of BMI (Body mass index) and BMR (Basal metabolic rate), Obesity and its hazard, Dieting versus exercise for weight control.

Unit 4: Concepts of Atoms, Molecules and Laws of Motion

(3 Hours)

Concepts of atoms and molecules, properties and categories of atoms and molecules, Laws of motion.

Unit 5: Metallurgy

(6 Hours)

Gold, Silver, Copper, Bronze and other alloys; Copper smelting blast furnace and copper extraction; Tron and Steel; Iron smelting blast furnaces from Southern India; Ironworks in Ancient and medieval India; Delhi Iron Pillar; Dhar and Kodachadri Iron pillars; Wootz steel; Zinc and its extraction.

Unit 6: Chemicals

(3 Hours)

Drugs, dyes, pigments, glass, cosmetics and perfumes, etc.

Unit 7: Drugs

(6 Hours)

Eight categories of Gandhasara; Compounds of mercury (Hg) made and used by the Indian Alchemists for medicinal purposes; Use of chemical, compounds and ores in medicines.

Unit 8: Life and work of Ancient Indian Scientists/Chemists

(6 Hours)

(i) Maharshi Kanada (Ancient text and manuscripts), (ii) Nagarjuna (Ras Ratnakar, Kakshaputtantra, Arogya Manjari, Yog Saar, Yoasthak), (iii) Vaagbhatt (Rasratna Samuchchay), (iv) Govindacharya (Rasarnava), (v) Yashodhar (Ras Prakash Sudhakar), (vi) Ramachandra (Rasendra Chintamani), (vii) Somdev (Rasendra Chudamani)

Practicals:

(30 Hours)

(Laboratory periods: 30)

1. Extraction of essential oil from rose petal.
2. Extraction of casein from milk.
3. Determination of pulse rate/blood pressure/oxygen saturation before and after exercise.
4. Determination of acid value of given oil sample.
5. Isolation of piperine from black pepper.
6. Determination of Copper in brass turnings.
7. Extraction of Butea monosperma (Palash) dye for its use in coloration of cloth.
8. Determination of mass loss in mild steel in acidic/basic media.

9. Project on (Do any one):

Ayurveda as alternate medicine system,

Homeopathy in India,

Yogic Practices for mental wellness

Ancient Chemists of India

Other titles can also be suggested by the teacher.

10. Visit to

Iron Pillar, the metallurgical marvel and prepare a brief report.

Industries like Dabur India Ltd.

References:

1. Baer cites Kabat-Zinn, J. (1994): **Wherever you go, there you are: Mindfulness meditation in everyday life**. New York: Hyperion, p.4.
2. Buchholz L (October 2015). **"Exploring the Promise of Mindfulness as Medicine"**. JAMA. 314 (13): 1327–1329. doi:10.1001/jama.2015.7023. PMID 26441167.
3. Harrington A, Dunne JD (October 2015). **"When mindfulness is therapy: Ethical qualms, historical perspectives"**. The American Psychologist. 70 (7): 621–631. doi:10.1037/a0039460. PMID 26436312.
4. Blanck P, Perleth S, Heidenreich T, Kröger P, Ditzen B, Bents H, Mander J (March 2018). **"Effects of mindfulness exercises as stand-alone intervention on symptoms of anxiety and depression: Systematic review and meta-analysis"**. Behaviour Research and Therapy. 102: 25–35. doi:10.1007/s12671-014-0379-y. PMID 29291584.
5. Khoury B, Sharma M, Rush SE, Fournier C (June 2015). **"Mindfulness-based stress reduction for healthy individuals: A meta-analysis"**. Journal of Psychosomatic Research. 78 (6): 519–528. doi:10.1016/j.jpsychores.2015.03.009. PMID 25818837.
6. Jain FA, Walsh RN, Eisendrath SJ, Christensen S, Rael Cahn B (2015). **"Critical analysis of the efficacy of meditation therapies for acute and subacute phase treatment of depressive disorders: a systematic review"**. Psychosomatics. 56 (2): 140–152. doi:10.1016/j.psych.2014.10.007. PMC 4383597. PMID 25591492.
7. Reangsing C, Punsuwun S, Schneider JK (March 2021). **"Effects of mindfulness interventions on depressive symptoms in adolescents: A meta-analysis"**. International Journal of Nursing Studies. 115: 103848. doi:10.1016/j.ijnurstu.2020.103848. PMID 33383273. S2CID 229940390.

8. Sharma M, Rush SE (October 2014). "**Mindfulness-based stress reduction as a stress management intervention for healthy individuals: a systematic review**". *Journal of Evidence-Based Complementary & Alternative Medicine*. 19 (4): 271–286. doi:10.1177/2156587214543143. PMID 25053754.
9. Hofmann SG, Sawyer AT, Witt AA, Oh D (April 2010). "**The effect of mindfulness-based therapy on anxiety and depression: A meta-analytic review**". *Journal of Consulting and Clinical Psychology*. 78 (2): 169–183. doi:10.1037/a0018555. PMC 2848393. PMID 20350028.
10. Chiesa A, Serretti A (April 2014). "**Are mindfulness-based interventions effective for substance use disorders? A systematic review of the evidence**". *Substance Use & Misuse*. 49 (5): 492–512. doi:10.3109/10826084.2013.770027. PMID 23461667. S2CID 34990668.
11. Garland EL, Froeliger B, Howard MO (January 2014). "**Mindfulness training targets neurocognitive mechanisms of addiction at the attention-appraisal emotion interface**". *Frontiers in Psychiatry*. 4: 173. doi:10.3389/fpsyt.2013.00173. PMC 3887509. PMID 24454293.
12. Sancho M, De Gracia M, Rodríguez RC, Mallorquí-Bagué N, Sánchez-González J, Trujols J, et al. (2018). "**Mindfulness-Based Interventions for the Treatment of Substance and Behavioral Addictions: A Systematic Review**". *Frontiers in Psychiatry*. 9 (95): 95. doi:10.3389/fpsyt.2018.00095. PMC 5884944. PMID 29651257.
13. Paulus MP (January 2016). "**Neural Basis of Mindfulness Interventions that Moderate the Impact of Stress on the Brain**". *Neuropsychopharmacology*. 41 (1): 373. doi:10.1038/npp.2015.239. PMC 4677133. PMID 26657952.
14. Dunning DL, Griffiths K, Kuyken W, Crane C, Foulkes L, Parker J, Dalgleish T (March 2019). "**Research Review: The effects of mindfulness-based interventions on cognition and mental health in children and adolescents - a metaanalysis of randomized controlled trials**". *Journal of Child Psychology and Psychiatry, and Allied Disciplines*. 60 (3): 244–258. doi:10.1111/jcpp.12980. PMC 6546608. PMID 30345511.
15. Sharman, J. R. (1964). **Introduction to physical education**. New York: A.S. Barnes & Co.
16. William, J. F. (1964). **The principles of physical education**. Philadelphia: W.B. Saunders Co
17. Bucher, C. A. (n.d.) **Foundation of physical education**. St. Louis: The C.V. Mosby Co.
18. Sharkey, B. J. (1990). **Physiology of fitness**, Human Kinetics Book
19. Giam, C.K & The, K.C. (1994). **Sport medicine exercise and fitness**. Singapore: P.G. Medical Book.
20. Kenney, W.L., Wilmore, J.H., Costill, D.L. (six edition) **Physiology of sport and exercise**.
21. Vedas: (i) Rig Veda, (ii) Yajur Veda, (iii) Atharva Veda, (iv) Sama Veda
22. Deb, B. M., **The Peacock in Splendour**, Visva Bharti University.
23. Ray, P. C., **A History of Hindu Chemistry: from the Earliest Times to the Middle of the Sixteenth Century A.D.**, Volume 1 – 1902, Volume 2 – 1908, The Bengal Chemical and Pharmaceutical Works Ltd

24. **“History of Chemistry in Ancient and Mideaval India”** (Edited volume of Acharya Ray’s “History of Hindu Chemistry”), Indian Chemical Society, Calcutta, 1956.
25. Harsha, N. M., Nagaraja, T. N., **The History of Hindu Chemistry**, Ancient Science of Life, 2010, 30, 58 – 61.
26. Ray, P. C., **Life and experiences of a Bengali chemist**, Two Volume Set. Calcutta: Chuckervetty, Chatterjee & Co. 1932 and 1935.
27. Ray, P. R., **Chemistry in Ancient India**, Journal of Chemical Education, 1948, 25 (6), 327.
28. Seal, B. N.(1915), **The Positive Sciences of the Ancient Hindus**, Longman Greens and Co., Kolkata.

BHASKARACHARYA COLLEGE OF APPLIED SCIENCE
B.Sc. (HONOURS) POLYMER SCIENCE

Category I

**DISCIPLINE SPECIFIC CORE COURSE -1 (DSC-1) – :
INTRODUCTION TO POLYMER SCIENCE**

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF
THE COURSE**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| INTRODUCTION TO POLYMER SCIENCE | 4 | 3 | 0 | 1 | PCM | PCM |

Learning Objectives

The Learning Objectives of this course are as follows:

- To familiarize with the structure of polymers.
- To acquaint students with knowledge of molecular weight determination and polymersolubility.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Understand physical state of polymers
- Develop fundamental knowledge of thermal transitions of temperature
- Understand structure-property relationship of polymers
- Apply mathematical formulae to depict polymer solution properties

SYLLABUS OF DSC-1
UNIT – I (9 hours)

INTRODUCTION TO POLYMER SCIENCES

Introduction and history of polymeric materials, classification of polymers, configuration and conformation of polymers, nature of molecular interaction in polymers, cumulative interaction, entanglement, random chain model and RMS end-to-end distance, Various structures of copolymers such as linear branched and cross-linked copolymers and their types.

UNIT – II (6 hours)

POLYMER CRYSTALS

Crystal morphologies, extended chain crystals, chain folding, lamellae, spherulites, crystallization, crystallinity, crystallizability & orientation, crystalline melting point, crystallization kinetics, effect of orientation and crystallinity on polymer properties, determination of crystallinity.

UNIT – III (9 hours)

PROPERTIES OF POLYMERS

Physical properties, introduction of mechanical properties (stress–strain curves, tensile, flexural, impact, fatigue, hardness, creep and abrasion), electrical properties (dielectric strength, volume resistivity and power factor)

UNIT – IV (9 hours)

POLYMER MOLECULAR WEIGHT

Nature and structure of polymers: structure-property relationships, molecular weight of polymers (M_n , M_w , M_v and M_z), polydispersity, molecular weight distribution and determination of molecular weight by solution viscosity and end group analysis,

UNIT – V (6 hours)

SOLUTION PROPERTIES OF POLYMERS

Polymer solutions, solubility parameter, athermal solvents, theta solvents, solution viscosity, thermodynamics of polymer solutions, Flory-Huggins theory

UNIT – VI (6 hours)

GLASS TRANSITION BEHAVIOUR OF POLYMERS

Glass transition temperature (T_g) and measurement of T_g , factors affecting the glass transition temperature, WLF equation

Practical component – (30 hours)

1. Chemical identification of polymers- • Unsaturation • Testing of functional groups(associated with polymers).
2. Measurement of glass transition temperature (T_g).
3. To determine the melting point of crystalline polymers.
4. To check the solubility of the given polymeric sample in different solvents.
5. Determination of molecular weight by solution viscosity.
6. Determination of number average molecular weight by end group analysis.
7. To find out the acid number and hydroxyl number of a given polymer.
8. To measure volume resistivity of polymer samples.

Essential/recommended readings

1. Odian, G., (2004) Principles of Polymerization, Wiley-interscience.
2. Gowarikar V.R., (2019) Polymer Science, New Age International Publishers Ltd, 3rd Edition.
3. Billmeyer F.W., (2007) Textbook of Polymer Science, Wiley, India.
4. Shah V., (1998) Handbook of Plastics Testing Technology, Wiley Interscience.

5. Seymour R.B., Carraher C.E., (2003) Polymer Chemistry, Marcel Dekker.
6. Teraoka, I. (2002). Polymer solutions: an introduction to physical properties.
7. Hiemenz, P. C., & Lodge, T. P. (2007). Polymer chemistry. CRC press.

Suggestive readings

1. Brydson J.A., (2016) Plastics Materials, Butterworth Heinemann, 8th Edition.
2. Schultz J.M., (2001) Polymer Crystallization, American Chemical Society.
3. Ghosh P., (2010) Polymer Science and Technology: Plastics, Rubbers, Blends and Composites, Tata McGraw Hill.
4. Shah V., (2006) Handbook of Plastics Testing and Failure Analysis, John Wiley & Sons, Inc., 3rd Edition.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2): RAW MATERIALS FOR POLYMERS

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| RAW MATERIALS FOR POLYMERS | 4 | 3 | 0 | 1 | PCM | |

Learning Objectives

The Learning Objectives of this course are as follows:

- To learn about the resources of polymers
- To learn about basic concepts of polymer latex
- To gain knowledge of properties of monomers and their synthesis XXX

Learning outcomes

The Learning Outcomes of this course are as follows:

- Apply the knowledge of latex manufacturing and compounding
- Apply the knowledge of techniques used in monomer production

SYLLABUS OF DSC- 2

UNIT – I (6 hours)

INTRODUCTION TO CRUDE OIL AND IT'S REFINING

Petroleum oil, natural gas, coal: capabilities and limitations. general consideration of petrochemicals, an overview of petroleum refining, desalting, distillation, cracking and its types

UNIT – II (15 hours)

SYNTHESIS OF MONOMERS FROM PETROCHEMICALS

Ethylene, vinyl acetate, vinyl chloride, ethylene oxide and ethylene glycol, acrylonitrile, methyl methacrylate, isoprene, phenol, styrene, terephthalic acid, adipic acid, caprolactam, hexamethylenediamine

UNIT – III (6 hours)

LATEX

Natural rubber latex: collection process, composition, concentration and stabilization of latex

UNIT – IV (9 hours)

LATEX ADDITIVES AND IT'S COMPOUNDING

Vulcanizing agents, fillers, accelerator, coagulating agent, wetting, dispersing and emulsifying agents, stabilizers, thickening agents and other additives, compounding formulations for product manufacturing

UNIT –V (9 hours)

LATEX PRODUCT MANUFACTURING TECHNIQUES

Latex compound formulation, process of manufacturing, finishing and applications of spreading, casting and dipping (Dipping-principle and procedure of dipping process- different types of dipping –after treatment of latex deposits -Manufacture of dipped goods with formulation and flow chart-defects and remedies . latex casting – principle and procedure of casting-production of cast articles –mould preparation, latex thread and latex foam

Practical component- (30 hours)

1. Analysis of formalin/phenol/epichlorohydrin/Plasticizer
2. Determination of hydroxyl value/carboxyl value/ester value/epoxy value
3. Determination of colour and viscosity by gardner's tube method
4. Fractional distillation of crude oil.
5. To calculate dry rubber content (DRC) of latex.
6. To determine the coagulation strength of latex.
7. Preparation of balloon by dipping process.
8. Latex compounding for preparation of gloves & balloons.
9. Synthesis of adipic acid from cyclohexanol using Conc. HNO₃.
10. To prepare monomers from C₄ hydrocarbons.
11. Determination of percentage purity of phenol.

Essential/recommended readings

1. Kumar D., Chandra R., (2001) Latex Technology, Dhanpat Rai & Co.
2. Rao B.K.B., (2007) Textbook on Petrochemicals, Khanna Publishers.

3. Blackley, D.C., "High Polymer Latices", Vol 1 and 2, Chapman and Hall, 1997
4. Mausser, R.F., "The Vanderbilt Latex Hand book" 3rd edn. R.T. Vanderbilt Company, 1987.

Suggestive readings

1. Rao B.K.B., (2007) Modern Petroleum Refining Processes, Oxford and IBH
2. Maiti S., (2002) Introduction to Petrochemicals, Oxford & IBH Publ. Co.
3. Speight J.G., (2006) Chemistry and Technology of Petroleum, CRC Press.
4. Martin J. M., Smith W.K., (2007) Handbook of Rubber Technology, CBS Publishers.

DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-3): UNIT

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| UNIT OPERATIONS | 4 | 3 | 0 | 1 | PCM | PCM |

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand concepts of unit operations and their importance in polymer industries
- To learn about the concepts of separation equipments used in the process industry

Learning outcomes

The Learning Outcomes of this course are as follows:

- Select suitable criteria for solving material and energy balance problems
- Illustrate energy and material balance equations for open and closed systems

SYLLABUS OF DSC-3

UNIT – I (6 hours)

INTRODUCTION TO UNIT OPERATIONS

Unit operations: concept and requirement, material and energy balances (with and without chemical reactions), energy transport in non-isothermal systems

UNIT – II (9 hours)

MECHANICAL OPERATIONS

Mechanical Operations: Size reduction and its equipment (ball mill, jack crusher, end and

edge roller mill), filtration: theory of filtration, filter aids, filter media, industrial filters including filter press, rotary filter, edge filter, etc., factors affecting filtration

UNIT – III (15 hours)

HEAT TRANSFER

Conduction (Fourier law, Reynolds number), convection, radiation, heat exchangers (tube shell, shell plate)

UNIT – IV (15 hours)

MASS TRANSFER MECHANISM

Mass diffusion, factors affecting diffusion, gas absorption (Henry's Law, Langmuir Absorption Isotherm, BET equation), types of distillation, drying

Practical component (30 hours)

1. Handling of jaw crusher, ball mill for crushing and grinding.
2. Calculate the rate of evaporations of different volatile liquids.
3. Distillation of various liquid mixtures.
4. To evaluate diffusion percentage of a plasticizer in a PVC.
5. Filtration of solids from slurry.
6. Calculation of pressure drop and pipe size.
7. Heat Transfer through different materials like glass and plastics.
8. Analysis of different adsorption isotherms.

Essential/recommended readings

1. McCabe W., Smith J., Harriott P., (2005) Unit Operations in Chemical Engg., McGraw-Hill Education.
2. Chattopadhyaya P., (2003) Unit Operations in Chemical Engg., Vol. 1 & Vol. 2, Khanna Publishers.
3. Coulson J.M., Richardson J.F., (2010) Chemical Engg., Vol. 1, Elsevier.

Suggestive readings

1. Kumar D. S., (2009) Heat and Mass Transfer, S K Kataria & Sons.
2. Rao G. K., (2002) Solved Example in Chemical Engg., Khanna Publishers.
3. Treybal R., (2012) Mass Transfer Operations, Tata McGraw Hill.

**COMMON POOL OF GENERIC ELECTIVE COURSES
OFFERED BY BHASKARACHARYA COLLEGE OF APPLIED
SCIENCES IN POLYMER SCIENCE**

**GENERIC ELECTIVES (GE-1): BASICS OF POLYMER
SCIENCE**

Category-IV

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title &Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department offering the course |
|----------------------------------|----------|-----------------------------------|----------|---------------------|----------------------------|-----------------------------|--------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| BASICS OF POLYMER SCIENCE | 4 | 2 | 0 | 2 | All Science Streams | NIL | Polymer Science |

Learning Objectives

The Learning Objectives of this course are as follows:

- To familiarize with the structure of polymers will be introduced to students.
- To acquaint students with knowledge of molecular weight determination and polymersolubility

Learning outcomes

The Learning Outcomes of this course are as follows:

- Understand concept of crystalline and amorphous states of polymers
- Correlate flexibility with the glass transition temperature
- Understand structure-property relationship of polymers
- Apply mathematical formulae to depict polymer solution properties

SYLLABUS OF GE-1

UNIT – I (10 hours)

INTRODUCTION TO POLYMERS

Introduction and classification of polymers, configuration and conformation of polymers,

nature of molecular interaction in polymers, entanglement, various structures of copolymers such as linear branched and cross-linked copolymers, Polymer solutions, solubility parameter, solution viscosity, polymer solubility, thermodynamics of polymersolutions

UNIT – II (10 hours)

PROPERTIES OF POLYMERS

Physical properties, stress–strain behaviour, mechanical properties (tensile, flexural, impact, fatigue, hardness, creep, abrasion), introduction to flow & glass transition temperature (T_g) and its measurement of T_g , factors affecting the glass transition temperature

UNIT – III (10 hours)

MOLECULAR WEIGHT OF POLYMERS

Nature and structure of polymers – structure-property relationships, Molecular weight of polymers (M_n , M_w etc.), polydispersity, molecular weight distribution and determination of molecular weight by viscosity, end group analysis, cryoscopy, ebulliometry, light scattering & ultracentrifugation methods

Practical component (60 hours)

1. Chemical identification of polymers: Functional groups (associated with polymers).
2. Determination of molecular weight by solution viscosity/end group analysis.
3. To check the solubility of the given polymeric sample in different solvents.
4. To determine the melting point of crystalline polymers.
5. Determination of heat deflection temperature & vicat softening point of polymers.
6. Acid value of acrylic acid
7. Estimation of hydroxyl value by PVA and Cyclohexanol
8. Determination of epoxy equivalent weight of the epoxy resin.
9. Determination of saponification value of oil.
10. Study of three component systems.

Essential/recommended readings

1. Brydson J.A., (2016) *Plastics Materials*, Butterworth Heinemann, 8th Edition.
2. Ghosh P., (2010) *Polymer Science and Technology: Plastics, Rubbers, Blends and Composites* Tata McGraw-Hill.
3. Gowarikar V.R., (2019) *Polymer Science*, New Age International Publishers Ltd, 3rd Edition
4. Billmeyer F.W., (2007) *Textbook of Polymer Science*, Wiley, India.
5. Shah V., (1998) *Handbook of Plastics Testing Technology*, Wiley interscience publications

Suggestive readings

1. Schultz J.M., (2001) *Polymer Crystallization*, American Chemical Society.
2. Seymour R.B., Carraher C.E., (2000) *Polymer Chemistry*, Marcel Dekker.

GENERIC ELECTIVES (GE-2): ADVANCED ANALYTICAL TECHNIQUES

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title& Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| ADVANCED ANALYTICAL TECHNIQUES | 4 | 2 | 0 | 2 | All Science Streams | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To acquaint the students with the advanced instrumental techniques and their applications in characterization of polymeric materials

Learning outcomes

The Learning Outcomes of this course are as follows:

- Learn the electronic microscope for characterization of morphology of polymeric materials
- Elucidate crystallinity of various polymers and their characterization on the basis of their thermal stability and glass transition temperature

SYLLABUS OF GE-2 UNIT – I (6 hours)

INTRODUCTION

Basic principle of spectroscopy, molecular and atomic spectra, Lambert-Beer's law, Frank-Condon principle, electromagnetic radiation and its properties, interaction of radiation with matter, statistical method of analysis

UNIT – II (6 hours)

SPECTROSCOPIC TECHNIQUES

Principles and applications in structural determination of polymers (functional group, tacticity, molecular structure, purity, unsaturation etc.): Infra-red spectroscopy, UV-Vis spectroscopy, electron spin resonance, raman, nuclear magnetic resonance spectrometer

UNIT – III (8 hours)

CHROMATOGRAPHY TECHNIQUES IN POLYMER

Thin layer chromatography, high performance liquid chromatography, gel permeation chromatography (GPC), gas chromatography.

UNIT – IV (10 hours)

MICROSCOPIC AND X-RAY TECHNIQUES

Optical microscopy, electron microscopy (SEM, TEM, AFM) and XRD: basics and applications (size, morphology, crystallinity etc.) in polymers characterization

Practical component- (60 hours)

1. Study of UV stabilization of polymer samples by UV-visible spectrophotometer.
2. Calculate weight percentage of inorganic and organic ingredients in polymeric compounds.
3. Determination of K-value of PVC.
4. Quantitative determination of impurities by UV-Vis. spectrophotometer.
5. Characterization of Filler Content /Ash Content of common polymers by Thermogravimetric Analysis, (TGA).
6. Identification of additives in a processed polymer by chromatography.
7. Interpretation of FTIR, NMR and Raman spectra of polymers

Essential/recommended readings

1. Willard H.H., Merritt L.L., Dean J.A. (1988) Instrumental method of analysis, Wadsworth Publishing Company.
2. Skoog D.A, (1997) Principle of Instrumental Analysis, Harcourt College Pub.
3. Shah V., (2007) Handbook of Plastic Testing, Technology, Wiley-Inter science.
4. Banwell C.N., McCash E.M., (2008) Fundamentals of Molecular Spectroscopy, Fourth Edition, Tata McGraw-Hill.

Suggestive readings -

1. Tanaka T., (1999) Experimental Methods in Polymer Sciences, Academic Press.
2. Silverstein R.M., (1991) Spectrometric identification of organic compounds, John Wiley.
3. Macomber R.S., (2008) A complete introduction to NMR spectroscopy, Wiley-interscience.

GENERIC ELECTIVES (GE-3): POLYMERS AND ENVIRONMENT

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| POLYMERS AND ENVIRONMENT | 4 | 2 | 0 | 2 | All Science Streams | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To give understanding of basics of care to be taken while handling polymer products.
- To know the Safety and hazardous of their manufacturing processes.
- To impart Knowledge of the subject will help students to see the environmental impact of plastic and resin.
- To understand the current benefits and concerns surrounding the use of plastics and look to future priorities, challenges and opportunities.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Understand basics of environmental and safety issues in the chemical industry.
- Understand safety in handling monomer and resins
- Impact of final product of polymer on environment after use and its waste management

SYLLABUS OF GE-3

UNIT – I (8 hours)

ENVIRONMENTAL APPROACH OF PLASTIC WASTE

Health and safety, Plastics in the society, Plastics in the environment, Plastic waste management, Plastic waste in the marine and terrestrial environment, Plastic material degradation, regulations for hazardous chemicals in articles/plastic products, coated articles. Separation techniques of plastic wastes (density, float sink and froth floatation methods, optical, spectroscopic, sorting by melting temperature etc.).

UNIT – II (8 hours)

PLASTIC SEGREGATION

Thermoplastic waste management: 4 R's approach (reduce, reuse, recycle (mechanical and chemical), recover), recycling classification- - primary - secondary - tertiary - quaternary recycling with examples.

UNIT – III (14 hours)

RECYCLING

Disposal processes and Various waste treatment methods – controlled tipping, pulverization, compositing, Energy from waste – (incinerators- pyrolysis, factors affecting incineration), new developments in thermal disposal of refuse, on-site disposal methods, compacting and baling. Recycling of Polyolefins, PVC, PET, Polystyrene, Polyamides (Nylon-6 and Nylon- 6,6). Recycling of Thermosets –reclaiming of rubber –pyrolysis, depolymerization of scrap rubber, tyre retreading, uses of recycled rubber.

Practical component- (60 hours)

1. Primary recycling of plastic waste collected from the environment.
2. Secondary recycling of MSW by incorporating and blending the recyclable waste with virgin polymers.
3. To study composting of natural/biopolymers.
4. Separation of polymer mixture by sink flotation technique.
5. Separation of polymer mixture by selective dissolution technique.
6. Recovery of BHET from PET by chemical recycling process
7. Recovery of Adipic Acid from Nylon 66 by chemical recycling technique
8. To study the effect of vulcanized rubber at varying ratio (in powder form) on mechanical properties of rubber vulcanizate
9. Preparation of plasticizer from polyester waste.
10. Preparation of reclaim from tyre waste.

Essential/recommended readings

1. Chandra, R., & Adab, A. (1994). Rubber & Plastic Waste: Recycling, Reuse and Future Demand. CBD Publishers.
2. Scheirs, J., & Long, T. E. (Eds.). (2005). Modern polyesters: chemistry and technology of polyesters and copolyesters. John Wiley & Sons.

Suggestive readings

1. Blow, S. (1998). Handbook of Rubber Technology.
2. Brandrup, J., Bittner, M., Michaeli, W., & Menges, G. (1996). Recycling and Recovery of Plastics, Hanser. Gardner, München.
3. Goodship, V. (2007). Introduction to plastics recycling. iSmithers Rapra Publishing.
4. Brydson J.A., (2016) Plastics Materials, Butterworth Heinemann, 8th Edition

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Sri Venkateswara College

COURSES OFFERED BY DEPARTMENT OF
BOTANY, BIOCHEMISTRY, ZOOLOGY, CHEMISTRY AND PHYSICS

B.Sc. (Hons.) Biological Science

Category-I

DISCIPLINE SPECIFIC CORE COURSE – 01: Basic concepts of Biomolecules

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (If any) |
|--------------------------------|---------|-----------------------------------|----------|---------------------|---|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic concepts of Biomolecules | DSC-101 | 2 | 0 | 2 | 10+2 from any recognized Board with Biology & Candidates must appear in CUET in the following subject combination: Physics+ Chemistry+ Biotechnology Biology/ | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

- to develop a basic understanding of the structure, bonding, stability, stereochemistry and reactivity of organic molecules with focus on biomolecules.
- This basic knowledge will empower the students to develop an understanding about chemistry and biology of biomolecules such as proteins and nucleic acids. This course also provides a basic understanding of the chemistry of carbohydrates and lipids.
- This knowledge will help students to better understand the biological applications of these biomolecules.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Understand and apply the fundamental principles of chemistry which include bonding, electronic effects, molecular forces and stability of reactive intermediates to biomolecules.
- Gain an insight into the influence of chemical bond polarization on a molecular structure and its reactivity.
- Identify the type of metabolic reaction and draw reaction mechanisms for key metabolic processes.
- Recognize stereochemistry of a biomolecule and give a rational explanation of its biological reactivity based on stereochemistry.
- Understand the chemistry and biological functions of carbohydrates and lipids

SYLLABUS OF DSC-1

Unit I: Basic Concepts

(6 hours)

Electronic displacements and their applications: Inductive, electromeric, resonance and hyperconjugation. Dipole moment, acidity and basicity. Types, shape and relative stability of carbocations, carbanions and free radicals. Electrophiles and nucleophiles, Intramolecular and intermolecular molecular forces including hydrophobic, hydrophilic interactions and hydrogen bond (emphasis on effect of these forces on the stability of biomolecules),

Unit II: Stereochemistry

(8 hours)

Stereochemistry and its importance to biological systems, Stereoisomerism: Optical activity and optical isomerism, asymmetry, chirality, enantiomers, diastereomers. Mesomers, specific rotation; Resolution of racemic modification, Configuration and projection formulae: Newmann, Sawhorse, Fischer projections and their interconversion. Chirality in molecules with one and two stereocentres; CIP rules: Erythro/Threo, D/L and R/S designations.; Relative and absolute configuration; thalidomide case and chiral drugs; Geometrical isomerism: cis-trans, syn-anti and E/Z nomenclature.; Cis-trans isomerism in vision.

Unit III: Biologically significant chemical reactions

(6 hours)

Aldol condensation (Glucogenesis), Retro-aldol (Glycolysis), Benzoin condensation (umpolung-decarboxylation of pyruvate in the presence of TPP), Claisen condensation (Synthesis of fatty acids), Michael addition (Dehydrases), Cannizzaro (Sugar metabolism), Baeyer Villiger reaction (FAD dependent ketone synthesis), Pinacole-pinacolone rearrangement (1,2-carbon carbon shift), Isomerisation (Glycolysis), Redox reaction (Lactate dehydrogenase).

Unit IV: Carbohydrates

(6 hours)

Classification of carbohydrates, reducing and non-reducing sugars, biological functions, linkage between monosaccharides, general properties and reactions of glucose and fructose, their open chain structure, epimers, mutarotation and anomers, reactions of monosaccharides, configuration, cyclic structure (exclude structure elucidation) and Haworth projection formulae of glucose and fructose: structure of disaccharides (sucrose, maltose, lactose); polysaccharides- classification, structure of important members, storage polysaccharides (Glycogen, Starch) and structural polysaccharides (Cellulose, chitin, peptidoglycans and glycosaminoglycans)

Unit V: Lipids

(8 hours)

Introduction, classification, biological importance of triglycerides, phospholipids, glycolipids, eicosanoids and steroids (cholesterol). Oils, Fats and Waxes: Common fatty acids present in oils and fats, essential fatty acids, characteristics of fatty acids and fats (saponification, iodine, acid, acetyl and peroxide values). Rancidity and reversion of fats; waxes, trans-fats and their biological significance.

Practical component: (60 hours)

1. Purification of organic compounds by recrystallization using the following solvents:
 - i. Water
 - ii. Water-Alcohol
 - iii. Alcohol
2. Criterion of purity of organic compound- melting point, mixed melting point and boiling point of organic compounds.
3. Estimation of saponification value of fat/oil.
4. Estimation of iodine value of fat/oil.
5. Qualitative tests for carbohydrates and lipids
6. Chromatography
 - a) To separate a mixture of sugars by circular paper chromatography
 - b) To separate a mixture of lipids in a sample by Thin Layer Chromatography.

Essential/recommended readings

- A Guidebook to mechanism in organic chemistry (2003) 6 th ed., Sykes, P. New York: John Wiley & Sons. Inc
- Organic Chemistry (2014) 7 th ed., Morrison, R.T., Boyd, R.N., Bhattacharjee, S. K., Pearson Education
- Stereochemistry of Organic Compounds (1994), Eliel, E. L., Wilen, S. H. John Wiley& Sons.
- Stereochemistry: Conformation and Mechanism (2015) 8 th ed., Kalsi, P. S. New Age International
- Organic Chemistry (2013), Madan, R. L. Tata McGraw Hill Education Private Limited, New Delhi
- Organic Chemistry (2020) 8th Edn., Bruice, P. Y., Pearson

Suggestive readings: Nil

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2: Photobiology

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (If any) |
|---------------------|---------|-----------------------------------|----------|---------------------|---|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Photobiology | DSC-102 | 2 | 0 | 2 | 10+2 from any recognized Board with Biology & Candidates must appear in CUET in the following subject combination: Physics+ Chemistry+ Biotechnology Biology/ | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

- The course explores the physical properties of light and its interplay with living organisms. Light as a source of energy and information has shaped life on earth over the last 3.6 billion years. We see the world around us because the light reflected to the retina is processed to our brain (Photoreception), we breathe in oxygen because it has been evolved by the plants around us due to the light dependent Photosynthesis. Where there is no natural light, some organisms produce their own (Bioluminescence). Maintaining coordination with the changing light regime with changing seasons is fundamentally important to various aspects of living organisms across latitudes (Photoperiodism). Every part of the spectrum is used in one way or the other by different life forms. In this paper students will be able to appreciate the delicate processes of life that are dependent on light.

Learning outcomes

A student studying this course can:

- Understand and appreciate the dual nature of light.
- Comprehend the impact of light on biodiversity from pole to pole.
- Gain knowledge about the various photoreceptors in plants and animals and will appreciate and understand the mechanism of photosynthesis.
- Understand bioluminescence, photoperiodism and biological rhythms.
- Gain knowledge about the ecological and physiological responses to light.

SYLLABUS OF DSC-2

Unit 1: Introduction to Light and Life (6 hours)

Latitudinal Diversity gradient. Altitudinal and latitudinal variations in light intensity and photoperiod. Light as an ecological factor affecting distribution, physiological processes of plants and animals (Phyto and Zoo geography), in terrestrial and aquatic ecosystems.

Unit 2: Bioluminescence and Photoreception (6 hours)

Discovery, diversity and functions of Bioluminescence. Comparative account of chemistry and functional roles of photoreceptors in plants: chlorophylls, carotenoids, phycobiliproteins, bacteriochlorophylls, etc. Photoreception in animals, evolution of eyes, color vision and visual processing in the human eye.

Unit 3: Photosynthesis (6 hours)

History, Spectrum of autotrophs, Photosynthetic equation, Photosynthetic electron transport (cyclic and non-cyclic), photolysis of water, oxygen-evolving complex (OEC), concept of Reaction centers, Q-cycle, Dark Reactions in Photosynthesis, C₃, C₄, CAM cycle, photorespiration (C₂ cycle).

Unit 4: Photoperiodism (6 hours)

Phytochrome mediated responses in Plants, Animal responses to changing photoperiodism. Morphological, Anatomical, Physiological and behavioral adaptations to extreme light conditions in plants and animals.

Unit 5: Ecological and physiological responses to Light (6 hours)

Morphological and physiological color change in animals. Light as an inducer for biosynthesis/activation of biomolecules (Vitamin D, Melatonin, Thymine dimer formation, RuBisCo. Three rhythm domains, Biological clocks and circadian rhythms, night shift disorders and jet lag.

Practical component: (60 hours)

1. To study light penetration in water using Secchi disc.
2. To demonstrate the effect of light on soil fauna using Berlese funnel setup.
3. To study the effect of light and darkness on the chromatophores of fish.
4. To test / survey for color blindness using Ishihara charts.
5. To study various Bioluminescent organisms using photographs- *Photinus pyralis*, *Aequorea victoria*, Vampire squid, Anglerfish, Lanternfish, Viperfish, Black dragonfish, *Omphalotus nidiformes*
6. Diel vertical migration using photographs
7. Measurement of light using Luxmeter under various conditions
8. To study structure of chloroplast- through photographs
9. Separation of Chloroplast pigments by Paper Chromatography/ Chemical Separation of

Chloroplast pigments

10. To study the effect of Light intensity and CO₂ concentration on the rate of Photosynthesis
11. Demonstration of Hill's Reaction and study the effect of Light intensity (any 2 light conditions).
12. Demonstration of Etiolation and de-etiolation.

Essential/ recommended Readings:

- Björn, L. O. (2015) 3rd Ed. *Photobiology: Science of Light and Life*, L.O. Björn., Springer
- Buchanan, B. B., Gruissem, W., and Jones, R. L. (2000). *Biochemistry and molecular biology of plants*. Rockville, Md.: American Society of Plant Physiologists.
- Huner, N. and Hopkins, W. (2013). *Introduction to Plant Physiology*. In: 4th ed. John Wiley & Sons, Inc.
- Kohen E., Santus R., Hirschberg J.G. (1995) 1st Ed., *Photobiology* Academic Press
- Randall D., Burggren W., & French k. (2001) 5th Ed. *Eckert, Animal Physiology Mechanisms and Adaptations*. W.H. Freeman and Co.

Suggested Readings:

- Gross M. (2003). *Light and Life*. Oxford University Press
- Shimomura O., (2012) *Bioluminescence: Chemical Principles and Methods*, World Scientific,
- Taiz, L., & Zeiger, E. (1991). *Plant physiology*. Redwood City, Calif: Benjamin/Cummings Pub. Co.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 3: Diversity in lifeforms I

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------------------|----------------|-----------------------------------|----------|---------------------|---|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Diversity in Life forms I | DSC-103 | 2 | 0 | 2 | 10+2 from any recognized Board with Biology & Candidates must appear in CUET in the following subject combination: Physics+ Chemistry+ Biotechnology Biology/ | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

- The course will acquaint students with variations and variability in the living world and the objectives of biological classification. The course covers important aspects of biodiversity and its components with emphasis on understanding the features of Kingdom Animalia and Plantae and systematic organization of the same based on their evolutionary relationships. Students will also understand the importance of taxonomy and structural organization of animals from Protista to Echinodermata to appreciate the diversity of non-chordates living in varied habitats. They will study about the general characteristics and significance of Algae, Fungi, Bryophytes and Pteridophytes

Learning outcomes

After studying this course the student will be able to:

- Understand characteristic features of different plant and animal life forms.
- Identify, classify and differentiate diverse non-chordates based on their morphological, anatomical and systemic organization.
- Understand similarities and differences in life functions among various non-chordates.
- Appreciate and understand the relevance of wild relatives of cultivated plants, their domestication and green revolution.
- Understand the general characteristics, classification, economic importance, morphology, asexual and sexual reproduction of Algae, Fungi, Bryophytes and Pteridophytes

SYLLABUS OF DSC-3

Please provide weekly distribution

Unit I: Algae and Fungi

(6 hours)

Importance of biodiversity in daily life. Biodiversity crisis and biodiversity loss,

Five kingdom classification and the position of Algae, Fungi, Bryophytes and Pteridophytes.

Algae: Study of general characteristics, Outline Classification, Economic Importance, Thallus Organization and Reproduction in Nostoc, Polysiphonia, Ectocarpus.

Fungi – General Characteristics, Outline Classification, Economic Importance, Thallus Organization and Reproduction in Rhizopus and Puccinia, Lichens (crustose, foliose and fruticose), Mycorrhiza (ectomycorrhiza and endomycorrhiza, VAM)

Unit II: Bryophytes and Pteridophytes

(8 hours)

Bryophytes: General Characteristics; Outline Classification; Ecological and Economic Importance; Morphology, Structure and Reproduction (comparative) in *Marchantia* and *Anthoceros*

Pteridophytes: General Characteristics; Outline Classification; Economic Importance; Morphology, Structure and Reproduction in *Selaginella*

Unit III Introduction to Animal Life Forms

(6 hours)

Introduction to animal diversity, Basic Taxonomy (Linnaean system of classification, Whittaker's five kingdom classification, ICZN Rules), General Characteristics of Non-Chordata and Chordata.

Unit IV: Non-Chordata Taxonomy and Diversity

(10 hours)

Study of General Characteristics and Classification up to classes (Protista, Porifera, Cnidaria, Platyhelminthes, Aschelminthes, Annelida, Arthropoda, Mollusca, Echinodermata)

Practical component: (60 hours)

FLORA

1. Study of Vegetative and Reproductive Structures through Temporary Preparations and Permanent Slides- *Nostoc*, *Oedogonium*, *Polysiphonia*; *Chlamydomonas* (Through Photograph/Electron photomicrograph)
2. Study of Asexual Stage from Temporary/ Tease Mounts- *Rhizopus Albugo*; *Puccinia* - WM uredospores, teleutospores, Section of Leaf through pustules to show conidia
3. *Marchantia*-Morphology of Thallus, W.M. Rhizoids, V.S. Thallus through Gemma Cup, Antheridiophore (Permanent slide), Archegoniophore (Permanent Slide)), *Funaria*-Morphology of Gametophyte bearing Sporophyte, W.M. Rhizoids, W.M. Leaf, W.M. Operculum, W.M. Peristome, W.M. Spores (all Temporary Slides), L.S. Capsule (Permanent Slide).
4. *Selaginella*- Morphology, T.S. Stem, W.M. Strobilus, W.M. Microsporophyll and Megasporophyll (all Temporary Slides), L.S. Strobilus (Permanent Slide), *Pteris*-Morphology, V.S. Sporophyll, W.M. Sporangium, W.M. Spores (all Temporary Slides), W.M. Prothallus with Sex Organs (Permanent Slide).

FAUNA

5. **Study of following specimens:** *Euglena*, *Paramecium*, *Sycon*, , *Tubipora*, *Taenia solium*, *Ascaris Phertima*, *Hirudanaria*, *Peripatus*, *Scolopendra*, *Julus*, *Cancer*, *Daphnia*, *Apis*, *Pila*, *Dentalium*, *Octopus*, *Asterias*
6. **Dissections / Virtual demonstration:** Nervous system of Cockroach, Salivary apparatus and Ovary of Cockroach.
7. Study of adult *Fasciola hepatica*, *Taenia solium* and their life stages (Slides/micro-photographs).
8. Study of following permanent Slides.
 - a. T.S. and L.S. of *Sycon*.
 - b. Crustacean larvae (W.M. Mysis, W.M. Megalopa, W.M. Zoea).
9. To study faunal composition of water samples (Lucky drop method).
10. Field trip on: Biodiversity park/reserve/ NBPGR. (Botany + Zoology)

Essential/ recommended readings:

- Barnes, R.D. (1982). *Invertebrate Zoology*, 5th. Edition
- Campbell N. A., (2008). *Biology* 8th Edition, Pearson
- Barrington, E.J.W. (2012). *Invertebrate Structure and Functions*. II Edition, EWP Publishers
- Singh, V. (2010). *A text book of botany*. Rastogi Publications.
- Ennos, R., & Sheffield, E., (2000). *Plant Life*. UK: University Press, Cambridge.

Suggested readings:

- Ingrowille, M., (1992). *Diversity and Evolution of land plants*. Chapman and Hall
- Wilson, E. O., (1998). *Biodiversity*. National Academic Press.
- Barnes, R.D. (2006). *Invertebrate Zoology*, VII Edition, Cengage Learning, India.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DEPARTMENT OF ANTHROPOLOGY

BSc (Hons.) Anthropology

Category-I

DISCIPLINE SPECIFIC CORE COURSE – 1: Introduction to Biological Anthropology

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction to Biological Anthropology | 4 | 3 | 0 | 1 | Class X II pass with biology | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

1. In order to acquaint the students with the fundamental concepts of Biological Anthropology
2. To introduce the student a foundational understanding of human variation and evolution of human and non-human primates

Learning outcomes

The Learning Outcomes of this course are as follows:

1. The students will comprehensively learn the scope and focal theme of biological anthropology along with its implications.
2. They will also learn the emergence of mankind in the context of human evolution and variation.
3. Further, this paper will help them in learning the role of evolutionary forces in bio-cultural human adaptations in the context of changing environment.

SYLLABUS OF DSC-1

UNIT – I History, Concepts, Aims and Scope (9 hours)

1. History and development of Biological Anthropology
2. Basic concepts of human evolution and variation
3. Scope and relationship of biological anthropology with other disciplines

UNIT – II Theories of Evolution (12 hours)

1. Pre-Darwinian Theories of Evolution
2. Darwinism and Synthetic theory of evolution

UNIT – III The primates (12 hours)

1. Classification and characteristics of living primates, Primate radiation

2. Primate Locomotion, Comparative anatomy and behaviour of human and non-human primates
3. Significance of non-human primate study in biological anthropology

UNIT – IV Human Variation and Concept of Race (12 hours)

1. Traditional and modern methods of studying human variation
2. Racial Classification of Mankind
3. Indian Racial classifications: Risley, Guha and Sarkar
4. UNESCO statement on Race and Current understanding of Race

Practical component (if any) - (30 hours)

Somatometry

1. Height/ Stature; Sitting height; Body weight
2. Maximum Head Length; Maximum Head Breadth; Minimum Frontal Breadth; Maximum Bizygomatic Breadth; Bigonial Breadth; Head Circumference
3. Physiognomic Facial Height; Morphological Facial Height; Physiognomic Upper Facial Height; Morphological Upper Facial Height
4. Nasal Height; Nasal Length; Nasal Breadth; Cephalic Index; Nasal Index

Somatoscopy

1. Head form; Facial form; Nose form; Eye form; Hair form
2. Skin colour; Hair Colour; Eye Colour

Essential/recommended readings

1. Campbell, G. (2016). The Ethnology of India. Wentworth Press.
2. Ember, C. R., Ember, M. Peregrine, P.N (2015). Anthropology (Twelfth Edition). Pearson Education Inc. Boston, USA [Unit-1: Chapter-1 and 2; Unit-2; Chapter -3 and 4; Unit-3: Chapter-5 and 6]
3. Eugenia Shanklin (1993). Anthropology and Race: The Explanation of Differences. Cengage Learning: 1 edition [Unit-4].
4. Jurmain R., Kilogre L., Trevathan W., Ciochon R.L. (2012). Introduction to Physical Anthropology. Wadsworth Publications, USA. [Unit-1: Page-3-23; Unit-2: Page 25-113; Unit-3: Page-143-225].
5. Statement of Race: Annotated Elaboration and Exposition of the Four Statements on Race (1972). Issued by UNESCO. Oxford University Press. 14.
6. Trudy R. Turner (2005). Biological Anthropology and Ethics: From Repatriation of Genetic Identity. State University of New York Press [Unit-3; Page 27-64].
7. Winfried Henke and Ian Tattersall (Eds.) (2007). Handbook of Paleoanthropology (Volume II). Springer.
8. Winfried Henke and Ian Tattersall (Eds.) (2007). Handbook of Paleoanthropology (Volume III). Springer

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

**DISCIPLINE SPECIFIC CORE COURSE – 2:
Society and Culture: Concepts and Approaches**

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Society and Culture: Concepts and Approaches | 4 | 3 | 0 | 1 | Class XII pass with biology | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

1. The course introduces concepts of Society and Culture and their role in shaping human lives
2. Raises awareness about ethnocentrism and cultural relativism
3. Outlines some basic concepts and approaches to social and cultural changes

Learning outcomes

The Learning Outcomes of this course are as follows:

The students will be able to:

1. Critically interrogate who we are and what we do.
2. Understand the basic concepts and methods of social and cultural Anthropology.
3. Understand how social and cultural differences operate in the world.

SYLLABUS OF DSC-2

UNIT – I Concept of Society (12 hours)

Concept of Society, Status and Role, Group, Association, Community and Institutions Social Fact, Social Action, Social Conflict

UNIT – II Concept of Culture (12 hours)

Culture and its attributes, Enculturation, Ethnocentrism, Cultural Relativism, Paradoxes of Culture, Cultural Change, Culture Trait, Culture Complex, Culture Area Tangible and Intangible Culture

UNIT – III Emergence and Historical Development of Social Anthropology (12 hours)

Early writings: Colonial accounts of travelers and administrators; Ethnography, Ethnology and Social Anthropology; Scope and Relevance; Relationship with other disciplines.

UNIT – IV Approaches to Culture and Society (9 hours)

Evolutionism, Diffusionism, and Historical Particularism

Practical component (if any) – (30 hours)

Research projects based on everyday life experiences from different walks of life in different cultures. Students will be required to operationalize various concepts, identify the variables and examine their relationships in small field settings.

Essential/recommended readings

1. De Annemarie Waal Malefijt (1916) Images of Man: A History of Anthropological Thought. Random House.
2. Barnard, A. (2021). History and theory in anthropology (Second Edition). Cambridge: Cambridge University Press (Selected Chapters).
3. Davis, K. (1973). Human society. New York: Macmillan. (Page: 289-391).
4. Durkheim, E. (2013). The Rules of Sociological Method and Selected Texts on Sociology and its Method Edited by Steven Lukes (Second Edition). Houndmills: Palgrave Macmillan. (Page: 20-49, 78-100).
5. Eriksen, T. H. (2015). Small Places, Large Issues: An Introduction to Social and Cultural Anthropology (Fourth Edition). London: Pluto Press (Selected Chapters).
6. Gluckman, M. (1956). Custom and Conflict in Africa. Oxford: Basil Blackwell. (Page: 1-26, 27-53).
7. Marx, K. and F. Engels. (2008). The Communist Manifesto (with an introduction by David Harvey). London: Pluto. (Page: 31-82)
8. Michael Wesch. 2018. The Art of Being Human (First Edition). Manhattan, Kansas: New Prairie (Whole book).
9. Linton R (1936) Study of Man; Manchester: D Appleton-Century.
10. Rapport N. and Overing J. (2004). Key Concepts in Social and Cultural Anthropology. London: Routledge. (Page: 333-343, 92-102).

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 3: Introduction to Archaeological Anthropology

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction to Archaeological Anthropology | 4 | 3 | 0 | 1 | Class XII pass with biology | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

1. The course will enhance students understanding of human prehistory in the light of human origins.
2. The course will help students to develop concepts pertaining to the fundamentals of archaeological anthropology

Learning outcomes

The Learning Outcomes of this course are as follows:

Students will learn on evolutionary relationships of different extinct/hominids in the context of emergence of various stone tool types and settlements.

SYLLABUS OF DSC-3

UNIT – I Introduction (9 hours)

1. Definition and scope of archaeological anthropology
2. Relation with other disciplines
3. Methods of studying archaeological anthropology

UNIT – II Methods of Estimation of Time and Reconstruction of the Past (12 hours)

1. Absolute dating methods
2. Relative dating methods
3. Geochronology of Pleistocene Epoch
4. Glacial and Interglacial
5. Pluviation and Inter Pluviation
6. Different types of geoclimatic events.

UNIT – III Understanding Culture (12 hours)

1. Technique of tool manufacture and estimation of their relative efficiency
2. Classification of tools: primary and combination fabrication techniques
3. Typology and cultural nomenclature

UNIT – IV Earliest Evidence of Culture in the World (12 hours)

Konso, Olorgesailie, Olduvai Gorge, Pirro Nord, Dmanisi, Attirampakkam, Isampur

Practical component (if any) (30 hours)

Typo-technological Analysis of Prehistoric Tools: Identification, Interpretation and Drawings of the tool Types

1. Core Tool Types
2. Flake Tool Types
3. Blade Tool Types

Essential/recommended readings

1. Renfrew Colin and Bahn Paul (2012) Archaeology: Theories, Methods and Practice. New York: Thames & Hudson, 6th Edition.

2. Fagan Brian M. and Nadia Durrani (2014). In the Beginning: An Introduction to Archaeology, London: Routledge, 14th Edition.
3. Champion Timothy, Clive Gamble, Stephen Shenan & Alasdair Whittle (2009) Prehistoric Europe, London: Routledge
4. Allchin, Bridget and Allchin, Raymond F. (2003) The Rise of Civilization in India and Pakistan. Cambridge: Cambridge University Press.
5. Phillipson D. W. (2005). African Archaeology. Cambridge: Cambridge University Press.
6. Whittaker, J.C. (2009) Flintknapping: Making and Understanding Stone Tools. Austin: University of Texas Press.
7. Odell, George H. (2003). Lithic Analysis. New York: Springer.
8. Moloney and Shott, M.J. (2016). Lithic Analysis at the Millennium, New York: Routledge.
9. Bhattacharya, D.K: An outline of Indian Prehistory (2006) Palaka prakashan Delhi
10. Bhattacharya, D.K. (1979). Old Stone Age Tools: A Manual of Laboratory Techniques of Analysis. Calcutta: K. P. Bagchi and Company.
11. Inizan, M.L.; M. R. Ballinger; H. Roche and J. Tixier. (1999). Technology and terminology of Knapped Stone. Nanterre: CREP.
12. Oakley, K.P. (1972). Man the Tool Maker. London. Trustees of the British Museum Natural History.
13. Sankalia, H.D. (1982). Stone Age Tools: Their techniques, Names and Probable Functions. Poona: Deccan College.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

**COMMON POOL OF GENERIC ELECTIVE COURSES
OFFERED BY DEPARTMENT OF ANTHROPOLOGY**

Category-IV

GENERIC ELECTIVES (GE-1)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--------------------------------------|---------|-----------------------------------|----------|---------------------|------------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Forensic and Criminal investigations | 4 | 3 | 0 | 1 | Class X II pass with biology | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- Give exposure of Forensic Science to students which focus on the investigation process of a crime.
- Enhance understanding of forensic applications and criminal investigations by teaching and research.
- Develop skills in forensic identification and problem solving methods.
- Keep up to date knowledge about all recent developments and emerging trends in Forensic science and criminal investigation.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Understand the aim, concept and significance of Forensic Science and Criminal Investigation.
- To make aware about recent techniques and developments of Forensic Science and Criminal Investigation.

SYLLABUS OF GE-1

UNIT – I: Forensic Science, Crime Scene Management and criminal investigation (9 hours)

- Introduction, history, development, laws and branches of Forensic Science.
- Organizational set-up of Forensic science laboratories.
- Crime scene protection, isolation, documentation, sketching, field notes and photography.
- Definition, concept, types and scope of crime, various control and prevention methods of crime.
- Criminology, criminal anthropology and criminal law

UNIT – II Forensic Ballistics and Explosives (9 hours)

- History, background, classification and characteristics of Firearms
- Internal, External, Terminal (wound) ballistics

- Classification, synthesis and characteristics of explosives.
- Examination and identification of firearms and explosives evidences.

UNIT – III Forensic Chemistry and toxicology (9 hours)

- Introduction, sampling, presumptive, screening and analytical techniques in Forensic Chemistry.
- Definition, classification and extraction of poisons.
- Toxicological techniques used in poisoning cases.
- Classification of drugs, Field and laboratory tests of drugs of abuse.

UNIT – IV Questioned Documents and fingerprint examination (9 hours)

- Classification of forensic documents, importance of natural variation and disguised writing
- Class and individual characteristics of handwriting and documents examination.
- History and classification of fingerprints, Conventional and modern methods of developing latent fingerprint.
- Automated Fingerprint Identification System (AFIS).

UNIT – V Forensic anthropology, Serology and DNA profiling (9 hours)

- Personal identification of living and non- living individual through various anthropological techniques.
- Forensic morphometric techniques of skeleton remains, Human and non-human identification.
- Sex determination, stature and age estimation from skeleton remains
- History, biochemistry and genetics of ABO, Rh, MN and other blood systems. Blood pattern analysis and blood stains ageing.
- DNA profiling and its application in criminal and civil investigations.

Practical component (if any) -

1. Descriptive study of organizational structure of a forensic science laboratory.
2. Interpretation of crime scene notes, photos, sketches, crime scene reconstruction and mock crime scene investigation.
3. Linkage of suspected bullet and cartridge case with the class and individual characteristics of firearms.
4. TLC and spot test for different toxic and drugs substances
5. Forensic identification of class and individual characteristics of handwriting
6. Examination of passports and currency notes
7. Various powder and chemical methods used for latent fingerprints.
8. Ridge characteristics, counting, and fingerprint comparison
9. Morphometric examination of skeleton remains
10. Sex determination, age and stature estimation from skeleton remains.
11. Examination of blood groups from fresh and dried blood stains
12. Preliminary and confirmatory tests for blood stains.

Essential/recommended readings

1. Sharma, B.R; Forensic Science in Criminal Investigation & Trials, Universal Publishing Co., New Delhi, 2003
2. Saferstein; Criminalistics- An Introduction of Forensic Science, Prentice Hall Inc, USA,2007.
3. Swansson, C.R, Chamelin, N.C, &Territ, L; Criminal Investigator, McGrawhill, New York, 2000.
4. The Indian Evidence Act,(1872), Amendment Act (2002); Universal Law Publishing Co., 2003.
5. The Code of Criminal Procedure (1973) Amendment Act, (2001); Universal Law Publishing Co., 2002.
6. Rattan Lal &DhirajLal; The Indian Penal Code, 28th Ed. Wadhwa& Co. Nagpur, 2002.
7. Clark E.G.C; Isolation and Identification of drugs, Academic Press, London, 1986
8. Feigl, F; Spot Test in Inorganic Analysis, Elsevier Publ. New Delhi, 2002
9. Sharma, B.R.; Firearms in Criminal Investigation & Trials, 4th Ed, Universal Law Publishing Co Pvt Ltd, New Delhi, 2011.
10. Hilton, O; Scientific Examination of Questioned Documents. Revised Edition, Elsevier, New York, 1982.
11. Singh, I.P. & Bhasin M.K; A manual of biological Anthropology, Kamla Raj Enterprises, New Delhi, 2004.
12. Eveleth, P.B. & Tanner, J.M; Worldwide Variation in Human Growth, Cambridge University Press, London, 1976.
13. Seigel, J.A, Sukoo, R.J, &Knupfer, G.L; Encyclopaedia of Forensic Science, Academic Press, London, 2000.
14. Pickering, R. & Bachman D; The use of Forensic Anthropology, CRC Press, Costa Rica, 2009.
15. Butler, J; Advanced Topics in Forensic DNA Typing: Methodology, 1st Ed., Academic Press, London, 2009.
16. Cummins, H., &Midlo, C. (1961). Finger Prints, Palms and Soles. New York: Dover Publications.

GENERIC ELECTIVES (GE-2)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course t itle & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|---------|-----------------------------------|----------|---------------------|------------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Anthropology of Sustainable Development | 4 | 3 | 0 | 1 | Class X II pass with biology | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

The objective of the paper is to understand the discourse around the idea of sustainable environment along with relevant issues and emerging challenges in managing the planetary crisis and the problems due to environmental degradations.

Learning outcomes

The Learning Outcomes of this course are as follows:

By studying the paper, the students will be able to:

- Understand the nature and scope of sustainable development, basic concepts in it.
- Know the importance of traditional ecological knowledge in sustainable development
- Contemporary issues and challenges in sustainable development and environmental degradation, biodiversity and conservation.

SYLLABUS OF GE-2

UNIT – I (9 hours)

Notion of Sustainable Development Genesis and Approaches; Economy, Equity and Environment: Idea of Triple Bottom-line

UNIT – II (12 hours)

United Nation's Sustainable Development Goals, Interconnections and Integration, Cultural diversity and Execution of SDG: Ethnographic Cases, Frameworks of Assessment

UNIT – III (12 hours)

Issues of planetary Crisis and idea of sustainable livelihood, Alternative and Sustainable use of natural resources: water, energy, mines and materials

UNIT – IV (12 hours)

Environmental Issue: Biodiversity, Indigenous Knowledge, Traditional Practices associated with sustainable nature

Practical component (if any) - (30 hours)

- I. Prepare an evaluative study/ a project based on any contemporary issue in India by employing various sources viz. books, journals, magazines, government reports newspaper articles, etc.
2. Presentation of the project and group discussion

Essential/recommended readings

1. Brightman, Marc. and Lewis, Jerome. (2021). Anthropology of Sustainability: Beyond development and progress. Palgrave Macmillan
2. Carroll, Bryce. (2017). An Introduction to Sustainable Development. Larsen & Keller Education.
3. Corsi, Patrick. (2017). Going Past Limits to Growth: A Report to the Club of Rome EU-Chapter. John Willey & Sons Inc.
4. Elliott, Jennifer A. (2013). An introduction to sustainable development. New York: Routledge.
5. Eversole, Robyn. (2018). Anthropology for Development: From Theory to Practice. Routledge.

6. Meadows, Donella H; Meadows, Dennis L; Randers, Jorgen; and William, W. Behrens III. (1972). The Limits to growth: A report for the Club of Rome's project on the predicament of mankind. New York: Universe Books.
7. Sachs, Jeffrey. D. (2015). The age of sustainable development. New York. Columbia University Press

GENERIC ELECTIVES (GE-3)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------------------------|---------|-----------------------------------|----------|---------------------|------------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Biodiversity and indigenous Knowledge | 4 | 3 | 0 | 1 | Class X II pass with biology | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

The course will help the students in understanding how indigenous knowledge and biodiversity are complementary phenomena essential to human development. Students will recognize indigenous knowledge as an important national resource and understand the collective knowledge of biodiversity and its use

Learning outcomes

The Learning Outcomes of this course are as follows:

1. Students will learn basic concepts of biodiversity and indigenous knowledge along with the rich traditional resources in management and conservation of biological diversity.
2. The course will help students to understand concepts pertaining to conservation of biodiversity and protection of indigenous knowledge including the indigenous management strategies of farmers.
3. They will also learn policies and laws relating to biodiversity conservation including protection of intellectual property rights relating to indigenous knowledge.

SYLLABUS OF GE-3

UNIT – I (9 hours)

Biodiversity: basic concept, UN Convention on biodiversity, health implications of biological diversity; conservation of biological diversity- policies and law.

UNIT – II (12 hours)

Human-animal interface- interface between human and animal world; Zoonotic diseases types, etiology and prevention, biodiversity and genetic resources.

UNIT – III (12 hours)

Indigenous Knowledge: basic concept, critique of western scientific knowledge, historical context of the emergence of indigenous knowledge, contemporary relevance of indigenous knowledge, indigenous knowledge in biodiversity conservation.

UNIT – IV (12 hours)

Problems of Indigenous Knowledge: issues pertaining to transfer of indigenous knowledge, debates for making indigenous knowledge universal, politics of indigenous knowledge, notion of identity and property; Intellectual Property Rights related to biodiversity and indigenous knowledge, protection of plant varieties.

Practical component (if any) -

Project Report on Indian Cases pertaining to Indigenous Knowledge, Intellectual Property Rights and Biodiversity

Essential/recommended readings

1. Antweiler, C. (2004). Local Knowledge Theory and Methods: An Urban Model from Indonesia. In *Investigating Local Knowledge: New Directions, New Approaches* (eds.) Alan Bicker, Paul Sillitoe & John Pottier. Ashgate. 1-34
2. Ellen, R. (2003). Variation and Uniformity in the Construction of Biological Knowledge across Cultures. In *Nature Across Cultures: Views of Nature and Environment I Non Western Cultures* (eds.) H. Selin, Great Britain: Kluwer Academic Press.
3. Eldredge, N. (2002). What Is Biodiversity? In *Life on Earth: An Encyclopedia of Biodiversity, Ecology, and Evolution Volume 1 A–G*. ABC-CLIO, Inc. Santa Barbara, California. 1-30
4. Gadgil, M., Berkes, F & Folke, C. (1993). Indigenous Knowledge for Biodiversity Conservation. *AMBIO*, Springer, 22 (2/3): 152-156
5. Leveque, C. & Mounolou, J. (2003). Brief History of a Concept: Why be concerned by Biological Diversity? In *Biodiversity*. John Wiley & Sons Ltd. 5-12
6. Leveque, C. & Mounolou, J. (2003). The Dynamics of Biological Diversity and the Consequences of Human Activities. In *Biodiversity*. John Wiley & Sons Ltd. 131-164
7. Leveque, C. & Mounolou, J. (2003). The Dynamics of Biological Diversity and Implications for Human Health. In *Biodiversity*. John Wiley & Sons Ltd. 165-184
8. Leveque, C. & Mounolou, J. (2003). Genetic Resources and Biotechnology. In *Biodiversity*. John Wiley & Sons Ltd. 185-206
9. Leveque, C. & Mounolou, J. (2003). The Conservation of Biodiversity. In *Biodiversity*. John Wiley & Sons Ltd. 225-248
10. Mandal, M. (2009). Internal Displacement in India: Status, Condition & Prospects of Return. *Refugee Watch*, 33: 33-47
11. Marselle, M. R. (2021). Pathways linking biodiversity to human health: A conceptual framework. *Environment International*, Elsevier. 150: 106420
12. Murray Li, T. (2007). Articulating Indigenous Identity in Indonesia: Resource Politics and Tribal Slot. In *Environmental Anthropology: A Historical Reader* (eds.) Michael Dove & Carol Carpenter. Blackwell.

13. Palsson, G. (2007). Bio-value: Appropriating Genomes. In *Anthropology and the New Genetics*. Cambridge University Press.
14. Posey, D. (2008). Indigenous Management of Tropical Forest Ecosystem: The Case of the Kayapo Indians of the Brazilian Amazon. In *Environmental Anthropology: A Historical Reader* (eds.) Michael Dove & Carol Carpenter. Blackwell.
15. Sillitoe, P. (1988). The Development of Indigenous knowledge: A New Applied Anthropology. *Current Anthropology* 19 (2):
16. United Nations, (1992). Convention on Biological Diversity (1992). 1-17
17. Wadehra, B.L. (2012). Protection of Plant Varieties and Farmers' Rights. In *Law Relating to Intellectual Property* 5 (eds.) Universal Law Publishing Co. New Delhi. 517-528
18. Vayda, A. P., Walters, B.B. & Setyawati, I. (2004). Doing and Knowing: Questions about Studies of Local Knowledge. In *Investigating Local Knowledge: New Directions, New Approaches* (eds.) Alan Bicker, Paul Sillitoe & John Pottier. Ashgate. 35-58

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-4)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|-----------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Health Systems, Promotion and Management | 4 | 3 | 0 | 1 | Class XII pass with biology | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

1. To understand basic idea of health systems, health promotion
2. To assess the health care management strategies
3. To understand the public health value of health promotion in different health systems

Learning outcomes

The Learning Outcomes of this course are as follows:

The students will learn the basic concepts of health system research, creatively design health promotion strategies and understand various challenges of health care management.

SYLLABUS OF GE-4

UNIT – I (9 hours)

Introduction to the basic concepts of health systems, health promotions and health management

UNIT – II (12 hours)

Models, Contexts and Agents of health promotion; practice framework of health promotion: lifestyle, diet, and physical activity

UNIT – III (12 hours)

Health system of (India vs International), health system framework: private and state functioning, health system spending and financing

UNIT – IV (12 hours)

Health care institutes/centre management: health care resource, clinical and technological challenges, cost containment, hospital waste management, health care emergency management

Practical component (if any) -

Project report based on activity related health promotion, or data collection related to health systems or management

Essential/recommended readings

Josep Figueras, Martin McKee, Jennifer Cain & Suszy Lessof. Health Systems in Transition: Learning from Experience. World Health Organization, 2003.

- Bruce R. Schatz, Richard B. Berlin Jr. (auth.). Healthcare Infrastructure: Health Systems for Individuals and Populations [ed.]. Springer-Verlag London, 2011
- Pruss, E. Giroult, Philip Rushbrook. Safe management of wastes from health-care activities. World Health Organization, 1999

Michael J. Reilly, David S. Markenson. Health Care Emergency Management: Principles and Practice [1 ed.], 2010

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-5)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|----------------------------|---------|-----------------------------------|----------|---------------------|-----------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Anthropology and Fieldwork | 4 | 3 | 0 | 1 | Class XII pass with biology | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

The objective of the course is to introduce the students to the technique of fieldwork, a highly sophisticated qualitative research method developed in the discipline over a century. The students shall learn the innovative ways of designing and doing fieldwork in different anthropological settings.

Learning outcomes

The Learning Outcomes of this course are as follows:

The students will learn how to design and undertake fieldwork using anthropological tools of research. They will also learn the intellectual trajectory of the field work tradition affecting various disciplines.

SYLLABUS OF GE-5

UNIT – I Fieldwork Tradition in Anthropology (9 hours)

The Beginning: Reports of travellers, administrators and missionaries
Invention of the 'non-western others' and the colonial agenda

UNIT – II Designing Field Research (12 hours)

Conceiving the universe of study
Identifying techniques of data collection
Pre-testing and Pilot study
Community immersion and researchers' identity

UNIT – III The Changing notion of Anthropological Field (12 hours)

Anthropological field in the era of globalisation
Mobility and interconnection: multi-sited ethnography

UNIT – IV Data Analysis and Report Writing (12 hours)

Qualitative and thematic analysis, content analysis
Analysis of metaphors and narratives
Language of representation and persuasion

Practical component (if any) – (30 hours)

The students shall prepare a project report using fieldwork as a method of data collection. Practical exercises will include task such as identification of units and universal study, designing tools of field research and to pre-test it for ensuring reliability and validity.

Essential/recommended readings

Madan & Beteille. (1975). Encounter and Experience: Personal Accounts of Fieldwork. University Press of Hawaii.

- Brewer, D. John. (2000). Ethnography. McGraw Hill Companies.
- Malinowski, B. (1922). Agronauts of Western Pacific: An Account of Native Enterprise and Adventure in the Archipelagoes of Melanesian New Guinea. London: Routledge & Kegan Paul Ltd.
- Okley, J. (2012). Anthropological Practice: Fieldwork and Ethnographic Method. Routledge.
- Spradley, J.P. (2016). Participant observation. Waveland Press.
- Evans- Pritchard, E.E. (1994). Social Anthropology. New Delhi: Universal Book Stall

- Srivastava, V. K. Edited (2005). Methodology and Fieldwork. New Delhi: Qxford University Press.
- Patnaik, S. M. (2011). Culture. Identity and Development: An Account of Team Ethnography among the Bhil of Jhabau. Jaipur: Rawat Publications.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-6)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|----------------------------------|---------|-----------------------------------|----------|---------------------|------------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Genetic Research in Anthropology | 4 | 3 | 0 | 1 | Class X II pass with biology | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

1. To introduce human genetics through anthropological perspectives where impetus will be laid on building an understanding of biochemical and molecular markers and their relevance in anthropology.
2. The course focuses on application of anthropological genetics in mendelian populations and molecular basis of complex diseases.
3. The course also focuses on aspects of field work, data collection, ethical, legal and social issues in genetic research in anthropology.

Learning outcomes

The Learning Outcomes of this course are as follows:

1. The students will be trained to use biochemical markers with respect to disease profile.
2. The students can be better equipped to understand the importance of mendelian populations in genetic research that can be applied to disease genetics.
3. The students will be skilled with basic laboratory techniques for molecular markers.
4. The students will be better equipped to comprehend fieldwork and data collection along with an understanding of ethical and legal aspects of genetic research.

SYLLABUS OF GE-6

UNIT – I Basic concepts (9 hours)

History and relevance of genetic research in anthropology, evolution of genetic markers as a tool in human research, concept of Hardy-Weinberg Equilibrium principle.

UNIT – II Methods of genetic research in anthropology (9 hours)

Twin studies, genetic linkage studies, pedigree analysis, candidate gene studies, cohort studies, cross-sectional studies, hypothesis and technology driven research

UNIT – III Data collection in human genetic studies (9 hours)

Field work and data collection strategies, quantitative and qualitative data collection in field

UNIT – IV Techniques in human genetics (9 hours)

Agglutination, electrophoresis, PCR, sequencing techniques

Unit-V: Ethical, legal and social issues in genetic research (9 hours)

Ethical guidelines and practices in genetic research, legal and social issues in genetic research, Indian national guidelines for collaborative research in genetics.

Practical component (if any) - (30 hours)

1. ABO blood group
2. DNA extraction
3. Identification of genetic mutation through specific technique

Essential/recommended readings

1. Speicher, M. R., Motulsky, A. G., & Antonarakis, S. E. (Eds.). (2010). Vogel and Motulsky's human genetics. Berlin, Heidelberg: Springer Berlin Heidelberg.
2. Crawford, M. H. (Ed.). (2007). Anthropological genetics: theory, methods and applications. Cambridge University Press.
3. Mange, E. J., & Mange, A. P. (1999). Basic human genetics. Sinauer Associates Inc., U.S.
4. Reich, D., Thangaraj, K., Patterson, N., Price, A. L., & Singh, L. (2009). Reconstructing Indian population history. *Nature*, 461(7263), 489-494.
5. DePristo, M. A. (2010). The \$1,000 genome: The revolution in DNA sequencing and the new era of personalized medicine. *The American Journal of Human Genetics*, 87(6), 742.
6. Jaworski, E., Routh, A., Head, S. R., Ordoukhanian, P., & Salomon, D. R. (2018). Next Generation Sequencing: Methods and Protocols. Springer New York.
7. Indian Council of Medical Research. (2017). National ethical guidelines for biomedical and health research involving human participants. National Ethics Guidelines for Biomedical and Health Research involving Human Participants.
8. Kumar, M., Sandhu, H., & Roshan, R. (2020). Indian Council of Medical Research's International Collaboration & Partnerships; Health Ministry's Screening Committee: Facts, figures & procedures. *The Indian Journal of Medical Research*, 151(6), 550.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DEPARTMENT OF ENVIRONMENTAL SCIENCE

B.Sc. (H) ENVIRONMENTAL SCIENCE

Category-I

DISCIPLINE SPECIFIC CORE COURSE – 1: ENVIRONMENTAL AND EARTH SURFACE PROCESSES

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|----------|-----------------------------------|----------|---------------------|------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| ENVIRONMENTAL AND EARTH SURFACE PROCESSES | 4 | 2 | 0 | 2 | Class X II pass | NIL |

Learning Objectives

- Introduce students to the basic structure and composition of the Earth
- Explore various surface processes and their impact on and role in living systems
- Analyse interactive processes in the inner as well as outer Earth's surface

Learning outcomes

After this course, students will be able to learn the following skills.

- Acquire environmental field mapping skills to identify rocks, landforms, soils, and minerals
- Analyse surface and near-surface processes and products;
- Develop the current status of earth's processes while correlating it with global changes through time.
- Correlate landform and environmental conditions based on the evolution of the earth
- Relate and interpret the geological history of an area based on rock analyses
- Use satellite data to interpret Earth's geology or landscape

SYLLABUS OF DSC-1

UNIT – I HISTORY OF EARTH (6 hours)

Solar system formation and planetary differentiation; formation of the Earth: formation and composition of core, mantle, crust, atmosphere and hydrosphere; Geological time scale and major changes on the Earth's surface; Holocene and the emergence of humans, role of humans in shaping landscapes; development of cultural landscapes.

UNIT – II EARTH SYSTEM PROCESS (8 hours)

Movement of lithosphere plates; mantle convection and plate tectonics, major plates and hot spots; sea floor spread; earthquakes; volcanic activities; orogeny; isostasy; gravitational and

magnetic fields of the earth; continental drift and present-day continents, paleontological evidences of plate tectonics; continental collision and formation of the Himalaya and mountains.

UNIT – III MINERALS AND ROCKS (8 hours)

Minerals and important rock forming minerals; rock cycle: lithification and metamorphism; Three rock laws; rock structure, igneous, sedimentary and metamorphic rocks; weathering: physical, biogeochemical processes; erosion: factors and agents of erosion; rivers and streams, glacial and aeolian transportation and deposition of sediments by running water, wind and glaciers

UNIT IV– EARTH SURFACE PROCESSES (8 hours)

Atmosphere: evolution of earth's atmosphere, composition of atmosphere, physical and optical properties, circulation; interfaces: atmosphere–ocean interface, atmosphere land interface, ocean–land interface; land surface processes: fluvial and glacial processes, rivers and geomorphology; types of glaciers, glacier dynamics, erosional and depositional processes and glaciated landscapes; coastal processes

Unit V: IMPORTANCE OF BEING A MOUNTAIN (8 hours)

Formation of Peninsular Indian Mountain systems - Western and Eastern Ghats, Vindhyas, Aravallis, etc. Formation of the Himalaya; development of glaciers, perennial river systems and evolution of monsoon in Indian subcontinent; formation of Indo-Gangetic Plains, arrival of humans; evolution of Indus Valley civilization; progression of agriculture in the Indian subcontinent in Holocene.

Practical component (if any) - (60 hours)

1. Field survey and learning what and how are to be collected, observed, and recorded as a young field environmental geologist.
2. Field visit to identify natural agents derived landform and geomorphic features.
3. Field surveys and learning indicators of geomorphology, external features, texture, colour, mineral composition, and minerals to identify the rock types
4. Mapping of igneous, sedimentary, and metamorphic rocks and drawing sketches to highlight important features of different rock types
5. Megascopic identification of mineral samples: bauxite, calcite, chalcopryite, feldspar, galena, gypsum, hematite, magnetite, mica, quartz, talc, tourmaline;
6. Estimate the relative density of soil and conduct sedimentation analysis using hydrometer method.
7. Determine plastic limit of soil and determine soil permeability
8. Study any glacier, its flow direction, identification of glacial erosional and depositional landforms, and analysis.
9. Read, prepare and interpret geological maps to analyze petrographical and structural features.
10. Read and interpret topographical maps, aerial photographs, satellite imagery, and digital elevation models for the earth's surface features
11. Locate the epicenter of an earthquake
12. Interpret earth's history using igneous and sedimentary rock

Suggestive readings

- Bridge, J., & Demicco, R. 2008. Earth Surface Processes, Landforms and Sediment Deposits. Cambridge University Press.
- Cronin, V.S., 2018. Laboratory Manual in Physical Geology. Pearson.
- Keller, E.A. 2011. Introduction to Environmental Geology (5th edition). Pearson Prentice Hall.
- Leeder, M., Arlucea, M.P. 2005. Physical Processes in Earth and Environmental Sciences. Blackwell Publishing.
- Ludman, A. and Marshak, S., 2010. Laboratory manual for introductory geology (p. 480). WW Norton & Company.
- McCann, T., 2021. Pocket Guide Geology in the Field. Springer, Bonn, Germany.
- Pelletier, J. D. 2008. Quantitative Modeling of Earth Surface Processes (Vol. 304). Cambridge: Cambridge University Press. Chicago.
- Rutford, R.H., and Carter, J.L., 2018. Zumberge's Laboratory Manual for Physical Geology, Sixteenth Edition, Mc-Graw-Hill Education, New York, USA.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2: ENVIRONMENTAL PHYSICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| ENVIRONMENTAL PHYSICS | 4 | 2 | 0 | 2 | Class X II pass | NIL |

Learning Objectives

- Build conceptual understanding of the environment by understanding the underlying principles of physics governing environmental processes
- Develop perspective on the concepts of physics associated with the movement of particles, chemicals, and gaseous across the environmental compartments
- Gain insights into physics of plant-soil-water interface determining ecosystem processes

Learning outcomes

After this course, students will be able to

- Apply principles of physics to manage soil, water, and plant growth, especially in extreme environment

- Acquire skills to predict and manage pollutant movement across the environmental phases using concepts of physics
- Assess the impact of change in soils properties and field data at the microscale on tracking environmental contaminants
- Analyse soil particle size fractions and determine their impact on the movement of water and other solutes
- Correlate environmental processes in the ocean and terrestrial ecosystems on weather and climate 16
- Use satellite data to interpret radiation data and its impact on living organisms and ecosystems

SYLLABUS OF DSC-2

UNIT – I Environmental spectroscopy (6 hours)

Basic concepts of light and matter; quantum mechanics (relation between energy, wavelength and frequency), black body radiation, Kirchhoff's law, Boltzmann equation, Introduction to the concept of absorption and transmission of light, Beer–Lambert law, photovoltaic and solar cells.

UNIT – II Ocean and Atmosphere (6 hours)

Oceanic waves and circulation, Atmospheric temperature, pressure, circulation, precipitation and other features, Lapse rate (dry and moist adiabatic), Scattering of light, Rayleigh and Mie scattering, Electromagnetic radiations and spectrum, Greenhouse effect.

UNIT – III Soil and Water Physics (6 hours)

Phase transition of water and its consequences for marine and freshwater life, and rock structures, Clausius–Clapeyron equation of thermodynamics and liquid–vapor phase transition, Soil temperature and heat flow, Aggregation of soil particle size fractions, Stress, strain and strength of soil bodies, Diffusion and dispersion in soils and water. Redistribution, retention and evaporation of soil moisture and gaseous components

UNIT – IV Movement of pollutants in environment (6 hours)

Diffusion and dispersion, point and area source pollutants, pollutant dispersal; Gaussian plume model, mixing heights, hydraulic potential, Darcy's equation, types of flow, turbulence

UNIT – V: Eco-physics (6 hours)

Soil–Plant–Water Relations, Water entry into soil, Water and energy balance, Plant up take and water use efficiency; Open or closed ecosystems, Macroscopic flows of matter or energy, Disturbance or catastrophe and phase space changes in ecosystems, Thermodynamic entropy, Ecosystem efficiency, Simulated landscapes.

Practical component (if any) – (60 hours)

1. Analyze the variations in hydraulic conductivity of different soil types
2. Determine the soil temperature and thermal conductivity in different soil particle size fractions
3. Find association between heat transfer ability and the soil types
4. Estimate radon released by different materials with time
5. Monitor the health of green plants and variations in photosynthesis with varying fluorescence

- Interpret the Gaussian plume model for the movement of pollutants in the environment.
- Analyze the principle and applications of black body radiation and Beer–Lambert law.
- Simulate the meteorogram of any geographical region and interpret it.

Suggestive readings

- Boeker, E. & Grondelle, R. 2011. Environmental Physics: Sustainable Energy and Climate Change. Wiley.
- Borghese, F., Denti, P. and Saija, R., 2007. Scattering from Model Nonspherical Particles: Theory and Applications to Environmental Physics. Springer Science & Business Media.
- Forinash, K. 2010. Foundation of Environmental Physics. Island Press.
- Monteith, J. and Unsworth, M., 2013. Principles of Environmental Physics: Plants, Animals, and the Atmosphere. Academic Press.
- Smith, C., 2004. Environmental Physics. Routledge.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 3: ENVIRONMENTAL CHEMISTRY

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| ENVIRONMENTAL CHEMISTRY | 4 | 2 | 0 | 2 | Class X II pass | NIL |

Learning Objectives

- Design strategies based on principles of environmental chemistry to The Learning Objectives of this course are as follows:
- Develop concepts of environmental chemistry as a fundamental principle of various environmental processes
- Link pollutant chemistry as a basis of pollution potential of contaminants
- Gain insights into chemical reactions that govern the movement of chemical contaminants across the environmental compartments and develop solutions that influence pollutant chemistry.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Synthesize knowledge on the structure and functions of environmental compartments based on the principles of environmental chemistry
 - Acquire analytical and technical skills to recognize and estimate different environmental chemicals
 - Apply concepts of environmental chemistry to develop low-cost methods to treat potable and industrial wastewater and manage the quality of water, soil, and air
 - Relate and interpret the contaminants exposure and its adverse impacts on living organisms and the health of ecosystems
- influence the environmental fate of contaminants
- Discuss global environmental issues in the background of the chemistry of pollutants

SYLLABUS OF DSC-3

UNIT – I Fundamentals of environmental chemistry (10 hours)

Atomic structure, electronic configuration, periodic properties of elements (ionization potential, electron affinity and electronegativity), types of chemical bonds (ionic, covalent, coordinate and hydrogen bonds); mole concept, molarity and normality, quantitative volumetric analysis.

Thermodynamic system; types of chemical reactions; acids, bases and salts, solubility products; solutes and solvents; redox reactions, concepts of pH and pE, electrochemistry, Nernst equation, electrochemical cells.

Basic concepts of organic chemistry, hydrocarbons, aliphatic and aromatic compounds, organic functional groups, polarity of the functional groups, synthesis of xenobiotic compounds like pesticides and dyes, synthetic polymers.

UNIT – II Atmospheric chemistry (8 hours)

Composition of atmosphere; photochemical reactions in atmosphere; smog formation, types of smog (sulphur smog and photochemical smog), aerosols; chemistry of acid rain, case studies; reactions of NO₂ and SO₂; free radicals and ozone layer depletion, role of CFCs in ozone depletion.

UNIT – III Water chemistry (6 hours)

Chemical and physical properties of water; alkalinity and acidity of water, hardness of water, calculation of total hardness; solubility of metals, complex formation and chelation; colloidal particles; heavy metals in water

UNIT – IV Soil chemistry (6 hours)

Soil composition; relation between organic carbon and organic matter, inorganic and organic components in soil; soil humus; cation and anion exchange reactions in soil; nitrogen, phosphorus and potassium in soil; phenolic compounds in soil.

Practical component (if any) - (60 hours)

1. Prepare buffers/solutions of different molarity and normality using the given stocks solutions

2. Determine the variations in pH of different soils and water samples using various methods.
3. Estimate hardness of given water samples
4. Determine cation exchange capacity of given soils samples
5. Determine the suitability of water for use for agriculture, industrial and domestic purposes based on selected water parameters
6. Estimate contents of selected heavy metals in given water and soil samples and identify their possible sources
7. Analyse variations in air quality index of different regions and correlate with anthropogenic or natural factors
8. Estimate organic matter contents in different soil types
9. Assess soil health based on the concentration of selected macro elements

Suggestive readings

- Beard, J.M. 2013. Environmental Chemistry in Society (2nd edition). CRC Press.
- Connell, D.W. 2005. Basic Concepts of Environmental Chemistry (2nd edition). CRC Press.
- Girard, J. 2013. Principles of Environmental Chemistry (3rd edition). Jones & Bartlett.
- Harnung, S.E. & Johnson, M.S. 2012. Chemistry and the Environment. Cambridge University Press.
- Hites, R.A. 2012. Elements of Environmental Chemistry (2nd edition). Wiley Sons.
- Manhan, S. E. 2000. Fundamentals of Environmental Chemistry. CRC Press.
- Pani, B. 2007. Textbook of Environmental Chemistry. IK international Publishing House.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Common Pool of Generic Electives (GE) Courses
Offered by Department of Environmental Studies

Category - IV

GENERIC ELECTIVES (GE-1)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--------------------------------|----------|-----------------------------------|----------|---------------------|-----------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| ENVIRONMENT AND SOCIETY | 4 | 2 | 0 | 2 | 12th Pass | NIL |

Learning Objectives

- Examine the relationship between the environment and society
- Enable students to understand and appreciate the role played by environment, society, and, their interface in shaping environmental decisions
- Think critically on environmental issues and different solutions
- Learning outcomes

Learning outcomes

The Learning Outcomes of this course are as follows:

SYLLABUS OF GE-1

UNIT – I Introduction (4 hours)

Social and cultural construction of ‘environment’; environmental thought from historical and contemporary perspective in light of the concepts of Gross Net Happiness and Aldo Leopold’s Land Ethic

UNIT – II Issues in Environmentalism (4 hours)

Significant global environmental issues such as acid rain, climate change, and resource depletion; historical developments in cultural, social and economic issues related to land, forest, and water management in a global context; interface between environment and society.

UNIT – III Development -Environment Conflict (4 hours)

Developmental issues and related impacts such as ecological degradation; environmental pollution; development-induced displacement, resettlement, and rehabilitation: problems, concerns, and compensative mechanisms; discussion on Project Affected People (PAPs).

UNIT- IV Urbanization and environment (4 hours)

Production and consumption oriented approaches to environmental issues in Indian as well as global context; impact of industry and technology on environment; urban sprawl, traffic congestion and social-economic problems; conflict between economic and environmental interests.

UNIT – V Environment and Social Inequalities (4 hours)

Inequalities of race, class, gender, region, and nation-state in access to healthy and safe environments; history and politics surrounding environmental, ecological and social justice; environmental ethics, issues and possible solutions.

UNIT – VI Regulatory Framework (4 hours)

Brief account of Forest Conservation Act 1980 1988; Forest Dwellers Act 2008; Land Acquisition Act 1894, 2007, 2011, 2012; Land Acquisition Rehabilitation and Resettlement Act 2013

UNIT- VII Community participation (6 hours)

State, corporate, civil society, community, and individual-level initiatives to ensure sustainable development; case studies of environmental movements (Appiko Movement, Chipko Movement, Narmada Bachao Andolan); corporate responsibility movement; appropriate technology movement; environmental groups and movements, citizen groups; role played by NGOs; environmental education and awareness.

Practical component (if any) - (60 hours)

1. Analyse the cultural construction of the environment in a country of your choice
2. Compare and contrast the perception of the environment in countries with varying levels of environmental quality
3. Critically evaluate the developmental status and type of environmental issues across societies from region within a country and different countries.
4. Determine the socio-demographic and industrial characteristics of a region and correlate them with the environmental issues of that region?
5. Identify the relationship between societies varying in cultures and environment and analyse the role of economic factors in changing the relationship over time
6. Show any relationship between natural resource use and changing population dynamics of the community
7. Evaluate the pattern of natural resource use by people and their likelihood of participating in the conservation of natural resources
8. Demonstrate any pattern between the resources use and population dynamics, industrial activities, and employment generation in a given region
9. Analyse attitudes, knowledge, and values towards an environmental resource of a population or stakeholder and what trade-off is the public willing to make for conservation of the resource.
10. Determine access to resources across members of a society and suggest measures for equitable sharing of resources or associated benefits, if required.
11. Select an environmental policy/regulation and identify its impact on society over time.

Suggestive readings

1. Cárdenas, J.C., 2009. Experiments in environment and development. *Annual Review of Resource Economics*, 1(1), pp.157-82.
2. Chokkan, K.B., Pandya, H. & Raghunathan, H. (eds). 2004. *Understanding Environment*. Sagar Publication India Pvt. Ltd., New Delhi.
3. Elliot, D. 2003. *Energy, Society and Environment, Technology for a Sustainable Future*. 30 Routledge Press.
4. Ioris, A.A.R. ed., 2021. *Environment and Development: Challenges, Policies and Practices*. Springer Nature.
5. Leopold, A. 1949. *The Land Ethic*. pp. 201-214. Chicago, USA.

6. National Research Council (NRC). 1996. Linking Science and Technology to Society's Environmental Goals. National Academy Press.
7. Stanton, C.Y., 2014. Experiments in Environment and Development. Stanford University.

GENERIC ELECTIVES (GE-2)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| HUMAN WILDLIFE CONFLICT AND MANAGEMENT | 4 | 2 | 0 | 2 | 12 th Pass | NIL |

Learning Objectives

- Analyze causal factors determining conflicts between humans and wildlife
- Gaining insights into complexity of habitat sharing between wildlife and human societies Acquire deeper understanding of causal factors of habitat shrinkage and its impact on wild life dynamics and threats and benefits to human societies
- Reveal the nexus between humans-culture-economy-wildlife
- Develop scientific and social perspective of wildlife conservation.

Learning Outcomes

After successful completion of this course, students will be able to:

- Develop clear perspective on human-wildlife conflict by defining and examining its historical & present-day status
- Discriminate the underlying factors associated with successful & unsuccessful efforts on providing solutions to human-wildlife conflicts
- Demonstrate the relevance of cultural factors in understanding the issues and providing acceptable and practical solutions
- Critically evaluate different case studies for identifying factors that may have major impact in resolving human-wildlife conflicts

SYLLABUS OF GE-2

UNIT – I Introduction to wildlife management (4 hours)

Need of environmental management; wildlife conservation: moral obligation? philosophy of wildlife management; why is it necessary to worry about human wildlife conflicts? What is the role of government, wildlife biologists and social scientists, concept of deep and shallow ecology.

UNIT – II Evolution of the concept of wildlife management (6 hours)

Journey of mankind from predator to conservator; prehistoric association between wildlife and humans: records from Bhimbetka wall paintings; conservation of wildlife in the reign of king Ashoka: excerpts from rock edicts; Bishnoi community; understanding wildlife

management, conservation and policies regarding protected areas in 21st century; positive values provided by wildlife conservation (monetary, recreational, scientific and ecological benefits)

UNIT – III Wildlife conservation laws in India (4 hours)

Types of protected areas (Wildlife Sanctuaries, National Parks, Biosphere Reserves); IUCN categories of protected areas, Natural World Heritage sites; concept of core and buffer area in a protected range, brief introduction to Wildlife Protection Act of 1972, Forest act 1927, Environmental Protection Act 1986, and Forest conservation Act 1920; introduction of Tiger task force, Status of current protected areas in India.

UNIT – IV Socio-economic and legal basis of conflicts (6 hours)

Concepts of development and encroachment, who is the intruders: human or animal? Impact of conflict on humans and wildlife, impact of habitat fragmentation, social inequality in terms of forest conservation: luxury hotels within protected areas vs. displacement of native tribes, forest produce as a need vs. forest exploitation, introduction to tribal rights in India, demographic profile of tribes in India, importance of forest produce to tribal populations, Scheduled tribes and other traditional Forest dwellers (Recognition of forest right) Act, 2006.

UNIT – V Wildlife conflicts (4 hours)

Insight into the important conflicts: Keoladeo National park conflict of Bharatpur, Human and elephant conflicts of Kerala, Fisherman and tiger conflict of Sundarbans forest, shifting cultivation in North east India.

UNIT—VI Human wildlife coexistence (6 hours)

Symbiotic relationship between tribals and forest, forest and development, focus on the inclusive growth of tribes: community participation in forest management, case study of Chipko movement, sacred groves forests, India's Bishnoi community and their conservation practices; ecological- economic welfare and development: conservation of indigenous culture and traditions, role of international organizations: Man and biosphere programmes; concept of conservation reserves and community reserves, importance of wildlife corridors in minimizing the conflicts and conservation.

Practical component (if any) -

1. Prepare a case study that has potential to develop as a human-wildlife conflicts in the area of your choice.
2. Write a case study describing different aspect of human-wildlife conflict and depict all associated factors in a schematic diagram
3. Using a case study, demonstrate the importance of historical facts in providing solutions in the present day
4. Evaluate merits and demerits of multistage sampling technique while collecting information on human-wildlife conflicts
5. Develop a questionnaire to identify the causal factors of human-wildlife conflicts emerging in a target regions
6. Analyze the roles of psychological factors in development of human-wildlife conflicts
7. Evaluate the relationship between resource scarcity and abundance in determining humanwildlife conflicts
8. Correlate the success and failure in resolving human-wildlife conflicts with existence of institutional framework

9. Use methods of triangulating information, field observations, photography and Problem Animal Control Report as complementary methods to focused interviews to understand the problem and suggest the solution
10. Understanding the significance of mediation among different policies on societal benefits and wildlife conservation to resolve human-wildlife conflicts

Suggestive readings

1. Angelici, F.M. and Rossi, L., 2020. Problematic Wildlife II. Springer International Publishing.
2. Conover, M. 2001. Resolving Human Wildlife Conflicts, CRC Press.
3. Conover, M.R. and Conover, D.O., 2022. Human-Wildlife Interactions: From Conflict to Coexistence. CRC Press.
4. Dickman, A. J. 2010. Complexities of conflict: the importance of considering social factors foreffectively resolving human–wildlife conflict. *Animal Conservation* 13: 458-466.
5. Hill, C.M., Webber, A.D. and Priston, N.E. eds., 2017. Understanding conflicts about wildlife: A Biosocial Approach (Vol. 9). Berghahn Books.
6. Manfred, M.J., 2008. Who Cares About Wildlife? Social Science Concepts for Exploring Human-wildlife Relationships and Conservation Issues.
7. Messmer, T. A. 2000. The emergence of human–wildlife conflict management: Turning challenges into opportunities. *International Biodeterioration & Biodegradation* 45: 97-102.
8. Nyhus, P.J., 2016. Human–wildlife conflict and coexistence. *Annual Review of Environment and Resources*, 41, pp.143-171.
9. Warriar, R., Noon, B.R. and Bailey, L.L., 2021. A framework for estimating human-wildlife conflict probabilities conditional on species occupancy. *Frontiers in Conservation Science*, p.37.
10. Woodroffe, R. 2005. People and Wildlife: Conflict and Coexistence. Cambridge.

GENERIC ELECTIVES (GE-3)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GENDER AND ENVIRONMENT | 4 | 2 | 0 | 2 | 12 th Pass | NIL |

Learning Objectives

The paper is designed to expose students to the concept of gender in society and its relevance in the environmental context. The principal objective of the course is to enable students to examine environmental issues from a gender-sensitized perspective

Learning outcomes

After the course, students will be able to:

- Identify causal factors of making women more vulnerable to environmental calamities and issues
- Reveal the reality of gender inequalities across the countries, challenging the development of risk resilient individuals and communities
- Demonstrate significant contributions of women as stakeholders while decisions making, educating, and evolving action plans across sectors to provide long-term solutions to environmental problems.
- Show the women's role as a leader in transitioning toward equitable and sustainable societies and industries

SYLLABUS OF GE-3

UNIT – I Introduction (4 hours)

The socially constructed 'gender' concept

UNIT – II Gender and society (6 hours)

Gender existence in society; gender: matriarchy and patriarchy as means of social exclusion (case studies in an Indian context); gender equity issues in rural and urban settings.

UNIT – III Gender and the environment (4 hours)

Relevance of the concept in an environmental context; evolution of gender hierarchies in historical and contemporary perspective; gendered division of roles in cultural, social and economic perspective; gender inequalities

UNIT – IV Gender, resources and the environment (4 hours)

Knowledge about the environment among men and women; differential dependencies on environmental resources; implications of gendered responses to environmental degradation.

UNIT – V Gender and environmental management (6 hours)

Women's participation in environmental movements and conservation; historical and contemporary case studies; role of women in environmental education, awareness and sustainable development.

UNIT – VI Strategies for change (6 hours)

Need for gender equity; Instruments for change: education, media, action groups, policy and management; equity in resource availability and consumption for a sustainable future

Practical component (if any) -

1. Using a case study, demonstrate the value of a gender-inclusive approach in the success of the environmental protection programme
2. Develop a context and show the importance of women's role in environmental conservation by emphasizing gender gaps in access to (a) power, (b) education, (c) markets, and (d) cultural practices.
3. Analyze the national gender policy or laws restricting or promoting women's participation in resolving environmental issues
4. Critically evaluate the national environmental policies for their gender sensitivity by taking an example of climate change-related policies across the sectors, including agriculture, forestry, and water.

5. Identify the gender gaps in policies related to climate change, energy access, natural resource access, and ecosystem services benefits
6. Determine the gender gaps in livelihood activities depend on ecological resources, such as agriculture, fisheries, and forestry, access to new technologies, and capacity-building in STEM (science, technology, engineering, or mathematics) for resolving environmental issues
7. Examine the impact of environmental awareness programmes involving or targeting women, especially to reduce vulnerability to climate change, access to renewable energy, skill development in energy entrepreneurship
8. Find out the variations in perspectives of women and men on environmental security across the societies within and outside country
9. Focused survey in neighbourhood community to gain insights into perception and solution to same environmental issues locally, nationally, and globally
10. Develop an action plan to address an environmental issue selected in practical 9 by incorporating livelihood strategies and economic and decision-making empowerment for women
11. Collect sex-disaggregated data and analyze the success of different environmental conservation programme based on the role of gender while focusing on involvement in decision making, participation in the action plan, the target of information dissemination, avenues of communication, major beneficiaries, and marginalized groups.

Suggestive readings

1. Agarwal, B. 2001. Participatory exclusions, community forestry, and gender: An analysis for South Asia and a conceptual framework. *World Development* 29: 1623-1648.
2. Agarwal, B., 2019. The gender and environment debate: Lessons from India. In *Population and environment* (pp. 87-124). Routledge.
3. Buckingham, S., 2005. *Gender and Environment*. Routledge.
4. Gaarder, E., 2011. Women and the animal rights movement. In *Women and the Animal Rights Movement*. Rutgers University Press.
5. Jackson, C. 1993. Doing what comes naturally? Women and environment in development. *World Development* 21: 1947-63.
6. Leach, M. 2007. Earth Mother myths and other ecofeminist fables: How a strategic notion rose and fell. *Development and Change* 38: 67-85.
7. MacGregor, S. ed., 2017. *Routledge Handbook of Gender and Environment*. Taylor & Francis.
8. Miller, B. 1993. *Sex and Gender Hierarchies*. Cambridge University Press
9. Oswald Spring, Ú., 2008. Gender and disasters: human, gender and environmental security. UNU-EHS.
10. Rodríguez-Labajos, B. and Ray, I., 2021. Six avenues for engendering creative environmentalism. *Global Environmental Change*, 68, p.102269.
11. Stein, R. (ed.). 2004. *New Perspectives on Environmental Justice: Gender, Sexuality, and Activism*. Rutgers University Press.
12. Stephens, A., Lewis, E.D. and Reddy, S., 2018. Towards an inclusive systemic evaluation for the SDGs: Gender equality, environments and marginalized voices (GEMs). *Evaluation*, 24(2), pp.220-236.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-4)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GREEN TECHNOLOGIES | 4 | 2 | 0 | 2 | 12 th Pass | NIL |

Learning Objectives

- Gain insights into interdisciplinary aspects of green systems and the environment, and sustainability
- Develop a new perspective on product life cycles for improving efficiency and promoting environmental conservation
- Understand product formulation, process complexity, and infrastructure design to promote sustainability
- Integrate technical and scientific skills for environmental security and industrial sustainability for nation's development

Learning outcomes

Apply principles of green chemistry for environmentally safe products

- Design processes that rely on using environmentally benign chemicals and developing economically viable products
- Minimize environmental hazards by improved design for developing industrial products
- Using biotechnology to improve industrial methods and chemical processes as less or non hazardous, green, safe, and economically acceptable.
- Implement a combination of technical and scientific skills to understand environmental problems better, use resources, manage waste, and develop green infrastructure

SYLLABUS OF GE-4

Unit I: Green technologies (6 hours)

Definition and concepts: green technology, green energy, green infrastructure, green economy, and, green chemistry; sustainable consumption of resources; individual and community level participation such as small-scale composting pits for biodegradable waste, energy conservation; encouraged use of public transport instead of private transport; 3 R's of green technology: recycle, renew and reduce; paradigm shift from 'cradle to cradle' to 'cradle to grave'

Unit II: Green infrastructure, planning and economy (6 hours)

Green buildings; history of green buildings, need and relevance, construction, costs and benefits; LEED certified building; Eco-mark certification: importance and implementation;

Green planning: role of governmental bodies, land use planning, concept of green cities, waste reduction and recycling in cities, role of informal sector in waste management, public transportation for sustainable development, green belts. ; Introduction to UNEP's green economy initiative, inclusive economic growth of the society, REDD+ initiative, and cap and trade concept; green banking.

Unit III: Applications of green technologies (6 hours)

Increase in energy efficiency: Energy efficient fume hoods, motion detection lighting, or programmable thermostats. Green House Gas (GHG) emissions reduction: carbon capture and storage (CCS) technologies, purchase and use of carbon offsets, alternative forms of transportation for employees, such as carpools, fuel efficient vehicles, and mass transit, methane emissions reduction and/or reuse). Pollution reduction and removal: Physico-chemical and biological methods

Unit IV: Green chemistry (6 hours)

Introduction to green chemistry; principles and recognition of green criteria in chemistry; bioAnnexure-VII38 degradable and bio-accumulative products in environment; green nanotechnology; reagents, reactions and technologies that should be and realistically could be replaced by green alternatives; photodegradable plastic bags.

Unit V: Green future (6 hours)

Agenda of green development; reduction of ecological footprint; role of green technologies towards a sustainable future; major challenges and their resolution for implementation of green technologies; green practices to conserve natural resources (organic agriculture, agroforestry, reducing paper usage and consumption, etc.); emphasis on waste reduction instead of recycling, emphasis on innovation for green future; role of advancement in science in developing environmental friendly technologies.

Practicals/Hands-on Exercise

1. Analyze practices of an industry of your choice from India and outside country that has adopted green technology for brand image and economic edge
2. Identify, explain and discuss the ecological principles adopted by the industry selected in practical 1 and analyze their importance
3. Select an industry of your choice where cleaner production is required to improve quality of life and weight its economic, social, and environmental costs
4. Recommend clean development mechanisms and methods of converting waste into wealth in an industry that plays a significant role in your native area or the nation's GDP.
5. Develop a plan for carbon credit and carbon trading where it is not prevalent so far and compare it with a similar plan from a developing or developed country
6. Conduct a Life Cycle Assessment and its elements of a product widely used in your family or residential complex and recommend methods/processes that can help achieve a green tag.
7. Compare and contrast the use of conventional and non-conventional energy sources in your state or country and devise a method for transitioning completely to complete green energy
8. Assess the types and quantity of biomass used as an energy source in your country and evolve a plan to switch towards greener methods in the next 5 years

9. Develop a feasibility status of developing and integrating solar, wind, tidal, and geothermal energy in your nation
10. Evolve an action plan for water recycling for your residential complex by considering the quantity available, type of usage, and existing infrastructure
11. Analyze a case study of commercial green building in your state and discuss the ecological principle(s) adopted for this purpose.

Suggested Readings

1. Allen, D.T., 2012. Sustainable Engineering: Concepts, Design, and Case Studies. Pearson
2. Anastas, P.T. & Warner, J.C. 1998. Green Chemistry: Theory & Practice. Oxford University Press.
3. Arceivala, S.L. 2014. Green Technologies: For a Better Future. Mc-Graw Hill Publications.
4. Baker, S. 2006. Sustainable Development. Routledge Press.
5. Floyd, A., 2011. Green Building: A Professional's Guide to Concepts, Codes and Innovation. Delmar Cengage Learning
6. Hrubovcak, J., Vasavada, U. & Aldy, J. E. 1999. Green technologies for a more sustainable agriculture (No. 33721). United States Department of Agriculture, Economic Research Service.
7. Striebig, B., Ogundipe, A.A. and Papadakis, M., 2015. Engineering applications in sustainable design and development. Cengage Learning.
8. Thangavel, P. & Sridevi, G. 2015. Environmental Sustainability: Role of Green Technologies. Springer Publications.
9. Vallero, D.A. and Brasier, C., 2008. Sustainable Design: The Science of Sustainability and Green Engineering. John Wiley & Sons.
10. Woolley, T. & Kimmins, S. 2002. Green Building Handbook (Volume 1 and 2). Spon Press

DEPARTMENT OF HOME SCIENCE

BSc. (Hons.) Home Science

Category-II

DISCIPLINE SPECIFIC CORE COURSE – 1 (DSC-HH101) Human Development I: The Early Years

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------------------|---------|-----------------------------------|----------|---------------------|------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Human Development I: The Early Years | 4 | 3 | 0 | 1 | Class XII with Science | - |

Learning Objectives

1. To develop an understanding about the discipline of Human Development
2. To gain an insight of development in different domains from conception to early childhood

Learning outcomes

After completing this course, students will be able to:

1. Develop an understanding about the discipline of Human Development
2. Acquire knowledge of development in different domains from conception through infancy and early childhood.
3. Understand the salient features of human development by getting acquainted with various methods of studying children.

SYLLABUS

Unit I: Introduction to Human Development (9 hours)

Unit Description: The unit presents the student with an overview of the discipline of Human Development. The student will develop an understanding of basic ideas and terms that are central to the study of Human Development.

Subtopics: • Human Development: Definitions, nature and scope • Domains and stages of development • Principles of development • Contexts of development

Unit II: Prenatal development and childbirth (9 hours)

Unit Description: The unit describes the process of development from conception to birth and elaborates on the hereditary and environmental influences that play a role in prenatal development

Subtopics: • Conception and stages of prenatal development • Influences on prenatal development • Prenatal care • Childbirth: Methods and birth complications

Unit III: Neonate and infant development (12 hours)

Unit Description: The unit draws focus to the first two years of life and provides an understanding of the physical-motor, socio-emotional, cognitive and language development of infants.

Subtopics: • Capacities of the neonate • Infant care practices • Physical motor development
• Socio-emotional development • Language development • Cognitive development

Unit IV: Development during early childhood (12 hours)

Unit Description: The unit traces the progression in development that occurs from 2-6 years of life.

Subtopics: • Physical Motor Development • Socio-Emotional Development • Language Development • Cognitive Development

PRACTICAL (30 hours)

Unit 1 • Narrative method: recalling and recording an event • Exploring cultural practices and traditions during - Pregnancy - birth - Infant care

Unit 2 • Observation method: - observing infants and preschool children in everyday settings - recording the observations • Neonatal assessment (APGAR scale and Neonatal reflexes) • Multi-media resources to study prenatal development, infancy, early childhood

Essential readings

1. Berk, L. (2013). Child development. 9th ed. Boston: Pearson.
2. DECE-1 Organising Child Care Services (IGNOU Study Material)
<https://www.egyankosh.ac.in/handle/123456789/32288>
3. Dixit, A. (2019). Baal Vikas (1st ed.). Doaba House.
4. Journey of the first 1000 days: Rashtriya Bal Swasthya Karyakram (2018) Ministry of Health and Family Welfare.
5. https://nhm.gov.in/images/pdf/programmes/RBSK/Resource_Documents/Journey_of_The_First_1000_Days.pdf
6. Patni, M. (2020). Baal Vikas (3rd ed.). Star Publications.
7. Santrock, J.W. (2011). Life-span development. New York: McGraw-Hill.
8. Singh, A. (Ed.) 2015. Foundations of Human Development. New Delhi: Tata McGraw
9. Hill. Chapter 2,
10. Snow, C.W. (1997). Infant Development. New Jersey, Prentice-Hall Inc.

Suggested Readings

1. Joshi, P. & Shukla, S. (2019). Child development and education in the twenty-first century. Singapore: Springer International
2. Khalakdina, M. (2008). Human development in the Indian context: A socio - cultural focus: 1. India: Sage.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-HH 102) Food Science and Nutrition

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------------|---------|-----------------------------------|----------|---------------------|------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Food Science and Nutrition | 4 | 3 | 0 | 1 | Class XII With Science | - |

Learning Objectives

1. To understand the relationship between food, nutrition and health.
2. To describe the function of various nutrients and list their sources.
3. To understand the nutritional contribution of and effect of cooking on different food groups.
4. To describe ways of reducing nutrient losses during cooking and methods of enhancement of nutritional quality of foods.
5. To be able to prepare dishes using principles of food science.

Learning outcomes

After completing this course, students will be able to:

1. Understand the relationship between food, nutrition and health.
2. Describe the digestion, absorption and function of various nutrients and list their sources.
3. Understand the nutritional contribution of and effect of cooking on different food groups.
4. Understand ways of reducing nutrient losses during different methods of cooking and methods of enhancement of nutritional quality of foods.
5. Prepare dishes using principles of food science and assess serving size and nutritional contribution.

SYLLABUS OF DSC- 2

Unit I: Basic Concepts in Food and Nutrition

(5 hours)

Unit Description: An introduction to the sciences of food and nutrition and their relationship to health and disease.

Subtopics: ● Basic terms used in study of food and nutrition ● Understanding relationship between food, nutrition and health ● Functions of food-Physiological, psychological and social

Unit II: Nutrients

(15 hours)

Unit Description: Functions, dietary sources and clinical manifestations of deficiency/ excess of the nutrients

Subtopics: ● Energy, Carbohydrates, lipids and proteins ● Fat soluble vitamins ● Water soluble vitamins ● Minerals

Unit III: Food groups

(15 hours)

Unit Description: Structure, composition, products, nutritional contribution, selection and changes during cooking of various food groups

Subtopics: ● Cereals and Pulses ● Fruits and vegetables ● Milk & milk products ● Eggs ● Meat, poultry and fish ● Fats and Oils ● Spices and herbs ● Beverages

Unit IV: Methods of Cooking and Enhancing the Nutritional Quality of Foods

(10 hours)

Unit Description: Different methods of cooking and ways to improve nutrient retention or improve nutritional quality

Subtopics: ● Dry, moist, frying and microwave cooking ● Advantages, disadvantages and the effect of various methods of cooking on foods ● Preventing losses of nutrient during cooking ● Improving nutritional quality of diets by Food synergy, Germination, Fermentation, Fortification and Genetic Modification of foods

Practical component – 30 Hours

Unit I • Weights and measures; preparing market order and table setting

Unit II Food preparation, understanding the principles involved, nutritional quality and portion size- • Cereals: Boiled rice, pulao, chapati, paratha-plain/stuffed, poori, pastas • Pulses: Whole, dehusked, pulse curry • Vegetables: Dry preparation, vegetable curry • Milk preparations: Kheer, porridge, custard • Egg preparations: Boiled, poached, fried, scrambled, omelettes, egg pudding • Soups: Plain and cream soups • Baked products: cakes, biscuits/cookies • Snacks and Breakfast Cereals: pakoras, cutlets, samosas, cheela, upma/poha, sandwiches • Salads: salads and salad dressings

Essential readings

1. Chadha R and Mathur P (eds)(2015). Nutrition: A Lifecycle Approach. Hyderabad: Orient Blackswan.
2. Rekhi T and Yadav H (2014). Fundamentals of Food and Nutrition. New Delhi: Elite Publishing House Pvt Ltd.
3. Srilakshmi B (2014). Food Science, 6th Edition. Delhi: New Age International Ltd.
4. Khanna K, Gupta S, Seth R, Mahna R, Rekhi T (2004). The Art and Science of Cooking: A Practical Manual, Revised Edition. New Delhi: Elite Publishing House Pvt Ltd.
5. Raina U, Kashyap S, Narula V, Thomas S, Suvira, Vir S, Chopra S (2010). Basic Food Preparation: A Complete Manual, Fourth Edition. Hyderabad: Orient Black Swan

Suggestive readings (if any)

1. Bamji MS, Krishnaswamy K, Brahman GNV (2016). Textbook of Human Nutrition, 4th edition. New Delhi: Oxford and IBH Publishing Co. Pvt. Ltd.
2. Byrd-Bredbenner C, Moe G, Beshgetoor D, Berning J. (2013). Wardlaw's Perspectives in Nutrition, International Edition, 9th edition, New York: McGraw- Hill.
3. Sethi P, Lakra P. Aahar Vigyan, Poshan evam Suraksha (Hindi); First Ed; 2015; Delhi: Elite Publishing House (P) Ltd.

DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-3) COMMUNICATION CONCEPTS AND THEORIES

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-------------------------------------|---------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Communication Concepts and Theories | 4 | 3 | 0 | 1 | Class XII pass with Science | |

Learning Objectives

1. To learn about the concept, nature, and scope of communication.
2. To understand the process of communication with the help of theories, models, and elements of communication.
3. To recognize and appreciate the role of Perception, Empathy, Persuasion, Culture and Listening in communication.
4. To be able to comprehend the various communication transactions and their role in day-to-day life with special reference to public communication.
5. To understand the relationship between culture and communication and its applications in real life settings.

Learning outcomes

The students would be able to:

1. Develop a clear understanding of the concepts of human communication.
2. Comprehend the elements and models governing the process of effective communication.
3. Gain understanding about the related concepts of communication such as Perception, Empathy, Persuasion and Listening
4. Understand the various communication transactions as well as the qualities and skills required of an effective public speaker.
5. Appreciate the role and application of factors for effective communication.

SYLLABUS OF DSC-3

Unit I: Communication: Core Concepts

(10 Hours)

Unit Description: The Unit 1 explores the fundamentals of Human Communication tracing the history of communication from the olden times to the present times. It highlights the concept, nature, types, scope, and postulates of communication and discusses the functions performed through communication

Subtopics: ● Historical background, concept, nature, functions, and scope of communication ● Types of Communication – Formal and informal communication; Verbal and Non-verbal communication; Digital and Non-digital communication ● Verbal communication- Principles, types, effective use of verbal messages for communication ● Non-verbal communication- functions, types, skills, channels of non-verbal communication, inter-relationship between culture and non-verbal skills ● Elements of communication - Source, Message, Channel, Receiver, Feedback, Context, Noise & Effects

Unit II: Communication Models and Theories

(10 Hours)

Unit Description: The Unit II emphasizes the models and theories of the communication process. The further delves on the importance of these models and theories for understanding the effectiveness of communication as a process.

Subtopics: ● Models of Communication: Types of models- Linear, Interaction and Transaction models, (Models by Aristotle, Harold Laswell, Shannon & Weaver, Charles Osgood, Wilbur Schramm, Helical model) ● Theories of Communication: Mass Society, Propaganda, Limited Effects, Individual Difference and Personal Influence

Unit III: Factors for Effective Communication

(13 Hours)

Unit Description: The Unit delves with intricate concepts such as Empathy, Persuasion, Perception and Listening that are associated with communication. The unit also discusses the relationship between culture and communication.

● Factors for effective communication: Definitions, goals and principles of Empathy, Perception, and Persuasion ● Empathy: Concept and Theories ● Perception: Concept and Theories ● Listening in Human Communication-Listening process, significance of good listening, styles of listening, barriers to listening, culture and listening, listening theories ● Culture and communication- Relationship between culture and communication, signs, symbols and codes in communication

Unit IV: Communication Transactions and Learning

(12 Hours)

Unit Description: The Unit III elucidates upon the various levels of communication transactions. This Unit in particular lays thrust on the Public communication and 'need and importance' of communication for learning. The unit also highlights the concept of communication for development.

Subtopics: ● Levels of communication transactions ● Public communication- Concept, types, techniques and skills in public speaking, qualities of an effective public speaker, overcoming speaker apprehension ● Communication, and Learning: Learning as Communication Process, Domains of Learning. Theories of learning ● Audio-Visual Aids in communication- definitions, functions, classification including Edgar Dale's Cone of Experience ● Communication for Development- Concept and approaches

Practical components – 30 Hours

- Exercises to understand visual communication: Elements of Art and Principles of Design
- Exercises to explore dimensions of non-verbal communication
- Hands on practice with different types of public speaking
- Exercises in effective listening skills
- Exercises on building empathy for effective communication
- Analysis and designing of IEC materials

Essential readings

Devito, J. (2012). Human Communication. New York: Harper & Row.

Barker, L. (1990). Communication, New Jersey: Prentice Hall, Inc; 171.

Anand, S. & Kumar, A. (2016). Dynamics of Human Communication. New Delhi: Orient Black Swan.

Vivian, J. (1991). The Media of Mass Communication. Pearson College Div; 11th edition (19 March 2012).

Punhani & Aggarwal (2014). Media for Effective Communication. Elite Publishers, New Delhi.

Suggestive readings

Patri, V. R. and Patri, N. (2002). Essentials of Communication. Greenspan Publications

Baran, S. (2014). Mass Communication Theory. Wadsworth Publishing.

Stevenson, D. (2002). Understanding Media Studies: Social Theory and Mass Communication, Sage Publications.

McQuail, D. (2000). Mass Communication Theories. London: Sage Publications.

Zeuschner, R. (1997). Communicating Today. California State University, USA.

BSC. (HONS.) FOOD TECHNOLOGY

Category-I

DISCIPLINE SPECIFIC CORE COURSE – 1 (DSC-FT01) Fundamentals of Food Technology

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------------|---------|-----------------------------------|----------|---------------------|------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Fundamentals of Food Technology | 4 | 3 | 0 | 1 | Class XII with PCM/PCB | - |

Learning Objectives

1. To understand the basic principles of food science and technology.
2. To understand the structure, composition, nutritional value, changes during processing and storage of various plant and animal foods.

Learning outcomes

1. Appreciate the principles of food science and technology.
2. Attain knowledge of the structure, composition, nutritional quality and post-harvest changes in various plant foods
3. Comprehend the structure and composition of various animal foods.
4. Understand the fundamentals of various plant and animal food processing

SYLLABUS OF DSC-1

Unit I: Introduction to Food Science and Technology (4 Hours)

The unit presents the student with an overview of the food science and technology.

Unit II: Structure, Nutritional Composition and Technological aspects of Plant foods (12 Hours)

Unit Description: Cereals, Millets and Pulses

Subtopics: Introduction to cereals, nutri-cereals (millets), pseudo cereals. ● Wheat- Structure and composition, types of wheat, Diagrammatic representation of longitudinal structure of wheat grain. ● Malting, dextrinization, gelatinization, types of browning Maillard & caramelization. ● Rice- types of rice, parboiling of rice- advantages and disadvantages. ● Pulses- Introduction to pulses and legumes. ● Naturally occurring toxic constituents in pulses, types of processing- soaking, germination, decortication, cooking and fermentation.

Unit III: Structure, Nutritional Composition and Technological aspects of Plant foods (13 Hours)

Unit Description: Edible Oils, Fruits and Vegetables

Subtopics: Fats & Oils- Classification of lipids, saturated fatty acids, unsaturated fatty acids, essential fatty acids, trans fatty acids. ● Refining of oils-different methods, hydrogenation ● Rancidity –Types- hydrolytic and oxidative rancidity and its prevention. Fruits & Vegetables- Classification of fruits and vegetables, composition, pigments, types of fibre. ● Enzymatic browning and its prevention, ● Post-harvest

changes in fruits and vegetables – Climacteric and non-climacteric, ripening, physicochemical changes-physiological and horticultural maturity, pathological changes, during the storage of fruits and vegetables.

Unit IV: Nutritional Compositional and Technological aspects of Animal foods

(16 Hours)

Unit Description: Flesh Foods - Meat, Fish, Poultry and Milk and Milk products

Subtopics: ● Meat – Definition of carcass, composition of meat, post-mortem changes in meat- rigor mortis, tenderization of meat, curing and ageing of meat. ● Fish - Classification and composition of fish, aquaculture, characteristics of fresh fish, Types of spoilage in fish- microbiological, physiological, biochemical. ● Poultry - Structure and composition of egg, egg proteins, characteristics of fresh egg, deterioration of egg quality. difference between broiler and layers. ● Milk & Milk Products- Definition of milk, composition of milk and types of market of milk, milk processing- homogenization, pasteurization.

Practical component – 30 Hours

1. To study enzymatic browning in fruits & vegetables.
2. To study different types of non-enzymatic browning.
3. To study gelatinization behavior of various starches.
4. To study the concept of gluten formation of various flours.
5. To study germination.
6. To study dextrinization in foods.
7. To perform quality inspection of egg.

Essential readings

1. Bawa. A.S., Chauhan, O.P, Raju. P.S. (2013) ed. Food Science. New India Publishing Agency
2. Potter, N. N., & Hotchkiss, J. H. (2012). Food science. Springer Science & Business Media.
3. Srilakshmi, B. (2018). Food science. New Age Publishers. 7th edition.

Suggestive reading

1. De, Sukumar. (2007). Outlines of Dairy Technology. Oxford University Press
2. Kent, N.L.(2018). Kent's Technology of Cereals: An introduction for students of food science and agriculture. Elsevier. 5th edition.
3. Meyer. (2006). Food Chemistry. CBS publishers and distributors.
4. Stewart, G.F., & Amerine, M.A.(2012). Introduction to Food Science and Technology. Elsevier, 2nd Edition.
5. Rao, E.S. (2019) Fundamentals of Food Technology and Preservation, Variety Books, New Delhi.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-FT02) Principles of Food Science

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------------|---------|-----------------------------------|----------|---------------------|------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Principles of Food Science | 4 | 3 | 0 | 1 | Class XII with PCM/PCB | - |

Learning Objectives

1. To impart basic concepts of food science, food chemistry and food sanitation.
2. To introduce the concept of food microbiology, sensory science and food packaging.

Learning outcomes

Understand the basic concepts of

1. Structure and composition, food science and food sanitation.
2. Food microbiology, sensory science and food packaging

SYLLABUS OF DSC- 2

Unit I: Surface Chemistry and Structural properties of foods (12 Hours)

Unit Description: Surface Chemistry and Structural properties of foods

Subtopic: Introduction to engineering properties of food and biomaterials, structure and chemical composition of foods, physical properties and surface chemistry (colloids, emulsions, foam, sols, gels, pectin gels) and application

Unit II: Sensory properties of foods (10 Hours)

- Basic description of taste, flavour, odour, colour and texture.
- Theories of gustation, olfaction, colour and texture.
- Techniques of sensory evaluation (Descriptive and Discriminative tests)

Unit III: Basic Food Microbiology (8 Hours)

Introduction to types of microorganisms, Food as a substrate for microorganism, bacterial growth curve, Factors affecting growth of microbes : Intrinsic and Extrinsic

Unit IV: Waste management and sanitation (9 Hours)

Properties of Waste water, hardness of water, break point chlorination, physical and chemical nature of impurities, BOD, COD, waste water treatment, detergents and sanitizers used in food industry, CIP and COP system with reference to food industry

Unit V: Introduction to Food Packaging (6 Hours)

Objectives of packaging, types of packaging materials (paper, glass, plastic, metal and wood, rigid and flexible packaging) and properties

Practical component – 30 Hours

1. Preparation and standardization of reagents
2. Determination of moisture content of food samples
3. Demonstration of fat/ protein estimation
4. Preparation of degree brix solution
5. Application of colloidal chemistry to food preparation
6. To perform sensitivity / threshold tests for basic taste
7. Introduction to microscopy and study of morphology of bacteria, yeast and mold using permanent slides.
8. Determination of alkalinity/ hardness of water
9. Determination of BOD/COD and total dissolved solids of water samples
10. Identification and testing (Thickness, GSM) of different types of packaging materials

Essential readings

- Coles, R., McDowell, D., & Kirwan, M. J. (Eds.). (2003). Food packaging technology (Vol. 5). CRC press.
- De, S. (1996). Outlines of dairy technology. Oxford University Press.
- DeMan, J. M., Finley, J. W., Hurst, W. J., & Lee, C. Y. (2018). Principles of food chemistry, 4th ed. Springer.
- Frazier, W.C. and Westhoff, D.C.(2004). Food Microbiology.New Delhi. TMH Publication
- Shadaksharaswamy, M., & Manay, N. S. (2011). Food, facts and principles. 4 th ed. New Age international publisher. New Age International.
- Meyer LH.(2006). Food Chemistry, CBS Publication, New Delhi.
- Potter N.N., Hotchkiss J.H. (2007). Food Science,5th ed. CBS Publication, New Delhi
- Ranganna, S. (2002). Handbook of Analysis of quality control for fruit and Vegetables products 2nd Ed. Tata Mcgraw Hill pub. Co. Ltd. New Delhi

Suggestive readings (if any)

- Jenkins, W.A. and Harrington, J.P. (1991). Packaging Foods with Plastics, Technomic Publishing Company Inc., USA.
- Norman, G. Marriott. and Robert, B. Gravani. (2018). Principles of Food Sanitation,6th ed. New York, Springer

DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-FT03) MILK & MILK PRODUCTS TECHNOLOGY

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course(if any) |
|--|----------|-----------------------------------|----------|---------------------|------------------------------------|-------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| MILK & MILK PRODUCTS TECHNOLOGY | 4 | 3 | 0 | 1 | Class XII pass with PCM/PCB | |

Learning Objectives

1. Processing of milk and milk products at industry level
2. To know the compositional and technological aspects of milk
3. To study processed milk products

Learning outcomes

1. Understand the importance of Dairy industry
2. Understand the various properties and composition of milk.
3. Understand the technology of manufacturing of various products like Butter, ghee, Yoghurt, Dahi, Shrikhand, Ice-cream, Milk powder, channa, Paneer, Cheese (cheddar), Khoa
4. Understand market milk industry stages of milk processing and working of a few Dairy equipment's

SYLLABUS OF DSC-3

Unit I: Physical properties of milk (7 Hours)

• Color • Taste • pH and buffering capacity • Refractive index • Viscosity • Surface tension • Freezing & boiling point • Specific heat and electrical conductivity

Unit II: Composition of milk (16 Hours)

Unit Description: Macro nutrients and micronutrients of milk; milk sugar, fat and protein.

Subtopics: • Lactose (alpha and beta forms and their differences) • Significances of lactose in dairy industry • Composition and structure • Fat constants (Saponification value, Iodine value, RM value, Polenske value, peroxide value) • Difference between casein and serum protein • Different types of casein (acid and rennet) • Uses of casein

Unit III: Market milk industry and milk products (22 Hours)

Processing of milk and milk products

Subtopics: • Systems of collection of milk reception • Platform testing • Various stages of processing; Filtration, Clarification Homogenization, Pasteurization • Description and working of clarifier, cream separator, homogenizer and plate heat exchanger • Principle of processing of following milk products -Butter, ghee, yoghurt, dahi, shrikhand, ice-cream, milk powder, channa, paneer, cheese (cheddar), khoa

Practical components – 30 Hours

1. To determine specific gravity of milk
2. To determine acidity of milk
3. To perform COB test in milk
4. To estimate milk protein by Folin method
5. To estimate milk fat by Gerber method
6. To prepare casein and calculate its yield
7. To perform MBRT test in milk
8. Schematic diagram of pasteurization of milk in dairy industry
9. Study energy regeneration in dairy industry
10. Study and schematic diagram of CIP in dairy industry

Essential readings

- De, Sukumar. (2007). Outlines of dairy technology. Oxford University Press.
- Webb B.H.and Alford (2005). Fundamentals of dairy chemistry. CBS Publisher.

Suggestive readings

- P.F. Fox, T. Uniacke-Lowe and J.A.O' Mahony (2005). Dairy Science and Technology. Taylor & Francis.
- P. Walstra, Jan T.M. Wouters and Tom J. Geurts (2015). Dairy chemistry and Biochemistry. Springe.

BSC. (PROG.) HOME SCIENCE
Category-II

DISCIPLINE SPECIFIC CORE COURSE – 1 (DSC-1) –: INTRODUCTION TO RESOURCE MANAGEMENT

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|----------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction to Resource Management | 4 | 3 | - | 1 | Class XII pass | - |

Learning Objectives

The Learning Objectives of this course are as follows:

1. To comprehend the fundamentals of resource management, their purpose and utilization in today's context and conservation approaches.
2. To understand the functions and processes of management in a scientific manner for optimum use of resources.

Learning outcomes

The Learning Outcomes of this course are as follows:

The students will be able:

1. Comprehend the concept and fundamentals of resource management in a changing scenario.
2. Acquaint themselves with the available resources, their uses and conservation approaches.
3. Utilize resources in an efficient and judicious manner.
4. Understand the functions and processes of management in a scientific manner for the optimum use of resources.

SYLLABUS OF DSC-1

UNIT – I Basics of Management

(9 Hours)

This unit will develop understanding regarding the concept of management and role of motivation in management.

Subtopics:

- Concept, nature, universality and scope of management
- Theories and Approaches to Management
- Ethics in management
- Motivation in management

UNIT – II Functions of Management

(12 Hours)

Students will be able to develop complete understanding of different management functions and their importance in the process of management.

Subtopics:

- Decision Making: Concept, significance and steps involved in decision-making process.
- Planning: Nature and characteristics, classification of plans & steps in planning.
- Organizing: Concept, significance and steps involved in organizing process.
- Supervision: Types of supervision (directing & guiding), factors of effective supervision.

- Controlling: Types of control, steps in controlling, requirements of effective control.
- Evaluation: Types and steps of evaluation.

UNIT – III Time and Energy Management (12 Hours)

This unit will orient the students towards application of management processes to time and energy as important resources.

Subtopics:

- Time Management: Concept, Tools of time management, types of time plans, Steps in making a time plan.
- Energy Management: Concept, principles of body mechanics, types of fatigue.
- Work Simplification: Techniques, Classes of Change.

UNIT – IV Prenatal Development (12 Hours)

Students will gain understanding of prenatal through presentations on stages of prenatal development and factors which have an impact.

Subtopics:

- Stages of prenatal development
- Factors affecting prenatal development

Practical component

Unit I: Identification and Development of managerial competencies

Activities:

- Micro Lab and Who am I
- SWOT analysis
- Self
- Case studies: Individuals
- Case studies: Organizations
- Building Decision making abilities
- Team building management games
- Decision Making through Case Analysis

Unit II: Time and Energy Management

Activities:

- Time Management:
 - Evaluation of time plans through case analysis:
 - o Case Study - 1
 - o Case study - 2
 - Analysis of time use pattern of self
 - Preparation and evaluation of time plans
- Work improvement using time and motion study techniques
 - pathway chart or travel chart / process chart - observe, record, and analyze an activity.
 - pathway chart or travel chart / process chart - observe, record, and analyze an activity with improvement.

Essential readings

1. Goel, S. Ed. (2016). Management of resources for sustainable development. New Delhi: Orient Blackswan Pvt. Ltd.
2. Moore, T. J. (2021). Family resource management (4th ed.), ISBN-13: 978-1544370620.
3. Chhabra, T.N. (2020) Business Organization & Management. ISBN: 9789385071102
4. Griffin, R. W. (2016). Fundamentals of Management. Cengage Learning.

- Griffin, R. W. (2013). Management: Principles and practices (11th ed.). South-Western Cengage Learning.
- Rao, V.S. P. (2008). Principles & practice of management. Konark Publishers Pvt. Ltd.
- Koontz, H., & O' Donnell, C. (2005). Management: A systems and contingency analysis of managerial functions. New York: McGraw-Hill Book Company.

Suggestive readings:

- Kreitner, R. (2009). Management Canada: Houghton Mifflin Harcourt Publishing Company.
- Robbin, S.P. (2009). Fundamentals of management. Pearson Education.
- Steidl, R. & Bratton, E. (1968). Work in the Home. USA: John Wiley & Sons, Inc.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2): FASHION CONCEPTS

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-------------------------|----------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| FASHION CONCEPTS | 4 | 3 | - | 1 | Class XII pass | - |

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand the basics of fashion and the fashion industry.
- To impart knowledge about functions and theories of clothing.
- To develop sensitivity towards selection of garments and garment design.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Identify the role and functions of clothing and recognize the factors affecting the selection and evaluation of clothing.
- Explain the concept of fashion, its terminology, sources and factors affecting it.
- Being aware of global fashion centers.
- Apply the knowledge of elements and principles in design interpretation.

SYLLABUS OF DSC- 2

UNIT – I Clothes and Us

(12 Hours)

This unit introduces the student to key concepts of how and why people started to wear clothes, and what factors are at play in the current times for selecting clothing for the individual.

- Clothing functions and theories of origin
- Clothing terminology
- Individuality and conformity, conspicuous consumption and emulation
- Body shapes
- Selection and Evaluation of quality of ready-made garments
- Selection of clothes for self

UNIT – II Understanding Fashion

(12 Hours)

This unit will deal with the basic concepts in understanding fashion, from key terms to the why and how of fashion and more contemporary knowledge of fast and slow fashions.

- Fashion cycle
- Terminology
- Theories of fashion adoption
- Sources of fashion research

- Factors favouring and retarding fashion
- Role of a Designer
- Fast Fashion: Characteristics of Fast Fashion, Fast Fashion and Consumer
- Slow Fashion: Characteristics, Slow Fashion as a process, importance of changing from fast to slow fashion.

UNIT – III Design in Garments

(9 Hours)

This unit orients the student from a design perspective in garments; the various elements that comprise a garment and the various principles that govern and guide in developing a good design.

UNIT – IV Fashion

(12 Hours)

This unit will apprise the student on the forecasting process for fashions, functioning of the industry and various garment categories for production

- Structure and Functioning of Fashion Industry
- Forecasting: Fashion seasons
- Garment Categories
- Fashion Centres
- Careers in Fashion

Practical component – 30 Hours

Unit I: Hand stitches

This unit will impart hands-on skill for making small products using upcycling of used articles of clothing or home textiles and how value addition may be achieved in garments by using popular embroidery stitches.

- Prepare samples of -
- Basic hand stitches for creating a seam and edge finishing.
- Decorative Hand Stitches

Develop an upcycled product.

Unit II: Elements & Principles of Design

This unit will train the students to identify the various elements of a design that a garment uses and the principles that create an aesthetic design. Eventually a student will be able to effectively use these elements and principles of design to create well designed garments.

- Create a collection of garments for analysis from print and visual media.
- Analyze the various elements that comprise the garments.
- Identify the various principles of design used in the selected garments

Essential readings

1. Brown, Patty, Rice J., 1998, Ready to Wear Apparel Analysis. Prentice Hall.
2. Marshall S G, Jackson H O, Stanley MS, Kefgen M & Specht T, 2009, Individuality in
3. Clothing & Personal Appearance, 6th Edition, Pearson Education, USA.
4. Tate S.L., Edwards M.S., 1982, The Complete Book of Fashion Design, Harper and Row Publications, New York.
5. Fringes G.S., 1994, Fashion From Concept to Consumer, 6th edition, Prentice Hall, New Jersey.

Suggestive readings

1. R. Andrew, 2018, Key Concepts for Fashion Industry, Bloomsbury Publishing, India.
2. Reader's Digest (Eds.). 2002, New Complete Guide to Sewing, (Canada) Ltd. Montreal.

DISCIPLINE SPECIFIC CORE COURSE – 3 (DSC-3): INTRODUCTORY LIFE SCIENCES FOR HOME SCIENCE

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|----------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| INTRODUCTORY LIFE SCIENCES FOR HOME SCIENCE | 4 | 2 | - | 2 | Class XII pass | - |

Learning Objectives

The Learning Objectives of this course are as follows:

1. To introduce students to animal and plant diversity, and its significance for human life.
2. To make students aware of the fundamentals of cell structure, physiology and growth.
3. To enable students to appreciate the interdependence of ecosystems and its environmental underpinnings.
4. To make students aware of basics of immunology, genetics and biotechnological applications.

Learning outcomes

The Learning Outcomes of this course are as follows:

1. The students would be able to identify animals and plants of human concerns and ecological importance.
2. The students would be able to appreciate the existential link between plants, microbes, animals and humans.
3. The students would develop hands-on experience on plant propagation methods along with a functional understanding of plant physiology.
4. The students would understand the importance of prenatal screening, and biotechnology.
5. The student would be able to make a pedigree chart of a family and identify the inheritance pattern of a character.

SYLLABUS OF DSC- 3

Section A – Botany

UNIT – I Introduction to the Plants: Cytology, Morphology and Economic Botany (8 Hours)

Fundamentals of Plant diversity, Plant morphology and Plant Resource Utilization

Subtopics

- Introduction to Plant Diversity
- Types of a cell: Prokaryotes and Eukaryotes
- Plant cell- An Overview, Types, Structure and Function
- Angiosperm plants: Morphology (Parts of plants with modifications and Life cycle)
- Plant Nutrition and Soil: Essential Elements and Functions, Nutrient cycles, Biofertilizers, Bio-enzymes
- Introduction to Economically important plants: Fibre Crops, Medicinal Plants, Oil Crops, Timber Plants, Food Crops

UNIT – II Plant Physiology, Propagation of Plants and Gardening

(7 Hours)

Basics of plant physiology, Plant propagation and Gardening

Subtopics

- Important physiological processes (Diffusion, Osmosis and plasmolysis)
- Brief account of transpiration, photosynthesis and respiration in plants
- Seed Propagation
- Vegetative Propagation: Cuttings – stem leaf and root, Layering, Grafting
- Gardening: Concept and Types with example of Kitchen Garden, Community gardens, and Maintenance of Plants
- Role of Plants in Air pollution Control
- Introduction to Organic farming, Climate smart agriculture

Section B – Zoology

UNIT – III Animal Diversity and Human needs

(8 Hours)

Animal diversity and importance in human life

Subtopics

- Types, Structure and Function of Animal Cell and its Components
- Animals and their ecosystem services (role of animals in pollination, seed dispersal, soil health, food security, domestic animals)
- Animal diversity in human environment: threats and conservation, human-animal conflict
- Economic importance and control of common household pests e.g. cockroach, housefly, mosquitoes and termites
- Identification and control of important stored grain pests
- Zoonotic disease: Transmission, Prevention and Control (Taeniasis, Ascariasis, Malaria, COVID-19, Bird flu, Rabies, Tuberculosis)

UNIT – IV Genetics, Immunity and Biotechnology

(7 Hours)

Basics of genetics, birth defects, immunity and biotechnology

Subtopics

- Structure and Function of Genes and Chromosome
- Laws of Heredity and sex linked inheritance
- Case Studies: Inheritance of Thalassaemia, Sickle Cell Anaemia and Phenylketonuria (PKU)
- Overview of Birth defects: Types and Causes with example like Down's syndrome etc.
- Basics of Human Immunity
- Introduction to Biotechnology: Application in Animal Improvement and Medicines

Practical component – 30 Hours

SECTION A- BOTANY

1. Study the role of sunlight during photosynthesis
2. Study the rate of transpiration on both the surfaces of leaves
3. Assessment of soil quality: determination of soil pH, test for nitrates, nitrites
4. Preparation of soil mixture, potting and re-potting
5. Raising of healthy seedlings in a nursery bed
6. Propagation of plants through stem cutting, air layering and underground layering
7. Propagation of plants by approach grafting and veneer grafting
8. Identification and classification of economically important Food Crops, Medicinal, Fibre crops, Timber Plants and Oil Crops
9. Identification, care and maintenance of important plants in controlling air pollution
10. Preparation of temporary mount of onion peel

11. Preparation of temporary mount of epidermis of Rhoeo plant to study distribution of stomata on upper and lower surface of leave

SECTION B- ZOOLOGY

1. Study of cell structure through temporary slides: Blood Cells
2. Study of cell structure through temporary slides: Neurons
3. Study of cell cycle stages through permanent slides: Mitosis
4. Study of cell cycle stages through permanent slides: Meiosis
5. Identification of few common animal and birds in the human environment
6. Estimation of species richness and abundance of animal/ birds in the human environment using point count method
7. Estimation of species richness and abundance of animal/ birds in the human environment using transect method
8. Identification of life cycle stages of two common household pests: Termite and Mosquito
9. Methods of pest control and its application in houses (through audio/ visual/ seminar/visit)
10. Pedigree chart preparation & analysis
11. Demonstration of vermicomposting: preparation and monitoring of the setup at home
12. Case study of a zoonotic/ parasitic disease: COVID-19 pandemics/ bird flu

Essential readings

1. Jordan E. L. and Verma P. S. 2009. Invertebrate Zoology, S. Chand and Co. Ltd, New Delhi.
2. Raven P. and Johnson G. 2010. Biology. Tata McGraw Hill Publication, New Delhi.
3. Soni N. K. and Soni V. 2010. Fundamentals of Botany. Tata McGraw Hill Publication, New Delhi.
4. K. Park. 2016. Textbook of preventive and social medicine. Banarsidas Bhanot Publishers.
5. Singh J. S., Singh S. P. and Gupta S. R. 2017. Ecology, Environment Science and Resource Conservation. S.Chand (G/L) & Company Ltd, India.

Suggestive readings

1. Chadha K. L. 2012. Handbook of Horticulture. ICAR Publication, New Delhi.
2. Gopalaswamianger K.S. 1991. Complete gardening in India. Messers Nagaraj and Co., Madras.
3. Magurran, A.E. 1988. Ecological Diversity and Measurement. Croom Helm Limited, Australia.
4. Gupta R. 2015. Fundamentals of Zoology: Theory and Practice. Elite Publishing House Pvt. Ltd., New Delhi.
5. Hartman H. T and Kester D. 1986. Plant Propagation: Principles and Practices Prentice Hall of India Pvt. Ltd., New Delhi.
6. Kotpal, R. L. 2000. Modern Textbook of Zoology. Rastogi Publications, Meerut.
7. Upadhyay R. 2017. Elements of Plant Science. Elite Publishing House, New Delhi.
8. Vij, U and Gupta, R. 2011. Applied Zoology. Phoenix Publishing House, New Delhi.

B.A (Prog.) with Nutrition and Health Education (NHE) as Major

Category-II

DISCIPLINE SPECIFIC CORE COURSE – DSC-1-NHE: FUNDAMENTALS OF NUTRITION

Credit distribution, Eligibility and Pre-requisites of the Course

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility Criteria | Prerequisite of the course |
|----------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Fundamentals of Nutrition | 4 | 3 | 1 | - | Class XII Pass | NIL |

Learning Objectives:

1. To familiarize students with fundamentals of nutrition and their relation to health.
2. To study the functions, dietary sources and clinical manifestations of deficiency or excess of nutrients.
3. To create awareness about enhancing nutritional quality of food.

Learning Outcomes:

After completion of the course, the students will be able to:

1. Understand basic concepts in nutrition and interpret relation between food, nutrition and health.
2. Describe functions, dietary sources and clinical manifestations of deficiency or excess of important nutrients.
3. Understand healthy cooking practices and minimizing nutrient losses.
4. Describe various methods of enhancing nutritional quality of food.

SYLLABUS OF DSC-1

Theory:

Unit 1: Basic Concepts in Nutrition

(7 Hours)

- *Unit Description:* This unit will introduce the basic terms in nutrition
- *Subtopics:*
 - Basic terms used in study of nutrition – food, health, nutrients, nutritional status, malnutrition.
 - Macronutrients, micronutrients, nutraceuticals, phytochemicals, antioxidants and balanced diet.
 - Understanding relationship between food, nutrition and health.

Unit 2: Energy, Macronutrients and Water

(13 Hours)

- *Unit Description:* This unit will introduce the students to energy components, macronutrients and water.
- *Subtopics:*
 - Energy- Components of energy expenditure and factors affecting energy requirement.

- Classification, functions, dietary sources and clinical manifestations of deficiency/excess of the following:
 - Carbohydrates including dietary fibre.
 - Dietary fat and fatty acids; introduction to lipoproteins (LDL & HDL)
 - Protein including protein quality

Unit 3: Micronutrients (18 Hours)

- *Unit Description:* This unit will introduce the various vitamins and minerals present in foods.
- *Subtopics:*
 - Functions, dietary sources and clinical manifestations of deficiency /excess of the following:
 - Fat soluble vitamins – A, D, E and K.
 - Water soluble vitamins – thiamine, riboflavin, niacin, pyridoxine, folic acid, vitamin B₁₂ and vitamin C.
 - Minerals – calcium, iron, iodine, zinc, sodium and potassium.

Unit 4: Enhancing Nutritional Quality of Food

(7 Hours)

- *Unit Description:* This unit will explain ways to minimize nutrient losses and enhance nutritional quality of food
- *Subtopics:*
 - Minimizing nutrient losses during food preparation.
 - Enhancing nutritional quality by supplementation, germination, fermentation and fortification.

Essential/recommended readings:

1. Rekhi, T., & Yadav, H. (2015). *Fundamentals of Food and Nutrition*. Delhi: Elite Publishing House Pvt. Ltd.
2. Mudambi, S. R., & Rajagopal M. V. (2012). *Fundamentals of food, nutrition and diet therapy*; (6th ed.). Delhi: New Age International (P) Ltd.
3. Sethi, P., & Lakra, P. (2015). *Aahar Vigyan, Poshan Evam Suraksha*. Delhi: Elite Publishing House Pvt. Ltd.
4. Chadha, R., & Mathur, P. (2015). *Nutrition: A life cycle approach*. Delhi: Orient Blackswan.
5. Srilakshmi, B. (2018). *Food science* (7th ed.) Delhi: New Age International (P) Ltd.

Suggested readings:

1. Roday, S. (2013). *Food science and nutrition*. (2nd ed.). Oxford University Press.
2. Wardlaw, G. M., & Hampl, J. S. (2019). *Perspectives in nutrition*. (11th ed.). New York, NY: McGraw Hill.
3. Agarwal, A., & Udipi. S. (2014). *Textbook of human nutrition*, Jaypee Brothers Medical Publishers (P) Ltd, New Delhi.

DISCIPLINE SPECIFIC CORE COURSE – DSC-2-NHE: INTRODUCTION TO FOODS

Credit distribution, Eligibility and Pre-requisites of the Course

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility Criteria | Prerequisite of the course |
|-----------------------|---------|-----------------------------------|----------|---------------------|----------------------|----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction to Foods | 4 | 3 | - | 1 | Class XII Pass | NIL |

Learning Objectives:

1. To introduce students with the functions of food.
2. To explain the nutritional contribution, selection, changes in cooking and storage of different food groups.
3. To generate awareness about various methods of cooking.

Learning Outcomes:

After completion of the course, the students will be able to:

1. Understand various functions of food and factors affecting food choices.
2. Acquaint themselves to select, purchase and store food safely.
3. Describe various methods of cooking and principles underlying them.

SYLLABUS OF DSC-2

Theory:

Unit 1: Basic Concepts of Food

(8 Hours)

- *Unit Description:* This unit will introduce the concept of food, functions of food and factors affecting food choices.
- *Subtopics:*
 - Definition of food including organic food, genetically modified foods, convenience foods, health foods.
 - Functions of food.
 - Factors affecting food choices.

Unit 2: Plant Based Food Groups

(15 Hours)

- *Unit Description:* This unit will introduce nutritional contribution, selection, changes in cooking and storage of the plant-based food groups.
- *Subtopics:*
 - Nutritional contribution, selection, changes in cooking and storage of the following:
 - Cereal and cereal products
 - Pulses
 - Vegetable and fruits
 - Sugars
 - Oils and fats

Unit 3: Animal Based Food Groups

(8 Hours)

- *Unit Description:* This unit will introduce nutritional contribution, selection, changes in cooking and storage of the animal-based food groups.

- *Subtopics:*
 - Nutritional contribution, selection, changes in cooking and storage of the following:
 - Milk and milk products
 - Eggs and flesh foods

Unit 4: Methods of Cooking Foods (14 Hours)

- *Unit Description:* This unit will introduce advantages and principles of cooking and various cooking methods.
- *Subtopics:*
 - Advantages of cooking
 - Principles of cooking
 - Preliminary steps in food preparation
 - Cooking methods:
 - Moist heat methods
 - Dry heat methods
 - Methods using fat as a medium
 - Others – microwave, solar cooking

Practical:

Unit 1: Cooking methods I (16 Hours)

- *Subtopics:*
 - Cooking employing dry heat methods
 - Cooking employing moist heat methods

Unit 2: Cooking methods II (14 Hours)

- *Subtopics:*
 - Cooking using frying as a cooking method
 - Cooking using microwave

Essential/recommended readings:

1. Rekhi, T., & Yadav, H. (2015). *Fundamentals of Food and Nutrition*. Delhi: Elite Publishing House Pvt. Ltd.
2. Mudambi, S. R., & Rajagopal M. V. (2012). *Fundamentals of food, nutrition and diet therapy*; (6th ed.). Delhi: New Age International (P) Ltd.
3. Sethi, P., & Lakra, P. (2015). *Aahar Vigyan, Poshan Evam Suraksha*. Delhi: Elite Publishing House Pvt. Ltd.
4. Srilakshmi, B. (2018). *Food science* (7th ed.) Delhi: New Age International (P) Ltd.
5. Raina, U., & Kashyap, S. (2010). *Basic Food Preparation – a complete manual* (4th ed.). Delhi: Orient Black Swan.

Suggested readings:

1. Roday, S. (2013). *Food science and nutrition*. (2nd ed.). Oxford University Press.
2. Wardlow, G. M., & Hampl, J. S. (2019). *Perspectives in nutrition*. (11th ed.). New York, NY: McGraw Hill.
3. Agarwal, A., & Udipi. S. (2014). *Textbook of human nutrition*, Jaypee Brothers Medical Publishers (P) Ltd, New Delhi.
4. Chadha, R., & Mathur, P. (2015). *Nutrition: A life cycle approach*. Delhi: Orient Blackswan.

B.A (Prog.) with Nutrition and Health Education (NHE) as Non-Major

Category-III

DISCIPLINE SPECIFIC CORE COURSE – DSC-2-NHE: INTRODUCTION TO FOODS

Credit distribution, Eligibility and Pre-requisites of the Course

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility Criteria | Prerequisite of the course |
|-----------------------|---------|-----------------------------------|----------|---------------------|----------------------|----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction to Foods | 4 | 3 | - | 1 | Class XII Pass | NIL |

Learning Objectives:

1. To introduce students with the functions of food.
2. To explain the nutritional contribution, selection, changes in cooking and storage of different food groups.
3. To generate awareness about various methods of cooking.

Learning Outcomes:

After completion of the course, the students will be able to:

1. Understand various functions of food and factors affecting food choices.
2. Acquaint themselves to select, purchase and store food safely.
3. Describe various methods of cooking and principles underlying them.

SYLLABUS OF DSC-1

Theory:

Unit 1: Basic Concepts of Food (8 Hours)

- *Unit Description:* This unit will introduce the concept of food, functions of food and factors affecting food choices.
- *Subtopics:*
 - Definition of food including organic food, genetically modified foods, convenience foods, health foods.
 - Functions of food.
 - Factors affecting food choices.

Unit 2: Plant Based Food Groups (15 Hours)

- *Unit Description:* This unit will introduce nutritional contribution, selection, changes in cooking and storage of the plant-based food groups.
- *Subtopics:*
 - Nutritional contribution, selection, changes in cooking and storage of the following:
 - Cereal and cereal products
 - Pulses
 - Vegetable and fruits

- Sugars
- Oils and fats

Unit 3: Animal Based Food Groups (8 Hours)

- *Unit Description:* This unit will introduce nutritional contribution, selection, changes in cooking and storage of the animal-based food groups.
- *Subtopics:*
 - Nutritional contribution, selection, changes in cooking and storage of the following:
 - Milk and milk products
 - Eggs and flesh foods

Unit 4: Methods of Cooking Foods (14 Hours)

- *Unit Description:* This unit will introduce advantages and principles of cooking and various cooking methods.
- *Subtopics:*
 - Advantages of cooking
 - Principles of cooking
 - Preliminary steps in food preparation
 - Cooking methods:
 - Moist heat methods
 - Dry heat methods
 - Methods using fat as a medium
 - Others – microwave, solar cooking

Practical:

Unit 1: Cooking methods I (16 Hours)

- *Subtopics:*
 - Cooking employing dry heat methods
 - Cooking employing moist heat methods

Unit 2: Cooking methods II (14 Hours)

- *Subtopics:*
 - Cooking using frying as a cooking method
 - Cooking using microwave

Essential/recommended readings:

1. Rekhi, T., & Yadav, H. (2015). *Fundamentals of Food and Nutrition*. Delhi: Elite Publishing House Pvt. Ltd.
2. Mudambi, S. R., & Rajagopal M. V. (2012). *Fundamentals of food, nutrition and diet therapy*; (6th ed.). Delhi: New Age International (P) Ltd.
3. Sethi, P., & Lakra, P. (2015). *Aahar Vigyan, Poshan Evam Suraksha*. Delhi: Elite Publishing House Pvt. Ltd.
4. Srilakshmi, B. (2018). *Food science* (7th ed.) Delhi: New Age International (P) Ltd.
5. Raina, U., & Kashyap, S. (2010). *Basic Food Preparation – a complete manual* (4th ed.). Delhi: Orient Black Swan.

Suggested readings:

1. Roday, S. (2013). *Food science and nutrition*. (2nd ed.). Oxford University Press.
2. Wardlow, G. M., & Hampl, J. S. (2019). *Perspectives in nutrition*. (11th ed.). New York, NY: McGraw Hill.
3. Agarwal, A., & Udipi. S. (2014). *Textbook of human nutrition*, Jaypee Brothers Medical Publishers (P) Ltd, New Delhi.
4. Chadha, R., & Mathur, P. (2015). *Nutrition: A life cycle approach*. Delhi: Orient Blackswan.

B.A (Prog.) with Apparel Design and Construction (ADC) as Major

Category-II

**DISCIPLINE SPECIFIC CORE COURSE – DSC-1-ADC:
FUNDAMENTALS OF APPAREL DESIGN AND CONSTRUCTION**

Credit Distribution, Eligibility and Pre-requisites of the Course

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility Criteria | Prerequisite of the course |
|---|---------|-----------------------------------|----------|---------------------|----------------------|----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Fundamentals of Apparel Design & Construction | 4 | 2 | - | 2 | Class XII Pass | NIL |

Learning Objectives:

1. To familiarise the students with the terminologies and concepts related to apparel design and its construction
2. To provide the basic knowledge of the different tools and processes involved in garment design and construction
3. To familiarise the students with the concepts related to apparel finishes and quality
4. To provide an introduction to home and technical textiles

Learning Outcomes:

After completion of the course, the students will be able to:

1. Define basic apparel design and construction terminologies
2. Identify and describe the functions of tools used in garment design and pattern making
3. Describe the importance and types of fabric grain.
4. Explain the steps of garment construction such as the preparation of the fabrics, laying out the patterns, cutting and marking the fabrics
5. Explain different types of pattern layout on various fabrics.
6. Make different types of temporary, permanent and decorative stitches.
7. Finish plain seam using various techniques
8. Construct a flanged pillow cover and Petticoat
9. Identify and describe the types of home textiles and technical textiles

SYLLABUS OF DSC-1

Theory:

Unit 1: Introduction to Apparel Design

(10 Hours)

- *Unit Description:* This unit introduces the students to common terminologies and concepts associated with garment design. It also deals with the aspects and factors affecting garment design and the type of trimmings that would add to the aesthetic aspects of the design.
- *Sub Topics:*

- Common terms: Apparel, Seam, Seam Finish, Seam allowance, Basic Blocks, Pattern, Grading, Stay stitching, Facing, Binding, Hem, Yoke, Gusset, Nap, Darts, Pleats, Tucks, Gathers
- Garment Design: Aspects (Function, Structure, Decoration) and types (Structural and Applied/Decorative), Application of structural and decorative design in a garment
- Trimmings – Types, selection and application of trimmings on apparels.
- Garment designing according to age, climate, occasion, occupation, fashion

Unit 2: Basics of Apparel Construction

(10 Hours)

- *Unit Description:* This unit provides the basic knowledge of the tools and steps associated with apparel construction.
- *Sub Topics:*
 - Fabric grain – types, identification and importance in apparel construction
 - Common tools and equipment required for measuring, drafting, pinning, marking, cutting, sewing, pressing
 - Preparation of fabrics for clothing construction- Pre-shrinking, Grain straightening, truing
 - Steps in Clothing Construction – Pattern layout, pinning, marking, cutting and sewing
 - Pattern Layout - general guidelines, basic layouts- lengthwise, partial lengthwise, crosswise, double fold, open, combination fold

Unit 3: Application of Textiles and Garment Quality

(10 Hours)

- *Unit Description:* This unit familiarises the students of the Application of textiles as apparel, at home and in the industry. It also introduces the students to the concept of readymade garment quality and the criteria for quality evaluation.
- *Sub Topics:*
 - Apparel/Garment Classification
 - Home Textiles – Categories, Standard Sizes and Fabrics used for Towels, Bed Linen
 - Technical Textiles – Medical textiles, Protective textiles, Sports textiles, Smart textiles
 - Garment Labels: Types and importance of labels with special reference to care labels
 - Evaluating the quality of readymade garments: overall appearance, fabric, fit, workmanship, finishing, price
 - Project work: Evaluation of Readymade garment Quality

Practical:

Unit 1: Hand Stitches and Basic Blocks

(30 Hours)

- *Sub Topics:*
 - Hand Stitches
 - i. Temporary hand stitches - even, uneven, pin, machine, diagonal basting, thread mark
 - ii. Permanent hand stitches - hemming, blind hemming, back stitch, fine stitch
 - iii. Decorative hand stitches – stem, chain, herringbone, running, lazy-daisy, satin
 - iv. Fastener attachment – Button and buttonhole, Hook and eye, Press Button
 - Child's basic bodice and basic sleeve block.
 - Adaptation of child's basic sleeve to flared, puffed sleeve

Unit 2: Machine Sewing and Design Analysis

(30 Hours)

• Sub Topics:

- Introduction to sewing machine - Practice of running sewing machine on paper and fabric on straight lines, curved lines and corners.
- Plain seam and seam finishes - Pinking, Turned and Stitched, Edge stitched, hand overcast, over-locked, Piped/Bound
- Samples of pleats, tucks, gathers
- Construction of a flanged pillow cover, petticoat
- Analysis of the use of structural and Decorative designs in garments.

Essential/ Recommended Readings:

- Colton V. (1995). Reader's Digest- Complete Guide to Sewing. New York: The Reader's Digest Association, Inc.
- Brown, P. and Rice, J. 1998, Ready-to-wear Apparel Analysis, Prentice Hall, Frings G. (1996). Fashion-From Concept to Consumer (5th Edition). USA: Prentice Hall Publications
- Kallal, M. J., 1985, Clothing Construction, Macmillan Publishing Company, New York,
- Marshall S G, et al. (2009). Individuality in Clothing & Personal Appearance (6th Edition). USA: Pearson Education,
- Vanderhoff M., Franck L., Campbell L., (1985). Textiles for Homes and People. Massachusetts: Ginn and Company.

Suggested Readings:

- Cunningham G. (1976). Singer Sewing Book. New York: The Singer Company.
- Gayatri V. (2007). Cutting and Stitching Practical. New Delhi: Asian Publishers.
- Stamper, A.A., S. H. Sharp and L.B. Donnell, 1986, Evaluating Apparel Quality, Fairchild Publications, America
- Verma P. (2003). Vastra Vigyan Evam Paridhan. Bhopal: Hindi Granth Academy

DISCIPLINE SPECIFIC CORE COURSE – DSC-2-ADC: UNDERSTANDING FABRICS

Credit Distribution, Eligibility and Pre-requisites of the Course

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility Criteria | Prerequisite of the course |
|-----------------------|---------|-----------------------------------|----------|---------------------|----------------------|----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Understanding Fabrics | 4 | 3 | - | 1 | Class XII Pass | NIL |

Learning Objectives:

1. To impart knowledge regarding production, properties and usage of textile fibres and yarns
2. To apprise the learners about the various techniques of fabric production and their properties
3. To familiarise the students with the concepts related to fabric finishes and quality.

Learning Outcomes:

After completion of the course, the students will be able to:

1. Classify textile fibres based on length and origin.
2. Identify different types of textile fibres using various tests.

3. Compare and select fabrics for different end uses based on their properties
4. Describe the properties of textile yarns based on their characteristics
5. Identify different textile fabrics based on their construction
6. Refer to fabrics by their popular trade names and their characteristics
7. Select fabrics for different end uses based on their regular and functional finishes
8. Describe the desirable fabric properties for garment construction
9. Inspect the fabrics and identify the quality related problems.

SYLLABUS OF DSC-2

Theory:

Unit 1: Textile Fibres

(10 Hours)

- *Unit Description:* This unit provides basic knowledge of textile fibres to create a better understanding of the properties and end use of the fabrics made from different fibres
- *Sub Topics:*
 - Textile Fibre classification based on their Origin (natural and man-made) and Length (staple and filament)
 - Identification of textile fibres through Physical examination (Visual and Feeling test), Burning test, Microscopic test, Chemical test
 - Natural and Manmade Fibres - Properties and end-uses (Cotton, Linen, Wool, Silk, Rayon, Acetate, Nylon, Polyester, Acrylic, Spandex)
 - Newer Fibres – Properties and end uses

Unit 2: Textile Yarns

(10 Hours)

- *Unit Description:* This unit provides basic knowledge of the yarn making processes and yarn properties to create a better understanding the fabrics made from them.
- *Sub Topics:*
 - Yarn manufacturing process – Basic steps of Mechanical and chemical spinning
 - Types of yarn – Spun and Filament, Simple and Fancy/Novelty
 - Yarn properties – Yarn count, Yarn twist

Unit 3: Fabric Construction

(15 Hours)

- *Unit Description:* This unit provides knowledge of the most common fabric construction methods to help understand the properties of the fabrics better. It also deals with the quality aspects of the fabric and the procedures for checking their required quality specifications.
- *Sub Topics:*
 - Fabric construction methods – weaving, knitting, lace, net, felt and non-woven, braiding – properties and end uses
 - Weaving : Basic loom - parts and operations
 - Basic and fancy weaves – plain, twill, satin, dobby, jacquard, pile, leno, surface figure weaves
 - Knitting: Basic Construction, Characteristics and usage
 - Blended fabrics – Reasons for blending, Properties of common Blended Fabrics

- Glossary of Common Fabrics
- Fabric characteristics - texture, hand, weight, width
- Fabric Quality -Fabric inspection systems, Common Fabric defects, Acceptable quality level
- Visit to Weavers' Service Facility and writing a report on the visit

Unit 4: Fabric Finishes

(10 Hours)

- *Unit Description:* This unit deals with the common routine and functional finishes applied on fabrics to provide a better understanding of fabric performance properties.
- *Sub Topics:*
 - Aims and classification of Fabric finishes
 - Basic/ Routine finishes - Scouring, Bleaching, De-sizing, Singeing, Mercerisation, Tentering, Calendaring
 - Functional finishes - Crease resistant, flame retardant, Anti-microbial, moth proofing

Practical:

Unit 1: Identification of Fibres and Yarns

(10 Hours)

- *Subtopics:*
 - Identification of fibres – Physical Examination, Burning Test, Demonstration of Chemical and Microscopic Test
 - Identification of yarns by visual examination – spun & filament yarns, ply & novelty yarns

Unit 2: Analysis of Fabric Properties

(20 Hours)

- *Subtopics:*
 - Analysis of Fabric properties - Dimensional Stability, Thread Count, GSM
 - Calculation of Yarn Count
 - Preparation of samples of basic weaves through paper/ribbon weaving
 - Preparation of a file containing fabric swatches of various Fibres, Yarns, Fabrics, Weaves, Fabric defects.

Essential Readings:

1. Corbman P.B. (1985). Textiles-Fibre to Fabric. New York: McGraw Hill Book Co.
2. Grover E. B. & Hamby D. S., (1969), Handbook of textile testing and quality control, New Delhi: Wiley Eastern Ltd. Handbook of textile testing,
3. Rastogi, D. & Chopra, S. (Eds.) (2017). Textile Science. New Delhi, India: Orient Black Swan Publishing Limited.
4. Sekhri S. (2013). Textbook of Fabric Science: Fundamentals to Finishing. Delhi, India: PHI Learning.

Suggested Readings:

1. Allec C., Johnson I., Joseph P. (2011). Fabric Science (6th Edition). New York: Fairchild Publications.
2. Bureau of Indian standards, (1990), Testing and grading of textile fibers, Part I-III, New Delhi
3. Tortora (1992) Understanding Textiles. 4th Ed., New York Macmillan Publishing Company
4. Verma P. (2003). Vastra Vigyan Evam Paridhan. Bhopal: Hindi Granth Academy.

**B.A (Prog.) with Apparel Design and Construction (ADC) as Non-Major
Category-III**

**DISCIPLINE SPECIFIC CORE COURSE – DSC-2-ADC:
UNDERSTANDING FABRICS**

Credit Distribution, Eligibility and Pre-requisites of the Course

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility Criteria | Prerequisite of the course |
|-----------------------|---------|-----------------------------------|----------|---------------------|----------------------|----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Understanding Fabrics | 4 | 3 | - | 1 | Class XII Pass | NIL |

Learning Objectives:

1. To impart knowledge regarding production, properties and usage of textile fibres and yarns
2. To apprise the learners about the various techniques of fabric production and their properties
3. To familiarise the students with the concepts related to fabric finishes and quality.

Learning Outcomes:

After completion of the course, the students will be able to:

1. Classify textile fibres based on length and origin.
2. Identify different types of textile fibres using various tests.
3. Compare and select fabrics for different end uses based on their properties
4. Describe the properties of textile yarns based on their characteristics
5. Identify different textile fabrics based on their construction
6. Refer to fabrics by their popular trade names and their characteristics
7. Select fabrics for different end uses based on their regular and functional finishes
8. Describe the desirable fabric properties for garment construction
9. Inspect the fabrics and identify the quality related problems.

SYLLABUS OF DSC-1A

Theory:

Unit 1: Textile Fibres

(10 Hours)

- *Unit Description:* This unit provides basic knowledge of textile fibres to create a better understanding of the properties and end use of the fabrics made from different fibres

- *Sub Topics:*
 - Textile Fibre classification based on their Origin (natural and man-made) and Length (staple and filament)
 - Identification of textile fibres through Physical examination (Visual and Feeling test), Burning test, Microscopic test, Chemical test
 - Natural and Manmade Fibres - Properties and end-uses (Cotton, Linen, Wool, Silk, Rayon, Acetate, Nylon, Polyester, Acrylic, Spandex)
 - Newer Fibres – Properties and end uses

Unit 2: Textile Yarns

(10 Hours)

- *Unit Description:* This unit provides basic knowledge of the yarn making processes and yarn properties to create a better understanding the fabrics made from them.
- *Sub Topics:*
 - Yarn manufacturing process – Basic steps of Mechanical and chemical spinning
 - Types of yarn – Spun and Filament, Simple and Fancy/Novelty
 - Yarn properties – Yarn count, Yarn twist

Unit 3: Fabric Construction

(15 Hours)

- *Unit Description:* This unit provides knowledge of the most common fabric construction methods to help understand the properties of the fabrics better. It also deals with the quality aspects of the fabric and the procedures for checking their required quality specifications.
- *Sub Topics:*
 - Fabric construction methods – weaving, knitting, lace, net, felt and non-woven, braiding – properties and end uses
 - Weaving : Basic loom - parts and operations
 - Basic and fancy weaves – plain, twill, satin, dobby, jacquard, pile, leno, surface figure weaves
 - Knitting: Basic Construction, Characteristics and usage
 - Blended fabrics – Reasons for blending, Properties of common Blended Fabrics
 - Glossary of Common Fabrics
 - Fabric characteristics - texture, hand, weight, width
 - Fabric Quality -Fabric inspection systems, Common Fabric defects, Acceptable quality level
 - Visit to Weavers' Service Facility and writing a report on the visit

Unit 4: Fabric Finishes

(10 Hours)

- *Unit Description:* This unit deals with the common routine and functional finishes applied on fabrics to provide a better understanding of fabric performance properties.
- *Sub Topics:*
 - Aims and classification of Fabric finishes
 - Basic/ Routine finishes - Scouring, Bleaching, De-sizing, Singeing, Mercerisation, Tentering, Calendaring
 - Functional finishes - Crease resistant, flame retardant, Anti-microbial, moth proofing

Practical:

Unit 1: Identification of Fibres and Yarns

(10 Hours)

- *Subtopics:*
 - Identification of fibres – Physical Examination, Burning Test, Demonstration of Chemical and Microscopic Test
 - Identification of yarns by visual examination – spun & filament yarns, ply & novelty yarns

Unit 2: Analysis of Fabric Properties

(20 Hours)

- *Subtopics:*
 - Analysis of Fabric properties - Dimensional Stability, Thread Count, GSM
 - Calculation of Yarn Count
 - Preparation of samples of basic weaves through paper/ribbon weaving
 - Preparation of a file containing fabric swatches of various Fibres, Yarns, Fabrics, Weaves, Fabric defects.

Essential Readings:

1. Corbman P.B. (1985). Textiles-Fibre to Fabric. New York: McGraw Hill Book Co.
2. Grover E. B. & Hamby D. S., (1969), Handbook of textile testing and quality control, New Delhi: Wiley Eastern Ltd. Handbook of textile testing,
3. Rastogi, D. & Chopra, S. (Eds.) (2017). Textile Science. New Delhi, India: Orient Black Swan Publishing Limited.
4. Sekhri S. (2013). Textbook of Fabric Science: Fundamentals to Finishing. Delhi, India: PHI Learning.

Suggested Readings:

1. Allec C., Johnson I., Joseph P. (2011). Fabric Science (6th Edition). New York: Fairchild Publications.
2. Bureau of Indian standards, (1990), Testing and grading of textile fibers, Part I-III, New Delhi
3. Tortora (1992) Understanding Textiles. 4th Ed., New York Macmillan Publishing Company
4. Verma P. (2003). Vastra Vigyan Evam Paridhan. Bhopal: Hindi Granth Academy.

B.A (Prog.) with Human Development and Family Empowerment (HDFE) as Major

Category-II

DISCIPLINE SPECIFIC CORE COURSE – DSC-1-HDFE: THEORETICAL FOUNDATIONS IN HUMAN DEVELOPMENT

Credit distribution, Eligibility and Pre-requisite of the Course

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility Criteria | Prerequisite of the course |
|---|---------|-----------------------------------|----------|---------------------|----------------------|----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Theoretical Foundations in Human Development | 4 | 3 | - | 1 | Class XII Pass | NIL |

Learning Objectives:

1. To enable an understanding of the significance of the theoretical basis of Human Development.
2. To gain an in-depth understanding of selected theories in Human Development.

Learning Outcomes:

After completing this course, the students will be able to:

1. Gain an insight into the importance and role of theories in Human Development.
2. Develop an understanding of selected theories in Human Development.
3. Become aware of the concepts and perspectives related to Human Development.

THEORY
(Credits: 3, Periods: 45)

Unit I: Introduction to theories in Human Development (6 hours)

- *Unit Description:* The unit will introduce themes in the area of human development covering nature/nurture, heredity/environment, continuity/discontinuity, individual differences and similarities.
- *Subtopics:*
 - Key themes in the study of Human Development- Nature/nurture, heredity/environment, continuity/discontinuity, individual differences and similarities.

Unit II: Psycho-analytic perspectives on Human Development (13 hours)

- *Unit Description:* The unit will introduce the Psycho-analytical perspectives on Human Development by Sigmund Freud and Eric H. Erikson.
- *Subtopics:*
 - Psycho-sexual theory by Sigmund Freud

- Psycho-social theory by Eric H. Erikson

Unit III: Theories on Cognitive Development (13 hours)

- *Unit Description:* The unit will introduce the theoretical perspective with regard to cognitive development. This unit will be covering theories by Jean Piaget and Lev Vygotsky.
- *Subtopics:*
 - Theory of Cognitive Development by Jean Piaget
 - Socio-cultural theory of Cognitive Development by Lev Vygotsky

Unit IV: Selected Theories in Child Development (13 hours)

- *Unit Description:* The unit will introduce theories in the area of child development. This unit will be covering theories by Urie Bronfenbrenner, Albert Bandura, John Bowlby and so on.
- *Subtopics:*
 - Ecological Systems Theory by Urie Bronfenbrenner
 - Social Learning Theory by Albert Bandura
 - Attachment Theories (John Bowlby, Mary Ainsworth, Harry Harlow)

PRACTICAL (Credit: 1; Periods: 30)

- **Unit 1: Biography of any one theorist of human development (15 hours)**
- **Unit 2: Application of any one theory in real life situations (15 hours)**

Essential / recommended readings:

1. Newman, P.R., & Newman, B.M. (2015). *Theories of Human Development*. New York: Routledge
2. Rice, P. (2000). *Human Development: A Lifespan Approach* (4th edition). (and all further editions). New Jersey, Prentice-Hall Inc
3. Srivastava, V.N., Srivastava D.N. (2020). *Adhunik vikasatmak manovigyan*. Shi Vinod Pustak Mandir.
4. Allen, B.P. (2006). *Personality theories: Development, growth and diversity* (5th ed.) Needham Heights, MA: Allyn and Bacon

Suggested Readings:

1. Berk, L. E. (2000). *Child development*. New Delhi: Prentice Hall.
2. Berk, L. E. (2017). *Exploring Lifespan Development*. New York: Pearson
3. Berger, J.M. (2010). *Personality* (8th ed.). Belmont, CA: Thomson/Wadsworth. *Journal of Developmental Psychology*
4. Santrock, J.W. (2007). *Lifespan Development* (3rd ed.). New Delhi, Tata- McGraw Hill

DISCIPLINE SPECIFIC CORE COURSE – DSC-2-HDFE: PRINCIPLES OF CHILD DEVELOPMENT

Credit distribution, Eligibility and Pre-requisite of the Course

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility Criteria | Prerequisite of the course |
|---------------------------------|---------|-----------------------------------|----------|----------------------|----------------------|----------------------------|
| | | Lecture | Tutorial | Practical / Practice | | |
| Principles of Child Development | 4 | 3 | -- | 1 | Class XII Pass | Nil |

Learning Objectives:

1. To familiarize students with the concept of child development as a field of study.
2. To introduce students with various methods of child study
3. To create an understanding of prenatal development

Learning Outcomes:

After completing this course, the students will be able to:

1. Get familiarized with the concept of child development as a field of study.
2. Develop an understanding of prenatal development.
3. Learn about the basics of techniques of data collection.

THEORY

(Credits:3, Periods: 45)

Unit I: Introduction to Child Development

(10 hours)

- *Unit Description:* This unit will introduce child development as a field of study. It also will provide insights into the historical perspective regarding development of children.
- *Subtopics:*
 - Definition, Scope and importance of child development as a field of study
 - Historical foundation of child development

Unit II: Introduction to methods of Child Study

(11 hours)

- *Unit Description:* The unit will introduce the methods of child study through the examples of well framed interviews, questionnaires.
- *Subtopics:*
 - Observation
 - Interview
 - Questionnaire
 - Case study

Unit III: Aspects of Development

(11 hours)

- *Unit Description:* The unit will introduce about the aspects of development through discussion on the principles of development, developmental norms.
- *Subtopics:*

- Principles of Development
- Developmental Norms

Unit IV: Prenatal Development

(13 hours)

- *Unit Description:* The unit will introduce prenatal development through presentations on stages of prenatal development and factors which have an impact.
- Subtopics:
 - Stages of prenatal development
 - Factors affecting prenatal development

PRACTICAL

(Credit:1, Periods:30)

Unit I: Recording/documenting any two methods of data collection

(20 hours)

Unit 2: Review of any one documentary related to prenatal development

(10 hours)

Essential / recommended readings:

1. Berk, L. E. (2013). *Child development (9th edition)*. New Delhi: Prentice Hall.
2. Colley, D. and Cooper, P. (Eds.) (2017). *Attachment and emotional development in the classroom*. Oxford City: Jessica Kingley Publishers
3. Verma, P., Srivastava, D. N. and Singh, A. (1996). *Bal manovigyan and bal vikas*. Agra: Agrawal Publication.
4. Singh, A. (2015). *Foundation of human development: a lifespan approach*. Hyderabad: Orient Longman.

Suggested Readings:

1. Bee, H. L. (2011). *The developing child*. London: Pearson.
2. Papilla, D.E., Olds, S. W. and Feldman, R. D. (2004). *Human development*. New York: Mcgraw Hill.
3. Singh, A. (2015). *Foundation of human development: a lifespan approach*. Hyderabad: Orient Longman.
4. Singh, V. (2007). *Bal vikas avam bal manovigyan*. Jaipur: Panchsheel Prakashan.

B.A (Prog.) with Human Development and Family Empowerment (HDFE)

as Non-Major

Category-III

DISCIPLINE SPECIFIC CORE COURSE – DSC-2-HDFE: PRINCIPLES OF CHILD DEVELOPMENT

Credit distribution, Eligibility and Pre-requisite of the Course

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility Criteria | Prerequisite of the course |
|---------------------------------|---------|-----------------------------------|----------|----------------------|----------------------|----------------------------|
| | | Lecture | Tutorial | Practical / Practice | | |
| Principles of Child Development | 4 | 3 | -- | 1 | Class XII Pass | Nil |

Learning Objectives:

1. To familiarize students with the concept of child development as a field of study.
2. To introduce students with various methods of child study
3. To create an understanding of prenatal development

Learning Outcomes:

After completing this course, the students will be able to:

4. Get familiarized with the concept of child development as a field of study.
5. Develop an understanding of prenatal development.
6. Learn about the basics of techniques of data collection.

THEORY

(Credits:3, Periods: 45)

Unit I: Introduction to Child Development

(10 hours)

- *Unit Description:* This unit will introduce child development as a field of study. It also will provide insights into the historical perspective regarding development of children.
- *Subtopics:*
 - Definition, Scope and importance of child development as a field of study
 - Historical foundation of child development

Unit II: Introduction to methods of Child Study

(11 hours)

- *Unit Description:* The unit will introduce the methods of child study through the examples of well framed interviews, questionnaires.
- *Subtopics:*
 - Observation
 - Interview

- Questionnaire
- Case study

Unit III: Aspects of Development

(11 hours)

- *Unit Description:* The unit will introduce about the aspects of development through discussion on the principles of development, developmental norms.
- *Subtopics:*
 - Principles of Development
 - Developmental Norms

Unit IV: Prenatal Development

(13 hours)

- *Unit Description:* The unit will introduce prenatal development through presentations on stages of prenatal development and factors which have an impact.
- *Subtopics:*
 - Stages of prenatal development
 - Factors affecting prenatal development

PRACTICAL

(Credit:1, Periods:30)

Unit I: Recording/documenting any two methods of data collection

(20 hours)

Unit 2: Review of any one documentary related to prenatal development

(10 hours)

Essential / recommended readings:

1. Berk, L. E. (2013). *Child development (9th edition)*. New Delhi: Prentice Hall.
2. Colley, D. and Cooper, P. (Eds.) (2017). *Attachment and emotional development in the classroom*. Oxford City: Jessica Kingley Publishers
3. Verma, P., Srivastava, D. N. and Singh, A. (1996). *Bal manovigyan and bal vikas*. Agra: Agrawal Publication.
4. Singh, A. (2015). *Foundation of human development: a lifespan approach*. Hyderabad: Orient Longman.

Suggested readings:

1. Bee, H. L. (2011). *The developing child*. London: Pearson.
2. Papilla, D.E., Olds, S. W. and Feldman, R. D. (2004). *Human development*. New York: Mcgraw Hill.
3. Singh, A. (2015). *Foundation of human development: a lifespan approach*. Hyderabad: Orient Longman.
4. Singh, V. (2007). *Bal vikas avam bal manovigyan*. Jaipur: Panchsheel Prakashan.

B.A. (Prog.) with Food Technology (FT) as Major
Category-II

DISCIPLINE SPECIFIC CORE COURSE – DSC-1-FT: BASICS IN FOOD AND NUTRITION

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basics in Food and Nutrition | 4 | 3 | 0 | 1 | Class XII Pass | NIL |

LEARNING OBJECTIVES:

1. To familiarize students with the relationship between food, nutrition, nutrients and health
2. To describe the functions, sources, deficiencies and excess of various nutrients
3. To make students understand the principles and methods of conserving and enhancing nutrients during cooking food
4. Prepare dishes using basic principles of food science and nutrition.

LEARNING OUTCOMES:

After completion of the course, the students will be able to:

1. Understand the basic concepts related to of the vibrant field of nutrition
2. Gain theoretical and practical knowledge about balanced diet, energy, macro nutrients and micro-nutrients
3. Judiciously adopt healthier methods of cooking based on the available resources
4. Adopt methods of processing food which would help to conserving/ enhancing nutrients while processing food.

SYLLABUS OF DSC-1-FT

THEORY:

UNIT I: Basic Concepts and Introduction to Food and Nutrition (5 Hours)

- *Unit Description:* This unit will introduce the vibrant field of nutrition to the

students. They will be appraised about the relationship of food with health and basics of a balanced diet.

- *Subtopics:*
 - Basic terms in food, nutrition and health
 - Functions of food
 - Foods groups
 - Balanced diet

UNIT II: Energy and Macronutrients

(12 Hours)

- *Unit Description:* The students will learn about the concepts of energy in food and its role in maintain good health. They will also learn about the energy giving macronutrients.
- *Subtopics:*
 - Energy: definition and units of measurement, factors affecting energy requirements, energy density of foods, energybalance.
 - Macronutrients: Functions, dietary sources and clinical manifestations of deficiency/ excess of carbohydrates, lipids and proteins.

UNIT III: Micronutrients

(16 Hours)

- *Unit Description:* This unit will help students to learn about the role of micronutrients in maintaining good health, effects of deficient and high intake, food sources.
- *Subtopics:*
 - Functions, dietary sources and clinical manifestations of deficiency/ excess of the following nutrients:
 - Fat soluble vitamins-A, D, E and K
 - Water soluble vitamins – thiamine, riboflavin, niacin, pyridoxine, folate, vitamin B12 and vitamin C
 - Minerals – calcium, iron, zinc and iodine

Unit IV: Theory of Cooking and Enhancing Nutrients

(12 Hours)

- *Unit Description:* The basic principles/methods of cooking food and ways of enhancing, conserving nutrients while cooking or processing food.
- *Subtopics:*
 - Methods of cooking food: dry heat, moist heat and combination
 - Methods of conserving nutrients
 - Methods of enhancing the nutritional quality of foods - supplementation, germination, fermentation, fortification and genetic modification of foods

PRACTICAL:

No. of Students per Practical Class Group: 10-15

- | | |
|---|-----------|
| | (2 Hours) |
| 1. Prepare educational aid on balanced diet or food groups | |
| 2. Preparing market order, selection of raw material | (2 Hours) |
| 3. Weights and measures | (2 Hours) |
| 4. Identification of presence/absence of food groups in given samples of food products/dishes/snacks available in college canteen | (2 Hours) |
| 5. Estimation of Edible portion size (peas/cauliflower/bottle gourd, potato, green leafy vegetables, one seasonal fruit) | (2 Hours) |
| 6. Pre-preparation Methods I: Washing, Peeling, Cutting, Chopping, Grating | (2 Hours) |
| 7. Pre-preparation methods II: blanching, kneading, whipping, whisking | (2 Hours) |
| 8. Dry-heat methods of cooking like roasting, grilling, frying | (2 Hours) |
| 9. Moist-heat methods of cooking like steaming, boiling, pressure cooking | (2 Hours) |
| 10. Planning and preparation of energy rich snack/dish. | (3 Hours) |
| 11. Planning and preparation of protein rich snack/dish. | (3 Hours) |
| 12. Planning and preparation of micronutrient (Vitamin A, Vitamin C) rich snack/dish. | (3 Hours) |
| 13. Planning and preparation of micronutrient (Calcium, iron) rich snack/dish | (3 Hours) |

ESSENTIAL/ RECOMMENDED READINGS (Theory and Practical):

1. Suri, S. and Malhotra, A. (2014). *Food Science Nutrition and Safety*. Delhi: Pearson India Ltd. Online Question Bank and student E Resources: https://wps.pearsoned.co.in/suri_fsns_1/ Online Instructor Resources: www.pearsoned.co.in/sukhneetsuri
2. Sethi P, Lakra P.(2015). *Aahar Vigyan, poshan evam Suraksha* (Hindi);(2015).First Ed; 2015; Delhi: Elite Publishing House (P)Ltd.
3. Srilakshmi B (2018). *Food Science*, 7th Edition. Delhi: New Age International Ltd.
4. Khanna K, Gupta S, Seth R, Mahna R, Rekhi T. (2004). *The Art and Science of Cooking: A Practical Manual*, Revised Edition. New Delhi: Elite Publishing House PvtLtd.

SUGGESTED READINGS:

1. Bamji MS, Krishnaswamy K, Brahman GNV (2016). *Textbook of Human Nutrition*, 4th edition. New Delhi: Oxford and IBH Publishing Co. Pvt. Ltd.
2. Chadha R and Mathur P (2015). *Nutrition: A Lifecycle Approach*. Hyderabad: Orient BlackSwan.
3. Roday, S (2018). *Food Science and Nutrition*. UK: Oxford University Press.
4. Lanham, SA, Hill, TR, Gallagher, AM, Vorster, HH. (2019). *Introduction to Human Nutrition*, Third Edition, Wiley Blackwell, USA.
5. Whitney, E.N., Rolfes, S.R. (2016). *Understanding Nutrition*. 14th Edition; USA: Elsevier.
6. Pike, R.L. and Brown, M.L. (1984) *An Integrated Approach. Nutrition*, John Wiley & Sons, Hoboken, 197.
7. Swaminathan, M. (2021). *Advanced Textbook on Food and Nutrition*. Bangalore Press.
8. Desai. (2019). *Handbook of Nutrition and Diet*. CRC Press

DISCIPLINE SPECIFIC CORE COURSE – DSC-2-FT: FOOD SCIENCE PART-I

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Food Science Part-I | 4 | 3 | 0 | 1 | Class XII Pass | NIL |

LEARNING OBJECTIVES:

1. To introduce the students to the vibrant field of food science and food technology
2. To impart theoretical and practical knowledge about composition, nutritive value and processing of cereals, pulses, fruits, vegetables and meat.
3. To familiarize students with basics of food adulteration.

LEARNING OUTCOMES:

After completion of the course, the students will be able to:

1. Define food science and describe its association with other related fields; and understand the role of food science in food and health industry.
2. Describe composition, nutritive value and processing of cereals, pulses, fruits, Vegetables, meat, fish and poultry.
3. Justify scientifically the changes occurring in food during processing, handling and Storage. Describe enzymatic and non-enzymatic browning reactions in various foods.
4. Describe harmful effects of adulteration on health and will be able to detect presence of common adulterants in food.

THEORY:

UNIT I: Introduction to Food Science and Technology

(15 Hours)

- *Unit Description:* This unit will introduce the students to the field of Food Science and Technology. It will also give information on basics of nutrition and food adulteration.
- *Subtopics:*
 - Definition, scope and current trends in food science and technology.
 - Basic introduction to macro and micronutrients-classification

and functions of various nutrients

- Definitions- food, safe food, nutrient, nutrition, balanced diet
- Commonly found food adulterants and their effect on health

UNIT II: Cereals and Pulses

(10 Hours)

- *Unit Description:* The unit will focus on various aspects of composition, nutritive value and processing of cereals, millets and pulses.
- *Subtopics:*
 - Composition and nutritive value, types of cereals and millets
 - Gelatinization of starch and the factors affecting it, dextrinization, germination and fermentation
 - Toxic constituents in pulses.

UNIT III: Fruits and Vegetables

(12 Hours)

- *Unit Description:* The unit is about composition, nutritive value and processing aspects fruits and vegetables. It also describes about various browning reactions that take place during food processing.
- *Subtopics:*
 - Classification of fruits and vegetables, composition and nutritive value; effect of processing on pigments.
 - Browning Reactions- enzymatic & non-enzymatic, role in food preparation and prevention of undesirable browning.

UNIT IV: Meat, Fish and Poultry

(8 Hours)

- *Unit Description:* The unit will focus on composition, nutritive value and processing aspects of meat, fish and poultry.
- *Subtopics:*
 - Composition and nutritive value
 - Types of meat, fish and poultry and their selection/purchasing criteria
Rigor mortis, Tenderization and Curing.

PRACTICAL:

No. of Students per Practical Class Group: 10-15

- | | |
|--|-----------|
| 1. Weights and Measures. | (2 Hours) |
| 2. Detection of adulterants in food | (2 Hours) |
| 3. Gelatinization of starch and the factors affecting it. | (2 Hours) |
| 4. Preparation of dish using gelatinization of starch | (2 Hours) |
| 5. Dextrinization of starch and its application | (2 Hours) |
| 6. Germination of pulses and cereals | (2 Hours) |
| 7. Preparation of products using sprouts | (2 Hours) |
| 8. Fermentation of cereals and pulses | (2 Hours) |
| 9. Preparation of cereal-pulse fermented products | (2 Hours) |
| 10. Effect of heat, acid and alkali on water soluble plant pigments. | (2 Hours) |
| 11. Effect of heat, acid and alkali on fat soluble plant pigments. | (2 Hours) |
| 12. Maillard browning during food preparation. | (2 Hours) |
| 13. Enzymatic browning and its prevention. | (3 Hours) |
| 14. Caramelization reaction in food. | (2 Hours) |

ESSENTIAL/ RECOMMENDED READINGS (Theory and Practical):

1. Sethi, P. & Lakra, P. (2015). *Aahar Vigyan, Poshan Evam Suraksha*. Delhi: Elite Publishing House Pvt.Ltd.
2. Srilakshmi, B. (2012). *Food Science*. Delhi: New Age International Pvt. Ltd.
3. Suri, S. & Malhotra, A. (2014). *Food Science Nutrition and Safety*. Delhi: Pearson India Ltd.
 - i. Online Question Bank and student E Resources:
https://wps.pearsoned.co.in/suri_fsns_1/ Online Instructor Resources:
www.pearsoned.co.in/sukhneetsuri
4. Potter, N., & Hotchkiss, J.H. (2007). *Food Science*. 5th Edition. Delhi: CBS Publishers.
5. Rekhi, T. & Yadav, H. (2014). *Fundamentals of Food and Nutrition*. Delhi: Elite Publishing House Pvt. Ltd.

SUGGESTED READINGS:

1. Avantina S (2019). *Textbook of Food Science and Technology*, 3rd Edition, CBS Publishers and Distributors Pvt Limited

2. McWilliams, M. (2016). *Foods: Experimental Perspectives*. USA: Pearson.
3. Reddy, S.M. (2015). *Basic Food Science and Technology*. Delhi: New Age International Publishers.
4. Vaclavik, V.A. & Elizabeth, C. (2014). *Essentials of Food Science*. 4th Edition. New York: Springer.
5. Roday, S. (2018). *Food Science and Nutrition*. 3rd Edition. Delhi: Oxford University Press.
6. Geoffrey Campbell–Platt. *Food Science and Technology*. 1st edition (2009). Wiley–Blackwell
7. Sharma A. *Textbook of Food Science and Technology* 3rd Ed., (2022). CBS Publisher 9789386478009

B.A. (Prog.) with Food Technology (FT) as Non-Major
Category-III

DISCIPLINE SPECIFIC CORE COURSE – DSC-2-FT: FOOD SCIENCE PART-I

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Food Science Part-I | 4 | 3 | 0 | 1 | Class XII Pass | NIL |

LEARNING OBJECTIVES:

1. To introduce the students to the vibrant field of food science and food technology
2. To impart theoretical and practical knowledge about composition, nutritive value and processing of cereals, pulses, fruits, vegetables and meat.
3. To familiarize students with basics of food adulteration.

LEARNING OUTCOMES:

After completion of the course, the students will be able to:

1. Define food science and describe its association with other related fields; and understand the role of food science in food and health industry.
2. Describe composition, nutritive value and processing of cereals, pulses, fruits, Vegetables, meat, fish and poultry.
3. Justify scientifically the changes occurring in food during processing, handling and Storage. Describe enzymatic and non-enzymatic browning reactions in various foods.
4. Describe harmful effects of adulteration on health and will be able to detect presence of common adulterants in food.

THEORY:

UNIT I: Introduction to Food Science and Technology

(15 Hours)

- *Unit Description:* This unit will introduce the students to the field of Food Science and Technology. It will also give information on basics of nutrition and food adulteration.

- *Subtopics:*
 - Definition, scope and current trends in food science and technology.
 - Basic introduction to macro and micronutrients-classification and functions of various nutrients
 - Definitions- food, safe food, nutrient, nutrition, balanced diet
 - Commonly found food adulterants and their effect on health

UNIT II: Cereals and Pulses

(10 Hours)

- *Unit Description:* The unit will focus on various aspects of composition, nutritive value and processing of cereals, millets and pulses.
- *Subtopics:*
 - Composition and nutritive value, types of cereals and millets
 - Gelatinization of starch and the factors affecting it, dextrinization, germination and fermentation
 - Toxic constituents in pulses.

UNIT III: Fruits and Vegetables

(12 Hours)

- *Unit Description:* The unit is about composition, nutritive value and processing aspects fruits and vegetables. It also describes about various browning reactions that take place during food processing.
- *Subtopics:*
 - Classification of fruits and vegetables, composition and nutritive value; effect of processing on pigments.
 - Browning Reactions- enzymatic & non-enzymatic, role in food preparation and prevention of undesirable browning.

UNIT IV: Meat, Fish and Poultry

(8 Hours)

- *Unit Description:* The unit will focus on composition, nutritive value and processing aspects of meat, fish and poultry.
- *Subtopics:*
 - Composition and nutritive value
 - Types of meat, fish and poultry and their selection/purchasing criteria
 - Rigor mortis, Tenderization and Curing.

PRACTICAL:

No. of Students per Practical Class Group: 10-15

1. Weights and Measures. (2 Hours)
2. Detection of adulterants in food (2 Hours)
3. Gelatinization of starch and the factors affecting it. (2 Hours)

- | | |
|--|-----------|
| 4. Preparation of dish using gelatinization of starch | (2 Hours) |
| 5. Dextrinization of starch and its application | (2 Hours) |
| 6. Germination of pulses and cereals | (2 Hours) |
| 7. Preparation of products using sprouts | (2 Hours) |
| 8. Fermentation of cereals and pulses | (2 Hours) |
| 9. Preparation of cereal-pulse fermented products | (2 Hours) |
| 10. Effect of heat, acid and alkali on water soluble plant pigments. | (2 Hours) |
| 11. Effect of heat, acid and alkali on fat soluble plant pigments. | (2 Hours) |
| 12. Maillard browning during food preparation. | (2 Hours) |
| 13. Enzymatic browning and its prevention. | (3 Hours) |
| 14. Caramelization reaction in food. | (2 Hours) |

ESSENTIAL/ RECOMMENDED READINGS (Theory and Practical):

1. Sethi, P. & Lakra, P. (2015). Aahar Vigyan, Poshan Evam Suraksha. Delhi: Elite Publishing House Pvt.Ltd.
2. Srilakshmi, B. (2012). Food Science. Delhi: New Age International Pvt. Ltd.
3. Suri, S. & Malhotra, A. (2014). Food Science Nutrition and Safety. Delhi: Pearson India Ltd.
 - i. Online Question Bank and student E Resources:
https://wps.pearsoned.co.in/suri_fsns_1/
 - ii. Online Instructor Resources: www.pearsoned.co.in/sukhneetsuri
4. Potter, N., & Hotchkiss, J.H. (2007). Food Science. 5th Edition. Delhi: CBS Publishers.
5. Rekhi, T. & Yadav, H. (2014). *Fundamentals of Food and Nutrition*. Delhi: Elite Publishing House Pvt. Ltd.

SUGGESTED READINGS:

1. Avantina S (2019). Textbook of Food Science and Technology, 3rd Edition, CBS Publishers and Distributors Pvt Limited
2. McWilliams, M. (2016). Foods: Experimental Perspectives. USA: Pearson.
3. Reddy, S.M. (2015). Basic Food Science and Technology. Delhi: New Age International Publishers.
4. Vaclavik, V.A. & Elizabeth, C. (2014). Essentials of Food Science. 4th Edition. New York: Springer.
5. Roday, S. (2018). *Food Science and Nutrition*. 3rd Edition. Delhi: Oxford University Press.
6. Geoffrey Campbell-Platt. Food Science and Technology. 1st edition (2009). Wiley-Blackwell
7. Sharma A. Textbook of Food Science and Technology 3rd Ed., (2022). CBS Publisher 9789386478009

Common Pool of Generic Elective (GE) Courses
Offered by Department of Home Sciences
Category-IV

GE HS 001
CARE AND WELLBEING ACROSS THE LIFESPAN

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| CARE AND WELLBEING ACROSS THE LIFESPAN | 4 | 3 | 0 | 1 | 12 th Pass | NIL |

Learning Objectives

1. To understand the concept of care and well-being across the lifespan and talk in context to the current social world.
2. To demonstrate skills to promote well-being of self and others in the society.
3. To gain familiarity of programmes and policy initiatives present on care and wellbeing in India

Course Outcomes:

1. The student will be able to develop an understanding of the concept and dimensions of care and wellbeing of individuals in the contemporary social world.
2. The student will acquire knowledge of the many influences on care and wellbeing across human lifespan.
3. The student will build capacity to promote wellbeing of self and society at large.
4. The student will be familiar with program and policy initiatives present on care and wellbeing in India.

THEORY
(Credits 3; Periods 45)

| | |
|---|-----------------|
| Unit I: Care and Human Development Unit Description: The unit offers information about the concept of care across lifespan. | 12 Hours |
| Subtopics: <ul style="list-style-type: none"> ● Definition, concepts & relevance of care ● Vulnerable periods in life that require care ● Principles & components of care ● Psychological, social, emotional and spiritual | |

| | |
|--|-----------------|
| Unit II: Well-being and Human Development Unit Description: The unit provides information regarding the concept of wellbeing across lifespan, life crises and factors and experiences that promote wellbeing in human development. | 9 Hours |
| Subtopics: <ul style="list-style-type: none"> ● Concept of well-being: physical, psychological, spiritual ● Life crises and well-being ● Factors & experiences that promote well-being | |
| Unit III: Care and wellbeing: Birth to adolescent years Unit Description: The unit focuses on the care and wellbeing from the period before birth up to the adolescent years. | 12 Hours |
| Subtopics: <ul style="list-style-type: none"> ● Antenatal care: maternal, fetal and neonatal care ● Care of the young child ● Adolescent reproductive health and wellbeing ● Community and school health programs ● Nutrition and health for all ages | |
| Unit IV: Care and wellbeing Adulthood and Aging Unit Description: The unit addresses the care and wellbeing issues of the caregiver, role of the family, health, medical and insurance schemes and provisions for the care of the elderly. | 12 Hours |
| Subtopics: <ul style="list-style-type: none"> ● Adulthood and old age: changing and adapting ● Stress, coping strategies and well-being of caregivers ● Counselling, yoga and meditation techniques ● Institutions, schemes and facilities for older adults | |

Essential Readings

1. Daaleman, Timothy & Helton, Margaret (2018). Chronic Illness Care: Principles and Practice: Springer. (Chapters 9- 12 & Chapters 21-27) NICHD Early Child Care Research Network. (2005).
2. Child Care and Child Development: Results From the NICHD Study of Early Child Care. New York: Guildford Press. (Chapters 2-6)
3. Berk, L. (2013). Child development. 9th ed. Boston: Pearson.
4. Ronda C. Talley, Rhonda J. V. Montgomery, Caregiving: A Developmental, Life-Long Perspective, Pages 3-10
5. Ronda C. Talley, Lydia LaGue (2013) Caregiving Across the Lifespan: Research . Practice . Policy, Springer.
6. Santrock, J. W. (2011). Life-span development. New York: McGraw-Hill.

7. Singh, A. (Ed.) 2015. Foundations of Human Development. New Delhi: Tata McGraw- Hill.
8. Markin, L. (2013). Health and Well-Being across Life Course. Sage Publication, Inc. Chapter 2-7
9. Asumadu-Sarkodie, Samuel. (2012). Nutritional Problems and Intervention Strategies in India. (All Chapters)
10. Chao, R.C. (2015). Counselling Psychology: An Integrated Positive Psychological Approach. (Chapter 1-4)
11. Institute of Public Health in Ireland and the Centre for Effective Services (2016) Improving Health and Wellbeing Outcomes in the Early Years: Research and Practice Dublin: Institute of Public Health in Ireland and the Centre for Effective Services. (All Chapters).
12. Kamerman, S.B., PIPPS, S., Ben-Arieh, A. (2010). From Child Welfare to Child Well-Being. Springer Publication. (Chapter 2, 5, 7, 12, 23)

Suggested Readings

1. Singhi, P. (1999). Child health & well-being: Psychological care within & beyond hospital walls. In T.S. Saraswathi (Ed.). Culture, socialization and human development. New Delhi: Sage.
2. Childhood in south Asia: A critical look at issues, policies and programmes. Conn.USA: Information Age.

PRACTICAL (Credit 1; Periods 30)

| | |
|--|-----------------|
| <ul style="list-style-type: none"> ● Use of various tools to understand care needs at different stages- childhood, adolescence, adulthood: Interview, Observation, Movies and Documentaries ● Lectures/ Talks/workshops on- Self-care and well-being, Counselling and Yoga/meditation ● Profile an organization to a senior citizen home/childcare institution to study care and well-being ● Psychometric tests- Well-being scale, Self-concept tests, Subjective well-being scale (WHO), any 2 personality tests | 30 Hours |
|--|-----------------|

GE HS 005 : FUNDAMENTALS OF HUMAN NUTRITION

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------|---------|-----------------------------------|----------|------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ | | |

| | | | | | | |
|--|----------|----------|----------|-----------------|-----------------------------|------------|
| | | | | Practice | | |
| FUNDAMENTALS OF HUMAN NUTRITION | 4 | 3 | 0 | 1 | 12th Pass | NIL |

Learning Objectives

1. To understand the relationship between food, nutrition and health.
2. To classify foods into various food groups and explain the concept of a balanced diet.
3. To describe the importance of various nutrients as well as list their food sources.
4. To be able to plan and prepare nutritious meals for an adult.

Course Outcomes

1. Relate how food affects health.
2. Classify foods into various food groups and explain the concept of a balanced diet.
3. Understand the importance of various nutrients and how these can be obtained from the diet.
4. Describe the considerations for planning and preparing balanced and nutritious meals for adults.

THEORY (Credits 3; Periods 45)

| Units | No. of Hours |
|--|---------------------|
| Unit I: Basic Concepts in Nutrition Unit Description: Understanding basic terminology used in nutritional sciences and the importance of nutrition | 10 Hours |
| Subtopics: <ul style="list-style-type: none"> ● Basic terms used in nutrition ● Understanding relationship between food, nutrition and health ● Functions of food-Physiological, psychological and social ● Basic food groups and concept of balanced diet | |
| Unit II: Nutrients Unit Description: Functions, dietary sources, requirements, effects of deficiency and/ or excess consumption of the various nutrients. | 20 Hours |
| Subtopics: <ul style="list-style-type: none"> ● Energy- Concept of energy balance ● Carbohydrates and dietary fibre ● Lipids ● Proteins ● Fat soluble vitamins ● Water soluble vitamins ● Minerals | |

| | |
|---|-----------------|
| Unit III: Healthy Eating Unit Description: Nutritional concerns and dietary guidelines for healthy eating for adults. | 15 Hours |
| Subtopics: <ul style="list-style-type: none"> ● Factors influencing food choices ● Planning balanced meals and diets ● Nutritional concerns for adults ● Dietary guidelines for prevention of diet related lifestyle disorders ● Importance of physical activity and other lifestyle factors | |

Essential Readings

1. Chadha R and Mathur P eds. (2015). Nutrition: A Lifecycle Approach. Hyderabad: Orient BlackSwan.
2. Khanna K, Gupta S, Seth R, Passi SJ, Mahna R, Puri S (2013). Textbook of Nutrition and Dietetics. Delhi: Phoenix Publishing House Pvt. Ltd.
3. Longvah T, Ananthan R, Bhaskarachary K and Venkaiah K (2017). Indian Food
4. Composition Tables. National Institute of Nutrition, Indian Council of Medical Research, Department of Health Research, Ministry of Health and Family Welfare, Government of India, Hyderabad.
5. NIN (2011). Dietary Guidelines for Indians- A Manual. Second edition. National Institute of Nutrition, Indian Council of Medical Research, Hyderabad.
6. Seth V, Singh K, Mathur P (2018). Diet Planning Through the Lifecycle Part I: Normal Nutrition- A Practical Manual. 6th Edition. Delhi: Elite Publishing House.

Suggested Readings

1. Byrd-Bredbenner C, Moe G, Beshgetoor D, Berning J (2013). Wardlaw's Perspectives in Nutrition, International Edition, 9th edition. New York: McGraw- Hill.
2. ICMR (2020). Nutrient Requirements for Indians-Recommended Dietary Allowances and Estimated Average Requirements. Published by National Institute of Nutrition, Hyderabad.
3. Sethi P, Lakra P. Aahar Vigyan, Poshan evam Suraksha (Hindi); First Ed; 2015; Delhi: Elite Publishing House (P) Ltd.
4. Siddhu, A, Bhatia, N, Singh, K, Gupta, S (2017). Compilation of Food Exchange List, Technical Series 6, Lady Irwin College, University of Delhi. Delhi: Global Books Organisation.
5. Suri S and Malhotra A (2014). Food Science, Nutrition and Safety. Dorling Kindersley (India) Pvt. Ltd, India

PRACTICAL

(Credit 1; Periods 30)

| Practical | No. of Lectures |
|--|------------------------|
| 1. Making the right food choices a. Nutrient rich sources from different food groups b. Concept of high fat, salt, sugar (HFSS) foods c. Reading food labels | 10 |
| 2. Planning a nutritious meal for adults a. Concept of food exchanges b. Calculating nutritional quality of diets c. Balancing meals according to nutrient requirements d. Healthy snacking options | 20 |

GE HS 005 : TRAINING AND CAPACITY BUILDING

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------------------------|----------------|--|-----------------|----------------------------|-----------------------------|------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| TRAINING AND CAPACITY BUILDING | 4 | 3 | 0 | 1 | 12th Pass | NIL |

Learning Objectives

1. To study the concept and significance of training and capacity building.
2. To understand the training process and the functions of different phases of training.
3. To know how different training approaches can be used to achieve various development goals.
4. To develop skills in designing, implementing and evaluating training programmes.

Course Outcomes

1. The student will be able to know the importance and scope of training for development.
2. The student will be able to learn the functions of different phases of the training process.
3. The student will be able to understand and critically evaluate the different training approaches and methodologies.

4. The student will be able to develop skills in planning, executing and evaluating training programmes for different stakeholders.

THEORY
(Credits 3; Periods 45)

| | |
|--|-----------------|
| Unit I: Training: Concept and Role in Development Unit Description: This Unit explores the concept, significance and different agencies involved in training for development. The unit focuses on adult learning and various approaches to train them. The Unit discusses the importance of evaluation and follow-up of training programmes. Various NGOs, GOs and Corporate initiatives in community development will also be discussed. | 9 Hours |
| Subtopics: <ul style="list-style-type: none"> ● Nature, scope, advantages and limitations of training ● Goals, approaches and types of training ● Characteristics and principles of adult learning ● Government policies for training and capacity building of different stakeholders ● Agencies involved in training and development - NGOs, GOs and Corporate | |
| Unit II: Roles and Responsibilities and Self-development of a Trainer Unit Description: This Unit elaborates on the roles and responsibilities of a trainer. The various types of skills required of a trainer will be discussed. Concepts of self, self-development and personality development of a trainer will also be covered. | 12 Hours |
| Subtopics: <ul style="list-style-type: none"> ● Roles and responsibilities of a trainer before, during and after a training programme ● Soft skills required by a trainer - communication, group mobilization leadership, team building, decision-making, networking and problem solving ● Technology-based skills - ICTs for facilitating the various aspects of the training process ● Concept of self and self-development of a trainer ● Need for personality development | |
| Unit III: Methods and Techniques of Training Unit Description: This Unit provides an insight into the different types of training methods and techniques which can be used in offline and online training programmes, including training in blended mode. | 12 Hours |

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|---|-----------------|
| <p>Subtopics:</p> <ul style="list-style-type: none"> ● Tools and techniques for training (Brainstorming, Buzz Groups, Panel Discussion, Role Play, Focus Group Discussions, Films, Games and Stories) ● New techniques and innovations in training methods especially using technology | |
| <p>Unit IV: Designing, Executing and Evaluating Training Modules</p> <p>Unit Description: This Unit focuses on analyzing training modules developed by different organizations - Government, National and International NGOs. The process of developing, mobilizing resources and implementing training programmes will be discussed. It also focuses on different ways of evaluating training programs for different stakeholders involved in the field of development.</p> | 12 Hours |
| <p>Subtopics:</p> <ul style="list-style-type: none"> ● Analysis of training programmes for different stakeholders ● Tools and techniques for training needs assessment ● Understanding various learning goals and outcomes for specific target groups ● Development of Training modules and materials ● Implementation of training programmes ● Methods of evaluation and follow-up of training | |

Essential Readings

1. Agochiya D. (2002). Every Trainer's Handbook. New Delhi, Sage publisher.
2. Dhama, O.P. and Bhatnagar, O.P. (2003). Education and Communication for Development. New Delhi.
3. Gardner, A. & Brindis, C. (2017). Advocacy and Policy Change Evaluation: Theory and Practice. USA: Stanford Business Books. ISBN-13: 978-0804792561.
4. PRIA. (1998). A Manual for Participatory Training Methodology in Development. New Delhi: Society for Participatory Research in Asia.
5. PRIA (2002). Methods of Participatory Training. New Delhi. Participatory Research in Asia.

Suggested Readings

1. Bhatia S.K, 2005, Training & Development; Concepts and Principles, Ch-1(3-8), ch-2(9-26), ch-3(28-38).
2. James W. Thacker C, (2004). Effectiveness Training-Systems, Strategies and Practices. Pearson Education.
3. Lyton R and Pareek U. (1990). Training for Development. New Delhi, Vistaar Publications.
4. Subedi, N R, (2008). Advocacy Strategies and Approaches: A Training of Trainers Manual. International.

- UNICEF. (2010). Advocacy toolkit. A guide to influencing decisions that improve children's lives.

PRACTICAL
(Credit 1; Periods 30)

| | |
|--|--------------------------------------|
| <ul style="list-style-type: none"> Exercises to understand roles and responsibilities of a trainer Undertake activities in building skills of a trainer. Undertake analysis of a variety of training modules. Development and conduct of training modules for specific client groups. Design, production and use of Training methods and materials. Evaluation of training programmes Visit to organizations involved in training and capacity building | No. of Hours 30 |
|--|--------------------------------------|

GE HS 013 : SUSTAINABLE FASHION

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|----------------------------|----------|-----------------------------------|----------|---------------------|-----------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Sustainable Fashion | 4 | 3 | 0 | 1 | 12th Pass | NIL |

Learning Objectives

- Spreading awareness about issues and challenges of sustainable fashion
- Make students conscious consumers of textiles and apparel
- Inculcating habits of reducing textile waste generation

Course Outcomes

- The student will be able to gain knowledge of issues and challenges related to over consumption and non-sustainable fashion.
- The student will be able to learning to choose garment consciously and become informed consumer
- The student will be able to using green laundry practices to help environment
- The student will be able to increasing life cycle of garments for less waste generation

THEORY
(Credits 3; Periods 45)

| | |
|--|-----------------|
| Unit I: Fashion & Sustainability Learning aspects of sustainability in relation to fashion and textiles. | 9 Hours |
| Subtopics: <ul style="list-style-type: none"> ● Basics of sustainability ● The Fashion Business & sustainability issues ● Ethical & sustainable fashion in the changing global scenario ● Circular fashion ● Start-ups and big brands dealing with sustainability ● Measuring sustainability – How brands do it | |
| Unit II: Green Consumption Factors that should be kept in mind while selecting and purchasing apparel | 12 Hours |
| Subtopics: <ul style="list-style-type: none"> ● Volumes of textile waste: Over consumption challenges ● Fashion based on values ● Locally made, globally relevant ● Local and connected: Designing with local artisans ● Reducing the speed in fashion consumption: Slow fashion, Durability, Appropriateness, Multifunctional garments, Trans-seasonal garments, emotionally durable design ● Standards, labels and organisations dealing with sustainable textiles and apparel | |
| Unit III: Ethical care and Maintenance Green practices for laundry and care of apparel. | 12 Hours |
| Subtopics: <ul style="list-style-type: none"> ● Laundering frequency: Reducing consumers' need to clean ● Laundry detergents and softeners: Effectiveness and environmental concerns ● Machine vs line drying: Energy costs vs consumer needs ● Special care laundry: Environmental impacts and changing consumer demands | |
| <ul style="list-style-type: none"> ● More efficient laundering practices ● Designing sustainable clothing that enables: low-impact care, extended use | |
| Unit IV: Intelligent Disposal Ways to increase the life of garments to reduce waste generation. | 12 Hours |

| | |
|---|--|
| Subtopics: <ul style="list-style-type: none"> ● Slowing the flow of materials ● Take-back schemes ● Waste management strategies: Reuse of goods, repair and reconditioning of goods, recycling of goods, zero waste pattern ● Collaborative consumption: Sharing, pass me down, give away ● Vintage Clothing: The world of second-hand clothing ● Traditional Practices in Indian culture leading to sustainable consumption | |
|---|--|

Essential Readings

1. Fletcher, K., & Grose, L. (2012). Fashion & sustainability: Design for change. Hachette UK
2. Fletcher, K. (2013). Sustainable fashion and textiles: design journeys. Routledge.
3. Gwilt, A., & Rissanen, T. (2012). Shaping sustainable fashion: Changing the way we make and use clothes. Routledge.
4. Jacques, P. (2020). Sustainability: the basics. Routledge.
5. Gardetti, M.A., & Torres, A.L. (Eds.). (2013). Sustainability in Fashion and Textiles: Values, Design, Production and Consumption (1st ed.). Routledge.
6. Pratibhan, M. Ed. (2017); Sustainability in Fashion & Apparels (Challenges & Solutions); Woodhead Publishing

Suggested Readings

1. Almeida, L. (2015). Ecolabels and organic certification for textile products. A Roadmap to sustainable textiles and clothing (pp. 175-196). Springer, Singapore.
2. Muthu, S. S. (Ed.). (2014). Roadmap to sustainable textiles and clothing: Eco-friendly raw materials, technologies, and processing methods. Springer.
3. Minney, S. (2011). Naked fashion: The new sustainable fashion revolution. New International
4. Mahapatra N. N. (2015); Textiles & Environment: Woodhead Publishing

PRACTICAL (Credit 1; Periods 30)

| | |
|--|-----------------|
| Analysing Market and Consumer Practices: <ul style="list-style-type: none"> ● Market survey to evaluate presence of Sustainable garments in Indian retail market: Identify any one Multiband apparel outlet and analyse brands selling sustainable clothes, green standards marked on labels and any other information available on labels that talks about sustainability in production of that garment. ● Analysing personal wardrobe to assess individual buying practices ● Analysing personal laundry practices and evaluating its impact on the environment. ● Analysing personal garment disposal practices and finding ways to reduce the waste generation. | 20 Hours |
| Case Study: <ul style="list-style-type: none"> ● Case study of an Indian Apparel Brand that is promoting Sustainable fashion. ● Case study on any one model of Collaborative consumption. | 10 Hours |

Suggested Readings

1. Kaur, J., & Singh, G. (2021). Cool Branding for Indian Sustainable Fashion Brands. Social and Sustainability Marketing: A Casebook for Reaching Your Socially Responsible Consumers through Marketing Science, 115.
2. Gwilt, A. (2020). A practical guide to sustainable fashion. Bloomsbury Publishing.

GE HS 020 :VISUAL MERCHANDISING

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-----------------------------|----------|-----------------------------------|----------|---------------------|-----------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Visual Merchandising | 4 | 3 | 0 | 1 | 12th Pass | NIL |

Learning Objectives

1. To introduce the concept and significance of visual merchandising in store design.
2. To impart knowledge regarding different types of visual displays and ways of achieving them.
3. To develop skill in creating aesthetically pleasing visual displays.

Course Outcomes

1. The student will be able to apprehend the key terms and principles involved in the components of visual merchandising.

2. The student will be able to understand the importance of visual merchandising and attractive visual display in communicating with customers.
3. The student will be able to create aesthetic visual displays on different themes in store design.

THEORY
(Credits 3; Periods 45)

| | |
|---|-----------------|
| Unit I: Introduction to Visual Merchandising Unit Description: The focus of this unit would be on understanding the concept, significance and key elements of visual merchandising. | 7 Hours |
| Subtopics: <ul style="list-style-type: none"> ● Concept and Significance of Visual Merchandising ● Key elements of Visual Merchandising - Store Exterior, Store Layout, Store Interior, Interior display ● Factors Influencing Visual Merchandising ● Role of Visual Merchandiser | |
| UNIT II: Store Design Unit Description: This unit attempts to acquaint the students with various store designs, its components and the importance of colour and lighting therein. | 13 Hours |
| Subtopics: <ul style="list-style-type: none"> ● Objectives and Characteristics ● Types of store design ● Interior components ● Exterior components ● Colour ● Lighting design | |
| Unit III: Design Display Unit Description: This unit will orient the students in understanding the various components of design displays. | 15 Hours |
| Subtopics: <ul style="list-style-type: none"> ● Concept, Purpose, style and importance of displays ● Types of window displays ● Factors in window display ● Signage and Graphics ● Understanding of display fixtures ● Budgeting | |

| | |
|--|-----------------|
| Unit IV: Materials and Technologies Unit Description: This unit will acquaint the students with the materials and technologies used in visual display and the global trends. | 10 Hours |
| <ul style="list-style-type: none"> ● Selection of materials ● Use of Latest Technologies: Augmented and Virtual reality tools, Robotics ● Global Trends | |

Essential Readings

1. Morgan, T. (2014). Visual Merchandising: Window and in-store displays for retail, Laurence King Publishing, London
2. Bergstrom, B. (2009). Essentials of Visual Communication, Laurence King Publishing, London
3. Poore, J. (1994). Interior Colour by Design, Rockport Publishers.
4. Wiley, J. , (2010), Interior lighting for designers, John Wiley & Sons
5. Williams, R. (2007), Visual Communication: Integrating Media, Art, and Science, Routledge Communication Series

Suggested Readings

1. Khaus, K. (2006). Semantic turn a new foundation for design, CRC press
2. Landa, Robin. (2010), Advertising by design: Generating and Designing Creative Ideas Across Media, Second Edition, James Wiley
3. Linton, H. (1999). Color in Architecture: Design Methods for Buildings, Interiors and Urban Spaces, McGraw-Hill

PRACTICAL (Credit 1; Periods 30)

| | |
|---|-----------------|
| Unit I: Design Exploration | 12 Hours |
| Activities: <ul style="list-style-type: none"> ● Preparing a portfolio on elements and principles of visual design ● Creating Theme based mood boards | |
| <ul style="list-style-type: none"> ● Market survey of materials used in display: accessories, props, signage, backdrop, banners, etc. ● Visit to retail stores for critical assessment of display arrangements. | |

| | |
|---|-----------------|
| Unit II: Store Design and Displays | 18 Hours |
| Activities: <ul style="list-style-type: none"> • MKS system and techniques of measurement • Identification and assessment of different layout plans • Making a layout plan | |
| <ul style="list-style-type: none"> • Prop designing: Identification of types of props, material selection, creating a focal point through prop • Planning and designing a prop • Window Display Designing: Identification of types of window displays • Assessment of selected window display • Planning and designing a theme based window display • Costing | |

Essential Readings

1. Morgan, T. (2014). Visual Merchandising: Window and in-store displays for retail, Laurence King Publishing, London
2. Bergstrom, B. (2009). Essentials of Visual Communication, Laurence King Publishing, London
3. Poore, J. (1994). Interior Colour by Design, Rockport Publishers.
4. Wiley, J. , (2010), Interior lighting for designers, John Wiley & Sons
5. Williams, R. (2007), Visual Communication: Integrating Media, Art, and Science, Routledge Communication Series

GENERIC ELECTIVE (GE) – FT-01: FOOD PROCESSING AND PRESERVATION

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|----------|-----------------------------------|----------|---------------------|-----------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| FOOD PROCESSING AND PRESERVATION | 4 | 3 | 0 | 1 | 12th Pass | NIL |

LEARNING OBJECTIVES:

1. To impart basic concept of Food colloids, Freezing, Dehydration processes and equipment used during the processing
2. To understand the Principles of thermal processing, Minimal Processing and hurdle technology
3. To understand the concepts of water disposal and sanitation.

COURSE OUTCOMES:

1. Understand the basic concepts of Food colloids, Freezing, Dehydration processes

- and equipment used during the processing
2. Understand the Principles of thermal processing, Minimal Processing and hurdle technology
 3. Understand the concepts of water disposal and sanitation.

UNIT I

Food Processing Operations

20 Hours

Unit Description: Food Processing operations

Subtopics

- **Refrigeration and Freezing**

Requirements of refrigerated storage - controlled low temperature, air circulation and humidity, changes in food during refrigerated storage, progressive freezing, changes during freezing
Freezing methods -direct and indirect, still air sharp freezer, blast freezer, fluidized freezer, plate freezer, spiral freezer and cryogenic freezing.

- **Dehydration**

Normal drying curve , effect of food properties on dehydration, change in food during drying, drying methods and equipments: air convection dryer, tray dryer, tunnel dryer ,continuous belt dryer , fluidized bed dryer, dryer, drum dryer, vacuum dryer , freeze drying, foam mat drying.

- **Thermal Processing of Foods**

Classification of thermal processes, Principles of thermal processing, commercial canning operations, Aseptic Processing, UHT Irradiation and microwave heating. Principles, Dosage, Applications of Irradiation, Mechanism of microwave heating and applications.

UNIT II:

10 Hours

Technology of Colloids in Food

Unit Description: Technology of Colloids in Food

Subtopics:

Surface chemistry (colloids, emulsions, foam, sols, gels, pectingels)

Unit III: Water Disposal and Sanitation

10 Hours

Unit Description: Water Disposal and Sanitation

Subtopics:

Waste water , hardness of water, break point chlorination, physical and chemical nature of impurities, BOD, COD, waste water treatment, milkplant sanitation, CIP system, sanitizers used in food industry

Unit IV: Minimal processing and hurdle technology

05 Hours

Unit Description: Minimal processing and hurdle technology

PRACTICAL

DURATION: 30 HRS (CREDIT 1)

- Study of canning equipment (Forming, Flanging, Seaming, Exhausting and Retort)
- Canning of foods

- Preservation of food by the process of freezing
- Drying of food using Tray dryer/other dryers
- Study of thawing characteristics of frozen foods
- Preparation of brix solution and checking by hand refractometer
- Analysis of water
- Minimal Processing of food
- Application of colloidal chemistry in food preparation

ESSENTIAL READINGS:

1. Deman, J.M. (2007). Principles of Food Chemistry, 3rd Ed. Springer.
2. Potter, N. and Hotchkiss H. (2007). Food Science. New Delhi: CBS Publication.
3. Ramaswamy, H. and Marcotte, M. (2009). Food Processing Principles and Applications. CRC Press.

SUGGESTED READINGS:

1. Fellows' Food Processing Technology Principles and Practice 5th Edition (2022) Elsevier Publishing

TEACHING LEARNING PROCESS

- Lectured based teaching
- Power point presentations
- Experimental learning through practicals
- Along with pedagogy of flipped classroom students are encouraged to participate actively in the classroom through regular presentations on curriculum based topics, peer assessment

ASSESSMENT METHODS

- As per University of Delhi norms
- Assessment methods - quiz, identification tests, assignments
- End semester exams for theory and practical
- Feedback given to students for improving
- Continuous evaluation of practicals

KEYWORDS

Food Preservation, Food Processing, Colloidal chemistry, BOD, COD, Sanitation, Effluent system.

BSc. (Life Science)

B.Sc. (Life Science) with Botany as one of the core discipline

Category-III

(Semester-I)

Based on

Undergraduate Curriculum Framework 2022 (UGCF)

(Effective from Academic Year 2022-23)



University of Delhi

| Course Title | Nature of the Course | Total Credits | Components | | | Eligibility Criteria/ Prerequisite |
|-------------------------------|----------------------|---------------|------------|----------|-----------|---|
| | | | Lecture | Tutorial | Practical | |
| Plant Diversity & Systematics | DSC-Botany | 04 | 02 | - | 02 | Chemistry+Physics+Biology/ Biological studies/Biotechnology |

Semester I

DISCIPLINE SPECIFIC CORE COURSES (DSC) SEMESTER-I

Course Code BOT-DSC-1

Course Title: **Plant Diversity and Systematics**

Total Credits: **04 (Credits: Theory 02, Practical 02)**

Total Hours: **Lectures- 30, Practical- 15 classes of 4 hours each**

Objective:

To make students aware about the diversity of plants and microbes present on the planet and their evolutionary relationships.

Learning Outcomes:

This course will be able to impart basic knowledge and understanding of:

- the diversity of plants and microbes
- the possible relationships between each group
- their general characteristics
- approaches used for identification and classification of various groups of plants

Unit 1: Diversity of Life

Lectures: 01

Classifying the diversity of life: Domains of Life –Eubacteria, Archaea and Eukaryotes

Unit 2: Microbes

Lectures: 04

Viruses: General account; Replication, Lytic and Lysogenic cycle; Bacteria: structure, wall-less forms (L-forms, Mycoplasma), asexual reproduction and genetic recombination

Unit 3: Algae

Lectures: 03

Brief introduction of major classes: Blue-green, Green, Brown and Red algae. Diagnostic features of identification; morphology, reproduction and classification with special reference to *Nostoc*, *Volvox* and *Spirogyra*.

Unit 4: Fungi

Lectures: 03

Diagnostic features of identification; morphology, reproduction and classification with special reference to *Rhizopus*, *Penicillium* and *Agaricus*; Lichens (a general account).

Unit 5: Bryophytes, Pteridophytes and Gymnosperms

Lectures: 06

Characteristic features of identification; morphology and reproduction of Bryophytes, Pteridophytes and Gymnosperms with special reference to *Marchantia*, *Funaria*, *Pteris* and *Pinus* (only morphology).

Unit 6: Angiosperms

Lectures: 02

Diagnostic features, Structure of flower, types of inflorescence

Unit 7: Systematics

Lectures: 01

Aims, fundamental components of systematics, description, identification, nomenclature, phylogeny, biosystematics.

Unit 8: Systematics in Practices

Lectures: 07

Taxonomic Hierarchy- Concept of taxa and categories, Botanical Nomenclature- principles and rules; Type method; Author citation; Valid publication; Rejection of names, Principle of priority and its limitations, names of hybrids and cultivars.

Unit 9: Systems of classification

Lectures: 03

Classification: Artificial, Natural and Phylogenetic. An outline of Bentham and Hooker's (up to series only) and Engler and Prantl's (up to Subclasses) systems of classification and their merits and Demerits. APG System.

Practicals: (60 hours)

1. **Viruses:** Electron Micrographs of TMV and Bacteriophage, Specimens of virus infected plants (any two).
2. **Bacteria:** Electron Micrographs of a bacterium, types through permanent slides/photographs, specimens of infected plants (any two).
3. **Algae:** Study of vegetative and reproductive structures of (a) *Nostoc* (b) *Volvox* (c) *Spirogyra* through temporary preparations and permanent slides.
4. **Fungi:** Study of vegetative and reproductive structures of (a) *Rhizopus*, (b) *Penicillium* and (c) *Agaricus* through temporary preparations and permanent slides/specimens/photographs.
5. **Lichens:** Crustose, Foliose and Fruticose (specimens/ digital resources)
6. **Bryophytes:** Study of (a) *Marchantia*: morphology of thallus, W.M. rhizoids and scales, V.S. thallus through gemma cup, W.M. gemmae (all temporary slides), V.S. antheridiophore, archegoniophore, L.S. sporophyte (all permanent slides), (b) *Funaria*: detailed study and classification from W.M. rhizoids, operculum, peristome, spores and permanent slides of archegonia, antheridia and capsule.
7. **Pteridophytes:** Study of *Pteris*: T. S. of Rachis, V.S. of Sporophyll and W.M. of sporangium.
8. **Gymnosperms:** Study of *Pinus* morphology of long & dwarf shoot, male and female cones (specimens) and T.S. of needle (permanent slides only).

9. **Herbarium technique:** Mounting of a properly dried and pressed specimen of any wild plant on the herbarium sheet with complete herbarium label.
10. Taxonomic study of characters of one plant from each of the following families (any four): Malvaceae, Solanaceae, Asteraceae, Fabaceae, Liliaceae.

Suggested Readings:

1. Alexopoulos, C.J., Mims, C.W., Blackwell, M. (1996). Introductory Mycology, 4th edition. Singapore, John Wiley and Sons (Asia).
2. Kumar, H.D. (1999). Introductory Phycology, 2nd edition. Delhi, Delhi: Affiliated East-West. Press Pvt. Ltd.
3. Bhatnagar, S.P., Moitra, A. (1996). Gymnosperms. New Delhi, Delhi: New Age International (P) Ltd. Publishers.
4. Parihar, N.S. (1991). An introduction to Embryophyta. Vol. I. Bryophyta. Prayagraj: U.P.: Central Book Depot.
5. Pelczar, M.J. (2001). Microbiology, 5th edition. New Delhi, Delhi: Tata McGraw-Hill Co.
6. Tortora, G.J., Funke, B.R., Case, C.L. (2007). Microbiology. San Francisco, U.S.A: Pearson Benjamin Cummings.
7. Raven, P.H., Evert, R.F., Eichhorn, S.E. (2013). Biology of Plants, 8th edition, New York, NY: W.H. Freeman and Company.
8. Sethi, I.K., Walia, S.K. (2018). Text book of Fungi and Their Allies. (2nd Edition), Medtech Publishers, Delhi.
9. Vashishta, P.C., Sinha, A.K., Kumar, A. (2010). Pteridophyta. New Delhi, Delhi: S. Chand & Co Ltd.
10. Singh, G. (2020). Plant Systematics: Theory and Practice, 4th edition. CBS Publishers and Distributors, New Delhi.
11. Simpson, M.G. (2020). Plant Systematics, 3rd edition, Elsevier Academic Press, San Diego, CA, U.S.A.
12. Gupta R. 2011. Plant Taxonomy: past, present, and future. New Delhi: The Energy and resources Institute (TERI).
13. Judd W.S., Campbell C.S., Kellogg, E. A., Stevens, P.F., Donoghue M.J. (2015). Plant Systematics: A Phylogenetic Approach 4th Edition Sinauer Associates, Oxford University Press. USA.
14. <http://www.mobot.org/MOBOT/research/APweb/>. (for APG IV classification).

Keywords: Bacteria, Viruses, Bryophytes, Pteridophytes, Gymnosperms, Angiosperms, Classification

B.Sc. (Life Science) with Chemistry as one of the core discipline
Category-III

(Semester-I)
Based on
Undergraduate Curriculum Framework 2022 (UGCF)
(Effective from Academic Year 2022-23)



University of Delhi

| Course Title | Nature of the Course | Total Credits | Components | | | Eligibility Criteria/ Prerequisite |
|-------------------------------------|----------------------|---------------|------------|----------|-----------|---|
| | | | Lecture | Tutorial | Practical | |
| Basic Concepts of Organic Chemistry | DSC-Chemistry | 04 | 02 | - | 02 | Chemistry+Physics+Biology/ Biological studies/Biotechnology |

Course Code : CHEM-DSC-01

Course Title: Basic Concepts of Organic Chemistry

Total Credits: 04 (Credits: Theory-02, Practical-02)

Total Lectures: Theory- 30, Practical- 15 classes of 4 hours each

Objectives: The course is infused with the recapitulation of fundamentals of organic chemistry and the introduction of the concept of visualizing the organic molecules in a three-dimensional space. To establish the applications of these concepts, a study of diverse reactions through mechanisms is included. The constitution of the course strongly aids in the paramount learning of the basic concepts and their applications.

Learning Outcomes:

By the end of the course, the students will be able to:

- Understand and explain the differential behavior of organic compounds based on fundamental concepts learnt.
- Understand the fundamental concepts of stereochemistry.
- Formulate the mechanism of organic reactions by recalling and correlating the fundamental properties of the reactants involved.
- Learn and identify many organic reactions and their mechanisms including electrophilic addition, nucleophilic addition, nucleophilic substitution, electrophilic substitution and rearrangement reactions.

Unit 1: Fundamentals of organic chemistry

Lectures: 05

Types of Electronic displacements: Inductive effect, Resonance effect, Hyperconjugation, Electromeric Effect. Reactive intermediates and their stability: carbocations, free radicals, carbanions, benzyne, carbenes.

Acidity and basicity in organic compounds (comparison of carboxylic acids, alcohols, phenols, primary, secondary and tertiary aliphatic amines, aniline and its derivatives)

UNIT 2: Stereochemistry

Lectures: 07

Types of projection formulae: Flying Wedge Formula, Newmann, Sawhorse and Fischer representations and their interconversion.

Stereoisomerism: Concept of chirality (upto two carbon atoms). Configurational isomerism: geometrical and optical isomerism; enantiomerism, diastereomerism and meso compounds). Threo and erythro; D and L; *Cis-trans* nomenclature; CIP Rules: R/ S (for upto 2 chiral carbon atoms) and *E/Z* nomenclature (for upto two C=C systems).

Conformational isomerism with respect to ethane, butane and cyclohexane.

UNIT 3: Types of Organic Reactions (Including reactions of alkenes, alkyl and aryl halides, alcohols, aldehydes, ketones)

Lectures: 18

Electrophilic addition reactions

Electrophilic addition reaction (with respect to propene, propyne, 3,3-dimethyl-1-butene): Hydration, Addition of HX in the absence and presence of peroxide, Hydroboration oxidation, Addition of bromine (with stereochemistry).

Nucleophilic addition reactions

Nucleophilic addition reaction of carbonyl compounds: Addition of HCN, ammonia derivatives (Hydroxylamine, Hydrazine, Semicarbazide and 2,4-DNP), the addition of carbanion (Aldol condensation, Claisen Schmidt, Benzoin condensation, Perkin reaction, reactions involving Grignard reagent).

Elimination and Nucleophilic substitution reactions

Nucleophilic substitution reaction (S_N1 and S_N2) in alkyl halides (mechanisms with stereochemical aspect), alcohols (with nucleophiles like ammonia, halides, thiols, ambident nucleophiles (cyanide and nitrite ion)), ethers (Williamson ether synthesis), Elimination reaction ($E1$ & $E2$), elimination vs substitution (*w.r.t.* potassium *t*-butoxide and KOH); Nucleophilic aromatic substitution in aryl halides-elimination addition reaction *w.r.t.* chlorobenzene, including the effect of nitro group (on the ring) on the reaction. relative reactivity and strength of C-X bond in alkyl, allyl, benzyl, vinyl and aryl halides towards substitution reactions

Electrophilic substitution reactions

Electrophilic Aromatic substitution with mechanism (benzene)- sulphonation, nitration, halogenation, Friedel craft acylation :*o*-, *m*- and *p*- directive influence giving examples of toluene/nitrobenzene/ phenol/ aniline/ chlorobenzene.

Reactive intermediates and Rearrangement Reactions

Free radicals (Birch Reduction); *Carbocations* (Pinacol-Pinacolone, Wagner-Meerwein, Rearrangement, and Beckmann rearrangement); *Carbanions* (Michael Addition); *Carbenes* (Reimer-Tiemann).

PRACTICALS:

60 hours

(Laboratory periods: 15 classes of 4 hours each)

1. Purification of an organic compound by crystallization (from water and alcohol) and distillation, Criteria of purity: Determination of M.P.
2. Determination of boiling point of liquid compounds. (Boiling point lower than and more than 100 °C by distillation and capillary method)
3. Detection of extra element
4. Preparations: (Mechanism of various reactions involved to be discussed).

- a. Bromination of phenol/aniline.
- b. 2,4-Dinitrophenylhydrazone of aldehydes and ketones
- c. Semicarbazone of aldehydes/ ketones
- d. Aldol condensation reaction using green method.
- e. Bromination of Stilbene.
- f. Acetanilide to p-Bromoacetanilide.

The above derivatives should be prepared using 0.5-1g of the organic compound. The solid samples must be collected and may be used for recrystallization and melting point.

References:

Theory:

1. Sykes, P.(2003), **A Guide Book to Mechanism in Organic Chemistry**, 6th Edition Pearson Education.
2. Eliel, E. L. (2001), **Stereochemistry of Carbon Compounds**, Tata McGraw Hill.
3. Morrison, R. N.; Boyd, R. N., Bhattacharjee, S.K. (2010), **Organic Chemistry**, 7th Edition, Pearson Education.
4. Bahl, A; Bahl, B. S. (2019), **Advanced Organic Chemistry**, 22nd Edition, S. Chand.

Practical:

1. Furniss, B.S.; Hannaford, A.J.; Smith, P.W.G.; Tatchell, A.R. (2012), **Vogel's Textbook of Practical Organic Chemistry**, Pearson.
2. Mann, F.G.; Saunders, B.C. (2009), **Practical Organic Chemistry**, Pearson Education.
3. Dhingra, S; Ahluwalia V.K., (2017), **Advanced Experimental Organic Chemistry**, Manakin Press.
4. Pasricha, S., Chaudhary, A. (2021), **Practical Organic Chemistry: Volume I**, I K International Publishing House Pvt. Ltd., New Delhi.

Teaching Learning Process:

- Blend of conventional blackboard teaching, modern teaching learning tools and
- Computational infrastructure- based instructions and Practical training.
- Problem solving and quizzes for enhanced understanding of the concepts.
- Explaining the handling and usage of the hardware and softwares required for solution to the given set of problems.

Assessment Methods:

- Presentations by individual student/ group of students
- Class Tests at periodic intervals.
- Written assignment(s)
- End semester University theory examination presentations by individual student/ group of students

Keywords: Chirality, Electrophilic addition, Nucleophilic addition, Nucleophilic substitution, Electrophilic substitution

B.Sc. (Life Science) with Zoology as one of the core discipline

Category-III

(Semester-I)

Based on

Undergraduate Curriculum Framework 2022 (UGCF)
(Effective from Academic Year 2022-23)



University of Delhi

| Course Title | Nature of the Course | Total Credits | Components | | | Eligibility Criteria/ Prerequisite |
|----------------------|----------------------|---------------|------------|----------|-----------|---|
| | | | Lecture | Tutorial | Practical | |
| Diversity of Animals | DSC-Zoology | 04 | 02 | - | 02 | Chemistry+Physics+Biology/ Biological studies/Biotechnology |

Course Code : ZOO-DSC-01

Course Title: Diversity of Animals

Total Credits: 04 (Credits: Theory-02, Practical-02)

Total Lectures: Theory- 30 hrs., Practical- 15 classes of 4 hours each

Objectives: The objective of this course is to teach the students concepts of morpho- taxonomy as well as understand the characteristics and physiological aspects of unicellular and metazoan animals. The course lays emphasis on creating awareness and concern towards significance of animal diversity for human survival and its socio- economic importance. In addition to this, the course is aimed at nurturing skills of conducting scientific inquiry and experimentation in the field of animal diversity to acquire knowledge of fundamental concepts and theories of animal diversity.

Learning Outcomes:

By the end of the course, the students will be able to:

- Acquire knowledge of diversity of non-chordate and chordates.
- Learn characteristics, morphotaxonomy, structural organization and physiological life system of diverse animal groups.
- Understand the economic importance of non-chordates and chordates and their importance in the ecosystem.
- Learn evolutionary relationships and phylogeny of invertebrates and vertebrates to structural as well as functional similarities.

Unit I– Introduction

02 hrs.

Introduction to five kingdom classification system, General characters of kingdom Animalia and basis of its classification (with special reference to coelom), Concept of Taxonomic Hierarchy (up to species level), significance of binomial nomenclature.

Unit II: Protista to Pseudocoelomates

09 hrs.

Characteristics of acoelomates and pseudocoelomates. Locomotory organelles and locomotion in Protozoa, Canal system in Porifera, Polymorphism in Cnidaria (Hydrozoa), Life cycle of *Taenia solium* and its Parasitic adaptations, Life cycle of *Ascaris lumbricoides* and its Parasitic adaptations.

Unit III: Coelomates

09 hrs.

General features of coelomates, Metamerism in Annelida, Vision in Arthropoda, Metamorphosis in Insects. Torsion and detorsion in Gastropoda. Pearl Formation, Water-vascular system in Asteroidea

Unit IV: Chordates

10 hrs.

Salient features of protochordates and chordates, Retrogressive metamorphosis in protochordates, Osmoregulation, Migration, and Parental care in fishes, Parental care in Amphibians, Flight adaptations and Migration in birds, Biting mechanism in snakes, Origin of mammals.

PRACTICAL

[60 hours]

1. General Characteristics and Classification up to classes: Protista, Porifera, Cnidaria, Platyhelminthes, Nematelminthes. Study of museum specimens: *Amoeba*, *Euglena*, *Paramecium*, *Sycon*, *Euplectella*, *Obelia*, *Physalia*, *Aurelia*, *Metridium*, larval stage of *Taenia solium*, Male and female *Ascaris lumbricoides*.
2. General Characteristics and Classification up to classes: Annelida, Arthropoda, Mollusca, Echinodermata. Study of museum specimens: *Aphrodite*, *Nereis*, *Chaetopterus*, *Pheretima*, *Hirudinaria*, *Palaemon*, *Cancer*, *Limulus*, *Palaemon*, *Scolopendra*, *Chiton*, *Dentalium*, *Pila*, *Unio*, *Octopus*, *Pentaceros*, *Echinus*, *Cucumaria*, *Antedon*.
3. Study of following specimens, general characteristics and classification: *Balanoglossus*, *Amphioxus*, *Herdmania*.
4. Study of following specimens, general characteristics and classification up to order: *Petromyzon*, *Pristis*, *Exocoetus*, *Hippocampus*, *Hyla*, *Salamander*, *Ichthyophis/Uraeotyphlus*, *Naja*, *Viper*, *Hydrophis*, *Chameleon*, *Uromastix*, *Milvus*, *Anas*, *Psittacula*, *Loris*, *Pteropus*, *Sorex*.
5. Submission of report on an excursion to a Sanctuary/ Biodiversity Park.

Note: Classification to be followed from Ruppert, E.E., Fox, R.S., Barnes R.D. “*Invertebrate Zoology*” 7th Edition., Cengage Learning, India” & Young, J. Z. (2004) *The Life of Vertebrates*. III Edition. Oxford university press.

Recommended Books:

1. Ruppert, E.E., Fox, R.S., Barnes, R. D. *Invertebrate Zoology: A Functional Evolutionary Approach*. 7th Edition, Cengage Learning, India.
2. Young, J. Z. (2004) *The Life of Vertebrates*. III Edition. Oxford university press.
3. Barrington, E.J.W. (2012) *Invertebrate Structure and Functions*. II Edition, EWP Publishers.
- Pechenik, J. A. (2015) *Biology of the Invertebrates*. VII Edition, McGraw-Hill Education
4. Campbell & Reece (2005). *Biology*, Pearson Education, (Singapore) Pvt. Ltd.
5. Kardong, K. V. (2002). *Vertebrates Comparative Anatomy. Function and Evolution*. TataMcGraw Hill Publishing Company. New Delhi.
6. Pough H. *Vertebrate Life*, VIII Edition, Pearson International.

7. Lal, S.S. (2012), Practical Zoology Invertebrate.
8. Lal S.S. (2015-16), Practical Zoology Vertebrate.
9. P. S. Verma (2010), A Manual of Practical Zoology: Chordates.

Teaching Learning Process:

- Blend of conventional blackboard teaching, modern teaching learning tools and computational infrastructure- based instructions and Practical training.
- Problem solving and quizzes for enhanced understanding of the concepts.
- Explaining the handling and usage of the hardware and software required for solution to the given set of problems.

Assessment Methods:

- Presentations by Individual Student/ Group of Students
- Class Tests at Periodic Intervals.
- Written assignment(s)
- End semester University Theory Examination Presentations by Individual Student/ Group of Students

6. Amendment to Appendix -II-A to the Ordinance V (2-A) of the Ordinances of the University vide EC Resolution 18-1-6 dated 18.08.2022 regarding Syllabi of 1st Semester of Department under Faculty of Commerce & Business Studies

Add the following:

Syllabi of Semester-I of the Commerce department under Faculty of Commerce & Business Studies based on Under Graduate Curriculum Framework -2022 to be implemented from the Academic Year 2022-23.

FACULTY OF COMMERCE AND BUSINESS

DEPARTMENT OF COMMERCE

B.Com (Hons.)

Category I

**DISCIPLINE SPECIFIC CORE COURSE -1 (DSC-1) –:
Management Principles and Applications**

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Management Principles and Applications BCH: DSC-1.1 | 4 | 3 | 1 | 0 | Pass in XII | NIL |

Learning Objectives

The course aims to familiarize the learner with extant and emerging management theories and practices for reflective and holistic thinking on management principles and practices.

Learning outcomes

The Learning Outcomes of this course are as follows:

1. describe the various levels of management and applicability of management principles.
2. evaluate a company's competitive landscape as per Porter's Five-force model.
3. demonstrate various types of authority, delegation and decentralization in authority
4. demonstrate various types of leadership styles and identify the motivation techniques used by leaders.
5. discuss the impact of emerging issues in management.

SYLLABUS OF DSC-1

Unit 1: Introduction (8 hours)

Meaning and importance of management; Coordination mechanisms in organisations; Management theories- classical, neo-classical and modern constructions of management; Managerial functions; Managerial roles (Mintzberg); Managerial competencies. Indian Ethos for Management: Value-Oriented Holistic Management; Learning Lessons from Bhagavat Gita and Ramayana.

Unit 2: Planning (16 hours)

Organisational objective setting; Decision-making environment (certainty, risk, uncertainty); Techniques for individual and group decision-making; Planning vis-à-vis Strategy- meaning and elements of the business firm environment- micro, meso, and macro; Industry structure, Business-level strategic planning.

Unit 3: Organising (12 hours)

Decentralization and Delegation; Factors affecting organisational design; Departmentalization; Organisational structures and Organograms: traditional and modern, comparative suitability and changes over time; formal- informal organisations' interface.

Unit 4: Directing and Controlling (16 hours)

Motivation- meaning, importance and factors affecting motivation; Leadership- meaning, importance and factors affecting leadership, leadership styles, and followership. Controlling- Principles of controlling; Measures of controlling and accountability for performance.

Unit 5: Salient Developments and Contemporary Issues in Management (8 hours)

Management challenges of the 21st Century; Factors reshaping and redesigning management purpose, performance and reward perceptions- Internationalisation, Digitalisation, Entrepreneurship & Innovation, Values & Ethics - Case studies on Indian corporates like Tata, Bhilwara Group, IOC and Godrej, Workplace diversity, Democracy and Sociocracy, Subaltern management ideas from India.

Practical Exercises:

The learners are required to

1. participate in a role-play activity for describing the various levels of management and applicability of management principles in defining the policies of the chosen organisation.
2. identify a company and evaluate its competitive landscape as per Porter's Five-force model.
3. a) prepare a comparative analysis of organizational structures of various companies.
b) create a simulation exercise in class to demonstrate various types of authority, delegation and decentralization in authority
4. demonstrate various types of leadership styles in the form of role-play and identify the motivation techniques used by leaders.
5. discuss the impact of emerging issues in management.

Essential/ Recommended readings

- Chhabra, T. N. (2021). Business Organisation and Management. Sun India Publications. New Delhi.
- Chakraborty, S. K. (1997). Human Values For Managers. Wheeler Publishing. (Case Studies - Chapter 1, 2, 4 and 8)
- Drucker, P. F. (1954). The Practice of Management. Newyork: Harper & Row.
- Drucker, P. F. (1999). Management Challenges for the 21st Century. Harper Collins Publishers Inc.
- Gupta, C. B., & Mathur, S. (2020). Management Principles and Applications. Scholar Tech Press, Delhi.
- Griffin. (2013). Management Principles and Application. Cengage.
- Koontz, H., & Weihrich, H. (2012). Essentials of Management: An International and Leadership Perspective. McGraw Hill Publications
- Kumar, P. (2019). Management: Principles and Applications. JSR Publication House LP, Delhi.
- Laasch, O. (2022). Principles of Management, 2e, Sage Textbook
- Mahajan, J. P., & Mahajan A. (2016). Management Principles and Applications. Vikas Publications.
- Mitra, J. K. (2018). Principles of Management. Oxford University Press.
- Rao, V. S. P. (2020). Management Principles and Applications. Taxmann Publications.
- Sharlekar, S. A. (2010). Management (Value-Oriented Holistic Approach). Himalaya Publishing House. (Chapters 3 and 4)
- Singh, B. P., & Singh, A. K. (2002). Essentials of Management. New Delhi. Excel Books Pvt. Ltd.
- Tulsian, P. C., & Pandey, V. (2021). Business Organisation & Management. Pearson Education, India

Note: Readings will be updated by the Department of Commerce and uploaded on Department's website.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2): Business Laws

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Business Laws BCH: DSC- 1.2 | 4 | 3 | 1 | 0 | Pass in XII | NIL |

Learning Objectives

To impart basic knowledge of the important business laws relevant for the inception and conduct of general and business activities with relevant case laws.

Learning outcomes

The Learning Outcomes of this course are as follows:

1. examine basic aspects of contracts vis-a-vis agreements and subsequently enter into valid business propositions.
2. describe various modes of discharge of contract and remedies available in case of a breach.
3. recognize and differentiate between the special contracts.
4. analyse the rights and obligations under the Sale of Goods Act.
5. apply skills to form and manage entrepreneurial ventures as LLP.

SYLLABUS OF DSC- 2

Unit 1: The Indian Contract Act, 1872 (8 hours)

Contract – meaning, characteristics and kinds; Essentials of a valid contract - offer and acceptance, consideration, contractual capacity, free consent, the legality of objects; Void agreements; Quasi–contracts.

Unit 2: Discharge of Contract and Remedies for Breach (16 hours)

Modes of discharge of contract: performance of a contract, mutual agreement, supervening impossibility, lapse of time, operation of law, breach of contract; Remedies for breach of contract: rescission, suit for damages, quantum meruit, suit for specific performance; suit for injunction.

Unit 3: Introduction to Special Contracts (12 hours)

Contracts of Indemnity and Guarantee; Contracts of Bailment and Pledge; Contract of Agency.

Unit 4: The Sale of Goods Act, 1930 (16 hours)

Contract of sale; Meaning and the difference between a sale and agreement to sell; Conditions and Warranties; Transfer of ownership in goods including sale by non-owners; Performance of the Contract of Sale; Unpaid seller – meaning and rights of an unpaid seller against the goods.

Unit 5: The Limited Liability Partnership Act, 2008 (8 hours)

Salient Features and Nature of LLP; Small LLP; Difference between LLP and Partnership, LLP and Company; LLP Agreement; Incorporation Document; Incorporation by Registration; Registered office of LLP and change therein; Change and Rectification of the name of LLP; Partners and Designated Partners: Partners and their Relations; Extent and limitation of liability of LLP and partners; Whistleblowing; Conversion into LLP.

Practical Exercises –

The learners are required to

1. identify components of valid contracts present in the rent agreement/ sale deed/appointment letters used or seen in day-to-day life.
2. identify and enumerate types of damages in case of breach of contract under different real-life situations.
3. prepare a list of gratuitous and non-gratuitous bailment contracts entered into daily life.
4. analyse some case studies where ‘caveat venditor’ is applicable.
5. examine the RUN form and FiLLip webform from notification on the MCA portal and enlist the mandatory fields.

Essential/ Recommended readings

- Bhushan, B., Kapoor, N. D., Abbi, R., & Kapoor, R. (2020). Elements of Business Laws. Sultan Chand
- Dagar, I., & Agnihotri, A., (2020). Business Laws, Sage Textbook
- Jagota, R. (2021). Business Laws. MKM Publishers ScholarTech Press.
- Kuchhal, M. C., & Kuchhal, V. (2013). Business Laws. New Delhi. Vikas Publishing House.
- Maheshwari, S. N., & Maheshwari, S. K. (2011). A Manual of Business Laws. Himalaya Publishing House Pvt. Ltd.
- Sharma, J. P., & Kanojia S. (2018). Business Laws. New Delhi. Bharat Law House Pvt. Ltd.
- Singh, A. (2008). The Principles of Mercantile Law. Lucknow. Eastern Book Company.
- Sulphey, M. M., & Basheer, Az-Har. (2014). Laws for Business, 5th ed. PHI Learning
- Tulsian, P. C. (2000). Business Law. New Delhi. Tata McGraw Hill.

Suggestive readings

- Arora, S. (2021) Business Laws. New Delhi. Taxmann.
- Das, & Roy, (2018). Business Laws. Oxford University Press
- Sharma, J. P., & Kanojia, S. (2015). Vyavsayik Sanniyam, Delhi University Hindi Cell. (For Hindi).
- The Indian Contract Act, 1872
- The Sale of Goods Act, 1930
- The Limited Liability Partnership Act, 2008
- Tulsian, P. C. (2022). Business and Corporate Laws. S.Chand, Delhi.

Note: Readings will be updated by the Department of Commerce and uploaded on Department’s website.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-3): Financial Accounting

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Financial Accounting BCH: DSC-1.3 | 4 | 3 | 0 | 1 | Pass in XII | NIL |

Learning Objectives

The course aims to help learners to acquire conceptual knowledge of financial accounting, to impart skills for recording various kinds of business transactions and to prepare financial statements.

Learning outcomes

The Learning Outcomes of this course are as follows:

1. apply the generally accepted accounting principles while recording transactions and preparing financial statements.
2. demonstrate the accounting process under a computerised accounting system.
3. measure business income applying relevant accounting standards.
4. evaluate the impact of depreciation and inventories on Business Income.
5. prepare the Financial Statements of sole proprietor firms and Not-For-Profit Organisations.
6. prepare the accounts for Inland Branches, Departments and Leases.

SYLLABUS OF DSC-3

Unit 1: Theoretical Framework and Accounting Process: (6 hours)

(A) Conceptual Framework

- (i) Accounting as an information system, the users of financial accounting information and their needs. An overview of Artificial Intelligence and Data Analytics in Accounting.
- (ii) Qualitative characteristics of accounting information. Functions, advantages and limitations of accounting. Branches of accounting. Basis of accounting: cash basis and accrual basis. Capital and revenue expenditures and receipts. Events occurring after the balance sheet date, Extraordinary Items, Prior Period Items, Accounting Estimate. Accounting Policies, Fair Value, Meaning, Recognition and Disclosure Requirements of Provision, Contingent Liability and Contingent Asset.

- (iii) Financial Accounting Principles: Meaning and need; Generally Accepted Accounting Principles(GAPP): Entity, Money Measurement, Going Concern, Cost, Revenue Recognition, Realization, Fundamental Accounting Assumptions, Accruals, Periodicity, Full Disclosure, Consistency, Materiality, and Prudence (Conservatism). Fundamental Accounting Assumptions as per AS 1.
- (iv) Accounting Standards: Concept, benefits, and Process of formulation of Accounting Standards including Ind AS (IFRS converged standards) and IFRSs; convergence vs adoption; Application of accounting standards (AS and Ind AS) on various entities in India. International Financial Accounting Standards (IFRS) –meaning, need, and scope.

(B) Accounting Process

From the recording of a business transaction to the preparation of trial balance including adjustment, transfer and closing entries. Application of Generally Accepted Accounting Principles in recording financial transactions and preparing financial statements and accounting treatment of GST.

Unit 2: Business Income, Accounting for Property, Plant and Equipment, and Valuation of Inventory: (9 hours)

- (a) Business income: Concept of Revenue and Business Income, Measurement of business income; relevance of accounting period, continuity doctrine and matching concept in the measurement of business income; Objectives of measurement of Business income.
- (b) Revenue recognition with reference to AS 9.
- (c) Accounting for Property, Plant, and Equipment with reference to AS 10. Impact of Depreciation on measurement of business income. Accounting for Intangible Assets with reference to AS 26.
- (d) Valuation of Inventory with reference to AS 2. Impact of inventory valuation on measurement of business income by using FIFO, LIFO, and Weighted Average Method.

Unit 3: Financial Statements of Sole Proprietorship and Not-for-Profit Organisations: (9 hours)

Preparation of Financial Statements of Sole Proprietorship and Not-for-Profit Organisations.

Unit 4: Accounting for Inland Branches, Departments and Leases: (12 hours)

- (a) Accounting for Inland Branches: Concept of Dependent branches; Branch Accounting as per- Debtors System, Stock and Debtors' System.
- (b) Accounting for Departments (excluding Mark-up Account).
- (c) Accounting for Leases with reference to AS 19.

Unit 5: Computerised Accounting Systems: (9 hours)

Computerised Accounting Systems: computerised Accounts by using any popular accounting software Creating a Company; Configure and Features settings; Creating Accounting Ledgers and Groups; Creating Stock Items and Groups; Vouchers Entry including GST; Generating Reports - Cash Book, Ledger Accounts, Trial Balance, Profit and Loss Account, Balance Sheet, Cash Flow Statement. Selecting and shutting a Company; Backup, and Restore data of a Company.

Notes:

1. The relevant Accounting Standards (both AS and Ind-AS) for all of the above topics should be covered.
2. Any revision of the relevant Indian Accounting Standard/Accounting Standard would become applicable after it is included in the guidelines issued by the Department of Commerce.

Practical Exercises:**(30 hours)**

The learners are required to

1. download 'Framework for the Preparation and Presentation of Financial Statements from the websites of the Institute of Chartered Accountants of India (ICAI) to analyse the qualitative characteristics of accounting information provided therein.
2. collect and examine the balance sheets of business Organisations to study how these are prepared.
3. examine the accounting policies and revenue recognition policies by collecting necessary data from small business firms.
4. prepare Trading and Profit & Loss Account and Balance Sheet collecting necessary data from small business firms.
5. prepare financial statements manually and using appropriate software.
6. prepare accounts of Inland Branches.
7. collect data from your college and prepare a Receipt and Payment Account, Income and Expenditure Account and Balance Sheet.

Essential/recommended readings

- Anthony, R. N., Hawkins, D., & Merchant, K. A. (2019). Accounting: Text and Cases McGraw-Hill Education India.
- Batra, J. K., (2018). Accounting and Finance for Non-finance Managers, Sage Textbook
- Bhattacharyya, A. K. (2021). Essentials of Financial Accounting, 6th ed. PHI learning;
- Narayanaswamy, R. (2020). Financial Accounting: A Managerial Perspective, 7th ed. PHI learning
- Dam, B. B., & Gautam, H. C. (2011). Financial Accounting. Gayatri Publications, Guwahati.
- Goldwin, N., Alderman, W., & Sanyal, D. (2016). Financial Accounting. Cengage Learning, Boston.
- Goyal, B. K., & Tiwari, H. N. (2021). Financial Accounting. Taxmann Publication, New Delhi.
- Horngren, C. T., & Philbrick, D. (2014). Introduction to Financial Accounting, Pearson Education, London.
- Kumar, A. (2018). Financial Accounting. Singhal Publication.
- Lal, J., Srivastava, S., & Abrol, S. (2017). Financial Accounting Text & Problems. Himalaya Publishing House, Mumbai.
- Lt Bhupinder. (2020). Financial Accounting – Concepts and Applications. Cengage.
- Maheshwari, S. N., Maheshwari, S. K., & Maheshwari, S. K. (2018). Financial Accounting. Vikas Publishing House Pvt. Ltd., New Delhi.

- Monga, J. R., & Bahadur, R. (2022) Financial Accounting: Concepts and Applications. Scholar Tech Press, New Delhi.
- Mukherjee. (2018). Financial Accounting. Oxford University Press
- Sah, R. K. (2019). Concept Building Approach to Financial Accounting. Cengage Learning India Pvt. Ltd.
- Sehgal, A., & Sehgal D. (2015). Fundamentals of Financial Accounting. Taxmann.
- Sehgal, D. (2016). Financial Accounting. Vikas Publishing House Pvt. Ltd., New Delhi.
- Shah, P. (2019). Financial Accounting for Management. Oxford University Press
- Shukla, M. C., Grewal, T. S., & Gupta, S. C. (2017). Advanced Accounts. Vol.-I. Sultan Chand Publishing, New Delhi.
- Tulsian, P. C. (2016). Financial Accounting. S Chand Ltd., New Delhi.

Suggestive readings

- Accounting Standards at the Website of the Institute of Chartered Accountants of India.
- Indian Accounting Standards at the Website of the Ministry of Corporate Affairs.

Note: Readings will be updated by the Department of Commerce and uploaded on Department's website.

Assessment Method:

1. There shall be 2 credit hours for lectures + one credit hour (Two Practical Periods per week per batch) for practical lab + one credit hour for tutorials (per group).
2. Examination scheme for computerised accounting system: Practical for 20 marks. The practical exam will be for one hour.
3. Theory exam shall carry 80 marks (Including an Internal Assessment of 25 Marks). The theory exam will be for 2.5 hours.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

B. Com.
Category III

**DISCIPLINE SPECIFIC CORE COURSE (DSC-1):
BUSINESS ORGANISATION AND MANAGEMENT**

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE
COURSE**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre- requisite of the course (if any) |
|--|---------|-----------------------------------|----------|------------------------|-------------------------|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Business Organisation and Management BC: DSC- 1.1 | 4 | 3 | 1 | 0 | Pass in XII | NIL |

Learning Objectives

The course aims to develop an understanding of business organisations, functions and challenges of management and contemporary issues in management.

Learning outcomes

The Learning Outcomes of this course are as follows:

1. explain the dynamics of business organisations and recent management practices.
2. describe varied perspectives related to the business environment and entrepreneurship.
3. analyse how the organisations adapt to an uncertain environment and decipher decision-making techniques.
4. analyse the relationship amongst functions of management i.e. planning, organizing, directing and controlling.
5. analyse the change in the working pattern of modern organisations.

SYLLABUS OF DSC-1

Unit 1: Introduction (12 hours)

Role of organisations and management in our lives; Nature and Functions of Management (An overview); Managerial Competencies, Ownership forms; Business formats- Brick & Mortar; Click; Brick & Click; E-commerce; Franchising; Outsourcing.

Unit 2: Business Environment and Entrepreneurship (12 hours)

Meaning and layers of Business Environment (micro/immediate, meso/intermediate, macro and international); Business ethics and social responsibility; Entrepreneurship and its relevance, Business and social entrepreneurship as a process of opportunity/problem; Micro, small and medium Enterprises; Government Policy regarding MSMEs

Unit 3: Planning and Organizing (12 hours)

Strategic Planning – Business and Corporate Level Strategies; Decision-making- process and techniques; Organizing, Formal and Informal Organisations, Centralisation and Decentralisation, Organisational structures – Divisional, Product, Matrix, Project and Virtual Organisation

Unit 4: Directing and Controlling (12 hours)

Motivation- needs (including Maslow's theory), incentives, Equity and two-factor theory (Herzberg); McGregor Theory X and Theory Y; Leadership – Leadership Styles, Transactional Vs. Transformational Leadership; Followership – meaning, importance and Kelley's Followership Model; Communication – New trends and directions (Role of IT and social media); Controlling –Techniques of Controlling Relationship between planning and controlling

Unit 5: Indian Ethos and Contemporary Issues in Management (12 hours)

Indian Ethos for Management: Value-Oriented Holistic Management; Learning Lessons from Bhagavat Gita and Ramayana. Business Process Reengineering (BPR), Learning Organisation, Six Sigma, Supply Chain Management, Subaltern Management Ideas from India; Diversity & inclusion; Work-life Balance; Freelancing; Flexi-time and work from home; Co-sharing/co-working.

Practical Exercises

The learners are required to

1. complete the exercise wherein they are given different situations and scenarios to start their own business (in terms of capital, liability, the scale of operations, etc.) and are asked to select the most suitable form of business and justify the same highlighting the advantages and disadvantages of their choice.
2. participate in a role-play activity for describing the various levels of Management and competencies.
3. each learner is required to identify various elements affecting the business environment and conduct a SWOT analysis for the company identified.
4. participate in a simulation activity wherein each learner is asked to prepare strategic plans concerning increasing the effectiveness of their respective organisation.
5. present a role play on bounded rationality or any aspect of decision making.
6. create a simulation exercise in class to demonstrate various types of authority, delegation, and decentralization of authority.
7. using Maslow's Need-Hierarchy Theory, analyse various needs and prepare a report.
8. demonstrate various types of Leadership Styles in the form of Role Play by identifying real-life leaders from the corporate world.

Essential/ Recommended readings

- Basu, C. (2017). Business Organisation and Management. McGraw Hill Education.
- Chhabra, T. N. (2021). Business Organisation and Management. Sun India Publications. New Delhi.
- Drucker, P. F. (1954). The Practice of Management. Newyork: Harper & Row.
- Kalra, S., & Singhal, N. (2020). Business Organisation and Management. Scholar Tech Press, Delhi.
- Kaul, V. K. (2012). Business Organisation Management. Pearson Education.
- Koontz, H., & Weihrich, H. (2012). Essentials of Management: An International and Leadership Perspective. Paperback.
- Laasch, O. (2022). Principles of Management, 2e, Sage Textbook

- Sherlekar, S. A. (2016). Modern Business Organisation and Management. Himalaya Publishing House.
- Singh, B. P., & Singh, A. K. (2002). Essentials of Management. New Delhi. Excel Books Pvt. Ltd.
- Vasishth, N., & Rajput N. (2013). Business Organisation & Management Kitab Mahal, Delhi.

Note: Readings will be updated by the Department of Commerce and uploaded on Department's website.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2): BUSINESS LAWS

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Business Laws BC: DSC- 1.2 | 4 | 3 | 1 | 0 | Pass in XII | NIL |

Learning Objectives

To impart basic knowledge of the important business laws relevant for the inception and conduct of general and business activities with relevant case laws.

Learning outcomes

The Learning Outcomes of this course are as follows:

1. analyse the basic aspects of contracts vis-a-vis agreements and subsequently enter into valid business propositions.
2. describe various modes of discharge of contract and remedies available in case of breach.
3. recognize and differentiate between the special contracts.
4. analyse the rights and obligations under the Sale of Goods Act.
5. attain skills to form and manage entrepreneurial ventures as LLP.

SYLLABUS OF DSC- 2

Unit 1: The Indian Contract Act, 1872 (14 hours)

Contract – meaning, characteristics and kinds; Essentials of a valid contract - offer and acceptance, consideration, contractual capacity, free consent, the legality of objects; Void agreements; Quasi-contracts.

Unit 2: Discharge of Contract and Remedies for Breach (6 hours)

Modes of discharge of contract: performance of a contract, mutual agreement, supervening impossibility, lapse of time, operation of law, breach of contract; Remedies for breach of

contract: rescission, suit for damages, quantum meruit, suit for specific performance; suit for injunction.

Unit 3: Introduction to Special Contracts (6 hours)

Contracts of Indemnity and Guarantee; Contracts of Bailment and Pledge; Contract of Agency.

Unit 4: The Sale of Goods Act, 1930 (14 hours)

Contract of sale; Meaning and the difference between a sale and agreement to sell; Conditions and Warranties; Transfer of ownership in goods including sale by non-owners; Performance of the Contract of Sale; Unpaid seller – meaning and rights of an unpaid seller against the goods.

Unit 5: The Limited Liability Partnership Act, 2008 (20 hours)

Salient Features and Nature of LLP; Small LLP; Difference between LLP and Partnership, LLP and Company; LLP Agreement; Incorporation Document; Incorporation by registration; Registered office of LLP and change therein; Change and Rectification of the name of LLP; Partners and Designated Partners: Partners and their Relations; Extent and limitation of liability of LLP and partners; Whistleblowing; Conversion into LLP.

Practical Exercises

The learners are required to:

1. identify components of valid contracts present in the rent agreement/ sale deed/appointment letters used or seen in day-to-day life.
2. identify and enumerate types of damages in case of breach of contract under different real-life situations.
3. prepare a list of gratuitous and non-gratuitous bailment contracts entered in daily life.
4. analyse some case studies where ‘caveat venditor’ is applicable.
5. examine RUN form and FiLLip webform from notification on MCA portal and enlist the mandatory fields.

Essential/ Recommended readings

- Bhushan, B., Kapoor, N. D., Abbi, R., & Kapoor, R. (2020), Elements of Business Laws. Sultan Chand.
- Dagar, I., & Agnihotri, A., (2020), Business Laws, Sage Textbook
- Jagota R. (2021). Business Laws. , MKM Publishers ScholarTech Press.
- Kuchhal, M. C., & Kuchhal, V. (2013). Business Laws. New Delhi. Vikas Publishing House.
- Maheshwari, S. N., & Maheshwari, S. K. (2011). A Manual of Business Laws. Himalaya Publishing House Pvt. Ltd.
- Sharma, J. P., & Kanojia, S. (2018). Business Laws. New Delhi. Bharat Law House Pvt. Ltd.
- Singh, A. (2008). The Principles of Mercantile Law. Lucknow. Eastern Book Company.
- Sulphey, M. M., & Basheer, AZ-HAR. (2014). Laws for Business, 5th ed. PHI Learning
- Tulsian, P. C. (2000) Business Law. New Delhi. Tata McGraw Hill.

Suggestive Readings

- Arora, S. (2021) Business Laws. New Delhi. Taxmann.
- Das & Roy (2018). Business Laws. Oxford University Press.

- Sharma, J. P., & Kanojia S. (2015). Vyavsayik Sanniyam, Delhi University Hindi Cell. (For Hindi)
- The Indian Contract Act, 1872.
- The Sale of Goods Act, 1930.
- The Limited Liability Partnership Act, 2008.

Note: Readings will be updated by the Department of Commerce and uploaded on Department's website.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 3 (DSC-3): Financial Accounting

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Financial Accounting BC: DSC-1.3 | 4 | 3 | 0 | 1 | Pass in XII | NIL |

Learning Objectives

The course aims to help learners to acquire conceptual knowledge of financial accounting, to impart skills for recording various kinds of business transactions and to prepare financial statements.

Learning outcomes

The Learning Outcomes of this course are as follows:

1. analyse the generally accepted accounting principles while recording transactions and preparing financial statements.
2. demonstrate the accounting process under a computerized accounting system.
3. measure business income applying relevant accounting standards.
4. evaluate the impact of depreciation and inventories on Business Income.
5. prepare the Financial Statements of sole proprietor firms and Not-For-Profit Organisations.
6. prepare the accounts for Inland Branches, Departments and Leases.

SYLLABUS OF DSC- 3

Unit 1: Theoretical Framework and Accounting Process: (6 hours)

(A) Conceptual Framework

- (i) Accounting as an information system, the users of financial accounting information and their needs. An overview of Artificial Intelligence and Data Analytics in Accounting.

- (ii) Qualitative characteristics of accounting information. Functions, advantages and limitations of accounting. Branches of accounting. Basis of accounting: cash basis and accrual basis. Capital and revenue expenditures and receipts. Events occurring after the balance sheet date, Extraordinary Items, Prior Period Items, Accounting Estimate. Accounting Policies, Fair Value, Meaning, Recognition and Disclosure Requirements of Provision, Contingent Liability and Contingent Asset.
- (iii) Financial Accounting Principles: Meaning and need; Generally Accepted Accounting Principles(GAPP): Entity, Money Measurement, Going Concern, Cost, Revenue Recognition, Realization, Fundamental Accounting Assumptions, Accruals, Periodicity, Full Disclosure, Consistency, Materiality, and Prudence (Conservatism). Fundamental Accounting Assumptions as per AS 1.
- (iv) Accounting Standards: Concept, benefits, and Process of formulation of Accounting Standards including Ind AS (IFRS converged standards) and IFRSs; convergence vs adoption; Application of accounting standards (AS and Ind AS) on various entities in India. International Financial Accounting Standards (IFRS) –meaning, need, and scope.

(B) Accounting Process

From the recording of a business transaction to the preparation of trial balance including adjusting, transfer and closing entries. Application of Generally Accepted Accounting Principles in recording financial transactions and preparing financial statements and accounting treatment of GST.

Unit 2: Business Income, Accounting for Property, Plant and Equipment, and Valuation of Inventory: (9 hours)

- (a) Business income: Concept of Revenue and Business Income, Measurement of business income; relevance of accounting period, continuity doctrine and matching concept in the measurement of business income; Objectives of measurement of Business income.
- (b) Revenue recognition with reference to AS 9.
- (c) Accounting for Property, Plant, and Equipment with reference to AS 10. Impact of Depreciation on measurement of business income. Accounting for Intangible Assets with reference to AS 26.
- (d) Valuation of Inventory with reference to AS 2. Impact of inventory valuation on measurement of business income by using FIFO, LIFO, and Weighted Average Method.

Unit 3: Financial Statements of Sole Proprietorship and Not-for-Profit Organisations: (9 hours)

Preparation of Financial Statements of Sole Proprietorship and Not-for-Profit Organisations

Unit 4: Accounting for Inland Branches, Departments and Leases: (12 hours)

- (a) Accounting for Inland Branches: Concept of Dependent branches; Branch Accounting as per- Debtors System, Stock and Debtors' System
- (b) Accounting for Departments (excluding Mark-up Account)

- (c) Accounting for Leases with reference to AS 19

Unit 5: Computerized Accounting Systems: (9 hours)

Computerized Accounting Systems: Computerized Accounts by using any popular accounting software Creating a Company; Configure and Features settings; Creating Accounting Ledgers and Groups; Creating Stock Items and Groups; Vouchers Entry including GST; Generating Reports - Cash Book, Ledger Accounts, Trial Balance, Profit and Loss Account, Balance Sheet, Cash Flow Statement. Selecting and shutting a Company; Backup, and Restore data of a Company.

Notes:

- (1) The relevant Accounting Standards (both AS and Ind AS) for all of the above topics should be covered.
- (2) Any revision of the relevant Indian Accounting Standard/Accounting Standard would become applicable.

Practical Exercises

(30 hours)

The learners are required to:

1. Download 'Framework for the Preparation and Presentation of Financial Statements from the websites of the Institute of Chartered Accountants of India (ICAI) to analyse the qualitative characteristics of accounting information provided therein.
2. Collect and examine the balance sheets of business Organisations to study how these are prepared.
3. Examine the accounting policies and revenue recognition policies by collecting necessary data from small business firms.
4. Prepare Trading and Profit & Loss Account and Balance Sheet collecting necessary data from small business firms.
5. Prepare financial statements manually and using appropriate software.
6. Prepare accounts of Inland Branches.
7. Collect data from your college and prepare a Receipt and Payment Account, Income and Expenditure Account and Balance Sheet.

Essential/ Recommended readings

- Anthony, R. N., Hawkins, D., & Merchant, K. A. (2019) "Accounting: Text and Cases" McGraw-Hill Education India.
- Batra, J. K., (2018) Accounting and Finance for Non-finance Managers, Sage Textbook
- Bhattacharyya, A. K. (2021) Essentials of Financial Accounting, 6th ed. PHI learning
- Narayanaswamy, R. (2020) Financial Accounting: A Managerial Perspective, 7th ed. PHI learning
- Dam, B. B., & Gautam, H. C. (2011). Financial Accounting. Gayatri Publications, Guwahati.
- Goldwin, N., Alderman, W., & Sanyal, D. (2016). Financial Accounting. Cengage Learning, Boston.
- Goyal, B. K., & Tiwari, H. N. (2021). Financial Accounting. Taxmann Publication, New Delhi.
- Horngren, C. T., & Philbrick, D. (2014). Introduction to Financial Accounting. Pearson Education, London.

- Kumar, A. (2018). Financial Accounting. Singhal Publication.
- Lal, J., Srivastava, S. & Abrol, S. (2017). Financial Accounting Text & Problems. Himalaya Publishing House, Mumbai.
- Lt Bhupinder. (2020). Financial Accounting – Concepts and Applications. Cengage.
- Maheshwari, S. N., Maheshwari, S. K., & Maheshwari, S. K. (2018). Financial Accounting. Vikas Publishing House Pvt. Ltd., New Delhi.
- Monga, J. R. & Bahadur, R. (2022). Financial Accounting: Concepts and Applications. Scholar Tech Press, New Delhi.
- Mukherjee. (2018). Financial Accounting. Oxford University Press
- Sah, R. K. (2019). Concept Building Approach to Financial Accounting. Cengage Learning India Pvt. Ltd.
- Sehgal, A. & Sehgal, D. (2015). Fundamentals of Financial Accounting. Taxmann.
- Sehgal, D. (2016). Financial Accounting. Vikas Publishing House Pvt. Ltd., New Delhi.
- Shah, P. (2019). Financial Accounting for Management. Oxford University Press
- Shukla, M. C., Grewal, T. S., & Gupta, S. C. (2017). Advanced Accounts. Vol.-I. Sultan Chand Publishing, New Delhi.
- Tulsian, P. C. (2016). Financial Accounting. S. Chand Ltd., New Delhi.

Suggestive Readings:

- Accounting Standards at the Website of the Institute of Chartered Accountants of India
- Indian Accounting Standards at the Website of the Ministry of Corporate Affairs.

Note: Readings will be updated by the Department of Commerce and uploaded on Department's website.

Assessment Method:

1. There shall be 2 credit hours for lectures + one credit hour (Two Practical Periods per week per batch) for practical lab + one credit hour for tutorials (per group).
2. Examination scheme for computerized accounting system: Practical for 20 marks. The practical exam will be for one hour.
3. Theory exam shall carry 80 marks (Including Internal Assessment of 25 Marks). The theory exam will be for 2.5 hours.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

(B.A. Programmes with Commerce (Entrepreneurship and Small Business) as non-Major or Minor discipline)

Category III

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Business Organisation BAC:DSC-1.1 (Major) | 4 | 3 | 1 | 0 | PASS IN XII | NIL |
| Fundamentals of Business organisation for Entrepreneurs (Major/ Minor) BAC: Discipline (ESB): 1 | 4 | 3 | 1 | 0 | PASS IN XII | NIL |

DISCIPLINE SPECIFIC CORE COURSE (DSC-1): BUSINESS ORGANISATION (Major)

Learning Objectives

The course aims to familiarize the students with the forms of business organisation and contemporary issues.

Learning outcomes

The Learning Outcomes of this course are as follows:

1. analyse the dynamics of business organisations
2. describe the various forms of business organisations
3. examine varied perspectives related to the business environment and entrepreneurship.
4. evaluate the change in the working pattern of modern organisations.
5. explore contemporary issues in business organizations.

SYLLABUS OF DSC-1

Unit 1: Introduction (8 hours)

Business – Concept, nature and scope, business as a system, business objectives, business and environment interface, distinction between business, commerce and trade, Business ethics, social responsibilities of Business

Unit 2: Business Enterprises (16 hours)

Forms of Business Organisation: Sole Proprietorship, Partnership firm, Joint Stock Company, One Person Company, Cooperative society; Limited Liability Partnership; Multinational Corporations; Choice of Form of Organisation; Business Combination: Need and Objectives, Forms: Mergers, Takeovers and Acquisitions

Unit 3: Business Environment (12 hours)

Meaning and significance of Business environment, Internal and external environment, Dimensions of Business Environment; Uncertainty and business; Environmental Analysis and Diagnosis, Environment scanning techniques: SWOT and ETOP

Unit 4: Entrepreneurship: Founding the Business (16 hours)

Entrepreneur- Entrepreneurship- Enterprise; entrepreneurial ideas and opportunities in the contemporary business environment; Process of entrepreneurship; Forms of entrepreneurship; Skill India, Startup India, Make in India, Globalisation.

Unit 5: Contemporary Issues of Business Organisations (8 hours)

Emerging Issues and Challenges; Innovation in Organisational Design; Learning Organisations, Workforce Diversity, Franchising, Outsourcing, and E-commerce; Government and business interface; Sustainability; Digitalisation and Technological innovations

Practical Exercises:

The learners are required to

1. complete the exercise wherein they are given different situations and scenarios to start their own business (in terms of capital, liability, the scale of operations, etc.) and are asked to select the most suitable form of business and justify the same highlighting the advantages and disadvantages of their choice.
2. identify various elements affecting the business environment and conduct a SWOT analysis for the company identified.
3. visit different enterprises and present a report on business models followed by them through a comparative analysis.
4. record and report their observations regarding the Emerging Issues and Challenges of Business Organisations
5. identify changes in the working pattern of modern organisations.

Essential/ Recommended readings

- Basu, C. (2017). Business Organisation and Management. McGraw Hill Education.
- Chhabra, T. N. (2020). Business Organisation and Management. Sun India Publications. New Delhi.
- Drucker, P. F. (1954). The Practice of Management. New York: Harper & Row.
- Kaul, V. K. (2012). Business Organisation Management. Pearson Education.
- Koontz, H., & Weihrich, H. (2012). Essentials of Management: An International and Leadership Perspective. Paperback.
- Laasch, O. (2022), Principles of Management, 2e, Sage Textbook
- Singh, B. P., & Singh, A. K. (2002). Essentials of Management. New Delhi. Excel Books Pvt. Ltd.

Note: Readings will be updated by the Department of Commerce and uploaded on Department's website.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE CORE: FUNDAMENTALS OF BUSINESS ORGANISATION FOR ENTREPRENEURS (Major/ Minor)

Learning Objectives

The purpose of this course is to facilitate awareness about the nature of the business activity, ownership types and the dynamic environment in which the business operates.

Learning outcomes

The Learning Outcomes of this course are as follows:

1. summarize the relationship between business and the environment.
2. analyze the environmental factors affecting business with special reference to SWOT analysis.
3. interpret various forms of business organisations.
4. analyze the principles of business management.

Unit I: Introduction (16 hours)

Concept of business, industry & commerce and their interrelationship in today's environment; MSME- definitions; Profile of activities; Role of MSMEs in Indian economy (national and state- level)

Unit II: Organizational Structures (16 hours)

Line organization, staff organization, functional organization, product organization, project organization, matrix organization, network organization, team-based organizational structure; Difference between Hierarchical and flat structure.

Unit III: Establishing different forms of business organization (16 hours)

Legal aspects of establishing – sole proprietorship, partnership, limited liability partnership, private limited company, public limited company, cooperatives & self-help groups, HUF and family business; Different reporting requirements of above forms of business.

Unit IV: Principles of Business Management (12 hours)

Evolution of management; Principles of management - concept, nature and significance; Fayol's principles of management; Taylor's scientific management- principles and techniques; Role of management in our lives; Functional areas of management – an overview

Practical Exercise:

The learners are required to:

1. Compare various kinds of business organisations and justify how suitable they are to achieve sustainability.
2. Chose five businesses and make their SWOT analysis.
3. Visit the business houses following different forms of business organisations and make a comparative analysis on their organisational structure.
4. After visiting the business organisations, make a report on the extent of following of business management principles.

Essential/ Recommended readings

- Basu, C. (2017). Business Organisation and Management. McGraw Hill Education.
- Burton, G., & Thakur, M. (1998). Management Today: Principles and Practice. New Delhi. Tata McGraw Hill.
- Gupta, C. B. (2011). Modern Business Organisation. New Delhi. Mayur Paperbacks.
- Kaul, V. K. (2012). Business Organisation Management. Pearson Education.
- Koontz, H., & Weihrich, H. (2012). Essentials of Management: An International and Leadership Perspective. Paperback.
- Singh, B. P., & Singh, A. K. (2003). Essentials of Management. New Delhi. Excel Books Pvt. Ltd.

Suggestive Readings

- Buskirk, R. H., et al. (1972). Concepts of Business: An Introduction to Business System. New York. Dryden Press.
- Griffin, R. W. (2009). Management Principles and Application. Cengage Learning.
- Griffin, R. W., Phillips, J. M., & Gully, S. M. (2019). Organisational Behavior: Managing People and Organisations. Biztantra publishers.

Note: Readings will be updated by the Department of Commerce and uploaded on Department's website.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

B.A. Programmes with Commerce (Accounting and Finance) as non-Major or Minor discipline

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Business Organisation BAC:DSC-1.1 (Major) | 4 | 3 | 1 | 0 | PASS IN XII | NIL |
| Fundamentals of Financial management (Major/ Minor) BAC: Discipline (A&F): 1 | 4 | 3 | 1 | 0 | PASS IN XII | NIL |

**DISCIPLINE CORE: FUNDAMENTALS OF FINANCIAL MANAGEMENT
(Major/ Minor)**

Learning Objectives

To familiarize the students with the principles and practices of financial management.

Learning outcomes

The Learning Outcomes of this course are as follows:

1. explain the financial environment within which the organization must operate
2. analyze the finances of individual corporations both in terms of their performance and capital budgeting
3. relate the importance of cost of capital within the context of financial decision making
4. access financial information from a wide variety of sources and use this information
5. estimate working capital requirement in a firm along with an understanding of cash management.

Unit 1: Financial Management: An Overview (8 hours)

Meaning, Importance, and Scope of Financial Management. Traditional and Modern Approach, Objectives and Functions of Financial Management, An Overview of Finance and Others Discipline, Role of Finance Manager, Agency Problem.

Unit 2: Time Value of Money (8 hours)

Time Value of Money- Concept and Rationale, Valuation Techniques- Discounting and Compounding. Practical Applications of Time Value of Money, Concept of Risk and Return.

Unit 3: Investment Decisions (20 hours)

- (a) Capital Budgeting Decisions- Capital Budgeting Process, Cash flow estimation. Techniques of Capital Budgeting- Payback Period, Accounting Rate of Return, Net Present Value, Internal Rate of Return and Profitability Index.
- (b) Working Capital Decisions - Concept of Working Capital, Operating & Cash Cycles, Risk-return Trade-off, Sources of short-term Finance, Working Capital Estimation.

Unit 4: Cost of Capital & Financing Decisions (12 hours)

Sources of Long-Term Financing, Components of Cost of Capital, Method for Calculating Cost of Equity, Cost of Retained Earnings, Cost of Debt, Cost of Preference Capital and Weighted Average Cost of Capital. Operating and Financial Leverage. An Overview of Theories of Capital Structure, Determinants of Capital Structure.

Unit 5: Dividend Decisions (12 hours)

Introduction, Theories of Dividend – Irrelevance and Relevance, Types of Dividend Policies and Determinants of Dividend policy. Bonus Share (Stock Dividend) and Stock (Share) Splits.

Practical Exercises:

The learners are required to:

1. analyse and interpret case studies on capital budgeting, financial structure and working capital of a company based on annual reports and other information.
2. determine the operating cycle of the manufacturing company.
3. use excel for evaluating various financing decisions.
4. determine the capital structure of various companies from their annual reports.
5. determine the working capital of various companies from their annual reports.

Essential/ Recommended readings

- Kothari, R. (2016). Financial Management: A Contemporary Approach. Sage Publications Pvt. Ltd. New Delhi.
- Pandey, I.M. (2011). Essentials of Financial Management. Vikas Publications. New Delhi
- Rustagi, R. P. (2019). Basic Financial Management Sultan Chand, New Delhi
- Sharma, S. K., & Sareen, R. (2018). Fundamentals of Financial Management Sultan Chand & Sons (P) Ltd. New Delhi.
- Singh, J. K. (2016). Basic Financial Management: Theory and Practice. Galgotia Publishing House New Delhi
- Singh, P. (2011). Financial Management. Ane Books Pvt. Ltd. New Delhi
- Singh, S., & Kaur, R. (2020). Basic Financial Management. Kitab Mahal. New Delhi
- Tulsian, P.C., & Tulsian, B. (2010). Financial Management. S.Chand. New Delhi.

Suggestive Readings:

- Chandra, P. (2011). Financial Management: Theory and Practice. Tata McGraw Hills, New Delhi.
- Horne, J. C. V., & Wachowicz, J. M. (2010). Fundamentals of Financial Management. Pearson Education
- Khan, M. Y., & Jain, P. K. (2007). Financial Management: Text and Problems. Tata McGraw Hills, New Delhi.

Assessment Method:

- (1) There shall be 3 credit hours for lectures + one credit hour for tutorials (per group).
- (2) The theory exam shall carry 100 marks (including an Internal Assessment of 25 Marks). The theory exam will be for 3 hours.

Note: Readings will be updated by the Department of Commerce and uploaded on Department's website.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

B.A. Programmes with Commerce (BANKING AND INSURANCE) as non-Major or Minor discipline

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Business Organisation BAC:DSC-1.1 | 4 | 3 | 1 | 0 | PASS IN XII | NIL |
| Introduction to Insurance BAC: Discipline (B&I):1 | 4 | 3 | 1 | 0 | PASS IN XII | NIL |

DISCIPLINE CORE: INTRODUCTION TO INSURANCE (Major/ Minor)

Learning Objectives

The course aims to familiarise the students with different aspects of insurance to develop an understanding of the basic concepts, nature and principles of insurance.

Learning outcomes

The Learning Outcomes of this course are as follows:

1. Describe the basic concept of Insurance;
2. Analyse the different Principles of Insurance;
3. Interpret the nature of the Insurance Contract;
4. Summarise the various types of documentation processes related to Insurance;
5. Describe the Emerging Trends in Insurance Industry

Unit 1: Introduction to Insurance (12 hours)

Insurance – Growth, Origin and History of Insurance, Purpose and Need, Meaning and Definition of Insurance, Characteristics of Insurance, Benefits of insurance, Functions of Insurance.

Unit II: Principles of Insurance (12 hours)

Principle of Utmost good faith (Uberrimae Fidei), Principle of Indemnity, Principle of Contribution, Principle of Mitigation of Loss, Principle of Subrogation, Principle of Proximate Cause, Principle of Insurable Interest.

Unit III: Nature of Insurance Contract (12 hours)

Salient features of a contract of insurance under Section 10 of Indian Contract Act 1872, Types of insurance contract – Personal, Property, Liability, and Guarantee Insurance, Insurance contract vs Wagering agreement, Assurance vs Insurance, Gambling vs Insurance.

Unit IV: Documentation and Claim Settlement (12 hours)

Proposal Forms, Policy Bonus, Cover Note, Certificate of Insurance, Nomination and assignment comparison. Claim settlement procedure - Death claim and Maturity claim, documents required for claim settlement.

Unit V Emerging Trends in Insurance Industry (12 hours)

Reforms in Indian Insurance Sector, Malhotra Committee, Liberation and Globalisation of Insurance Sector: Future Trends, Opportunities ahead, Macro Insurance, Major Players in Indian Insurance Industry, Bancassurance

Practical Exercises:

The learners are required to:

1. Organise various group discussions and case studies related to basic aspects of insurance.
2. Disseminate the experiences and apply the knowledge among peer groups, friends and relatives about the principles of insurance.
3. Conduct a small survey in their locality about different dimensions of an insurance contract.
4. Analyse and interpret the various aspects of Documentation and Claim Settlement.
5. Examine the Emerging Trends in Insurance Industry through Case Studies.

Essential/ Recommended readings

- Chaturvedi, D. D., & Mittal, A. (2021). Banking and Insurance, Scholar Tech Press, New Delhi.
- Kumar, S. (2019). Fundamentals of Insurance & Risk Management, JSR Publications, New Delhi.
- Sethi, J., & Bhatia, N. (2012). Elements of Banking and Insurance, PHI learning Pvt. Ltd., New Delhi.

Suggestive Readings:

- Banking and Insurance- Law & Practice, The Institute of Company Secretaries of India, New Delhi
- Imam, A. (2011). Principles and Practice of Life Insurance in India. Anmol Publications Pvt. Ltd., New Delhi
- Loomba, J. (2014). Risk Management and Insurance Planning. PHI Learning Private Limited, New Delhi.
- Singh, I., & Katyal, R. (2014). Insurance Principles and Practice. Kalyani Publishers, New Delhi

Note: Readings will be updated by the Department of Commerce and uploaded on Department's website.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

B.A. Programmes with Commerce (ADVERTISING, SALES PROMOTION A SALES MANAGEMENT) as non-Major or Minor discipline

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Business Organisation BAC:DSC-1.1 | 4 | 3 | 1 | 0 | PASS IN XII | NIL |
| Principles of Marketing BAC: Discipline (ASPSM)- 1 | 4 | 3 | 1 | 0 | PASS IN XII | NIL |

DISCIPLINE CORE: PRINCIPLES OF MARKETING (Major/ Minor)

Learning Objectives

The objective of this course is to provide basic knowledge of concepts, principles, tools and techniques of marketing and to provide knowledge about various developments in marketing.

Learning outcomes

The Learning Outcomes of this course are as follows:

1. develop an understanding of basic concepts of marketing, marketing philosophies and environmental conditions affecting the marketing decisions of a firm.
2. explain the dynamics of consumer behaviour and the process of market selection through STP stages.
3. analyze the process of value creation through marketing decisions involving product development.
4. identify and analyze the marketing decisions involving product pricing and its distribution.
5. explore the marketing decisions involving product promotion and also equip them with the knowledge of various developments in the marketing area that may govern the marketing decisions of a firm.

Unit 1: Introduction to Marketing (12 hours)

Meaning, Scope and Importance; Marketing Philosophies; Marketing Mix for goods and services
Marketing Environment

Need for studying marketing environment; Micro environmental factors- company, suppliers, marketing intermediaries, customers, competitors, publics; Macro environmental factors – demographic, economic, natural, technological, politico-legal and socio-cultural.

Unit 2: Consumer Behaviour (12 hours)

Need for studying consumer behaviour; Stages in Consumer buying decision process; Factors influencing consumer buying decisions.

Market Selection

Market Segmentation: Concept and Bases. Market Targeting, Product Positioning – concept and bases.

Unit 3: Product Decisions (12 hours)

Concept and classification; Levels of Product. Product- mix; Branding- concept, types, significance, qualities of the good brand name; Packaging and Labeling-types and functions; Product support service; Product life cycle.

Unit 4: Pricing Decisions (12 hours)

Objectives, Factors affecting the price of a product; Skimming and Penetration pricing.

Distribution Decisions

Channels of distribution- types and functions; Distribution logistics decisions.

Unit V: Promotion Decisions (12 hours)

Communication process; Importance of Promotion. Promotion mix tools: Distinctive characteristics of advertising, personal selling, sales promotion, public relations, and direct marketing.

Developments in Marketing

Sustainable Marketing, Rural marketing, Social marketing, Digital marketing – an overview.

Practical Exercises:

The learners are required to:

1. Submit a report on the marketing mix of a good and/or service of your choice.
2. Examine the stages of the buyer decision process in a recent purchase done by you and detail your experiences in each stage. What could the seller have done to make your buying experience better?
3. Select any five consumer products of your choice and examine their current stage in the product life cycle.
4. Draft a report on the promotion mix strategy for any five products of your choice.
5. Identify 5 real-life products each that have been using penetration pricing and market-skimming pricing.
6. Identify 10 social marketing initiatives that can be currently observed in the environment.
7. Identify 20 brand names of real-life products of your choice and justify why they are good brand names.

Essential/ Recommended readings

- Etzel, M. J., Walker, B. J., Stanton, W. J., & Pandit, A. (2010). Marketing (14th ed.). Mc Graw Hill.
- Grewal, D., & Levy, M. (2022). Marketing (8th ed.). McGraw-Hill Education.
- Kapoor, N. (2021) Principles of Marketing, Prentice Hall of India.
- Kotler, P., Keller, K L., & Chernev, A. (2022). Marketing Management (16th Edition). Pearson Education.
- Kotler, P., Armstrong, G. & Agnihotri, P. (2018). Principles of Marketing (17th Edition), Pearson Education. Indian edition.

- Sharma, K., & Swati Aggarwal. (2021). Principles of Marketing. Taxmann Publications.

Note: Readings will be updated by the Department of Commerce and uploaded on Department's website.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

B.A. Programmes with Commerce (HUMAN RESOURCE MANAGEMENT) as non-Major or Minor discipline

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Business Organisation BAC:DSC-1.1 | 4 | 3 | 1 | 0 | PASS IN XII | NIL |
| Human Resource Management BAC: Discipline (HRM)- 1 | 4 | 3 | 1 | 0 | PASS IN XII | NIL |

DISCIPLINE CORE: HUMAN RESOURCE MANAGEMENT (Major/ Minor)

Learning Objectives

The course aims to acquaint the students with the importance, techniques, and principles of human resources in the workplace.

Learning outcomes

The Learning Outcomes of this course are as follows:

1. explicate the importance of human resource management.
2. analyze the concept and sources of the recruitment and selection process.
3. design performance appraisal techniques.
4. devise effective compensation schemes that enhance employee satisfaction and promote retention.
5. cater to the dynamics of the business environment.

Unit 1: Introduction to Human Resource Management (12 hours)

Basic concepts and significance of HRM, Role and Functions of an HR manager. Emerging issues in human resource management: Workplace diversity, employee empowerment, downsizing, VRS, work-life balance, and work from home.

Unit 2: Acquisition of Human Resources (12 hours)

Job analysis, concept and sources of recruitment, selection, placement, induction and socialization.

Unit 3: Training and Development (12 hours)

Concept and importance; Role-specific and competency-based training; Training methods - Apprenticeship, understudy, job rotation, vestibule training, Development methods - case study, role-playing, sensitivity training, In-basket, management games, conferences and seminars, coaching and mentoring, management development programs; Training process outsourcing.

Unit 4: Compensation and Maintenance (12 hours)

Compensation- concept administration and methods - time and piece wage system; Fringe benefits; Employee stock option, pay band compensation system; Maintenance- concept and rationale of employee health, safety, welfare and social security (excluding legal provisions); Grievance handling procedure.

Unit 5: Performance Appraisal (12 hours)

Performance appraisal system - nature and objectives; methods of performance appraisal - ranking, graphic rating scale, checklist, management by objectives, 360-degree appraisal; HRIS (Human Resources Information System) - concept, functioning and application of computerized HRIS.

Practical Exercises:

The learners are required to:

1. design a human resource plan.
2. conduct orientation cum induction programme.
3. hold mock counselling sessions.
4. design team building activities.
5. devise incentive plans for a diverse workforce.

Essential/ Recommended readings

- Aswathappa, K., & Dash, S (2021). Human Resource Management-Text and cases, Ninth Edition, Tata McGraw-Hill.
- Chhabra, T. N., & Chhabra M. (2020). Essentials of Human Resource Management, Sun India Publications.
- Decenzo, D.A., & Robbins, S. P. (2009). Fundamental of Human Resource Management. New Jersey; Wiley.
- Dessler G, & Varrkey B. (2020). Human Resource Management, Sixteenth Edition By Pearson Paperback.
- Gupta, C. B. (2018). Human Resource Management. Delhi: Sultan Chand & Sons.
- Prasad, L. M. (2018). Human Resource Management, Delhi: Sultan Chand & Sons
- Rao, V. S. P. (2020). Human Resource Management. Delhi: Second edition, Taxmann.

Note: Readings will be updated by the Department of Commerce and uploaded on Department's website.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

B.A. Programmes with Commerce (COMMERCIAL LAWS AND CORPORATE GOVERNANCE) as non-Major or Minor discipline

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Business Organisation BAC:DSC-1.1 | 4 | 3 | 1 | 0 | PASS IN XII | NIL |
| Limited Liability Partnership: Law and Practice BAC: Discipline (CLCG)- 1 | 4 | 3 | 1 | 0 | PASS IN XII | NIL |

DISCIPLINE CORE: Limited Liability Partnership: Law and Practice (Major/ Minor)

Learning Objectives

The course aims to impart knowledge of provisions of law and corresponding rules related to Limited Liability Partnership. Case studies and problems involving issues in LLP are required to be discussed.

Learning outcomes

The Learning Outcomes of this course are as follows:

1. explain the benefits available to partners in carrying out business in the LLP form of business
2. describe the process and effect of registration of LLP
3. explain the relationship of partners inter se and the relationship of partners with LLP
4. comprehend various provisions related to contribution and financial disclosures
5. enumerate the process of conversion of existing business entities into LLP

Unit 1: Nature of Limited Liability Partnership (12 hours)

Introduction to LLP, administrative mechanism, salient features, small LLP, the difference between LLP and partnership firm, the difference between LLP and company.

Unit 2: Incorporation of LLP (16 hours)

Incorporation by registration, incorporation document, LLP agreement, online registration of LLP, the effect of registration, name of LLP and change therein, rectification of name, registered office and change therein.

Unit 3: Partners, their relations and liabilities (12 hours)

Eligibility to be a partner, eligibility to be a designated partner, relationship of partners, cessation of the partnership interest, registration of changes in partners, extent of liability of LLP, extent of liability of partner, whistleblowing.

Unit 4: Contribution and Financial Disclosures (8 hours)

Form of contribution, obligation to contribute, maintenance of books of accounts, other records and audit, statement of accounts and solvency, and annual return.

Unit 5: Conversion into LLP, Winding up and Dissolution (12 hours)

Process of conversion of a firm, a private company, unlisted public company into LLP, winding up and dissolution, winding up by the tribunal

Practical Exercises:

The learners are required to:

- 1) prepare a list of factors which make LLP a hybrid form of organization
- 2) (a) check availability of name using 'check LLP name service' on the MCA portal.
- 3) examine the FiLLiP web form from notification on the MCA portal and enlist the mandatory fields.
- 4) explore the significance of designated partner identification number (DPIN) and examine various fields in relevant forms.
- 5) enlist mandatory fields related to accounts and solvency from form 'Statement of Account and Solvency and Charge filing' accessed from notification on MCA portal
- 6) collect data related to conversion from latest monthly information bulletin available on MCA portal.

Essential/ Recommended readings

- Jain, D. K., & Jain, I. (2021). Law & Procedure of Limited Liability Partnership. Bharat Law House Pvt Ltd.
- Kuchhal, M. C. (2018). Business Laws. New Delhi. Vikas Publishing House.
- Sharma, J. P., & Kanojia, S. (2019). Business Laws. New Delhi. Bharat Law House Pvt. Ltd.
- Singh, A. (2008). The Principles of Mercantile Law. Lucknow. Eastern Book Company.
- Tulsian, P. C., & Tulsian, B. (2017). Business Law. New Delhi. Tata McGraw Hill.

Suggestive Readings

- Maheshwari, S.K., & Maheshwari, S. N. (2014). Business Law. Himalaya Publication House-New Delhi.

Note: Readings will be updated by the Department of Commerce and uploaded on Department's website.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

B.A. Programmes with Commerce (TAX PROCEDURES & PRACTICES) as non-Major or Minor discipline

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Business Organisation BAC:DSC-1.1 | 4 | 3 | 1 | 0 | PASS IN XII | NIL |
| Income Tax and Law Practice BAC: Discipline (TPP)- 1 | 4 | 3 | 1 | 0 | PASS IN XII | NIL |

DISCIPLINE CORE: INCOME TAX LAW AND PRACTICE (Major/ Minor)

Learning Objectives

This paper aims to provide comprehensive knowledge of various heads of income and focuses on the computation of the total income and tax liability of an individual as per the Income Tax Act 1961.

Learning outcomes

The Learning Outcomes of this course are as follows:

1. explain the basic concepts, residential status of the assessee and incidence of tax.
2. develop an understanding of the nuances of the salaries, various allowances and perquisites available under the head income from Salaries.
3. develop an understanding of the concept of self-occupied and let out property under the head income from house property.
4. compute the income under the head profits and gains of business or profession and capital gains.
5. compute incomes covered under the head income from other sources.
6. explore the concept of including the income of other persons in the assessee's income.
7. compute the total tax liability of an individual after allowing for permissible deductions and exemptions.

Unit 1: Basic concepts and Residential Status (12 hours)

Basic concepts: person, assessee, income, previous year, assessment year and PAN; structure to compute tax liability; residential status and tax incidence.

Unit 2: Income under the head Salaries and House Property (24 hours)

Computation of income under the head salaries including various allowances and perquisites, computation of income of self-occupied and let out property; unrealised rent.

Unit 3: Income under the head Profits and Gains of Business or Profession (10 hours)

Computation of income from business or profession, expenses specified and disallowed while computing such incomes.

Unit 4: Income under the head of Capital Gains and Other Sources (6 hours)

Meaning of capital assets, long term and short term capital gains; computation of capital gains. Computation of taxable income from other sources;

Unit 5: Computation of Total Income and Tax Liability of an Individual (8 hours)

Clubbing of income; set off and carry forward of losses, permissible deductions under section 80C to 80U; computation of taxable income and tax liability of an individual.

Practical Exercises:

The learners are required to:

1. identify and educate the individuals not having PAN Card and help them understand the crucial relevance of holding a PAN Card. Help them in filling out the online application for the PAN Card and prepare the summarised report for the same.
2. identify the relevance of various allowances and deductions in the present context and give a presentation for the same.
3. identify and evaluate the tax liability of some individuals having income under different heads of income and present a case of the deductions and exemptions availed by each assessee.
4. go through the e-filing website of the Government of India.

Essential/recommended readings

- Ahuja, G., & Gupta, R. (2022). Simplified Approach to Income Tax. Flair Publications Pvt. Ltd., Delhi.
- Mittal, N. (2019). Concept Building Approach to Income Tax Law & Practice. Cengage Learning India Pvt. Ltd., Delhi.
- Singhanian, V. K., & Singhanian, M. (2022). Student's Guide to Income Tax. Taxmann Publications Pvt. Ltd., Delhi.

Suggested Resources:

- Income tax Act 1961
- www.incometaxindia.gov.in

Note: Readings will be updated by the Department of Commerce and uploaded on Department's website.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

B.A. Programmes with Commerce (MODERN OFFICE MANAGEMENT) as non-Major or Minor discipline

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Business Organisation BAC:DSC-1.1 | 4 | 3 | 1 | 0 | PASS IN XII | NIL |
| Business Communication BAC: Discipline (MOM)- 1 | 4 | 3 | 1 | 0 | PASS IN XII | NIL |

DISCIPLINE CORE: Business Communication (Major/ Minor)

Learning Objectives

The course aims to prepare the Executive Secretary with proper knowledge of different types of communication and correspondence, presentation skill along with effective reports. This paper intends to acquaint the learners with communication theory and provide them ample exercise in communication through business correspondence.

Learning outcomes

The Learning Outcomes of this course are as follows:

1. summarise the different concepts of Business Communication.
2. interpret the vocabulary to be used in business.
3. demonstrate the different types of Correspondence or letter writing skills.
4. describe the different approaches to report writing.
5. demonstrate the Business presentation.

Unit I: Introduction (16 hours)

Meaning, process, characteristics, objectives, importance, methods/types of communication: based on relationship (internal & external); based on expressions (verbal & Non-verbal) and the basis of flow (downward, upward, horizontal and diagonal/crosswise), Persuasive Communication, 7Cs of Communication, Barriers to Effective Communication and tips to overcome the barriers.

Unit II: Communication and Technology (8 hours)

Communication through modern technology – different apps, virtual and online video conferences - Google Meet, Zoom, Microsoft team etc., netiquettes.

Unit III: Modern Business Correspondence (16 hours)

Internal: Formal & Informal Correspondence -- Memorandum, Office Order, Circular, Meeting, Notice, Agenda & Minutes. External: Formal Correspondence- Routine letters (enquiry,

quotation, orders and acceptance, release of payment), Sales Letters (a proposal, promotional, follow-up, mailshots), Agency Letters (status enquiries, seeking finance), Problem letters (complaint, collection/dunning, concession). Personnel: Job Application letter, Preparing the Resume, CV and Portfolio. E-Correspondence: Emails, Blogs, Chat Rooms, Discussion Forums, Social Networking, Online news releases, and Company newsletters.

Unit IV: Report Writing (12 hours)

Meaning, Types of Business Reports, characteristics, importance, the structure of a report, Organization of Report –Long reports & Short reports (letter form, memorandum form, minutes form).

Unit V: Oral/Visual Presentation (8 hours)

Importance, Characteristics, Presentation Plan, Visual Presentation – diagram/flowchart.

Practical Exercises:

The learners are required to:

- 1) Practice learning the use of different types of communications conducting their class meetings online/offline.
- 2) Learn the different rules of vocabulary to be used in Business Communication.
- 3) Practice making the drafts of all types of letters for correspondence including agenda, minutes etc.
- 4) Prepare at least one report as per your choice relating to any business/college event.
- 5) Present diagram/piktochart/flowchart on any relevant topic of this paper in the class.

Essential/ Recommended readings

- Bhatia, R.C.(2018). Business Communication, New Delhi: Anne Books Pvt. Ltd.
- Gupta, C.B. (2019) Essential Business Communication, New Delhi: Cengage Learning India Pvt. Ltd.
- Khanna, P. (2016). English Communication New Delhi: Vikas Publishing House Pvt. Ltd.
- Lehman, C. M., D. D., & Sinha., M. (n.d.). Business Communication. Cengage Learning India Pvt. Ltd.
- R. P., & Korlahalli, J. S. (2008). Essentials of Business Communication. New Delhi: Sultan Chand & Sons.
- Taylor, S., & Chandra, V. (2005). Communication for Business. New Delhi: Pearson Education Ltd.

Suggestive Readings:

<https://www.youtube.com/embed/6IIh9trXgyQ> (Source: epg pathshala)

<https://www.youtube.com/embed/t-DzqqIaiM8> (Source: epg pathshala)

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES OFFERED BY DEPARTMENT OF COMMERCE

GENERIC ELECTIVES (GE-1): BUSINESS ORGANISATION

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|----------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Business Organisation BCH: GE- 1.1 | 4 | 3 | 1 | 0 | Pass in XII | NIL |

Learning Objectives

The course aims to familiarize the students with the forms of business organisation and contemporary issues.

Learning outcomes

The Learning Outcomes of this course are as follows:

1. examine the dynamics of the most suitable form of business organisation in different situations.
2. evaluate the various elements affecting the business environment.
3. analyse business models for different organisations.
4. record and report emerging issues and challenges of business organisations.
5. evaluate changes in the working pattern of modern organisations

SYLLABUS OF GE-1

Unit 1: Introduction (12 hours)

Business – Concept, nature and scope, business as a system, business objectives, business and environment interface, distinction between business, commerce and trade, Business ethics, social responsibilities of Business

Unit 2: Business Enterprises (12 hours)

Forms of Business Organisation: Sole Proprietorship, Partnership firm, Joint Stock Company, One Person Company, Cooperative society; Limited Liability Partnership; Multinational Corporations; Choice of Form of Organisation; Business Combination: Need and Objectives, Forms: Mergers, Takeovers and Acquisitions.

Unit 3: Business Environment (12 hours)

Meaning and significance of Business environment, Internal and external environment, Dimensions of Business Environment; Uncertainty and business; Environmental Analysis and Diagnosis, Environment scanning techniques: SWOT and ETOP.

Unit 4: Entrepreneurship: Founding the Business (12 hours)

Entrepreneur-Entrepreneurship-Enterprise; entrepreneurial ideas and opportunities in the contemporary business environment; Process of entrepreneurship; Forms of entrepreneurship; Skill India, Start-up India, Make in India, Globalisation.

Unit 5: Contemporary Issues of Business Organisations (12 hours)

Emerging Issues and Challenges; Innovation in Organisational Design; Learning Organisations, Workforce Diversity, Franchising, Outsourcing, and E-commerce; Government and business interface; Sustainability; Digitalisation and Technological innovations.

Practical Exercise

The learners are required to

1. complete the exercise wherein they are given different situations and scenarios to start their own business (in terms of capital, liability, the scale of operations, etc.) and are asked to select the most suitable form of business and justify the same highlighting the advantages and disadvantages of their choice.
2. identify various elements affecting the business environment and conduct a SWOT analysis for the company identified.
3. visit different enterprises and present a report on business models followed by them through a comparative analysis.
4. record and report their observations regarding the emerging issues and challenges of business organisations.
5. identify changes in the working pattern of modern organisations.

Essential/ Recommended Readings:

- Basu, C. (2017). Business Organisation and Management. McGraw Hill Education.
- Chhabra, T. N. (2019). Business Organisation and Management. Sun India Publications. New Delhi.
- Drucker, P. F. (1954). The Practice of Management. New York: Harper & Row.
- Kaul, V. K. (2012). Business Organisation Management. Pearson Education.
- Koontz, H., & Weihrich, H. (2012). Essentials of Management: An International and Leadership Perspective. Paperback.
- Singh, B. P., & Singh, A. K. (2002) Essentials of Management. New Delhi. Excel Books Pvt. Ltd.
- Vasishth, N., & Rajput N. (2019)., Business Organisation & Management. Kitab Mahal. Delhi.

Note: Readings will be updated by the Department of Commerce and uploaded on Department's website.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-2: FINANCE FOR EVERYONE)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Finance for Everyone BCH: GE- 1.2 | 4 | 2 | 1 | 1 | Pass in XII | NIL |

Learning Objectives

The course aims to offer an integrated approach to the understanding of concepts and applications of financial planning.

Learning outcomes

The Learning Outcomes of this course are as follows:

1. explain the importance of financial literacy and the institutions providing financial services.
2. prepare a financial plan, and budget and manage personal finances.
3. avail and manage services offered by banks.
4. avail and manage services offered by post offices.
5. plan for life insurance and property insurance.
6. choose instruments for investment in shares.

SYLLABUS OF GE-2

Unit 1: Introduction, Financial Planning and Budgeting (9 hours)

Meaning, importance and scope of financial literacy; Prerequisites of financial literacy – level of education, numerical and communication ability; Various financial institutions – banks, insurance companies, post offices, mobile app-based services. Need of availing of financial services from banks, insurance companies and postal services. Concept of economic wants and means for satisfying these needs; Balancing between economic wants and resources; Meaning, importance and need for financial planning; Personal budget, family budget, business budget and national budget; Procedure for financial planning and preparing a budget; Budget surplus and budget deficit, Avenues for savings from surplus, Sources for meeting the deficit.

Unit 2: Banking Services (9 hours)

Types of banks; Banking products and services – Various services offered by banks; Types of bank deposit accounts – savings bank account, term deposit, current account, recurring deposit; pan card, address proof, KYC norm; Various types of loans – education loan, consumer durable loan, vehicle loan, housing loan, short term, medium term, long term, microfinance, bank overdraft, cash credit, mortgage, reverse mortgage, hypothecation, pledge, Agricultural and related interest rates offered by various nationalized banks; Cashless banking, e-banking, check

counterfeit currency; CIBIL, ATM, net banking, RTGS, NEFT, IMPS, electronic clearance services (ECS), debit and credit card, app-based payment system, bank draft and pay order; banking complaints and ombudsman.

Unit 3: Financial Services from India Post Office (6 hours)

Post office savings schemes: savings bank, recurring deposit, term deposit, monthly income scheme, kisan vikas patra, NSC, PPF, senior citizen savings scheme, sukanya samriddhi yojana; India post payments bank. money transfer: money order, e-money order. instant money order, collaboration with the western union financial services; mo videsh, international money transfer service, money gram international money transfer, Indian postal order.

Unit 4: Insurance Services (9 hours)

Life insurance policies: life insurance, term life insurance, endowment policies, pension policies, ULIP, health insurance plans, comparison of policies offered by various life insurance companies, comparison of policies offered by various health insurance companies. Property insurance policies. Post office life insurance schemes: postal life insurance and rural postal life insurance.

Unit 5: Stock Markets – Some Basic Concepts (12 hours)

Terms used in stock markets: SENSEX, NIFTY, primary markets, secondary markets, initial public offering(IPO), follow-on public offering (FPO), offer for sale (OFS), block deal, equity shares, preference shares, debentures, bonus shares, stock split, dividend, buyback, DEMAT account, trading account, delivery instruction slip (DI Slips), blue chips, defensive stocks, face value, market value, market capitalisation, pre-opening session, trading session, opening price, closing price, business days, bull, bear, bull market, bear market, risk, stop loss, derivatives, call option, put option, hedge, holding period; Tax on short term capital gains and long-term capital gains, Mutual Fund and its various schemes.

Practical Exercise

(30 hours)

The learners are required to

1. visit banks, post offices, and insurance companies to collect information and required documents related to the services offered by these institutions and to know the procedure for availing of these services.
2. carry out the comparative analysis of different types of life insurance policies.
3. carry out the comparative analysis of different types of health insurance policies.
4. prepare a personal and family budget for one/six/ twelve months on imaginary figures.

Essential/ Recommended Readings:

- Avadhani, V. A. (2022). Investment Management. Himalaya Publishing House Pvt. Ltd., Mumbai.
- Batra, J. K. (2018). Accounting and Finance for Non-finance Managers, Sage Textbook
- Bhattacharya. (2021). Indian Financial System. Oxford University Press.
- Chandra, P. (2018). Investment Game: How to Win. Tata McGraw Hill Education, New Delhi.
- Kothari, R. (2010). Financial Services in India-Concept and Application. Sage Publications India Pvt. Ltd., New Delhi.
- Milling, B. E. (2001). The Basics of Finance: Financial Tools for Non-Financial Managers. Universe Company, Indiana.

- Mittra, S., Rai, S. K., Sahu, A. P., & Starn, H. J. (2020). Financial Planning. Sage Publications India Pvt. Ltd., New Delhi.
- Sofat, R., & Hiro, P. (3rd Edition). (2016). Basic Accounting. PHI learning
- Zokaityte, A. (2017). Financial Literacy Education. Palgrave Macmillan, London.

Note: Readings will be updated by the Department of Commerce and uploaded on Department's website.

Assessment Method:

1. There shall be 2 credit hours for lectures.
2. Theory exam shall carry 100 marks (including Internal Assessment of 25 Marks). The theory exam will be for 3 hours.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-3) Marketing for Beginners

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Marketing for Beginners BCH: GE-1.3 | 4 | 3 | 1 | 0 | Pass in XII | NIL |

Learning Objectives

The structure of this course is to provide a basic understanding of concepts, principles, tools and techniques of marketing and to provide knowledge about various developments in the marketing scenario in India.

Learning outcomes

The Learning Outcomes of this course are as follows:

1. evaluate the companies following societal marketing concepts and along with their social initiatives.
2. judge the segmentation of a product, service, event, or organisation of companies.
3. analyse the process of value creation through marketing decisions involving product, pricing and distribution.
4. compare the pricing strategies of various companies.
5. explain marketing decisions involving product promotion and acquire knowledge about the various developments in the marketing area.

SYLLABUS OF GE-3

Unit 1: Introduction to Marketing and Marketing Environment (12 hours)

Introduction to Marketing: Concept, Scope and Importance; Marketing Philosophies; Marketing Mix for goods and services.

Marketing Environment: Need for studying marketing environment; Micro environment- company, suppliers, marketing intermediaries, customers, competitors, publics; Macro environment- demographic, economic, natural technological, politico-legal and socio-cultural factors.

Unit 2: Consumer Behaviour and Marketing Strategies (12 hours)

Consumer Behaviour: Need for studying consumer Behaviour; Stages in consumer buying decision process, Factors influencing consumer's buying decisions.

Marketing Strategies: Market segmentation-concept and bases of segmenting consumer markets; Market Targeting; Product Positioning- concept and bases.

Unit 3: Product Decisions (8 hours)

Concept and classification; Product mix; Branding; Packaging; Labeling; Product support services; Product life cycle concept and marketing strategies.

Unit 4: Pricing Decisions and Distribution Decisions (12 hours)

Pricing Decisions: Objectives; Factors affecting the price of a product; Pricing strategies for new products- penetration pricing and skimming pricing.

Distribution Decisions: Channels of Distribution: types and functions; Wholesaling and retailing; factors affecting the channels of distribution; Logistics Decisions.

Unit 5: Promotion Decisions and Developments in Marketing (16 hours)

Promotion Decisions: Communication process; Importance of promotion; Promotion tools: advertising, personal selling, sales promotion, public relations, publicity and direct marketing

Developments in Marketing: Sustainable Marketing; Rural marketing; Social marketing; Digital marketing – an overview.

Practical Exercises:

The learners are required to

1. select the examples of companies who are following societal marketing concepts and discuss their social initiatives.
2. suggest the suitable bases for segmentation of a product, service, event, or organisation of your choice.
3. list out the companies whose product has reached the maturity stage and explain the marketing strategies adopted by them.
4. identify the companies following skimming and penetration pricing policy.
5. analyse the rural marketing strategies of a business organisation.

Essential/ Recommended readings

- Baines, P. et al. (2021). Fundamentals of Marketing. Oxford University Press.
- Etzel, M. J., Walker, B. J., Stanton, W. J., & Pandit, A. (2010). Marketing. Mc Graw Hill.
- Kapoor, N. (2022). Principles of Marketing, 2nd ed. PHI learning
- Kotler, P., Armstrong, G., & Agnihotri, P. (2018). Principles of Marketing. Pearson Education. Indian edition.
- Kotler, P., Chernev, A., & Keller, K. L. (2022). Marketing Management. United Kingdom

Pearson Education.

- Levy, M., & Grewal, D. (2022). Marketing. United States: McGraw-Hill Education.
- Masterson, R. (2022), Marketing, 5ed., Sage Textbook
- Ramaswamy, N. (2018), Marketing Management, Sage Textbook
- Sharma, K. & Aggarwal S. (2021). Principles of Marketing. Taxmann Publications.

Note: Readings will be updated by the Department of Commerce and uploaded on Department's website.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE- 4) Accounting for Everyone

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Accounting for Everyone BCH: GE-1.3 | 4 | 2 | 1 | 1 | Pass in XII | NIL |

Learning Objectives

Objective: The course aims to help learners coming from non-commerce backgrounds acquire basic knowledge of financial accounting and to impart preliminary skills for recording various kinds of financial transactions and preparing financial statements.

Learning outcomes

The Learning Outcomes of this course are as follows:

1. Analyze various terms used in accounting;
2. Make accounting entries and prepare cash books and other accounts necessary while running a business;
3. Prepare profit and loss account and balance sheet;
4. Prepare accounts based on accounting software;
5. Analyze information from the company's annual report.

SYLLABUS OF GE-4

Unit 1: Introduction to Accounting and Accounting Principles (9 hours)

Accounting - Meaning, Importance, Need, objectives, advantages and limitations. Accounting as an information system, user of accounting information, sources of accounting information. Some Basic Accounting Terms –Transactions, Accounts, Assets, Liabilities, Capital, Drawings, Expenditure and Expense, Income, Revenue, Gain, Profit, Surplus, Loss, Deficit.

Accounting Principles Basis of Accounting – Cash, Accrual and Hybrid. Difference between Double Entry system and Single entry system (accounting for incomplete records).

Unit 2: Recording of transactions (9 hours)

Identification of transactions and events for recording, Classifications of accounts (Traditional): Personal Account, Real Account and Nominal Account, Classifications of accounts (Modern): Assets, Liabilities, Capital, Income and expenses. Accounting Equation, Rules of debit and credit. Basis of recording – vouchers, Journalising the transactions.

Unit 3: Preparation of Accounts and Depreciation Accounting (9 hours)

Preparation of Ledger, Cash Book including bank transactions and depreciation accounting: concept, features, causes, methods (SLM and WDV), charging to assets account.

Unit 4: Preparation of Financial Statement (9 hours)

Trial Balance; Concept of Revenue and Capital expenditure; Preparation of Trading and Profit & Loss Account and Balance Sheet for a sole proprietor with basic adjustments.

Unit 5: Accounts from Incomplete Records (9 hours)

Meaning, features, reasons and limitations of accounting from incomplete records. Determining profit and loss using the Statement of affairs method.

Practical Exercises:

(30 hours)

1. Download annual reports of business Organisations from the websites and go through the contents of the annual report and present the salient features of the annual report using some ratios and content analysis including textual analysis.
2. Prepare a bank reconciliation statement from the individual passbooks.
3. Prepare Trading and Profit & Loss Account, Balance Sheet, and Cash Flow Statement collecting necessary data from small business firms.
4. Prepare financial statements using appropriate software.

Suggestive Readings:

- Batra, J. K. (2018). Accounting and Finance for Non-finance Managers, Sage Textbook
- Bhupinder, Lt. (2020). Principles of Financial Accounting, Cengage.
- Goyal, B. K., & Tiwari, H. N. (2021). Financial Accounting. Taxmann Publication, New Delhi.
- Gupta, R. L., & Radhaswamy, M. (2014). Financial Accounting. S. Chand Publishing, New Delhi.
- Hatfield, L. (2019) Accounting Basics. Amazon Digital Services LLC.
- Horngren, C. T., Sundem, G. L., Elliott, J. A., & Philbrick, D. (2017). Introduction to Financial Accounting. Pearson Education, London
- Kumar, A. (2018) Financial Accounting, Singhal Publication
- Lal, J., & Srivastava, S. (2017). Financial Accounting Text & Problems. Himalaya Publishing House, Mumbai.
- Maheshwari, S. N., Maheshwari, S. K., & Maheshwari, S. K. (2018). Financial Accounting. Vikas Publishing House Pvt. Ltd, New Delhi
- Monga, J. R. (2020). Financial Accounting: Concepts and Applications. Mayur Paperback , New Delhi

- Mukharji, A., & Hanif, M. (2010). Financial Accounting. Tata McGraw Hill Publishing Co. Ltd, New Delhi
- Mukherjee, S., & Mukherjee, A. K. (2017). Financial Accounting Oxford University Press, USA
- Sah, R. K. (2020). Concept building approach to financial accounting, Cengage
- Sehgal, D. (2016). Financial Accounting. Vikas Publishing House Pvt. Ltd, New Delhi.
- Siddiqui, S. A. (2008). Book Keeping & Accountancy. Laxmi Publications Pvt. Ltd, New Delhi.
- Sofat, R., & Hiro, P. (2016). Basic Accounting, 3rd ed. PHI learning
- Tulsian, P. C. (2020). Financial Accounting. Tata McGraw Hill Publishing Co. Ltd, New Delhi.

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GENERIC ELECTIVES (GE- 5) COMPUTER APPLICATIONS IN BUSINESS

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Computer Applications in Business BCH: GE-1.5 | 4 | 1 | 0 | 3 | Pass in XII | NIL |

Learning Objectives

This paper aims to impart computer knowledge that will enable them the ability to handle and analyse data for decision making and present it to the person concerned in the form of presentations and/or reports in the fast-moving business world.

Learning outcomes

The Learning Outcomes of this course are as follows:

1. describe the various concepts and terminologies used in computing, computer networks and the internet.
2. examine document creation for report making and communication.
3. identify and make good presentations.
4. analyse various computations using various functions in the area of accounting and finance and represent the business data using suitable charts. s/he should also be able to

manipulate and analyse the business data for a better understanding of the business environment and decision-making.

5. identify the spreadsheet knowledge acquired through this paper in solving real-life problems that help in decision making.

Unit 1: Introduction (4 hours)

Computing: Concept of computing, Data and information; Computing Interfaces: Graphical User Interface (GUI), Command Line Interface (CLI), Touch Interface, Natural Language Interface (NLI); data processing; applications of computers in business.

Computer Networks: Meaning of computer network; objectives/ needs for networking; Applications of networking; Basic Network Terminology; Types of Networks; Network Topologies; Distributed Computing: Client Server Computing, Peer-to-peer Computing; Wireless Networking; Securing Networks: firewall.

Basic Internet Terminology: I.P. Address, Modem, Bandwidth, Routers, Gateways, Internet Service Provider (ISP), World Wide Web (www), Browsers, Search Engines, Proxy Server, Intranet and Extranet; Basic Internet Services; Internet Protocols: TCP/IP, FTP, HTTP(s), Uses of the Internet to Society; Cyber Security: Cryptography, digital signature.

Unit 2: Word Processing (3 hours)

Introduction to word Processing, Word processing concepts, Use of Templates and styles, Working with word documents: Editing text, Find and replace text, Formatting, spell check, Autocorrect, Auto-text; Bullets and numbering, Tabs, Paragraph Formatting, Indent, Page Formatting, Header and footer, page break, table of contents, Tables: Inserting, filling and formatting a table; Inserting Pictures and Video; Mail Merge (including linking with spreadsheet files as data source); Printing documents; Citations, references and Footnotes.

Unit 3: Preparing Presentations (2 hours)

Basics of presentations: Slides, Fonts, Drawing, Editing; Inserting: Tables, Images, texts, Symbols, hyperlinking, Media; Design; Transition; Animation; and Slideshow, exporting presentations as pdf handouts and videos.

Unit 4: Spreadsheet basics (2 hours)

Spreadsheet concepts, Managing worksheets; Formatting, conditional formatting, Entering data, Editing, and Printing and Protecting worksheets; Handling operators in the formula, Projects involving multiple spreadsheets, Organizing Charts and graphs; Flash-fill; Working with Multiple worksheets; controlling worksheet views, naming cells and cell ranges.

Spreadsheet functions: Mathematical, Statistical, Financial, Logical, Date and Time, Lookup and reference, Text functions and Error functions.

Working with Data: Sort and filter; Consolidate; Tables; Pivot tables; What-if-analysis: Goal seek, Data tables and Scenario manager.

Unit 5: Spreadsheet projects (4 hours)

Creating business spreadsheet: Loan repayment scheduling; forecasting: stock prices, costs & revenues; Payroll statements; handling annuities and unequal cash flows; Frequency distribution and its statistical parameters and break-even analysis.

Note:

1. The General Purpose Software referred in this course will be notified by the University Departments every three years. If the specific features, referred to in the detailed course

above, are not available in that software, to that extent it will be deemed to have been modified.

2. There shall be a practical examination of 50 Marks (2 hours duration), a theory exam of 25 marks (1 hour duration) and an Internal Assessment of 25 marks (Class Test-10 Marks, Workbook- 10 Marks and attendance- 5 marks).
3. There shall be 1 lecture period per class and 6 Practical Lab periods per batch to be taught in the Computer Laboratory.

Practical Exercises

(60 hours)

The learners are required to do the practical exercises which include, but are not limited to, the following:

1. Analyze and compare the different mobile payment apps (at least 5) on the basis of their pros and cons and prepare a report on the same in word document using a table of contents, bullets, numbering, citations, etc. Also prepare a presentation for the same.
2. Using mail merge utility of word processing for either sending letters or for creating any other document like salary slip/ utility bills to be delivered to multiple recipients using data from a business organization or of the peer students.
3. Identify a topic related to any business operation and prepare a PowerPoint Presentation with all the above functions therein.
4. Prepare a Spreadsheet document with any hypothesized data and perform all the above functions therein.
5. By taking secondary data from a company's income statement and balance sheet for five to ten years, all the learners are required to conduct the Ratio Analysis and forecast values for different items of these statements for the next five to ten years.
6. Using logical, mathematical and statistical functions of the spreadsheet, the learners should be able to analyse the results of the class test using hypothesized data to determine the students who passed or failed, assigning them ranks like first, second, third, etc., finding out a number of absentees, counting no. of students scoring marks with distinction, etc.
7. The learners should be able to prepare repayment schedules of the loans that they borrow, prepare a payroll statement using spreadsheet functions listed above and analyse different investment opportunities using financial functions.
8. By taking live data from the website of the Government of India, use a Spreadsheet for preparing frequency distribution, and graphs, and calculate statistical measures like mean, median, mode, standard deviation, Correlation etc.

Essential/ Recommended Readings

- Jain, H. C., & Tiwari, H. N. (2021). Computer Applications in Business. Taxmann, Delhi.
- Joseph, P. T., S. J. (2015). E-Commerce: An Indian Perspective, 6th ed. PHI Learning
- Mathur, S., & Jain, P. (2016). Computer Applications in Business. Galgotia Publishing Company

- Madan, S. (2020). Computer Applications in Business. Scholar Tech Press, Delhi.
- Sharma, S. K., & Bansal, M. (2017). Computer Applications in Business. Taxmann, Delhi.
- Thareja, R. (2019). Fundamentals of Computers. Oxford University Press.
- Thareja, R. (2018). IT & It's Business Application. Oxford University Press.
- Walkenbach, J. (2016). MS Excel. Bible. John Wiley & Sons, USA.
- Winston, W. L. (2013). MS Excel. Data Analysis & Business Modeling. Microsoft Press, USA.

Suggestive Readings:

- Benninga, S. (2022). Financial Modeling. The MIT Press, USA.

Note: Readings will be updated by the Department of Commerce and uploaded on Department's website.

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GENERIC ELECTIVES (GE- 6)

Bhartiya Gyan Parampara (Indian Knowledge System)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Bhartiya Gyan Parampara (Indian Knowledge System) BCH: GE- 1.6 | 4 | 3 | 1 | 0 | Pass in XII | NIL |

Learning Objectives

The course aims to familiarize the students with the astonishing breadth and depth of the Indian scientific and knowledge tradition.

Learning outcomes

The Learning Outcomes of this course are as follows:

1. apportion the experience of the Gurukul system of education Indian culture
2. explain the concept of oneness (Ekatma Bhav).
3. use meditation on Panchkoshas and Chakras for enhancing productivity.
4. apply the management principles from the epics and compare them with the policies and schemes of the Government of India.

Unit 1: Bhartiya Gyan Parampara (Indian Knowledge System) – An Overview (16 hours)

Importance of Ancient Knowledge; Defining Indian Knowledge System; The Indian Knowledge System Corpus- A Classification Framework; Some unique aspects of Indian Knowledge System: Nuances of an Oral Tradition. History of Traditional Indian Trade and commerce: Silk, cotton, sugar, spices etc., silk route. Traditional mercantile system

Unit 2: Knowledge: Framework and Classification (16 hours)

Tarka: The Indian Art of Debate- The Knowledge Triangle; Prameya – A Vaisesikan Approach to Physical Reality- Dravyas, Attributes, Action; Vaisesikan Worldview of ‘Existence’; Pramana; Samasya; Framework for establishing Valid Knowledge – Deductive/ Inductive Logic Framework, Potential Fallacies in the Reasoning Process, Established Tenets in a Field of Study. Knowledge management; Types of knowledge management , Knowledge barriers, Knowledge Retention

Unit 3: Health, Wellness and Psychology (16 hours)

Impact of Yoga Way of life on Emotional Intelligence of Managers; Ayurveda- Definition of Health; Tri- dosas – Relationship to Health; The Body- Mind- Intellect- Consciousness Complex; Consciousness- The True Nature of an Individual; Five layered Consciousness of an Individual (Panchkoshas); Chakra System (Energy centres). Consciousness: Management by consciousness, Levels of Individual and Organizational consciousness, Self-consciousness, beyond self-consciousness.

Unit 4: Governance and Public Administration (12 hours)

Ramayana on Great Attributes, Dos, and Don'ts of a King; Arthasastra- Governance and Administration; Relevance of Arthasastra; Kautilyan State; Vidura- niti – Advice to a King- The Amatya, Settlements and Land Use (Janapada), Fortified Capital city (Durga), Treasury and State Economy (Kosa), Law & Order and Security (Danda), Foreign Policy and Allies (Mitra); Public Administration- Perspectives from the Epics. Indigenous banking system: Methods of the Indigenous banking system; Promissory note, Dastavez, Rahan, Functions of the indigenous banking system; Advancing loans, discounting Hundis; Type of Hundi, Darshni Hundi, Muddati Hundi.

Practical Exercises:

1. visit a Gurukul/ Ashram and have your own experience (anubhooti) of the Indian ancient knowledge system.
2. muktchintan (brainstorming) on topics life worldview of existence.
3. practise of meditation on Panchkoshas and Chakras.
4. muktchintan (brainstorming) on the perspectives from the epics and the real-life scenario of their applicability in the policies and schemes of the Government of India like Foreign policy, Defence policy, Innovation and Start-up Policy, Global Initiatives like One Sun One World One Grid: India's Initiative; Vaccine Diplomacy, International Yoga Day.

Essential/ Recommended readings

- Aurobindo, S. (2021). The Foundations of Indian Culture. India: Sri Aurobindo Ashram.

- Dharampal. (1995). The Beautiful Tree: Indigenous Indian Education in the Eighteenth Century. Rashtrottana Sahitya. ISBN-10:8175310952
- Indian Knowledge Systems. (2005). India: Indian Institute of Advanced Study.
- Mahadevan, B., Bhat, V. R., & Pavana, N. (2022) Introduction to Indian Knowledge System Concepts and Applications. PHI Learning
- Parthasarathy, S. (2014). Vedanta for Modern World. Sri Siim Research Press.
- Pe, D. (2005). Hidden dangers of meditation and yoga. Payal Books
- Simpson, A. (2019). Leadership Lessons from the Bhagavad Gita. India: SAGE Publications.
- The Arthashastra. (2000). India: Penguin Books Limited.
- Vivekananda, S. (2021). Patanjali Yoga Sutra. Srishti Publishers & Distributors. ISBN-10:9390441137

Suggestive Readings

- <https://iksindia.org/index.php>
- <https://indianculture.gov.in/indian-culture-repository>
- <https://vedicheritage.gov.in/>
- <https://www.rarebooksocietyofindia.org/>
- <https://management.cessedu.org/>
- <https://indica.in/>
- <https://www.bhratiyakritisampada.nic.in>
- Attree, A. K., Kumar, V., and Singh, A. K. (2020) Developing and validating the individual and organisational consciousness scale, International Journal of Work Organisation and Emotion, Vol. 11, No. 2, 154-177

Note: Readings will be updated by the Department of Commerce and uploaded on Department's website.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE- 7) Basic Personal Taxation

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Personal Taxation BCH: GE-1.7 | 4 | 3 | 1 | 0 | Pass in XII | NIL |

Learning Objectives

To provide basic knowledge and equip students with the application of principles and provisions of the Income-tax Act, 1961 applicable to individuals and the relevant Rules; and to enable the students to apply them to real-world situations.

Learning outcomes

The Learning Outcomes of this course are as follows:

1. analyse the basic concepts of income tax and determine the residential status of different persons;
2. compute income under the heads 'salaries' and 'income from house property';
3. compute income under the heads 'Profits and gains of business or profession' and 'capital gains';
4. compute income under the head 'income from other sources' and understand the provisions relating to income of other persons included in assessee's total income; and
5. analyse various deductions and computation of total income and tax liability of individuals.

Unit 1: Introduction (12 hours)

Origin of Tax System in India; Taxation – Voluntary practice to the involuntary system, Kautilya's philosophy of Taxation.

Basic concepts: Income, agricultural income, person, assessee, assessment year, previous year, gross total income, total income, the maximum marginal rate of tax; Permanent Account Number (PAN). Residential status (only individual); Scope of total income on basis of residential status.

Unit 2: Computation of Income – 1 (16 hours)

Income from Salaries: Meaning, the basis of charge, different forms, allowances, perquisites.

Income from house property: Basis of charge, computing income from letting out, self-occupied and partly let out and partly self-occupied, provisions related to unrealised rent, taxation of arrears of rent. Deductions from Annual Value (Sec 24).

Unit 3: Computation of Income – 2 (16 hours)

Profits and gains of business or profession: Basis of charge, computing business or profession income, the relevance of method of accounting, scheme of deductions and allowances, specific deductions under the act, specific disallowances under the act.

Unit 4: Computation of Income -3 (16 hours)

Capital gains: Basis of charge, capital asset, transfer of a capital asset, consideration, cost of acquisition, cost of improvement, indexation, computation of capital gains.

Income from other sources: Basis of charge, the relevance of method of accounting, dividend, interest on securities, winnings from lotteries, crossword puzzle, horse race, card games and their taxation, deduction from total income.

Practical Exercises:

The learners are required to:

1. discuss selected provisions of the Income-tax Act, 1961 from the official website of the Government of India;
2. refer to the Finance Act to learn about the amendments done in various provisions of the Income-tax Act, 1961;
3. refer relevant notifications and circulars from the official website of Government of India;

4. use tax calculators available on the official website of Government of India; and
5. explore and attempt online filing of Returns of Income & TDS on the Income tax e-filing website under ITR-1 and ITR-2.

Essential/ Recommended Readings:

- Ahuja, G., & Gupta, R. (2022). Systematic Approach to Income Tax. Commercial Law House, Delhi.
- Lal, B. B. (2011). Income Tax Law and Practice. Konark Publications, New Delhi.
- Pagare, D. (2021). Law and Practice of Income Tax. Sultan Chand and Sons, New Delhi.
- Singhania, V. K., & Singhania, M. (2021). Students' Guide to Income Tax. University Edition. Taxmann Publications Pvt. Ltd., New Delhi.

Suggestive Readings

- Current Tax Reporter. Current Tax Reporter, Jodhpur.
- Income Tax Reports. Company Law Institute of India Pvt. Ltd., Chennai.
- Taxman. Taxman Allied Services Pvt. Ltd., New Delhi.

Note: Readings will be updated by the Department of Commerce and uploaded on Department's website.

Assessment

Total Marks: 100

Internal Assessment: 25 Marks

End Semester University Exam: 75 Marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work and Presentations, amongst others as decided by the faculty.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

7. Amendment to Appendix -II-A to the Ordinance V (2-A) of the Ordinances of the University vide EC Resolution 18-1-1 & 18-1-10 dated 18.08.2022 regarding Syllabi of 1st Semester of Department under Faculty of Education and Cluster Innovation Centre

Add the following:

Syllabi of Semester-I of the Department of Education under Faculty of Education and Semester-I of Cluster Innovation Centre based on Under Graduate Curriculum Framework -2022 to be implemented from the Academic Year 2022-23.

**DEPARTMENT OF EDUCATION
BA (Prog.) with Education as Major
Category II**

(B.A Programme Courses for Undergraduate Programme of study with Education discipline as one of the Core Disciplines)

DISCIPLINE SPECIFIC CORE COURSE – 1 (DSC-1): Basic Concepts and Ideas in Education

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Concepts and Ideas in Education DSC 1 | 4 | 3 | 1 | - | Class XII Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- This is a discipline course in education, which aims to provide the basics of education and the nature of education (Liberal).
- It establishes the interdisciplinary nature of education by acquainting the student with its interconnectedness with other disciplines: philosophy, psychology, sociology, economics and polity. It intends to clarify the significant concepts in education.
- The students will be able to know and understand how educational aims are framed.
- They will also be able to comprehend the linkages between social institutions and education. Social change and its relationship with education will be understood.
- The students will develop analytical and critical thinking based on the themes and issues in education in a philosophical and social context.

Learning outcomes

The Learning Outcomes of this course are as follows:

- The learners are expected to know the concept of education and its interconnections with other relevant disciplines and its nature.
- The learners are expected to understand various theoretical concepts in education.
- The learners are expected to understand how the aims of education are formulated and how they are influenced by various socio-cultural forces/aspects.
- The learners will establish the importance of education for all human beings.
- The learners will develop critical thinking and analytical ability to evaluate written texts and formulate their response to reality.
- The learners will understand the role of ethics, morals and values in education.

SYLLABUS OF DSC- 1

Unit 1: Basic Ideas in Education

(20 Hours)

- Education: Its meaning, processes, purpose and aims; its liberal and interdisciplinary nature

- Major concepts in Education: Schooling and Education, Teaching, Training, Learning, Indoctrination, and Propaganda.
- Epistemological basis of education: Knowledge, Belief, Inquiry, Reason
- Ethics, values and ideals

Unit 2: Understanding Education and Society

(20 Hours)

- Education and Socialisation: Agencies of Socialisation—Home, Family, Community, School and Media.
- Culture and Education: Role of education in preservation, transformation, and promotion of Culture; culture and ideology.
- Constitutional Values: Equality, Freedom, Justice, Secularism, Human Rights
- Bases for formulating Aims of Education: With reference to the constitution and other socio-cultural forces in India.

Unit 3: Thinkers in Education

(20 Hours)

Each thinker is to be studied with reference to their perspectives on education

- Sri Aurobindo
- J. Krishnamurti
- John Dewey
- J.J. Rousseau
- Paulo Freire

Practicum/ Suggested Projects / Assignments (Any Two)

- Read the Position Paper titled 'Aims of Education' (NCF 2005 or any recent position paper) and present your understanding.
- Beginning with the Preamble of the Constitution of India, focus on the ideas of Justice, Liberty, Equality, and Secularism and present your understanding of these concepts and how education can help to achieve them.
- Identify any one aim of education and study the current practices of any school to understand how this aim is being realised.
- A detailed study of one educational thinker concerning his ideas on the nature of the child, teacher, and school and their relevance and challenges in the contemporary context.
- Reflective critical essay on one's socialisation with reference to home, school, community and media.

- Interview school teacher(s) and discuss their understanding of the meaning of education.

Note: Based on the above, the teacher may design other relevant projects/ assignments

Essential/ Recommended Readings

- Barrow, R., & Milburn G. (1986) *A critical dictionary of educational concepts: An appraisal of selected ideas and issues in educational theory and practice*. New York. (Concepts: Education; Schooling; Teaching; Ethics; Indoctrination; Knowledge; Learning.)
- Dewey, J. (1916). *Democracy and Education: An introduction to the philosophy of education*. New York: MacMillan.
- Freire, P. (2005). *Pedagogy of the oppressed*. Continuum.
- Gore, M.S., Desai, I. P., & Chitnis S. (1967). *Papers in Sociology of Education*. NCERT: New Delhi. Ch 1 pp 1-18; Ch 2 pp33-51; Ch 3 pp 52-74; Ch 5 pp91-106,111-126; Ch 6 pp 133-141.
- Jarvis, P (edited) (2002). *The Theory and Practice of Teaching* (2nd ed) Ch 4 P 39-51; Ch 17 P 237-247.
- Krishnamurti, J. *On Education*, Krishnamurti Foundation India
- Kumar, K. (2004). *What Is Worth Teaching?* India: Orient Blackswan.
- Noddings, N. (1995). *Philosophy of Education*. Westview Press
- Peters, R.S. (1966) *Ethics and Education*, Routledge, p.23-45.
- Rousseau, J. J. (1817). *Emile* (Vol. 2). A. Belin.
- Salamatullah (1979) *Education in the Social Context*. NCERT Ch 1 P 1-8; Ch 2 P 10-12; Sec. 11- Introduction Ch 3 P #0-32, 35-36, 38-40; Ch 4 P 63-74; Ch 5 P 83-85; Ch 9 & 10 P 167-185; Ch 12 P 194-204.
- Schofield, H., *The Philosophy of Education—An Introduction*. Unit -1 The Concept 'Values' P 205-227; The Concept 'Culture' P 107-119.
- Titus H., Smith, M. & Nolan, Richard T. (1975) *Living Issues in Philosophy*. Part 1 P 25-44; Part 2 Chapter 6 P 102-111.

Hindi

- Kumar, K. (1993). *Raj, Samaj aur Shiksha*. New Delhi: Raj Kamal Prakashan.
- Mittal, M.L. (2012). *Shiksha ke Samajshastriya Aadhar*. Delhi: Pearson. Ch 1 P 1-9; Ch 3 P 20-28; Ch 4 P 33-42; Ch 5 P 46-52; Ch 9&10 P 82-91 & 96-111; Ch 11 P 116-119; Ch 14 P 145-151; Ch 18 P 193-199; Ch 19 P ; Ch 20 P 214-224; Ch 23 P 245-254; Ch 24 P 258-282.
- Pandeya, R. S. (1994). *Shiksha Darshan*. Vinod Pustak Mandir, Agra. Ch 2 P 26-34; Ch 3 P 59-61; Ch 4 75-88; Ch 22 P 396-424.

- Saluja, C. K. (2004) *Shiksha –Ek Vivechan*. Ravi Books (Whole Book)

Suggestive Readings

- Bhogle, S. (1981). Socialisation among different cultures. In Sinha, D. *Socialisation of the Indian Child*. New Delhi: Concept Publishing Co.
- Brint, S. (1998). *Schools and Societies*. California: Pine Forge Press. (Chapters 1 and 5)
- Brubacher, John S. (1969) *Modern Philosophies of Education*. McGraw Hills. 4th edition. Ch -1 P7-9; Ch 5 P95-107; Ch 6 P 109-130; Ch 11 P 221-245; Ch 13 P 278-281; Ch 14 P 297-305; Ch 16 P 362-364.
- Cohen, B. (1969). *Educational Thought- An Introduction*. Britain: MacMillan.
- Dewey, J. (1915). *The School and Society*. USA: The University of Chicago Press.
- Dhankar, R. (2010). *Education in Emerging Indian Society*. New Delhi: APH Publishing Corporation.
- Dubey, S.C. (2001). *Indian Society*. New Delhi: NBT.
- Hamm, C. M. (1999). *Philosophical Issues in Education- An Introduction*. New York: The Falmer Press
- Kumar, K. (2007). Education and Culture: India's Quest for a Secular Policy. In Kumar, K. and J. Oesterheld (Ed) *Education and Social Change in South Asia*. Hyderabad: Orient Longman
- Magee, J. B. (1971). *Philosophical Analysis In Education*, Harper and Row Publishers Ch 1; Ch 4; Ch 5; Ch 6 .
- Freire P. (1992). *Pedagogy of Hope*. Continuum, London
- Peters, R. S. (2010). *The Concept of Education* (Eds.). London: Routledge and Kegan Paul.
- Saluja, C. K. (2004). *Shiksa, Samaj aur Vikas*. New Delhi: Kanishka Publication.
- Shermis, S. S. (1967). *Philosophical Foundations of Education*. Van Nostrand Reinhold Ch 1 P 1-21; Ch 2 P 26-36; Ch 5 P 111-117; Ch 7 P 160-161; Ch 9 P 205-213, P 222- 225.
- Shukla, S., and Kumar, K. (1987). *Sociological Perspectives in Education*. US: South Asia Books.

Teaching Learning Process:

The course will be taught through interactive pedagogic methods, such as classroom discussion, debates, film discussions, critical media analysis, collaborative learning tasks which enhance reading comprehension of core writings in the area and innovative projects. Reflective expression and learning will be encouraged.

Assessment Method

The assessment will be formative in nature and will include student participation. Individual and group tasks and assignments will be given. Summative evaluation will be done through an end-semester examination.

Keywords

Education, Concepts, Ideas

DISCIPLINE SPECIFIC CORE COURSE (DSC-2): Education in Contemporary India

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------------------|---------|-----------------------------------|----------|----------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical / Practice | | |
| Education in Contemporary India DSC 2 | 4 | 3 | 1 | - | Class XII Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- The course aims to acquaint students with modern education in contemporary India.
- It would familiarize them with key debates prevalent during the anti-colonial struggle and subsequent developments in post - independent India.
- The course will introduce education within the framework of constitutional principles and rights - based approach.

Learning outcomes

The Learning Outcomes of this course are as follows:

- The learners are expected to discuss the influence of colonialism on education and the changes that have unfolded.
- The learners will trace the modern education system in India and the expansion of women's education through the experiences of pioneering women.
- The learners will explain the alternatives posited by M.K. Gandhi and Rabindranath Tagore to colonial education.
- The learners will discuss the constitutional provisions relevant to education.
- The learners will exhibit an understanding of India's federal structure and democratic decision- making with reference to education.

SYLLABUS OF DSC-2

Unit 1: Colonialism and Modern Education

(24 Hours)

- Modern education in India; Impact of Colonialism on traditional systems of education; Emergence of modern school system and universities
- Women and modern education: educational endeavors of Rokeya Sultana, Pandita Ramabai, Jyotiba and Savitribai Phule
- Aims and purpose of colonial education and alternative visions with reference to Nai Taleem of Gandhi and My school of Tagore

Unit 2: Going to school and college in India

(16 Hours)

- Education and Development with reference to Human Development Index, Gender Development Index.
- Factors affecting access to different levels of education; the need for Right to Education.
- Challenges and issues in development of education: regional disparities, gender, religious, class and caste based variations in education based on an introduction to reading of data

Unit 3: Constitution and Education

(20 Hours)

- Importance of Constitutional values and their relevance to education
- Provisions in the Constitution relevant to education: Acts and Amendments; religious minority and linguistic minority Rights, Rights against discrimination, Right to equality, and Right to Education
- Education and the role of Center and State: Union, State and Concurrent lists, Panchayati Raj and local bodies
- Role of Judiciary, Legislature and Executive in education with specific reference to RTE Act 2009 (21A) and other amendments

Suggested Projects/ Assignments: Any two

- Review of Swami and Friends by RK Narayan with reference to education in colonial times.
- Essay on Gandhi's ideas of education through handicrafts.
- Review of Jyotirao Phule's Ghulamgiri with reference to education of the caste oppressed.

- Reflective essays/ presentations on student's own schooling and educational experiences
- Preparing educational status reports based on reading of data tables done in class for specific social groups.
- Documenting educational testimonies of family members/migrant workers/ children living on the streets/ child workers/homeless people.
- Case study of the Unnikrishnan Judgement 1993.
- Essay on Ambedkar's idea of education for social transformation.

Note: On the basis of the above, the teacher may design his/her own relevant assignments and projects.

Essential/recommended readings

- *Constitution of India: Preamble, Provisions of the Constitution of India having a bearing on Education* retrieved from <http://www.education.nic.in/constitutional.asp> and <http://education.nic.in/NatPol.asp>
- Ghosh S.C. (2009). *The History of Education in Modern India (1757-2007) - Third Edition*. Hyderabad: Orient Blackswan Private Limited. (Chapter 1- Introduction)
- Govinda, R and M, Bandyopadhyay. (2011). Access to Elementary Education: Analytical Overview (chapter 1) in R, Govinda, *Who Goes to School? Exploring Exclusion in Indian Education*, New Delhi: OUP.(for Disparities and access to elementary education: Issues of Class, gender, caste, region, religion, disability)
- Harriss, J. (2011). Education, Democracy and Development. In K N Panikkar and M Bhaskaran Nair (Eds.) *Emerging Trends in Higher Education in India: Concepts and Practices*. New Delhi: Pearson Education India. (pp3-11) Retrieved from http://www.swaraj.org/shikshantar/tagore_myschool.html
- Human Development Report retrieved from <http://hdr.undp.org/en/reports/>
- Kumar, K. (1991). *Political Agenda of Education: A Study of Colonialist and Nationalist ideas*. New Delhi, Sage Publications. Chapter 1 (Introduction: Dynamics of colonisation), Chapter 2 (Colonial Citizen as an Educational Ideal),
- Latest Selected Education Statistics, on MHRD website: <http://www.education.nic.in>

- *Buniyadi Shiksha, "The selected works of Gandhi". Vol. 6, The Voice of Truth . Retrieved from http://www.mkgandhi.org/views_edu/chap02.htm.*
- National Curriculum Framework (2005). New Delhi: NCERT. Chapter- 1 (for Constitutional values and the curriculum)
- What is RTE: A Handbook for Teachers (2017). New Delhi: NCERT. Chapter 1
- Raina, V. (2006), 'Where do children go after class VIII?', Seminar Volume 563 Retrieved from <http://www.indiaseminar.com>
- Tagore, R. (1933). *My School*. London: MacMillan retrieved from http://www.swaraj.org/shikshantar/tagore_myschool.html
- Chakravarti, U (2007), *Pandita Rama Bai : A life and a Time*. New Delhi: Critical Quest.
- रामपाल, अ (2008). शिक्षाकाअर्थऔरउद्देश्यहैमानवीयविकास, आजकेसवाल-शिक्षाऔरभूमंडलीकरण,नयीदिल्ली: शब्दसंघनप्रकाशन.

Suggestive readings

- Deshpande , G.P.,2012, Selected Writings of Jotirao Phule, Leftword Book
- Kumar, D., Bara, J., Khadria, N and Gayathri, R. (2013). *Education in Colonial India: Historical Insights*. Delhi, Manohar Books. (Introduction)
- Kumar, K. (1991). *Political Agenda of Education: A Study of Colonialist and Nationalist ideas*. New Delhi: Sage Publications. (Chapter 5- Pursuits of Equality, Chapter 7- Meanings of Progress)
- Kumar, K. (2007). Education and Culture: India's quest for a Secular Policy, In Kumar K and J Oesterheld (Eds.) *Education and Social Change in South Asia*, Hyderabad: Orient Longman.
- Kumar, K. (2008) 'Anusuchit Jatiyon aur Janjatiyon ka Shaekshik Anubhav' In Sureshchandra Shukla and Krishna Kumar (Eds.) *Shiksha ka Samajshastriye Sandarbh*. Delhi: Granth shipli (also available in English Sociological Perspectives in Education: A Reader)
- Natarajan, S. (2011). *A Gardener in the Wasteland: Jotiba Phule's Fight for Liberty*. New Delhi: Navayana Publishing
- Stalin, K. (2007). *India Untouched*. Drishti Media Collective (film).
- Vyam, D B., Natarajan, S. A. and Vyam, S. (2011). *Bhimayana: Experiences of Untouchability*. New Delhi: Navayana Publishing

Teaching Learning Process:

The course will be taught through interactive pedagogic methods, such as classroom discussion, debates, film discussions, critical media analysis, collaborative learning tasks which enhance reading comprehension of core writings in the area and innovative projects. Reflective expression and learning will be encouraged.

Assessment Method

Assessment will be formative in nature and will include student participation. Individual and group tasks and assignments will be given. Summative evaluation will be done through end- semester examination.

Key words

Education, Contemporary India

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category III

B.A. Programme Courses for Undergraduate Programme of study with Education discipline as one of the Core Disciplines as non-Major or Minor discipline)

DISCIPLINE SPECIFIC CORE COURSE – 1 (DSC-1): Basic Concepts and Ideas in Education

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Concepts and Ideas in Education DSC 1 | 4 | 3 | 1 | - | Class XII Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- This is a discipline course in education, which aims to provide the basics of education and the nature of education (Liberal).
- It establishes the interdisciplinary nature of education by acquainting the student with its interconnectedness with other disciplines: philosophy, psychology, sociology, economics and polity. It intends to clarify the significant concepts in education.
- The students will be able to know and understand how educational aims are framed.
- They will also be able to comprehend the linkages between social institutions and education. Social change and its relationship with education will be understood.
- The students will develop analytical and critical thinking based on the themes and issues in education in a philosophical and social context.

Learning outcomes

The Learning Outcomes of this course are as follows:

- The learners are expected to know the concept of education and its interconnections with other relevant disciplines and its nature.
- The learners are expected to understand various theoretical concepts in education.
- The learners are expected to understand how the aims of education are formulated and how they are influenced by various socio-cultural forces/aspects.
- The learners will establish the importance of education for all human beings.
- The learners will develop critical thinking and analytical ability to evaluate written texts and formulate their response to reality.
- The learners will understand the role of ethics, morals and values in education.

SYLLABUS OF DSC- 1

Unit 1: Basic Ideas in Education

(20 Hours)

- Education: Its meaning, processes, purpose and aims; its liberal and interdisciplinary nature
- Major concepts in Education: Schooling and Education, Teaching, Training, Learning, Indoctrination, and Propaganda.
- Epistemological basis of education: Knowledge, Belief, Inquiry, Reason
- Ethics, values and ideals

Unit 2: Understanding Education and Society

(20 Hours)

- Education and Socialisation: Agencies of Socialisation—Home, Family, Community, School and Media.
- Culture and Education: Role of education in preservation, transformation, and promotion of Culture; culture and ideology.
- Constitutional Values: Equality, Freedom, Justice, Secularism, Human Rights
- Bases for formulating Aims of Education: With reference to the constitution and other socio-cultural forces in India.

Unit 3: Thinkers in Education

(20 Hours)

Each thinker is to be studied with reference to their perspectives on education

- Sri Aurobindo
- J. Krishnamurti
- John Dewey
- J.J. Rousseau
- Paulo Freire

Practicum/ Suggested Projects / Assignments (Any Two)

- Read the Position Paper titled 'Aims of Education' (NCF 2005 or any recent position paper) and present your understanding.
- Beginning with the Preamble of the Constitution of India, focus on the ideas of Justice, Liberty, Equality, and Secularism and present your understanding of these concepts and how education can help to achieve them.
- Identify any one aim of education and study the current practices of any school to understand how this aim is being realised.
- A detailed study of one educational thinker concerning his ideas on the nature of the child, teacher, and school and their relevance and challenges in the contemporary context.
- Reflective critical essay on one's socialisation with reference to home, school, community and media.
- Interview school teacher(s) and discuss their understanding of the meaning of education.

Note: Based on the above, the teacher may design other relevant projects/ assignments

Essential/ Recommended Readings

- Barrow, R., & Milburn G. (1986) *A critical dictionary of educational concepts: An appraisal of selected ideas and issues in educational theory and practice*. New York. (Concepts: Education; Schooling; Teaching; Ethics; Indoctrination; Knowledge; Learning.)
- Dewey, J. (1916). *Democracy and Education: An introduction to the philosophy of education*. New York: MacMillan.
- Freire, P. (2005). *Pedagogy of the oppressed*. Continuum.
- Gore, M.S., Desai, I. P., & Chitnis S. (1967). *Papers in Sociology of Education*. NCERT: New Delhi. Ch 1 pp 1-18; Ch 2 pp33-51; Ch 3 pp 52-74; Ch 5 pp91-106,111-126; Ch 6 pp 133-141.
- Jarvis, P (edited) (2002). *The Theory and Practice of Teaching* (2nd ed) Ch 4 P 39-51; Ch 17 P 237-247.
- Krishnamurti, J. *On Education*, Krishnamurti Foundation India

- Kumar, K. (2004). *What Is Worth Teaching?* India: Orient Blackswan.
- Noddings, N. (1995). *Philosophy of Education*. Westview Press
- Peters, R.S. (1966) *Ethics and Education*, Routledge, p.23-45.
- Rousseau, J. J. (1817). *Emile* (Vol. 2). A. Belin.
- Salamatullah (1979) *Education in the Social Context*. NCERT Ch 1 P 1-8; Ch 2 P 10-12; Sec. 11- Introduction Ch 3 P #0-32, 35-36, 38-40; Ch 4 P 63-74; Ch 5 P 83-85; Ch 9 & 10 P 167-185; Ch 12 P 194-204.
- Schofield, H., *The Philosophy of Education—An Introduction*. Unit -1 The Concept 'Values' P 205-227; The Concept 'Culture' P 107-119.
- Titus H., Smith, M. & Nolan, Richard T. (1975) *Living Issues in Philosophy*. Part 1 P 25-44; Part 2 Chapter 6 P 102-111.

Hindi

- Kumar, K. (1993). *Raj, Samaj aur Shiksha*. New Delhi: Raj Kamal Prakashan.
- Mittal, M.L. (2012). *Shiksha ke Samajshastriya Aadhar*. Delhi: Pearson. Ch 1 P 1-9; Ch 3 P 20-28; Ch 4 P 33-42; Ch 5 P 46-52; Ch 9&10 P 82-91 & 96-111; Ch 11 P 116-119; Ch 14 P 145-151; Ch 18 P 193-199; Ch 19 P ; Ch 20 P 214-224; Ch 23 P 245-254; Ch 24 P 258-282.
- Pandeya, R. S. (1994). *Shiksha Darshan*. Vinod Pustak Mandir, Agra. Ch 2 P 26-34; Ch 3 P 59-61; Ch 4 75-88; Ch 22 P 396-424.
- Saluja, C. K. (2004) *Shiksha –Ek Vivechan*. Ravi Books (Whole Book)

Suggestive Readings

- Bhogle, S. (1981). Socialisation among different cultures. In Sinha, D. *Socialisation of the Indian Child*. New Delhi: Concept Publishing Co.
- Brint, S. (1998). *Schools and Societies*. California: Pine Forge Press. (Chapters 1 and 5)
- Brubacher, John S. (1969) *Modern Philosophies of Education*. McGraw Hills. 4th edition. Ch -1 P7-9; Ch 5 P95-107; Ch 6 P 109-130; Ch 11 P 221-245; Ch 13 P 278-281; Ch 14 P 297-305; Ch 16 P 362-364.
- Cohen, B. (1969). *Educational Thought- An Introduction*. Britain: MacMillan.
- Dewey, J. (1915). *The School and Society*. USA: The University of Chicago Press.
- Dhankar, R. (2010). *Education in Emerging Indian Society*. New Delhi: APH Publishing Corporation.
- Dubey, S.C. (2001). *Indian Society*. New Delhi: NBT.
- Hamm, C. M. (1999). *Philosophical Issues in Education- An Introduction*. New York: The Falmer Press

- Kumar, K. (2007). Education and Culture: India's Quest for a Secular Policy. In Kumar, K. and J. Oesterheld (Ed) *Education and Social Change in South Asia*. Hyderabad: Orient Longman
- Magee, J. B. (1971). Philosophical Analysis In Education, Harper and Row Publishers Ch 1; Ch 4; Ch 5; Ch 6 .
- Freire P. (1992). *Pedagogy of Hope*. Continuum, London
- Peters, R. S. (2010). *The Concept of Education* (Eds.). London: Routledge and Kegan Paul.
- Saluja, C. K. (2004). *Shiksha, Samaj aur Vikas*. New Delhi: Kanishka Publication.
- Shermis, S. S. (1967). *Philosophical Foundations of Education*. Van Nostrand Reinhold Ch 1 P 1-21; Ch 2 P 26-36; Ch 5 P 111-117; Ch 7 P 160-161; Ch 9 P 205-213, P 222- 225.
- Shukla, S., and Kumar, K. (1987). *Sociological Perspectives in Education*. US: South Asia Books.

Teaching Learning Process:

The course will be taught through interactive pedagogic methods, such as classroom discussion, debates, film discussions, critical media analysis, collaborative learning tasks which enhance reading comprehension of core writings in the area and innovative projects. Reflective expression and learning will be encouraged.

Assessment Method

The assessment will be formative in nature and will include student participation. Individual and group tasks and assignments will be given. Summative evaluation will be done through an end-semester examination.

Keywords

Education, Concepts, Ideas

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

CLUSTER INNOVATION CENTRE (CIC)

Category I

B.Tech. (Information Technology and Mathematical Innovations) in four years)

DISCIPLINE SPECIFIC CORE COURSE -1 (DSC-1): Single and Multivariable Calculus

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Single and Multivariable Calculus, DSC-1 | 04 | 3 | 0 | 1 | Class XII pass | Mathematics till XII |

Learning Objectives

Calculus is the most powerful tool in mathematics with widespread applications. The goal of this course is for students to gain proficiency in calculus computation. The course builds up on the topics, namely limits and continuity, differentiation and integration. These topics will use to solve application problem in a variety of fields such as physics, biology, business and economics.

Learning outcomes

- A good understanding of basic concepts of limits, derivatives, continuity, asymptotes, sequence and series, integrals, vector valued functions, partial differentiation, multiple integrals, etc.
- Able to find points of discontinuity for functions and classify them and understand the consequences of the intermediate value theorem for continuous functions.
- Able to solve applied problems using basic concepts of calculus.
- Able to explain why calculus is valuable in daily life.
- Create a project using the fundamental knowledge and principle of differential and integral calculus that helps to provide a hands-on experience of the same.
- Able to plot and manipulate the curves appropriately to make various real-life models like studying the projectile motion in firecrackers and the flow of water in fountain.
- Create animations of given problems using MATHEMATICA software.

SYLLABUS OF DSC-1

UNIT – I (12 Hours)

Limits and continuity

Limits at infinity - Indeterminate forms - Special limits involving exponential and logarithmic functions – Asymptotes - Graphs of function and its derivatives - Optimization problems - Fluency in differentiation - Concavity and inflexion points - Sequences, infinite series including Taylor approximations, Power series

UNIT – II (12 Hours)

Integration

Parametric equations of curves, arc length and surface area-Vector valued functions, differentiation and integration of vector valued functions

UNIT – III (12 Hours)

Functions of several variables

Level curves and surfaces - Limits and continuity of functions of two and three real variables - Partial differentiation (two variables), partial derivative as a slope, partial derivative as a rate, Maxima and Minima

UNIT – IV (9 Hours)

Multiple Integrals

Line, surface and volume integrals - Applications of Green's, Stokes and Gauss's Theorem.

Practical component – 30 Hours

Engineering Kitchen Activity (Symbolic Mathematics Software) [Laboratory]

- Introduction of basic functions
- Plotting of graphs of functions and their derivatives
- Manipulating the parameters in a graph
- Fitting of a curve
- Parametric plot of curves (Eg. Trochoid, Cycloid, Epicycloid)
- Obtaining surfaces of revolution of curves
- Plotting functions of two variables and their level curves
- Graphical illustration of limits for functions of two variables
- Innovation Project

Essential/recommended readings

1. *Calculus*, T. M. Apostol, Volumes 1 and 2, Wiley Eastern, 1980.
2. *Calculus - Single and Multivariable*, Hughes-Hallett et al., John-Wiley and Sons, 2003.
3. *Calculus*, James Stewart, Thomson, 2003.
4. *Calculus and Analytic Geometry*, G. B. Thomas and R. L. Finney, Addison-Wesley, 1998.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2): Discrete Mathematics and its Applications

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Discrete Mathematics and its Applications, DSC-2 | 04 | 3 | 1 | 0 | Class XII pass | Mathematics till XII |

Learning Objectives

The objective of this paper is to familiarize the student with basic concepts of logic and combinatorics. The aim of the paper is also to conceptualize the terminologies of graph theory, isomorphism, paths, cycles, circuits, graph coloring in various physical situations. Throughout this paper, students will be encouraged to develop their own algorithms and to analyze their computational complexities. Further, students may develop codes in any of the programming language for implementation of various algorithms.

Learning outcomes

After completing this course, student should be able to;

- Familiarize with basic concepts of logic
- Understand combinatorics principles: sets, permutations, combinations, recurrence relations etc.
- Conceptualize basic terminologies of graph theory, isomorphism, connectivity etc
- Understand concepts of paths, cycles, circuits and their applications in various fields
- Learn different shortest path algorithms, their computational complexities, implementation & programming
- Understand travelling salesman problem and its importance
- Understand the concept of graph coloring with real applications, planar graphs and algorithms
- Conceptualize trees, spanning trees and algorithms

SYLLABUS OF DSC-2

UNIT – I (16 Hours)

Logic and Combinatorics

Propositional Logic; Truth tables; Conditional statements; Logic and Bit operations; Propositional and logical equivalences; De Morgan's law; Applications of propositional logic. Sets, counting of sets - Permutation - Combination - Inclusion - exclusion - Generating functions - Recurrence relations

UNIT – II (16 Hours)

Graph Theory

Introduction - Basic terminologies - Graph representation - Euler relation Isomorphism- Connectivity - Cut vertices and edges - Covering - Euler and Hamilton paths and circuits

UNIT – III (16 Hours)

Applications of Graph Theory

Shortest Path Algorithms: Dijkstra's algorithm - Travelling salesman problem - Scheduling problems - Matching - Independent sets - Coloring - *Planar graph*: idea of region - Euler formula - Kuratowski theorem and application

UNIT – IV (12 Hours)

Tree

Basic terminology, traversal, Prefix code - Idea of data compression: Huffman code - Spanning tree - Minimum spanning tree: Prim's and Kruskal method.

Practical component – NIL

Essential/recommended readings

1. *Discrete and Combinatorial Mathematics*, Ralph Grimaldi, International Edition, 2003.
2. *Discrete Mathematical Structures*, Bernard Kolman, Robert Busby, Sharon Ross, International Edition, 2008.
3. *Discrete Mathematics and Its Applications*, K. H. Rosen, McGraw-Hill, 2008.

DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-3): Programming Fundamentals

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Programming Fundamentals, DSC-3 | 04 | 3 | 0 | 1 | Class XII pass | Mathematics till XII |

Learning Objectives

This course aims at providing the fundamental knowledge of programming. This course trains students to design code, write programs to instruct computer systems. In addition, the course objective is to give an understanding of real-world data, tasks and their representation in terms of programs.

Learning outcomes

After completing this course, students will have:

- understanding of Programming Concepts
- understanding of real-world applications development through programs
- understanding of independent data and collection of data and their organization

- understanding of memory allocation on runtime
- understanding of the program life cycle
- understanding of testing, coding guidelines, debugging and integration.

SYLLABUS OF DSC-3

UNIT – I (12 Hours)

Philosophy of programming and algorithm

Algorithm and its characteristics-Programming philosophy-Problem solving process-Programming language concepts-Program life cycle

UNIT – II (12 Hours)

Data representation and storage

Data definition structures such as types-constants-variables-Expressions such as arithmetic-logical-Precedence and associative rules-Control Structures-Functions-Variable scope

UNIT – III (9 Hours)

Multiple data item and processing

Preprocessing - Arrays, Structures – Strings - Pointers - Memory allocation

UNIT – IV (12 Hours)

Permanent storage and information handling

Files handling – Coding guidelines - testing & debugging-System testing & Integration

Practical component – 30 Hours

Engineering Kitchen Activity [Laboratory]

- User input and output programs having mathematical operations
- Pattern printing programs
- Programs for operators implementation
- Programs to implement function
- Programs to implement collection such as Array and String
- Programs to implement structure
- Innovation Project

Essential/recommended readings

1. *C++: The Complete Reference, Fourth Edition*, Herbertz Schildt, McGraw Hill, 2015.
2. *The C++ Programming Language, 4th Edition*, Bjarne Stroustrup, Addison-Wesley, 2013.
3. *Computer Science: A Structured Approach Using C++ 2nd Edition*, Behrouz A. Forouzan, Richard F. Gilberg, 2004
4. *The C Programming Language (Ansi C Version)*, Brian W. Kernighan, Dennis M. Ritchie, 1990.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES

NOTE: The core papers offered in the B.Tech. Course at CIC are Mathematics and Information Technology. Therefore, the students will choose GE offered by Physics and Chemistry faculty members of CIC.

GENERIC ELECTIVES (GE-1): Engineering Physics I

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department offering the course |
|-----------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|--------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| Engineering Physics I, GE-1 | 4 | 2 | 0 | 2 | Class XII pass | Science Till Class X | Physics Faculty of CIC |

Learning Objectives

This interactive learning module intends to provide basic theoretical understanding of Classical Mechanics with special emphasis on learning how these theoretical concepts are applied in designing mechanical and energy efficient systems etc.

Learning outcomes

- Understanding of physics principles in machines.
- Ability to conceptualize and build machines for real life use.
- Reverse engineering of mechanical devices and redesigning of such objects.
- Practical hands-on skills and understanding of simple engineering concepts derived from Mechanics.

SYLLABUS OF GE-1

UNIT – I (8 Hours)

Classical mechanics at work

Newtonian Mechanics (Kinematics & Dynamics) - Classical Mechanics at work - deconstructing mechanical systems - Universal Gravitation

UNIT – II (8 Hours)

Oscillation & Rotation

Oscillations - Inertial & Non-inertial frames - Central force motion - Understanding rotational dynamics

UNIT – III (8 Hours)

Machines

Efficiency and mechanical advantage in simple and complex machines: Levers, Pulley, Wheel & Axles, Gear systems, Hydraulic systems

UNIT – IV (6 Hours)

Energy Applications

Forms of energy and conversion between different forms of energy.

Practical component – 60 Hours

Engineering Kitchen Activities [Laboratory]

- Concepts of measurement, error, precision, accuracy. Concept of scale. Understanding Measuring Instruments
- Understanding oscillation using simple and compound pendulums
- Mechanics system with 850 Universal Interface – understanding Newtonian Dynamics
- Measurement of Moment of inertia from rotational dynamics
- Roller coaster dynamics – computer simulation and physical verification
- Coupled pendulum motion – using webcam and image analysis
- Ballistic Pendulum
- Understanding physics of complex machines – one implementation of “Tod-Phod-Jod” concept.
- Visualization in 3D and understand how things work – Building a CAD model in 3D to trace the flow of power, energy, information and material.
- Innovation project – designing instruments, machines, prototypes, applets

Essential/recommended readings

1. *Classical Mechanics*. Herbert Goldstein, Pearson Education, 2011.
2. *A Textbook of Machine Design*. R. S. Khurmi, and J. K. Gupta, S. Chand Publishing, 2005.

GENERIC ELECTIVES (GE-2): Engineering Chemistry I

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department offering the course |
|-------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|--------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| Engineering Chemistry I, GE-2 | 04 | 2 | 0 | 2 | Class XII pass | Science Till Class X | Chemistry Faculty of CIC |

Learning Objectives

This course is designed in such way, so that it provides a flavor of interesting, innovative, programmable and multifunctional materials of chemistry. Students will be exposed to a lot of applications of materials from various walks of our day to day life. Different forms of materials (Biomolecules, drugs, nanomaterials, environment friendly materials etc.) will be discussed at length. Innovative applications of these extremely important materials for drug development, electronic material development, biosensing (like glucose monitoring / disease detection) and environmental remediation etc. will be elaborated, so that students become more aware of the useful materials, which may further be designed, developed and utilized by society as a whole.

Learning outcomes

- Students will be exposed to important aspects related to biomolecules, which are one of the most important constituents of our life.
- Students will get basic knowledge about programmable and multifunctional materials, which are being used in various walks of life nowadays.
- Students will be aware of the basic and advanced forms of nanomaterials and their applications in different fields.
- Importance of green chemistry will be understood through related examples.
- Students will be able to understand the importance of designing drugs and their development through various concepts of marketing.

SYLLABUS OF GE-2

UNIT – I (8 Hours)

Programmable and Multifunctional Materials

Basic features and properties of Biomolecules (Carbohydrates, Proteins, Nucleic Acids and Fats) along with their applications in our day to day life as food, medicine, drugs, enzymes for catalysis etc.; Programmable and Multifunctional DNA-Based Materials for various Applications; Chemical and Biological sensors.

UNIT – II (8 Hours)

Nanochemistry and Nanoscience in our day to day life

Synthesis of Nanoparticles (Green and Chemical Methods; Bottom up and Bottom down approach), Various kinds of nanomaterials and nanostructures (Nanoparticles, Nanoclusters, Nanorods, Quantum dots, Nanotubes, Nanorobots etc.) and their applications in various fields like biomedical, electronics, and environment etc.

UNIT – III (8 Hours)

Green Chemistry and it's applications in various fields

Green Chemistry, it's principles and applications in day to day life, Twelve Principles of Green Chemistry; Use of green chemistry for producing environmentally benign chemical products for varied applications.

UNIT – IV (6 Hours)

Designing of Drugs and their development

Discovery and designing of drugs (from concept to marketing); Organic therapeutic agents used in various diseases, their management and economics in market.

Practical component –60 Hours

1. Three-dimensional modelling of DNA structure using various open access softwares available in public domain; Molecular Dynamics simulation of DNA (very simple and rudimentary coarse grained (CG) models, where DNA can be simulated as rods and proteins as ovoids/ spheres)
2. Understanding of principle, designing, fabrication and application of a nano-biosensor (Examples like glucose biosensors or diagnostic kits for COVID-19 etc. can be studied at length).
3. Simulation of a single nano-particle for understanding it's physical and chemical properties in solution
4. Practical assignments on computer-aided drug design/ In-silico drug designing using databases (like Pubchem, zinc database, drug bank etc.), ligand designing softwares, 2D and 3D structure making open access softwares like chem-draw, chimera, pymol etc. and ligand-target interaction (using various molecular docking softwares).

Essential/recommended readings

1. DNA Beyond Genes: From Data Storage and Computing to Nanobots, Nanomedicine, and Nanoelectronics by Vadim V. Demidov
2. Templated DNA Nanotechnology Functional DNA Nanoarchitectonics, 2019, by Govindraju, T.
3. DNA: The Secret of Life by James Watson
4. Structural DNA Nanotechnology by Nedrian Seeman
5. Nanotechnology: Importance and Applications, January 2019, by M.H. Fulekar
6. Scalable Green Chemistry: Case Studies from the Pharmaceutical Industry, by Stefan Koenig

BA (Hons.) Humanities & Social Sciences

Category II

(UG Courses for Undergraduate Programme of study with Humanities & Social Sciences discipline as one of the Core Disciplines)

DISCIPLINE SPECIFIC CORE COURSE -1 (DSC-01) –: Humanities & Social Sciences: Concepts & Scope

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Humanities & Social Sciences: Concepts & Scope (DSC-01) | 4 | 3 | 1 | 0 | Class XII pass | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

- Students will be exposed to fundamental and methodological issues in Humanities & Social Sciences.
- Students will be introduced to the expanse of the field of Humanities and Social Sciences.

Learning Outcomes

The Learning Outcomes of this course are as follows:

- The students will be able to appreciate the concepts of multidisciplinary, interdisciplinary and transdisciplinarity.

- The students will develop critical thinking with respect to identifying interlinkages between various disciplines of social sciences and humanities.
- The students will be able to apply a variety of disciplines to find a solution to social problems.

SYLLABUS OF DSC-1

UNIT – I: Concepts and Scope

(16 Hours)

- Understanding Humanities & Social Sciences
- Approaches to studying Humanities & Social Sciences
- Emergence & growth of Humanities and Social-sciences
- Multidisciplinarity, interdisciplinarity & transdisciplinarity – scope & impediments
- Knowledge creation- Subjectivity versus Objectivity

UNIT – II: Humanities & Social Sciences, perspectives of Cultural Studies

(16 Hours)

- Cultural Studies – Language and cultural studies
- Meaning formation and meaning creation
- Culture and identity; multiculturalism

UNIT – III: Understanding Religion

(12 Hours)

- Religion, culture & society – construction of religion
- Religion as an institution
- Religion & Secularism

UNIT – IV: Human Rights

(16 Hours)

- Concept of Human Rights; universalism vs relativism
- Universal Declaration of Human Rights 1948; Constitution of India (Part III-IV); Protection of Human Rights Act 1993
- Rights of Vulnerable Groups (children, women, elderly, PwD, other marginalised population)

Suggestive readings

- Allen F. Repko, William H. Newel & Rick Szostak (2012). Case Studies in Interdisciplinary Research. Sage Publications.
- Allen F. Repko (2008). Interdisciplinary Research: Process and Theory.

- Dennis J. Sporre (2011). Perceiving the Arts: An Introduction to the Humanities, 10th Edition.
- Frank J. Zulke & Jacqueline P. Kirley (2002). Through the Eyes of Social Sciences (6th ed). Waveland Press
- Hunt, E. F. & Colander, D. C. (2016). Social science: An introduction to the study of society (14th ed.). Boston: Pearson/Allyn and Bacon.
- Richard Paul Janaro & Thelma C. Altshuler (2011). The Art of Being Human: Humanities as a Technique for Living Person. Pearson Publication.
- Alvin Gouldner- coming crises of western sociology – last chapter is on reflexivity

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-02): Technology and Society

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Technology and Society (DSC-02) | 4 | 3 | 1 | 0 | Class XII pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To analyse the fundamental questions, concepts and development of technology.
- To explore the way technology works to shape human experience and wellbeing.
- To acquire the critical understanding of ethical and social implications of science and technology.

Learning Outcomes

The Learning Outcomes of this course are as follows:

- Students will be acquainted with the basic knowledge of the development of technology over time.
- Students will acquire the knowledge of technology society relationship.
- Students will be skilled to comment on the practical ethics in various aspects of technology-society interaction.

SYLLABUS OF DSC- 2

UNIT – I Concept and History of Technology (16 Hours)

- Meaning, Concept and Nature of Technology
- History of Science & Technology
- Technological Process - Invention, Innovation and Diffusion
- Technological Development and Progress
- Approaches to Technology
- Limits of Science & Technology

UNIT – II Technology and Social Change (12 Hours)

- Human-Technology Relationship
- Technology and Social Change
- Gender, Science and Technology
- Technology and Inequality
- Technology & Human Well-being
- Technology and Environmental Change

UNIT – III Philosophical and Ethical Implications of Technology (16 Hours)

- Philosophy of Technology - Humanities & Analytical Philosophies of Technology
- Technoethics: History and Development
- Current Issues: Cybercrimes, Privacy, Citizen Journalism
- Emerging Issues: Artificial Intelligence, Bioinformatics, Genetic Engineering, Nanotechnology,
- Virtual Worlds and Metaverse

UNIT – IV Alternate and Responsible Technologies (16 Hours)

- Technology and the Future of Humanity
- Technology for Sustainable Energy and Ecology
- Technology Policies
- Laws and Regulations

Suggestive readings (if any)

- Albert Borgmann. Technology and the Character of Contemporary Life. University of Chicago Press, 1984
- Andrew Feenberg. Questioning Technology. Routledge, 1999
- Bryan Bunch. The History of Science and Technology. Houghton Mifflin Company, 2004
- James Smith. Science and Technology for Development: Development Matters.

ZedBooks, 2009.

- Don Ihde. *Ironie Technics*. Automatic Press, 2008
- Jacques Ellul. *The Technological Society*. Vintage Books, 1904
- Neil Postman. *Technopoly: The Surrender of Culture to Technology*. Vintage Books, 1993
- Nick Bostrom & Milan M. Cirkovic. *Global Catastrophic Risks*. Oxford University Press, 2008
- Noah Yuval Harari. *Homo Deus: A Brief History of Tomorrow*. Vintage, 2016
- R.V.G. Menon. *Technology and Society*. Pearson, 2011
- Rocci Luppini. *Technoethics and the Evolving Knowledge Society*. Information Science Reference, 2010
- Rohan Dsouza. *Environment, Technology and Development*. Orient Blackswan, 2012.
- Sven Ove Hansson. *The Ethics of Technology: Methods and Approaches*. Rowman & Littlefield International, 2017.
- Val Dusek. *Philosophy of Technology: An Introduction*. Blackwell Publishing, 2006

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-03): Qualitative and Quantitative Social Inquiry

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Qualitative and Quantitative Social Inquiry (DSC-03) | 4 | 3 | 1 | 0 | Class XII pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To introduce students to the fundamentals of social science inquiry.
- To acquaint students with knowledge on undergraduate research.

Learning Outcomes

The Learning Outcomes of this course are as follows:

- Students will be able to examine issues for research in Humanities & Social Sciences.

- Students will acquire basic skills of research.
- Students will acquire skills of scientific communication.

SYLLABUS OF DSC- 03

UNIT – I: Examining issues in Humanities & Social Sciences (12 Hours)

Identifying areas to examine; sources of idea generation; arriving at an idea; social examination and ethical concerns; drafting of research project/proposal.

UNIT – II: Using data in social inquiry (16 Hours)

Descriptive and inferential statistics; Quantitative and qualitative statistical variables; Introduction to spreadsheet; Graphical presentation of data through frequency curve, histogram, bar graphs and pie chart.

UNIT – III: Collecting and analysing data (16 Hours)

Identification of appropriate sample in social inquiry; Understanding the need of a proper questionnaire to collect primary data; Constructing a questionnaire; Analysing the responses of a questionnaire graphically.

UNIT – IV: Presenting findings (16 Hours)

Discussing quantitative and qualitative findings; Report writing; Communicating findings - poster presentation, academic writing, seminar presentation, popular writing.

Suggestive readings (if any)

1. *Statistics for the Social Science*, R. Mark Sirkin, Sage Publishing, 2005.
2. *Applied Statistics for Social and Management Science*, Abdul Qauder Miah, Springer, 2016.
3. *Statistics Without Tears: An Introduction for Non-Mathematicians*, Derek Rowntree, Penguin Mathematics, 2018.
4. Few, Stephen (2012). *Show Me the Numbers. Designing Tables and Graphs to Enlighten* (Second Edition). Analytics Press.
5. Kieran Healey (2018). *Data Visualization: A Practical Introduction*
6. Gary King, Robert Keohane and Sidney Verba (1994). *Designing Social Inquiry: Scientific Inference in Qualitative Research*.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES

GENERIC ELECTIVES (GE-01A): Fundamentals of Cognition and Emotions

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Fundamentals of Cognition and Emotions (GE-01A) | 4 | 3 | 1 | 0 | Class XII pass | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

- The course is aimed at giving students a basic understanding of human behaviour and factors determining individual differences.
- The course will introduce students to the impact of culture on human behaviour.
- The course is aimed at strengthening critical executive function skills in students.

Learning Outcomes

The Learning Outcomes of this course are as follows:

- Students will develop insight on how behaviour functions and what influences behaviour.
- Students will develop more effective problem solving behaviour and decision making skills.
- Students will be able to negotiate the complexities of emotional development.

SYLLABUS OF GE-01A

UNIT – I: What is Human Behaviour?

(16 Hours)

- Defining Human Behaviour; Behaviour and Cognition, Behaviour and Affect and Behaviour and Action

- Genes, Evolution and Behaviour
- Measuring Human Behaviour
- Complexities of defining Human Behaviour
- Consciousness and Conscious Experience

UNIT – II: Learning and Behaviour

(12 Hours)

- Theories of Learning
- Culture, Learning and Behaviour

UNIT – III: Language and Thinking

(16 Hours)

- Functions, Properties and Production of Language
- Why do we think? Problem Solving & Decision Making

UNIT – IV: Emotions and Behaviour

(16 Hours)

- Characteristics of emotions - biology, cognition, affect & action
- Theories of Emotions
- Assessing emotions
- Culture and emotions

Essential/recommended readings

- Baron, R. & Misra.G. (2013). Psychology. New Delhi: Pearson.
- Cacioppo (2013). Discovering Psychology: The Science Of Mind, 1st Edition.USA: Cengage Learning.
- Ciccarelli, S. K., & Meyer, G. E. (2010). Psychology: South Asian Edition. NewDelhi: Pearson Education.
- Passer, M.W. & Smith, R.E. (2010). Psychology: The science of mind and Behaviour. New Delhi: Tata McGraw-Hill.
- Kalat, J. W. (2011). Introduction to Psychology (9th Ed). USA: Cengage Learning

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-01B): Fundamentals of Tourism

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department offering the course |
|----------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|--------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| Fundamentals of Tourism (GE-01B) | 4 | 3 | 1 | 0 | Class XII Pass | Nil | Faculty of History of CIC |

Learning Objectives

The Learning Objectives of this course are as follows:

- To acquaint students with the basics of tourism industry.
- To expose students to the wealth of natural and cultural tourism resources of India.
- To encourage students to find innovative ways for the designing and promotion of sustainable tourism.

Learning Outcomes

The Learning Outcomes of this course are as follows:

- Students will be able to appreciate the relevance and role of tourism.
- Students will gain awareness of the rich natural and cultural wealth of India.
- Students will be skilled to design new tourism products to tap the untapped tourism capacity of the country.

SYLLABUS OF GE-01B

UNIT – I: Understanding Tourism

(16 Hours)

Definitions and Concept of Tourism; History and Development; Forms and Types of Tourism; Tourism Purposes and Motivations

UNIT – II: Tourism Resources and Products (16 Hours)
A's of Tourism; Characteristics and Types of Tourism Products; Natural and Cultural Tourism Products; Tourism Resources and Products of India

UNIT – III: Tourism Impacts (12 Hours)
Economic Impacts; Socio-cultural and Political Impacts; Environmental Impacts

UNIT – IV: Towards Sustainable Tourism Practices (16 Hours)
Principles and Dimensions of Sustainable Tourism; Tourism Planning and Policies; New Tourism Policy of India; Sustainable Entrepreneurship in Tourism

Practical component (if any) - NIL

Essential/recommended Readings

- Michael Luck, Peter Robinson, and Stephen L. J. Smith (2013). Tourism, CABI Publishing
- Howell, David W. (1989). Passport: An Introduction to the Travel and Tourism, Ohio.
- WTO (2011). Handbook on Tourism Product Development
- Chopra, Suhita. (1991). Tourism Development in India, Ashish Publishing House, New Delhi.
- Ministry of Tourism, Govt. of India. India Tourism Statistics. 2014
- IGNOU Material for Tourism Studies (TS-1, TS-3, TS-6)
- Ratten, V. et.al. (2020), Tourism Innovation: Technology, Sustainability and Creativity, Routledge
- Eric Zeulow (2015). A History of Modern Tourism. Red Globe Press

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-01C): Communication: Concepts and Processes

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department offering the Course |
|--|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|---|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| Communication: Concepts and Processes (GE-01C) | 4 | 3 | 1 | 0 | Class XII Pass | Nil | Faculty of Media & Communication of CIC |

Learning Objectives

The Learning Objectives of this course are as follows:

- To help students understand the relation between thought, language and communication.
- To encourage students to identify the construction and deconstruction of meaning in the process of communication.
- To motivate students to recognise the importance of different elements of a communication process.
- To let students discover and employ different forms of communication.

Learning Outcomes

The Learning Outcomes of this course are as follows:

- The students will be able to identify and appreciate the nature of the relationship between thought, language and communication.
- The students will be able to critically engage with the construction and deconstruction of meaning in the process of communication.
- The students will be able to apply different forms of communication in their everyday personal and professional context.

SYLLABUS OF GE-01C

UNIT – I: Thought and Language

(16 Hours)

Thought and cognitive process of language

Universal Grammar and basic structure of communication
Language as a system of signs

UNIT – II: Interpretation, Language and Communication

(12 Hours)

Human thought process and the construction of meaning
Deconstruction of meaning

Basic argumentation and its implications

UNIT – III: Elements and Process of Communication

(16 Hours)

Source, Message, Sender, Receiver, Context, Environment

Noise - Linguistic, Geographical, Psychological, Cultural, Ideological

UNIT – IV Forms of Communication

(16 Hours)

Verbal and Non-verbal communication

Intrapersonal communication

Interpersonal communication

Group communication

Mass Communication

Practical component (if any) - NIL

Essential/recommended readings -

NIL

Suggestive readings

- Vakyapadiya by K A Subramania Iyer
- Syntactic Structures by Noam Chomsky
- General Linguistics by Ferdinand de Saussure

- Levi Straus, Tristes Tropiques
- The death of the Author- Ronald Barth
- Of Grammatology by Jacques Derrida
- Media and Communication by Paddy Scannel
- Communication of Innovations: A Journey with Ev Rogers Edited by ArvindSinghal and James W Dearing
- Nonverbal Communication: An Applied Approach by Jonathan M Bowman
- Communication in Everyday Life: The Basic Course Edition With Public Speaking

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

8. Amendment to Appendix -II-A to the Ordinance V (2-A) of the Ordinances of the University vide EC Resolution 18-1-7 dated 18.08.2022 regarding Syllabi of 1st Semester of Department under Faculty of Music & Fine Arts

Add the following:

Syllabi of Semester-I of the Department of Music under Faculty of Music & Fine Arts based on Under Graduate Curriculum Framework -2022 to be implemented from the Academic Year 2022-23.

Faculty of Music & Fine Arts
B.A. (Hons.) Hindustani Music
Vocal/Instrumental (Sitar/Sarod/Guitar/Violin/Santoor)
Category-I

DSC – 1: GENERAL THEORY

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility Criteria | Pre-requisite of the course |
|-----------------------------|---------|--------------------------------------|---|---|-------------------------|--------------------------------|
| | | L | T | P | | |
| GENERAL THEORY (101) | 4 | 4 | 0 | 0 | Class XII Pass | Nil |

Learning Objectives:

- To initiate a relative beginner into the world of Hindustani music, where he is made aware of the rich cultural heritage of India, that Indian classical music is.
- To teach him the very basics of Indian music, such as sound, notes, scales, tempo, rhythm etc., so that his foundation can be made strong.
- To discuss in detail, the two notation systems of Hindustani music, that are essential for reading a composition.

Learning Outcomes:

- The student will come to know what the basic terminologies of Indian music are, which will help him in the proper understanding of not just Hindustani music, but also Indian music as a whole. Having understood the basic concepts like Laya (tempo), Tala (rhythmic cycle), Alap (tonal elaborations), the student will be on course to becoming a performing artiste in Hindustani music.
- The student will develop the ability to read and write the notations of compositions according to a well-defined notion system, which in turn, will help him in learning new compositions by various composers of Hindustani music.
- He/she will grasp the various theoretical aspects of the prescribed ragas, like how it arises, what are the general grammatical rules that govern the ragas in this course, etc.
- He/she will come to understand the concept of Tala and the use of various talas in Hindustani music, especially ragas.

Syllabus:

Unit - I (12 Hours)

- Sangeet
- Nada and its properties
- Shruti
- Svara
- Saptak
- Raga
- Vadi, Samvadi, Anuvadi, Vivadi
- Thata
- Jati

Unit - II (8 Hours)

The concept of Alap in a Hindustani raga -

- In vocal forms (Dhrupad-Dhamar and Khayal)
- In instrumental music

Unit - III (8 Hours)

- Tala - Theka, Sam, Tali, Khali, Vibhag, Matra

- Laya – Vilambit, Madhya & Drut

Unit - IV (8 Hours)

- Varna
- Alankar
- Tan
- Gamak

Unit - V (8 Hours)

Knowledge of the notation systems of the following musicians –

- Pt. Vishnu Narayan Bhatkhande
- Pt. Vishnu Digambar Paluskar

Unit - VI (8 Hours)

- Vibration
- Forced Vibration
- Free Vibration
- Equal tempered scale
- Just Intonation

Unit - VII (4 Hours)

- Study of the following talas in detail – Teentala, Ektala & Dadra
- Study of the application of talas in musical forms
- Ability to write the notation of the talas in dugun, tigung and chaugun

Unit - VIII (4 Hours)

- Study of the ragas of this semester – Bhairav, Alhaiya Bilawal, Yaman & Bhupali
- Comparative study of the ragas with each other
- Ability to write the notation of compositions in prescribed ragas

Suggestive readings:

- Paranjape, S.S. (1964) Bhartiya Sangeet ka Itihas, Varanasi, U.P., Chaukhamba Surbharti Prakashan

- Paranjape, S.S. (1972) Sangeet Bodh, Bhopal, M.P., Madhya Pradesh Hindi Granth Academy
- Bhathkande, V.N. (1975) Bhathkande Sangeet Shastra, part 1, Hathras, UP, Sangeet Karyalaya
- Bhathkande, V.N. (1969) Bhathkande Sangeet Shastra, part- 2, Hathras, UP, Sangeet Karyalaya
- Prajnananda, Swami (1963) History of Indian Music, vol. 1, Kolkata, WB, Swami Adyananda Ram Krishna Math.
- Prajnananda, Swami (1981) Historical study of Indian Music, New Delhi, Delhi, Munshiram Monoharlal Publishers Pvt. Ltd.
- Singh, Lalit Kishore (1999) Dhvani aur Sangeet, New Delhi, Delhi, Bhartiya Gyan Peeth
- Rajurkar, Govind Rao (1984) Sangeet sastra parag, Jaipur, Rajasthan, Hindi granth Academy
- Sharma, Swatantra (1996) Fundamental of Indian Music, Delhi, Pratibha Prakashan
- Madan, Pannalal (1991) Sangeet Shastra vigyan, Chandigarh, HR, Abhishak Publication
- Charavarty, Indrani (1988) Sangeet Manjusha, Delhi, Mittal Publication

DSC – 2: Stage Performance

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility Criteria | Pre-requisite of the course |
|----------------------------|---------|-----------------------------------|---|---|----------------------|-----------------------------|
| | | L | T | P | | |
| STAGE PERFORMANCE (102) | 4 | 0 | 0 | 4 | Class XII Pass | Nil |

Learning Objectives:

- To teach the student the fundamentals of singing and playing, such as voice production, holding of the Sitar and the correct placement of the hands on the instrument, the right posture for sitting, breathing exercises to enhance lung capacity for singing etc.
- To demonstrate tonal exercises, such as *palta-s* and *alankar-s*, vital for both singing and playing.
- To initiate his training in the realm of performance, with the most basic of all ragas, like Yaman and Bhairav.

Learning Outcomes:

- The student will become well-versed with the techniques of singing or playing, as the case may be.

- The student will be able to achieve dexterity of the voice (singing) and hand (playing), through regular practice of the tonal exercises at home.
- The students will know how to tune their respective instruments – Tanpura for vocal students and Sitar, Sarod etc. for instrumental students.
- Having learnt the Notation system in the Theory, the student will be able to read and learn new compositions in the prescribed ragas.
- He will grasp the various grammatical aspects of the prescribed ragas, like how they arise, what are the respective rules that govern these ragas, how do the notes move in the ragas, what are the performing times of the ragas etc.
- He will learn the art of singing or playing, especially with regard to having the Tabla as an accompanying instrument.
- He will possess a fairly good idea of how a raga is to be performed after learning the basic ragas.

Syllabus:

Prescribed Ragas:

1. Bhairav
2. Alhaiya Bilawal
3. Yaman
4. Bhupali

Unit I – Vocal Music (60 Hours)

- A detailed performance of Vilambit and Drut Khayal with gayaki to be presented in any one raga
- Presentation of one semi classical, devotional or folk song

Unit II – Instrumental Music (60 Hours)

- A detailed performance of Maseetkhani and Razakhani Gats with elaboration to be presented in any one raga
- Presentation of a dhun, devotional or light music composition

Note: Students of Vocal and Instrumental music will have to prepare according to the requirements of their respective Units.

Suggestive readings:

- Bhatkhande, V.N. (2000) Kramik Pustak Malika, Part-I, Hathras, U.P., Sangeet Karyalaya
- Bhatkhande, V.N. (2000) Kramik Pustak Malika, Part-II, Hathras, U.P., Sangeet Karyalaya

- Patwardhan, V.R., (2001) Raga Vigyan, Part-I, Pune, MH, Dr. Madhusudhan Patwardhan
- Patwardhan, V.R., (1999) Raga Vigyan, Part-II, Pune, MH Dr. Madhusudhan Patwardhan
- Patwardhan, V.R., (1967) Raag Vigyan, Part-III, Pune, MH, Dr. Madhusudhan Patwardhan
- Mishra, Lalmani, (1979) Tantrinada, Kanpur, U.P. Sahitya Ratnalaya
- Aggarwal, V.K. and Nagpal, Alka (2004) Sitar and its Compositions, Part-I-II, Delhi, Sanjay Prakashan
- Mahajan, Anupam (2003) Compositions in Instrumental Music (Traditional and New Creation), Delhi, Sanjay Prakashan

DSC – 3: Practical Assessment

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility Criteria | Pre-requisite of the course |
|--------------------------------------|---------|--------------------------------------|---|---|-------------------------|--------------------------------|
| | | L | T | P | | |
| PRACTICAL ASSESSMENT (103) | 4 | 0 | 0 | 4 | Class XII Pass | Nil |

*Practical assessment is a viva paper.

Learning Objectives:

- To assess the understanding of the student regarding the grammatical rules of the prescribed ragas
- To make an assessment of the student regarding his ability to perform different compositions in different talas
- To assess the student on his ability to sing Khayal, Dhrupad and Dhamar in different ragas

Learning Outcome:

- The student shall be able to demonstrate the various aspects of a raga with regard to its various rules and regulations
- The student shall be able to sing Khayal, Dhrupad and Dhamar in different ragas
- The student shall be able to perform a raga in different talas
- The student shall be able to demonstrate his ability to tune his instrument

Syllabus:

Prescribed Ragas:

1. Bhairav

2. Alhaiya Bilawal
3. Yaman
4. Bhupali

Unit I – Vocal Music (60 Hours)

- Vilambit and Drut Khayal with gayaki in all the prescribed ragas mentioned above
- Dhrupad-Dhamar or Sadra composition in each of the prescribed ragas with Alap, Layakari & Upaj
- Knowledge and demonstration of the following talas - Teentala, Ektala & Dadra
- Basic knowledge of Tanpura and its tuning

Unit II – Instrumental Music (60 Hours)

- Maseetkhani and Razakhani gat with elaboration in all the ragas prescribed above
- Knowledge and demonstration of the following talas - Teentala, Ektala & Dadra
- Basic knowledge of the student's respective instrument and its tuning

Note: Students of Vocal and Instrumental music will have to prepare according to the requirements of their respective Units.

Suggestive readings:

- Bhatkhande, V.N. (2000) Kramik Pustak Malika, Part-I, Hathras, U.P., Sangeet Karyalaya
- Bhatkhande, V.N. (2000) Kramik Pustak Malika, Part-II, Hathras, U.P., Sangeet Karyalaya
- Patwardhan, V.R., (2001) Raga Vigyan, Part-I, Pune, MH, Dr. Madhusudhan Patwardhan
- Patwardhan, V.R., (1999) Raga Vigyan, Part-II, Pune, MH Dr. Madhusudhan Patwardhan
- Patwardhan, V.R., (1967) Raag Vigyan, Part-III, Pune, MH, Dr. Madhusudhan Patwardhan
- Mishra, Lalmani, (1979) Tantrinada, Kanpur, U.P. Sahitya Ratnalaya
- Aggarwal, V.K. and Nagpal, Alka (2004) Sitar and its Compositions, Part-I-II, Delhi, Sanjay Prakashan
- Mahajan, Anupam (2003) Compositions in Instrumental Music (Traditional and New Creation), Delhi, Sanjay Prakashan

**B. A. (Hons.) Music – Karnatak Music
(Vocal & Instrumental- Veena/Violin)**

Category-I

DSC – 1: GENERAL THEORY

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility Criteria | Pre-requisite of the course |
|-----------------------------|---------|--------------------------------------|---|---|-------------------------|--------------------------------|
| | | L | T | P | | |
| GENERAL THEORY (101) | 4 | 4 | 0 | 0 | Class XII Pass | Nil |

Learning Objectives:

- Education plays a significant role in building the nation. There are quite a large number of highly regarded educational institutions, engaged in imparting education in different fields in our country. Majority of them have entered recently into semester system to match with international educational standards. However, our present education system is churning out youth, who have to compete locally, regionally, nationally as well as globally. The present alarming situation necessitates transformation and/or redesigning of system, not only by introducing innovations but developing “learner-centric approach. They are focused on the overall development of the student both academically and professionally.
- The present under-graduate course in Karnatak Music is designed in such a way that, after going through the entire course of study, candidates will have a consolidated knowledge in the subject that takes them ahead further to upgrade their knowledge.
- The holistic approach in tutoring makes them motivated and proficient in both practice as well as theory of Karnatak Music.

Learning Outcomes:

- Develop the ability to define some musical concepts, describe the characteristic features of ragas,
- Gain knowledge about the rudiments of Western Classical Music and contributions of prominent composers of Karnatak music.
- Understanding of the classification of musical instruments, constructions and its playing techniques.

Syllabus:

Unit I (8 Hours)

Definition and brief explanation of

- Nada – Ahata and Anahata Nada, Varieties in Ahata Nada
- Sruti – Nyuna, Pramana & Purna sruti
- Swara – Prakriti and Vikritiswaras, Swarasthanas,
- Vadi, Samvadi, Anuvadi, Vivadi
- Tala, Laya, Kaalapramana

Unit II (12 Hours)

Raga Lakshanas of prescribed ragas.

- Sankarabharanam,
- Mohanam
- Bilahari
- Arabhi
- Pantuvarali
- Kalyani
- Kedaragoula
- Vasantha
- Anandabhairavi

Unit III (8 Hours)

Raga classification –

- Janaka, Janya system,
- Varja & Vakra,
- Bhashanga & Upanga,
- Panchamantya, Dhaivatantya, & Nishaadantya

Unit IV (8 Hours)

- Scheme of 35 talas, Chapu tala and It's varieties, Shadangas

Unit V (4 Hours)

- Introduction to notation,
- Melody
- Polyphony

- Harmony

Unit VI (12 Hours)

- Life and contribution of Musical Trinity

Unit VII (8 Hours)

- Classification of musical instruments in general
- Construction, tuning and playing technique of Tambura/Veena/Violin.

Suggestive readings:

- Sambamoorthy, P. Prof. (Vol 3, 1971), A dictionary of South Indian Music, Madras, Indian Music Publishing House
- Sambamoorthy, P. Prof. (Vol. 2, 1982), South Indian Music, Madras, Indian Music Publishing House, Page No 19
- Sambamoorthy, P. Prof. (Vol. 3, 1964), South Indian Music, Madras, Indian Music Publishing House, Page No. 105-107
- Raga Classification: Page No. 1-18 Books-III, Book II Page No.416, Book-II page 138 to 152
- Sambamoorthy, P. Prof. (1956), Sruti Vadyas, New Delhi, All India Handicrafts Board, Page No. 52 to 89
- Sambamoorthy, P. Prof. (1970), Great Composers, Madras, Indian Book Publishing House, Page No. 28 to 35, 66 to 94, 126 to 153
- Bhagyalekshmy, Dr. S. (1990), Ragas in Carnatic Music, Trivandrum, CBH Publications, Page No. 81 to 365
- Subba Rao, B. (Vol 1, 1956) Raga Nidhi, Poona, Pandit Veenayak Rao Patwardhan
- Subba Rao, B. (Vol 2, 1993) Raga Nidhi, Madras, The Music Academy
- Subba Rao, B. (Vol 3, 1993) Raga Nidhi, Madras, The Music Academy
- Subba Rao, B. (Vol 4, 1993) Raga Nidhi, Madras, The Music Academy
- Kuppuswamy, Gowry Dr. (1990), Textbook of Comparative Music, Trivandrum, CBH Publications (Page 88 to 110)
- Popley, H.A., (1981) The Music of India, New Delhi, Award Page 98 to 124

DSC – 2: Stage Performance

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility Criteria | Pre-requisite of the course |
|----------------------------|---------|-----------------------------------|---|---|----------------------|-----------------------------|
| | | L | T | P | | |
| STAGE PERFORMANCE (102) | 4 | 0 | 0 | 4 | Class XII Pass | Nil |

Learning Objectives:

- The main focus of the course is to develop an aptitude towards the classical subject opted and inculcate the abilities to maintain the classicism in the art along with well approved principles.

Learning Outcomes:

- Students will develop the ability to perform simple Varnams in two degrees of speed and compositions of Prominent composers in the prescribed ragas
- They will be focused on the principles of performance

Syllabus:

Prescribed Ragas,

- Sankarabharanam,
- Mohanam
- Bilahari
- Arabhi
- Pantuvarali
- Kalyani
- Kedaragoula
- Vasantha
- Anandabhairavi

Unit I (32 Hours)

- Simple Varnams in 2 degrees of speed

Unit II (88 Hours)

- 3 kritis of Tyagaraja
- 2 Kritis of Muthuswamy Dikshitar
- 1 kriti each of
 - Shyama shastri
 - Subbaraya Shastri
 - Swati Tirunal
 - Patnam Subramanya Iyer.

Suggestive readings:

- PanchapakesaIyer, A.S. (2002), Ganamrutha Varna Malika, Chennai, Karnatic Music Book Centre • Kriti Mani Malai - T K Govinda Rao.

DSC – 3: PRACTICAL ASSESSMENT

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility Criteria | Pre-requisite of the course |
|--------------------------------------|---------|--------------------------------------|---|---|-------------------------|--------------------------------|
| | | L | T | P | | |
| PRACTICAL ASSESSMENT (103) | 4 | 0 | 0 | 4 | Class XII Pass | Nil |

*Practical assessment is a viva paper.

Course Objectives:

- The main focus of the course is to develop an aptitude towards the classical subject opted and inculcate the abilities to maintain the classicism in the art along with well approved principles.

Learning Outcome:

- Students will develop the ability to perform simple Varnams in two degrees of speed and compositions of Prominent composers in the prescribed ragas
- They will be focused on the principles of performance.

Syllabus:

Prescribed Ragas

- Sankarabharanam
- Mohanam
- Bilahari
- Arabhi
- Pantuvarali
- Kalyani
- Kedaragoula
- Vasantha
- Anandabhairavi

Unit I (32 Hours)

- Simple Varnams in 2 degrees of speed

Unit II (88 Hours)

- 3 kritis of Tyagaraja
- 2 Kritis of MuthuswamyDikshitar
- 1 kriti each of
 - Syama Shastri
 - Subbaraya Shastri
 - Swati Tirunal
 - Patnam Subramanya Iyer.

Suggestive readings:

- PanchapakesaIyer, A.S. (2002), Ganamrutha Varna Malika, Chennai, Karnatic Music Book Centre • Kriti Mani Malai - T K Govinda Rao.

**B.A. (Hons.) Music - Percussion Music
(Tabla/Pakhawaj)**

DSC – 1: GENERAL TERMINOLOGY

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility Criteria | Pre-requisite of the course |
|-------------------------------------|---------|--------------------------------------|---|---|----------------------|--------------------------------|
| | | L | T | P | | |
| GENERAL TERMINOLOGY (101) | 4 | 4 | 0 | 0 | Class XII Pass | Nil |

Learning Objectives:

The main focus of the course is to establish a better understanding of the Percussion Music-Tabla/Pakhawaj to the students of the B.A. (Hons.). Therefore, the course is more practically inclined along with relevant theory for achieving better understanding. This helps the students acquire theoretical and practical skills and idea about the chronological sequence of Tabla/Pakhawaj Playing, thus giving them a holistic approach in Percussion Music-Tabla/Pakhawaj. A project work helps gaining in-depth study on the chosen topic. This enhances the student's skill to face the challenges at his work place too.

Learning Outcomes:

- The student study about the general aspects of Percussion music
- Student understands the basic terminologies of Indian music
- Student learns to write the practical compositions according to the Notation system
- Student studies about the theoretical aspects of Talas

Syllabus:

Unit – I (8 Hours)

- Sangeet
- Laya
- Matra
- Tali
- Khali
- Vibhag
- Sam
- Avartan

- Tala

Unit – II (12 Hours)

- Peshkar
- Kayada
- Palta
- Rela
- Tihai
- Uthan
- Chakradar
- Farmaishi
- Paran
- Gat
- Dupalli
- Tripalli
- Choupalli
- Khali - Bhari ki Gat

Unit – III (8 Hours)

- Naad
- Swar
- Shruti
- Saptak
- Raga
- Alankar
- Andolan
- Meend
- Ghaseet
- Krintan

Unit – IV (8 Hours)

- Pitch
- Intensity
- Timbre
- Vibration
- Frequency

Unit – V (8 Hours)

- Classification of Instruments
- Avanaddha vadya
- Brief structural knowledge of Tabla & Pakhawaj.

Unit – VI (12 Hours)

Brief introduction of following instruments:

- Mridangam
- Dholak
- Khanjari
- Nakkara
- Rudra Veena
- Tanpura
- Sitar
- Sarod
- Sarangi
- Bansuri
- Sahnai.

Unit – VII (4 Hours)

- Study of V.N. Bhathkhande Tala Notation System.
- Theory book prepared for prescribed unit.

Suggested readings:

- Mishra, Pt. Chhote Lal (2004) Taal Prasoon, Kanishka Publishers, New Delhi
- Kumar, Dr. Ajay, Banaras Gharane Ke Pravartak Pandit Ramshai ji ki Tabla Vadan Parampra (2022), Kanishka Publishers, Delhi
- Shivpuji, Gurunath (1988) Laya Shastra, M.P. Hindi Granth Academy, Bhopal
- Pathak, Jadish Narayan (1967) Sangeet Shastra Praveen, R. Pathak, Allahabad
- Shrivastava, Girish Chandra (1999) Taal Parichay, Bhag - I, Rubi Prakashan, Allahabad
- Mishra, Dr. Lalmani, (2002) Bhartiye Sangeet Vadya, Bhartiye Gyanpeeth, New Delhi
- Kasliwal Suneera (2001) Classical Musical Instruments, Rupa & Co. New Delhi

DSC – 2: STAGE PERFORMANCE

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility Criteria | Pre-requisite of the course |
|----------------------------|---------|--------------------------------------|---|---|----------------------|--------------------------------|
| | | L | T | P | | |
| STAGE PERFORMANCE (102) | 4 | 0 | 0 | 4 | Class XII Pass | Nil |

Learning Objectives:

- To teach the student the fundamentals of Tabla/Pakhawaj playing, such as voice production, correct holding and placement of hands on the instrument.
- To demonstrate systematically the solo playing order of Tabla/Pakhawaj.
- To initiate his training in the realm of performance, with the most basic of all talas like Teentaal, Jhaptaal, Dhamar and Chautala.

Learning Outcomes:

- The student is able to give a practical demonstration of the prescribed Talas.
- Student is able to demonstrate various aspects of Talas and their differentiation.

Syllabus:**TABLA****Study of Prescribed Talas : Unit-I (16 Hours)**

- Teentala
- Jhaptala
- Ektaala
- Chautala
- Keharwa
- Dadra

Unit – I (40 Hours)

- Solo performance of 10 minutes in Teentala with following:
- Uthan/ Peshkar
- Kayada
- Baant
- Chakradar Tukra
- Paran

Unit – II (40 Hours)

- One Chakradar Uthan
- Two advance Kayada with four Paltas and Tihai in Teentala
- One Baant with four Paltas and Tihai in Teentala.
- Two Sadharan Tukra,
- Two Chakradar Tukra
- One Paran in Teentala.

Unit – III (8 Hours)

- Variation of Theka in Teentala.

Unit – IV (16 Hours)

- Basic Knowledge of tuning of the Instrument (Tabla).
- Notation book to be prepared for compositions writing.

PAKHAWAJ

Study of Prescribed Talas : Unit-1A (16 Hours):

- Chautala
- Dhamar
- Sooltal
- Tevra
- Ektala
- Jhaptala

Unit – IIA (40 Hours)

- Solo performance of 10 minutes in Chautala with following:
- Theke ka Prakar
- Stuti Paran
- Rela
- Paran
- Chakradar
- Tihai

Unit – IIIA (8 Hours)

- Knowledge of different Uthan and Tihai (1,3,4,7,9,11).

Unit – IVA (8 Hours)

- Varieties of Theka

Unit – VA (24 Hours)

- Prastar of Madhyalaya with four variations
- Two Sadharan Paran
- One Chakradar Paran
- One Ganesh Stuti Paran

Unit – VIA (24 Hours)

- Knowledge of playing Sadharan Paran in Dhamar & Sooltala with Padhant (Tali-Khali).
- Basic knowledge of tuning of the Instrument (Pakhawaj).
- Notation book to be prepared for compositions writing.

Note: Students of B.A. (Hons.) Percussion Music have to prepare according to the requirements of their respective Units.

Suggestive readings:

- Mishra, Pt. Chhote Lal (2004) Taal Prasoon, Kanishka Publisher, New Delhi
- Kumar, Dr. Ajay, Banaras Gharane Ke Pravartak Pandit Ramshai ji ki Tabla Vadan Parampra (2022), Kanishka Publishers, Delhi
- Das, Purushottam, Mridang Vadan, Sangeet Natak Akademi
- Saxena, S.K. (1994) Indian Concept of Rhythm, Kanishka Publisher, New Delhi
- Patwardhan, Datatrye Vashudev, (1955) Mridanga Tabla Vadan Paddhati, Vinayek Rao Patwardhan, Pune
- Shrivastava Girish Chandra, (2009) Taal Parichaye Bhaag II, Rubi Parkashan, Allahabad
- Saxena, Sudhir Kumar (2006) The Art of Tabla Rhythm, Sangeet Natak Academy, New Delhi
- Mishra, Pt. Vijay Shankar, Tabla Rare Compositions of the Great Masters (2014), Kanishka Publishers Distributors, New Delhi

DSC – 3: PRACTICAL ASSESSMENT

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility Criteria | Pre-requisite of the course |
|-------------------------------|---------|--------------------------------------|---|---|----------------------|--------------------------------|
| | | L | T | P | | |
| PRACTICAL ASSESSMENT (103) | 4 | 0 | 0 | 4 | Class XII Pass | Nil |

*Practical assessment is a viva paper.

Learning Objectives:

- Enabling the students to face the technical and critical questions both in practical and theoretical aspects of Tabla and Pakhawaj.
- Most importantly the accompanying aspect of the instrument while accompanying with Vocal and Instrumental compositions is rendered to the students.

Learning Outcomes:

- The student is able to demonstrate various aspects of Talas.
- Student is also able to differentiate between similar Talas, thereby making a comparative analysis.

Contents

TABLA

Study of Prescribed Talas : Unit-I (8 Hours)

- Teentala
- Jhaptala
- Ektala
- Chautala
- Keharwa
- Dadra

Unit – II (32 Hours)

Ability to perform solo recital in Teentala with the following:

- Uthan / Peshkar
- Kayada
- Baant
- Chakradar, Tukra & Paran

Unit – III (16 Hours)

- Ability to do padhant in compositions with Tali-Khali.

Unit – IV (16 Hours)

- To demonstrate the Theka and playing knowledge of prescribed Talas with Thah, Dugun, & Chaugun laya.

Unit –V (24 Hours)

- Ability to accompany with Bhajan.

Unit – VI (24 Hours)

- Basic knowledge of Tabla tuning.
- Notation book to be prepared for compositions writing.

PAKHAWAJ

Study of Prescribed Talas : Unit-IA (8 Hours)

- Chautala
- Dhamar
- Sooltal
- Tevra
- Ektala
- Jhaptala
- Rupak
- Keherwa
- Dadra

Unit – IIA (32 Hours)

- Ability to perform solo recital in Chautala with various compositions.

Unit – IIIA (40 Hours)

- Ability to Padhant compositions in Tali Khali.
- Demonstrate the Theka and playing knowledge of prescribed Talas in Thah, Dugun, & Chaugun laya.

Unit – IVA (40 Hours)

- Ability to accompany with Bhajan.
- Basic knowledge of Pakhawaj tuning.
- Notation book to be prepared for compositions writing.

Note: Students of Percussion Music have to prepare according to the requirements of their respective Units.

Suggestive readings:

- Mishra, Pt. Chhote Lal (2004) Taal Prasoon, Kanishka Publisher, New Delhi
- Kumar, Dr. Ajay, Banaras Gharane Ke Pravartak Pandit Ramshai ji ki Tabla Vadan Parampra (2022), Kanishka Publishers, Delhi
- Das, Purushottam, Mridang Vadan, Sangeet Natak Akademi
- Saxena, S.K. (1994) Indian Concept of Rhythm, Kanishka Publisher, New Delhi
- Patwardhan, Datatrye Vashudev, (1955) Mridanga Tabla Vadan Paddhati, Vinayek Rao Patwardhan, Pune
- Shrivastava Girish Chandra, (2009) Taal Paricheye Bhaag II, Rubi Parkashan, Allahabad
- Saxena, Sudhir Kumar (2006) The Art of Tabla Rhythm, Sangeet Natak Academy, New Delhi
- Mishra, Pt. Vijay Shankar, Tabla Rare Compositions of the Great Masters (2014), Kanishka Publishers Distributors, New Delhi.

B.A. (PROG.) MUSIC – HINDUSTANI MUSIC (VOCAL/INSTRUMENTAL)

DSC-1(A/B): Fundamentals of Indian Music (Non-major)

| Course Title& Code | Credits | Credit distributions of the course | | | Eligibility Criteria | Prerequisite of the course (if any) |
|---|---------|------------------------------------|----------|-----------|----------------------|-------------------------------------|
| | | Lecture | Tutorial | Practical | | |
| FUNDAMENTALS OF INDIAN MUSIC DSC-1 A | 4 | 2 | 0 | 2 | Class XII Pass | Nil |

SEMESTER-1

Theory: Component-1 Course: DSC 1 (A/B)

Paper Name: Fundamentals of Indian Music

Credits:2

Learning Objectives

- The foremost emphasis of the course is on establishing better understanding of the different aspects of Hindustani music.
- Basic knowledge of the instruments – Tanpura/ Sitar.
- Biographies of the musicians, composers and musicologists will help students to know about the great musicians.
- Theoretical knowledge of Ragas and Talas.

Learning Outcomes (LO)

- The student will learn and understand the definitions of the musical phrases and will be able to effectively communicate the same.
- The student will gain qualitative knowledge on the study of important melodic terminology, and will be able to successfully display the same.
- The students will be able to attain in depth understanding of musical instruments such as the Tanpura and Sitar and skillfully illustrate their various section.
- The student will be able to acquire cognition about the biographies of renowned musicians, thereby deriving influence from their musical pursuits.
- The student will be able to illustrate the prescribed Ragas and Talas which will further illuminate their Practical demonstration.

Contents:

Unit I

Sangeet, Shruti , Swara and its types- Shuddhaswara, vikritswara, chalswara, achalswara, Vadi, Samvadi, Anuvadi, VivadiSwar. **(8 Hours)**

Unit II –

Saptak , Laya- vilambit Madhya & drutlaya, Nada – Ahata and Anahata Nada- tarta –teevrata - jati. **(4 Hours)**

Unit III - Raga and its Jati- audav-shadav- sampoorana, Aroh, Avroh, Pakad. **(4 Hours)**

Unit IV - Tala: Matra,Tali, Khali, Vibhag. **(2 Hours)**

Unit V - Basic knowledge of the following instruments with diagrams and labelling: Tanpura for Vocal students, Sitar for Instrumental students. **(2 Hours)**

Unit VI –

Biographies & contributionsof the following musicians: Amir Khusrau, Swami Haridas, Tansen, Purandardas, Ameer Khan, Maseet Khan, Raza Khan. **(6 Hours)**

Unit VII - Study of prescribed Ragas: **(2 Hours)**

- Alhaiya Bilawal
- Khamaj
- Bhairav

Unit VIII - Study of prescribed Talas with Dugun : **(4 Hours)**

- Teentala
- Dadra
- Kaharwa
- Jhaptal

References:

- Bhatkhande, V.N. (Part-I 1st Edition: 1951, Part-II 3rd Edition: April. 1969, Part-III 2nd Edition: April. 1968, Part-IV 2nd Edition: March. 1970) Bhatkhande Sangeet Shastra, Hathras, U.P., Sangeet Karyalaya.
- Garg, Laxmi Narayan (1984) Hamare Sangeet Ratna, Hathras, U.P., Sangeet Karyalaya.
- Mishra, Pt. Lalmani (1st Edition: 1973) Bhartiya Sangeet Vadya, New Delhi, Delhi, Bhartiya Gyanpeeth.
- Singh, Tejpal. & Arora, Prerna (1st Edition; 2005) Sangeet Kedeedee pyaman Soorya, Ustad Ameer Khan, New Delhi, Delhi, Kanishka Publishers.
- Govardhan, Shanti (1st Edition, Part-I 2005, Part-I 2004) Sangeet Shastra Darpan. Allahabad, U.P., Rantakar Pathak.
- Kasliwal, S. (2001), Classical Musical Instruments, New Delhi, Delhi, Rupa & co.

- Shrivastava, Girish Chandra (2002) Tala Parichaya; Part-III, New Delhi, Delhi, RubiPrakashan.
- Jain, Renu (1st Edition: 2006) Swaraaur Raga, New Delhi, Delhi, Kanishka Publishers

Practical : Component -60 Hours

Course : DSC 1(A) Practical : Performance & Viva –Voce

Credit : 2

Learning Objectives:

Ability to play/sing Alankar.

Performance based on Raga and Tala in prescribed syllabus. Learn different techniques to sing and play.

Learn to play basic Harmonium.

Learning Outcomes (LO):

The students will gain proficiency in learning the five rudimentary Alankars and will be able to adeptly demonstrate them, thereby attaining a firm grasp on the accuracy of Swaras.

The student will be able to display their mastery over Swarmalika in one of the prescribed Ragas, which becomes the fulcrum to learning the intrinsic nature of the Raga.

The student will be able to skillfully exhibit DrutKhayals in the two specified Ragas. This becomes a preamble to acquiring performance skills.

The student will be able to achieve deciphering of the twelve musical notes by the ear, giving them a resilient hold on the Swaras.

The student will be able to recite the Thekas with their Dugun and Tali-Khali in the given Talas, achieving a stable foothold on rhythm.

The student will be able to obtain understanding of the fundamental knowledge of playing the Tanpura and Harmonium which becomes a core for further learning and self reliance.

The practical file for internal assessment will be presented with

Illustrations of Ragas, notations of traditional compositions, Talas with Dugun. This also becomes a valuable note file for references.

Contents:

Prescribed Ragas :

- **AlhaiyaBilawal**
- **Khamaj**
- **Bhairav**

Vocal Music: (30 Hours)

Five Alankars.

Lakshangeet/Swarmalika in any one of the Ragas.

DrutKhayal in any two of the prescribed Ragas.

Identifying Shuddha and VikritSwaras when sung or played .

Ability to recite the following Thekas and their Dugun with Tali& Khali-

- Teentala
- Jhaptala
- Kaharwa
- Dadra

Basic knowledge of playing Tanpura.

Practical file with details of Ragas

Notations of compositions .

Talas with Dugun.

Instrumental Music: (30 Hours)

Five Alankars.

Razakhani gat in any two of the prescribed Ragas.

Basic technique of Jhala Playing.

Identifying Shuddha and Vikrit Swaras when sung or played .

Ability to recite the following Thekas and their Dugun with Tali& Khali-

- Teentala
- Jhaptaala
- Kaharwa
- Dadra

Practical file with details of Ragas.

Notations of compositions.

Talas with Dugun.

References:

Bhatkhande, V.N., (Part I, Jan, 2000), KramikPustakMalika, Hathras, U.P., Sangeet Karyalya.

Bhatkhande, V.N., (Part-II,Dec. 2013), KramikPustakMalika, Hathras, U.P., Sangeet Karyalya.

Patwardhan, V.R., (Part-I, First Edition,1936), Raga Vigyan, Pune, MH, Publisher-Dr.

MadhusudhananPatwardhan.

Patwardhan, V.R., (Part-II, First Edition, 1937), Rag Vigyan, Pune, MH, Publisher-Dr.

MadhusudhananPatwardhan.

Mishra, Lalmani, (First Edition,1979), Tantrinada, Kanpur, U.P., Sahitya Ratnalaya.

Bhatkhande, V.N., (6th Edition, Sep., 1999), Bhatkhande Sargam GeetSangrah,

Hathras, U.P., Sangeet Karyalya.

Ratanjankar, Krishna Narayan (Part-I 3rd Edition: 1990, Part-II 2nd Edition: 1992, Part-III 2nd Edition: 1994) Abhinav GeetManjari, Mumbai, Maharashtra, VishvasatMandal.
 Jha, Ramashraya (Part-I 2014, Part-II 7th Edition: 2013, Part-III 4th Edition: 1999, Part-IV 5th Edition: 2015, Part-V 3rd Edition: 2012) Abhinav Geetanjali, Allahabad, U.P., Sangeet SadanPrakashan.
 Singh, Tejpal (1st Edition: 2006) Vidhivat Sangeet Shikshan, Allahabad, U.P., Pathak Publication.
 Shrivastava, Harish Chandra (Part-I 7th Edition: 2006, Part-II 7th Edition: 2008, Part-III 2009, Part-IV 14th Edition: 2008) Raga Parichaya, Allahabad, Sangeet SadanPrakashan

DSC-1-C Biographies of Musicians and Musicologists (Major)

| Course Title & Code | Credits | Credit distributions of the course | | | Eligibility Criteria | Prerequisite of the course (if any) |
|---|---------|------------------------------------|----------|-----------|----------------------|-------------------------------------|
| | | Lecture | Tutorial | practical | | |
| BIOGRAPHIES OF MUSICIANS AND MUSICOLOGISTS DSC-1 C | 4 | 2 | 0 | 2 | Class XII Pass | Nil |

B.A. (PROG.) Hindustani Music - Vocal/ Instrumental as Discipline course (Major)

Theory: Component -1

Paper name: Biographies of Musicians and Musicologists

Learning Objectives:

*The objective of the course is to establish a chronology of the evolution through the study of the biographies of eminent musicians across the country.

* The biographies collected from authentic sources of musicians united by technique and methodology will help in creating a solid structural understanding.

*Studying notation of compositions established by eminent musicologists.

Learning Outcomes:

*Students will be able to perform an in depth study of the biographies of illustrious and eminent musicians.

*Students will be able to learn and attain optimum skills in notation writing of the composition.

Content:**A. Biographies of following Musicians and Musicologists:**

1. Samudragupt (2 Hours)
2. Abhinavgupt (2 Hours)
3. Nanyadev (2 Hours)
4. Gopal Nayak (2 Hours)
5. Baiju Bawra (2 Hours)
6. Faqirulla (2 Hours)
7. Swami Haridas (2 Hours)
8. Sultan Husain Shah Sharqi (2 Hours)
9. Baj Bahadur (2 Hours)
10. Miyan Shori (2 Hours)
11. Sadarang- Adarang (2 Hours)
12. Taanras Khan (2 Hours)

B. Notation writing of compositions in the prescribed Ragas. (4 Hours)**References:**

Mishra Sushila- Some immortals of Hindustani music

Mishra Sushila- Great Masters of Hindustani music

Sharma Amal Das- Musicians of India

Brihaspati Sulochana- Khusro Tansen Tatha Anya Kalakar

Ranade A. D.-Music and Musicians of Hindustan

Saraf Rama- Bhartiya Sangeet Sarita

Practical: Component -2 (60 Hours)

Course: DSC:1-C

Credit:2

Learning Objectives:

*The objective is to impart training in singing Raga based Alankar.

*Detailed knowledge of Lakshan Geet /Sargam Geet with Alaps and Tanas.

*Layakari to be shown using hand beats in the prescribed Talas.

Learning Outcomes :

*The students will be able to depict impeccably the Raga based Alankars with Tala through their performance.

*Students will be able to efficiently display their understanding of Lakshan Geet / Sargam Geet with Alaps and Tanas in the prescribed Ragas.

* Students will be able to accurately show using hand beat, the layakari of prescribed Talas.

Ragas-

- Bhairav
- Alhaiya Bilawal
- Kafi

Talas-

- Ektala
- Teentala
- Kaharwa

Vocal Music

1. Five Alankaras in each Raga of your syllabus with Tala.
2. Lakshan Geet /Sargam Geet in all the Ragas with Alaps and Tanas.
3. One composition in any one of the prescribed Ragas other than Teentala.
4. Layakari in all Talas.
5. Recognition of Shuddha Swaras and vikrit swaras.

Instrumental Music

1. Five Alankaras in each Raga of your syllabus with Tala.
2. Razakhani Gat in all the Ragas with Alaps and Tanas.
3. One composition in any one of the prescribed Ragas other than Teentala
4. Layakari in all Talas.
5. Recognition of Shuddha Swaras and Vikrit Swaras.

HINDUSTANI MUSIC (VOCAL & INSTRUMENTAL)

GENERIC ELECTIVE

B.A. Hindustani Music Vocal/Instrumental

| Course Title& Code | Credits | Credit distributions of the course | | | Eligibility Criteria | Prerequisite of the course (if any) |
|--|---------|------------------------------------|----------|----------------------|----------------------|-------------------------------------|
| | | Lecture | Tutorial | Practical/ practical | | |
| An Introduction of Hindustani Music GE-1 | 4 | 2 | 0 | 2 | Class XII Pass | Nil |

Theory:

Paper Name: An Introduction of Hindustani Music

Credit:2

Learning Objective

- The Course has been carefully structured and aims at rendering the know - how of the technical terminologies and definitions.
- General discussions on various genres of music.
- A view on the Vedic music.
- Extensive knowledge of prescribed Ragas.
- Writing notations of the various layas of the suggested Talas.
- Making a project on the life and contributions of a distinguished musician of Indian Music.

Learning Outcome (CLO)

- By learning the technical terminologies, the students become aware of the basic and most commonly used terms in Indian music.
- The general discussion on the classical, semi-classical and light music gives them the knowledge of the prevalent Streams of Indian music and their content.
- The learning of the Vedic Music teaches them the importance of inheritance and origination.
- The study of Ragas and Talas helps in understanding the fundamentals of music for the students.
- Through the project report, they not only learn the process of research but also get inspired by the lives of famous musicians.

Content

Unit1

- Technical Terminology–Nada, Shruti, Swara (Shuddha & Vikrit), Alankar, Saptak, Raga, Aroha, Avroha, Pakad, Tala. **(8 Hours)**

Unit2

- Definition of Sangeet. **(4 Hours)**

Unit3

- General discussion about Classical, Semi Classical and Light music. **(4 Hours)**

Unit4

- Brief Introduction of Music in Vedic period. **(4 Hours)**

Unit5

- Detailed study of prescribed Ragas–Alahiya Bilawal & Bhupali. **(4 Hours)**

Unit6

- Ability to write Thaah, dugun & chaugun in prescribed talas –Teentaala, Jhaptaal, Kaharwa. **(2 Hours)**

Unit7

- Project work of any one reputed classical musician –Hindustani / Karanatak. **(4 Hours)**

References

- Bhatkhande,V.N.(Part-I1stEdition:1951, Part-II3rdEdition:April. 1969,Part-III2ndEdition: April. 1968, Part-IV 2nd Edition: March. 1970) Bhatkhande Sangeet Shastra,Hathras,U.P.,SangeetKaryalaya.
- MishraS.(1981),Great MastersofHindustaniMusic,NewDelhi,Delhi:Hempublishers.
- Govardhan,Shanti.(1stEdition,Part-I2005,Part-I2004)SangeetShastraDarpan.Allahabad,U.P.,RantakarPathak.
- Shrivastava,HarishChandra(1stEdition:1970)Sangeet NibandhSangrah,Allahabad,U.P.,SangeetSadanPrakashan.
- Garg,LaxmiNarayan(3rdEdition:2003)NibandhSangeet, Hathras,U.P.,SangeetKaryalaya.
- Garg,LN(1978),HamareSangeetRatna, Hathras,U.P.,SangeetKaryalaya.

- Mishra, Lalmani (4th Edition: 2011) Bhartiya Sangeet Vadya, Delhi, Bhartiya Gyanpeeth.
- Mishra, Chhotelal (2004) Taal Prasoon, New Delhi, Delhi, Kanishka Publishers.

SEMESTER-1

GE-1

Practical: Performance & Viva –Voce
(60 Hours)
Credit:2

Learning Objective

- The practical course design is such that the student gains the fundamental expertise in-decoding the 12 notes of the Hindustani Classical Music system, along with singing and playing of five basic Alankars which become a swivel for mastering tunefulness.
- A firm hold on rhythm is achieved by practice of keeping beats of recommended Talas on the palm in continuous rounds.
- Students are introduced to singing/playing of two elementary yet significant Ragas Alhaiya Bilawal and Bhupali, which are intended to further enrich their propensities as musicians while demonstrating a seven note Raga and five note one.
- The purpose of guided listening and discussions is to train the students by the ear, enabling them in deciphering various musical notes and Ragas by listening.

Learning Outcome(LO)

- Practical knowledge of the Swar and Alankars sets the foundation of Indian music among the students.
- Verbal demonstration of Talas enables them to understand rhythmic cycles.
- Guided listening with discussion of instrumental music/semi-classical forms increase and encourage interest among the students.

Content:

Prescribed Ragas:

- Alhaiya Bilawal
- Bhoopali

Vocal Music:

- Basic knowledge of Swaras (Shuddha and Vikrit).
 Five Alankaras with bol patterns.
 Aaroha, Avaroha and Pakad of Raga Alhaiya Bilawal & Bhoopali with a Lakshana Geet or a drut khayal / Razakhani Gat.
- Ability to keep the theka of following talas by hand beats - Tala-Teentaala, Jhaptaal & Kaharwa with Thaah and dugun.

- Guided listening & discussion of compositions /dhun based on raga.

Instrumental Music:

- Basic knowledge of Swaras (Shuddha and Vikrit).
Five Alankaras with bol patterns.
Aaroha, Avaroha and Pakad of Raga Alhaiya Bilawal & Bhoopali with a Lakshana Geet or a drut khayal / Razakhani Gat.
- Ability to keep the theka of following talas by hand beats - Tala-Teentaala, Jhaptaal & Kaharwa with Thaah and dugun.
- Guided listening & discussion of compositions /dhun based on raga.

Note: The candidate opting the course will start from Level One.

Reference

- Bhatkhande, V.N. (2008) Kramik Pustak Malika (Part- II, III, IV), Hathras, U.P., Sangeet Karyalya.
- Patwardhan, V.R. (1996), Raga Vigyan, Pune, MH, Publisher: Dr. Madhusudhanan Patwardhan.
- Bhatkhande, V.N., (6th Edition, 1999), Bhatkhande Sargam Geet Sangrah, Hathras, U.P., Sangeet Karyalya.
- Ratanjankar, Krishna Narayan (1990) Abhinav Geet Manjari, Mumbai, Maharashtra, Acharya S.N. Ratanjankar Foundation.
- Jha, Ramashraya (2014) Abhinav Geetanjali, Allahabad, U.P., Sangeet Sadan Prakashan.
- Singh, Tejpal (1st Edition, 2015) Shastreeya Sangeet Sikshan, New Delhi, Delhi, Akanksha Publishing House.
- Shrivastava, Harish Chandra (June: 2002) Raga Parichaya, New Delhi, Delhi, Rubi Prakashan.
- Mishra, Lalmani, (1st Edition: 1979) Tantri Naad Part-I, Kanpur, U.P., Sahitya Ratnawali.
- Mishra, Chhotelal (1st Edition: 2006) Tala Prabhandh, New Delhi, Kanishka Publishers,

9. Amendment to Appendix -II-A to the Ordinance V (2-A) of the Ordinances of the University vide EC Resolution 18-1-11 dated 18.08.2022 regarding Syllabi of 1st Semester of BA (Vocational Studies) under the College of Vocational Studies

Add the following:

Syllabi of Semester-I of the B.A (Vocational Studies) under the College of Vocational Studies based on Under Graduate Curriculum Framework -2022 to be implemented from the Academic Year 2022-23.

**B.A. (VS) Small and Medium Enterprises
Semester I
Fundamentals of Entrepreneurship and MSMEs
BA (VS) - DSC– 1.1, Credit (4)**

B.A. (VS) Small and Medium Enterprises Programme aims at preparing future entrepreneurs with the skills and knowledge to start their own businesses. It develops their skills as a passionate, self-motivated entrepreneur within a close-knit driven community.

Learning Objectives: The objectives of the paper are to:

1. Make the students understand the role, significance and contribution of MSMEs in the development of our economy.
2. Have a deep insights into the intricacies of entrepreneur and entrepreneurship.
3. Learn the various kinds of entrepreneurs and theories of entrepreneurship.
4. Know the entrepreneurial process for initiating new venture creation.
5. Enable students to plan and design strategies for the successful implementation of innovative ideas of new ventures.

Learning Outcomes: After completion of the course, learners will be able to:

1. Explain the contribution of MSMEs in the development of our economy.
2. Negotiate and deal with the intricacies of entrepreneur and entrepreneurship.

3. Assess himself/herself that what kind of entrepreneur he/she may become and will also be able to apply theories of entrepreneurship in business functions.
4. Explore the possibilities of setting up new ventures.
5. Design strategies for the successful implementation of innovative ideas of new ventures.

Course Contents:

| Unit | Unit wise weightage of marks (in %) | C&K* | A&A** |
|--|-------------------------------------|------|-------|
| Unit 1: MSMEs : An Overview | 25% | √ | √ |
| Unit 2: Entrepreneur and Entrepreneurship | 25% | √ | √ |
| Unit 3: Developing Entrepreneurial Plan and Challenges in Entrepreneurship | 25% | √ | √ |
| Unit 4: Creativity, Innovation and Entrepreneurial Venture | 25% | √ | √ |

*C&K- Comprehension & Knowledge

**A&A – Analysis & Application

Unit 1: MSMEs: An Overview - 15 Hours

Micro, Small and Medium Enterprises: Definition, Role in the economy and significance, problems of MSMEs, Government promotional and developmental initiatives for MSMEs, organised sector, unorganized sector, Current Economic Survey Report on MSME sector of Govt. of India, a brief discussion on government organs and financial institutions and their financial and developmental support to MSME sector.

Unit 2: Entrepreneur and Entrepreneurship 15 Hours

Concept and Definitions of Entrepreneurship, Entrepreneurial Mind-set, Traits of Entrepreneurs, Distinction between Entrepreneur and Manager, Distinction between Entrepreneur and Intrapreneur, Entrepreneurship process; Theories of entrepreneurship; Factors affecting the emergence of entrepreneurship; Role of an entrepreneur in economic growth as an innovator; Generation of employment opportunities; Complementing and supplementing economic growth; Bringing about social stability and balanced regional development of industries, Classification and Types of Entrepreneurs; Women Entrepreneurs; Social Entrepreneurship; Corporate Entrepreneurs, Family Business: Concept, structure, and kinds of family firms; Culture and evolution of family firm; Managing Business.

Unit 3: Developing Entrepreneurial Plan and Challenges in Entrepreneurship- 15 Hours

Environment assessment: Political environment, Legal environment, Economic environment, Social environment, Culture environment, Technological environment and Global environment, Developing effective business plan, Barriers of entrepreneurship, Business succession and continuing from family business perspective, Succession policy, Problems of innovation and change, Project formulation and appraisal.

Unit 4: Creativity, Innovation and Entrepreneurial Venture - 15 Hours

Generating and evaluation of business ideas, Team building, Creativity and Innovation, Challenges in managing innovation; Entrepreneurial strategy and Scaling up, Business planning process; Drawing business plans; Failure of the business plan, Venture capital, Entrepreneurial motivation.

Exercises:

The learners are required to:

1. Analyse the contribution of MSMEs in the development of our economy in last decade. (Unit I)
2. Identify the intricacies of entrepreneur and entrepreneurship and find the ways to get benefit. (Unit II)
3. Critically evaluate the various types of entrepreneur and theories of entrepreneurship in business functions. (Unit II)
4. Explain the process of setting up of a new venture. (Unit III & IV)
5. Outline the various strategies for implementing the innovative ideas in a new venture. (Unit IV)

Suggested Readings:

- Barringer, B.R. and R. Duane Ireland, Entrepreneurship, Pearson Prentice Hall.
- Gersick, K. E., Davis, J. A., Hampton, M. M., & Lansberg, I., Generation to generation: Life cycles of the family business. Boston: Harvard Business School Press.
- Hill, Michal A., Inland Durama R et al; Strategic Entrepreneurship: Creating a New Mindset, Blackwell Publishers, Oxford.
- Hisrich, R.D., Manimala, M.J., Peters, M.P., Shepherd, D.A.: Entrepreneurship, Tata McGraw Hill.
- Kuratko, D.F., and Rao, T. V., Entrepreneurship: A South-Asian Perspective, Cengage.
- Lall, Sahai, Entrepreneurship, Excel Books, New Delhi.
- M.B. Shukla, Entrepreneurship and Small Business Management, Kitab Mahal Publishers.
- Nicholls, A., Social entrepreneurship new models of sustainable social change. Oxford University Press.
- Sahay A., V. Sharma, Entrepreneurship and New Venture Creation, Excel Books, New Delhi.
- Scarborough, N. M., Cornwall, J. R., & Zimmerer, T., Essentials of Entrepreneurship and Small Business Management, Boston, Pearson.
- Shankar, R., Entrepreneurship Theory and Practice, Tata McGraw Hill
- Zenas Block and Ian C Macmillan, Corporate Venturing, Harvard Business School Press, Boston

Note: Latest edition of the readings may be used.

Course Assessment: Internal Assessment– 25%, Exam – 75%

B.A. (VS) Small and Medium Enterprises
Semester I
Organization and Management of MSMEs
BA (VS) - DSC– 1.2, Credit (4)

This course is designed to provide a basic understanding of the various concepts related to the establishment and management of a small business. It helps students to choose an appropriate business form and to develop an organizational structure as per the nature of the business.

Learning Objectives: The objectives of the paper are to:

1. Make the students familiar with the investment criteria for Micro, Small and Medium enterprises and categories them accordingly.
2. Learn the procedure for setting up MSMEs and Government initiatives to promote MSMEs.
3. Understand the ways that how organisations can be set up according to the requirement of individual and business.
4. Know the processes of manufacturing, effective and efficient usage of available resources and preparing master production schedule.
5. Learn the ways that how the internal and external growth strategies can be followed in a business.

Learning Outcomes: After completion of the course, learners will be able to:

1. Identify the investment criteria for Micro, Small and Medium enterprises and will choose the size of enterprise accordingly.
2. Describe the process of setting up micro/small business and evaluate the benefits of government initiatives to promote MSMEs.
3. Choose an appropriate form of business that suits to the specific needs of an entrepreneur.
4. Select manufacturing process and will be able to allocate the resources by material resource planning and preparing master production schedule.
5. Formulate and implement strategies for internal and external growth of business.

Course Contents:

| Unit | Unit wise weightage of marks (in %) | C&K* | A&A** |
|---|-------------------------------------|------|-------|
| Unit 1: Setting up MSMEs | 30% | √ | √ |
| Unit 2: Forms of Business Organizations | 20% | √ | √ |
| Unit 3: Resource Allocation and Production Planning | 30% | √ | √ |

| | | | |
|---|-----|---|---|
| Unit 4: Productivity Improvement Strategies | 20% | √ | √ |
|---|-----|---|---|

*C&K- Comprehension & Knowledge

**A&A – Analysis & Application

Unit 1: Setting up MSMEs - 15 Hours

Determination of the nature of the business unit: Micro, Small and Medium enterprise, Comparative evaluation of feasibility of buying an existing enterprise, setting up a new venture or starting the business through franchising, Location strategy, Preliminary Registration with State Directorate of Industries, registration process of industries, implications of non-registration, UDYOG AADHAAR, Steps involved in setting up MSMEs: Project selection through market assessment, Arranging Finance, Technology and Machinery, Unit development and location strategy, Approvals and clearances; Challenges and opportunities of MSMEs; Government initiatives to promote MSMEs.

Unit 2: Forms of Business Organizations - 15 Hours

Concept and nature of Business Organization; Forms of Organization: Sole proprietorship, Partnership firm, Limited liability partnership, Joint stock companies, Hindu Undivided Family; Organizational structure: Purpose, Types and development of organizational structure for a new business.

Unit 3: Resource allocation and Production Planning - 15 Hours

Concept, Types and importance of resources for a business, Resources allocation methods; Preplanning: Forecasting and Market analysis; Objective and functions of production, Layout and control, Types of manufacturing process, Selection of manufacturing process; Purchase Management and Inventory Management; Material Resource Planning, Master Production Schedule, Progress control through records and charts.

Unit 4: Productivity Improvement Strategies - 15 Hours

Importance, Factors influencing productivity: Internal and external factors, Integration and diversification, internal expansion, Quality management, Research and technology developments; Ergonomics: Training and motivation, working conditions & workplace design, Safety programs.

Exercises:

The learners are required to:

1. Distinguish MSMEs on the basis of investment and turnover criteria. (Unit I)
2. Find out the procedures for setting up MSMEs and prepare a list of government initiatives to promote MSMEs. (Unit I)
3. Identify a suitable form of business organizations according to the requirement of

- individual and business. (Unit II)
4. Prepare a list of processes of manufacturing, the ways of effective and efficient usage of available resources and also prepare master production schedule. (Unit III)
 5. Discuss the methods of internal and external growth strategies followed in a business. (Unit IV)

Suggested Readings:

- Hill, Michal A., Inland Durama R. et.al, Strategic Entrepreneurship: Creating a New Mindset, Blackwell Publishers, Oxford.
- Kanishka Bedi, Production and Operations Management, Oxford University Press.
- Lall, Sahai, Entrepreneurship, Excel Books, New Delhi.
- Sahay A., V. Sharma, Entrepreneurship and New Venture Creation, Excel Books, New Delhi.
- Shukla, M.B., Entrepreneurship and Small Business Management, Kitab Mahal, Allahabad.
- Wickham, Phillip A., Strategic Entrepreneurship, Pitman, UK.
- Zenas Block and Ian C Macmillan, Corporate Venturing, Harvard Business School Press, Boston

Websites:

- <https://www.msme.gov.in>
- <https://udyamregistration.gov.in/Government-India/Ministry-MSME-registration.htm>

Note: Latest edition of the readings may be used.

Course Assessment: Internal Assessment – 25%, Exam – 75%

B.A. (VS) Small and Medium Enterprises Semester I Microeconomics for MSMEs BA (VS) - DSC– 1.3, Credit (4)

Learning Objectives: The objectives of the paper are to:

1. Make students familiar with the micro economic theory along with their applications with examples.
2. Learn basic principles of microeconomics and understand the functioning of different kinds of market structure.

Learning Outcomes: the students will be able to:

1. Assess the economic trade-offs and opportunities facing a small or medium sized firm and to get benefit of it.
2. Apply the fundamentals of market mechanism to real life situations confronting a small or medium enterprise.

| Unit | Unit wise weightage of marks (in %) | C&K* | A&A** |
|---|-------------------------------------|------|-------|
| Unit 1: Understanding Demand & Supply, Price and resource allocation, Elasticity, Market equilibrium. | 20% | √ | √ |
| Unit 2: Understanding Consumer Behaviour | 25% | √ | √ |
| Unit 3: Understanding Production, Costs and Profit maximization by Firm | 20% | √ | √ |
| Unit 4: Understanding Market structures. | 35% | √ | √ |

*C&K- Comprehension & Knowledge

**A&A – Analysis & Application

Content (Unit-wise):

Unit 1: Understanding Demand & Supply, Price and resource allocation, Elasticity, Market equilibrium. - 15 Hours

Markets and competition; determinants of individual demand/supply; demand/supply schedule and demand/supply curve; market versus individual demand/supply; shifts in the demand/supply curve, determination of equilibrium output and price, how prices allocate resources; elasticity and its application; controls on prices; impact and incidence of indirect taxation.

Unit 2: Understanding Consumer Behaviour - 15 Hours

The consumption decision using Indifference curve analysis-budget constraint, consumption and income/price changes, demand for all other goods and price changes; preferences; consumer's optimum choice; income and substitution effects; labour supply and savings decision; choice between leisure and consumption.

Unit 3: Understanding Production, Costs and Profit maximization by Firm - 15 Hours

Production functions. Laws of production under short and long run, Producer's equilibrium with the help of isoquants and iso-cost line. Expansion path in the long run and short run. Short run and long run costs curves. Economies and diseconomies of scale. Short-run costs and output decisions; costs and output in the long-run, external economies of scale, agglomeration economies.

Unit 4: Understanding Market structures - 15 Hours

Price and output determination under perfect competition, monopoly, monopolistic markets and oligopolistic market structure in short run and long run, allocative efficiency in perfect competition. Difference between monopoly and different forms of imperfect competition.

Exercises:

The learners are required to:

1. Analyse the micro economic theory along with their applications with examples. (Unit I & II)
2. Know the basic principles of microeconomics and evaluate the functioning of different kinds of market structure. (Unit III & IV)

Suggested Readings:

1. Case, Karl E. & Ray C. Fair: Principles of Economics, Pearson Education, Inc., latest edition.
2. Farnham, Paul G., Economics for Managers, Pearson, latest edition.
3. Lipsey, R. and Alec Chrystal: Economics, Oxford University Press, Latest edition.
4. Satya P. Das, Microeconomics for Business, Sage Publications, Latest edition.

Course Assessment: Internal Assessment – 25 %, Exam – 75%

BA (VS) Human Resource Management

MANAGEMENT CONCEPTS AND PRACTICES

DSC 1.1

Marks: 100

(4: credits: 3 + 1 tutorial)

Course Objective

The aim of this course is to acquaint students with the basic concepts and processes of management. Students will examine the fundamental roles and processes of planning, leading, organizing and controlling that comprise the managers' role. Students will develop skills related to the manager's function as required in today's competitive environment.

Learning Outcomes: After completion of the course, learners will be able to:

1. demonstrate understanding of various HR terminologies, importance of human resources and their effective management in an organization
2. acquire HR skills and their ability to assess the constraints and opportunities associated with managing employees in various organizational contexts.
3. analyse and discuss the role of the various functional areas within Human Resources.
4. effectively manage and plan key human resource functions within organizations

Course Contents:

| Unit | Unit wise weightage of marks (in %) | C&K* | A&A** |
|--|--|-----------------|------------------|
| Unit 1: Introduction to Management | 25 | √ | |
| Unit 2: Planning and Organizing | 30 | √ | √ |
| Unit 3: Staffing, Directing and Motivation | 25 | √ | √ |
| Unit 4: Leadership and Control | 20 | √ | √ |

*C&K- Comprehension & Knowledge

**A&A – Analysis & Application

Unit 1: Introduction to Management

Concept of Management, Management: Art and Science, Management Vs Administration, Levels of Management, Functions of management, Management as a Profession, Management skills, contributions: Taylor and Scientific Management, Fayol's Administrative Management, Bureaucracy, Human Relations, and Modern Approach, Social responsibility of managers Indian Ethos for

Management; Value Oriented Holistic Management; Learning lessons from Bhagavat Gita and Ramayan.

Unit 2: Planning and Organizing

Concept of planning, Significance of planning, Classification of planning: Strategic plan, Tactical plan and Operational plan, Process of planning, Barriers to effective planning. MBO, Management by Exception.

Decision Making: Strategies of decision making, Steps in rational decision-making process, Factors influencing decision making process, Psychological bias, and decision support system.

Organizing: Defining organizing, Principles of organizing, Process of organizing, Types of organizational structure, Span of control, Centralization vs. Decentralization of authority. Informal organization.

Unit 3: Staffing, Directing and Motivation

Staffing: Concept, Objective of staffing, System approach to staffing, Manpower planning. Directing: Concept, Techniques of directing and supervision, Types of supervision, Essential characteristics of supervisor.

Motivation: Concept, Forms of employee motivation, Need for motivation. Theories of motivation.

Unit 4: Leadership and Control

Leadership vs Management, Process of Leadership, Importance of leadership, Characteristics of an effective leader, Leadership styles and influence process, Analyzing Interpersonal Relations, Group Dynamics

Controlling: Concept, Importance of controlling, Types of control, Steps in control process, Characteristics of Effective Controls

Practical Exercises

The learners are required to:

1. explain relevant concepts by way of Class presentation.
2. understand and discuss different Management concepts and functions using Focused group discussion.
3. assess the understanding of theory and practical by objective and subjective assessment (Class test, assignments, MCQs, Fill in the blanks and quiz).
4. analyze the case studies to understand the dynamics of Management functions.

Course Assessment: Internal Assignments/projects/class tests/presentations – 25; Exam - 75

Suggested Readings:

1. Durai, P. Principles of Management, Text and Cases. New Delhi: Pearson Education.
2. Griffin, R. (2021). Fundamentals of management. Cengage Learning.

3. Sharlekar, S.A. (2010). Management (Value-Oriented Holistic Approach). Himalaya Publishing House. (Chapter 3 and 4)
4. Robbins, S.P. & Decenzo, D. A. Fundamentals of Management: Essential Concepts and Applications. New Delhi: Pearson Education.
5. Robbins, S.P. & Coulter, M. Prentice Hall. Management. San Diego State University & Southwest Missouri State University.
6. Singh & T. N. Chabra., Management Concepts & Practices. Dhanpat Rai & Co.

Note: Students are advised to use the latest editions of textbooks

HUMAN RESOURCES MANAGEMENT: AN OVERVIEW

DSC: 1.2

Marks: 100

(4: credits: 3 + 1 tutorial)

Course Objective

The aim of the course is to impart the knowledge of concept, functional areas (like Recruitment, Selection, Training and Development, etc.), systems, policies, applications of Human Resource Management. The course intends to help the students to acquire and develop skills for rational decision making in the discipline of human resource management

Learning Outcomes: After completion of the course, learners will be able to:

1. demonstrate understanding of various HR terminologies, importance of human resources and their effective management in an organization
2. Assess the constraints and opportunities associated with managing employees in various organizational contexts.
3. analyze and discuss the role of the various functional areas within Human Resources.
4. effectively manage and plan key human resource functions within organizations

Course Contents:

| Unit | Unit weightage wise of marks (in %) | C&K* | A&A** |
|--|-------------------------------------|------|-------|
| Unit 1: Introduction to Human Resource Management | 25 | √ | |
| Unit 2: HR Procurement and Development | 30 | √ | √ |
| Unit 3: Performance Management: Assessment and Appraisal | 25 | √ | √ |
| Unit 4: Employer-Employee Relations | 20 | √ | √ |

*C&K- Comprehension & Knowledge

**A&A – Analysis & Application

Unit 1 Introduction to Human Resource Management

Meaning, Nature, Philosophy, Need, Objectives and Evolution of HRM, HRM Functions, Human Resource Development (HRD): Concept, HRD Strategy; Human Resource Planning: Concept, Importance; HRIS, Environmental Factors of HRM, Challenges to HRM

Unit 2 HR Procurement and Development

Job Analysis and Job Design: meaning and overview, Human Resource Planning: Introduction to HRP, Need of HRP, Forecasting, Recruiting, Selecting & Outsourcing, Sources of people, Socialization.

Training: Objectives and Needs, Training Process: Methods of Training, Tools and Aids, Evaluation of training Programs, Mentoring and Performance Coaching, Career Planning-Succession Planning

Unit 3 Performance Management: Assessment and Appraisal

Performance Management System: Definition, Performance appraisal: Concept, Objectives and Ethics: Different methods of Performance Appraisal, Rating Errors, Competency Mapping.

Compensation Management-Concepts, Objectives, Compensation Strategy, Structure, Composition - Job Evaluation- Incentives and Benefits

Unit 4 Employer-Employee Relations

Regulatory Mechanisms in Industrial Relations; Dealing with Unions and Associations; Industrial Democracy; Grievance Handling and Discipline.

Retirement/Separation -Superannuation, Voluntary Retirement Schemes, Resignation, Discharge-Dismissal -Suspension, Layoff

Practical Exercises

The learners are required to:

1. explain different HR concepts and related terms by way of Class presentation.
2. understand and demonstrate knowledge using Focused group discussion.
3. assess the understanding of theory and practical by objective and subjective assessment (Class test, assignments, MCQs, Fill in the blanks and quiz).
4. analyze the case studies to understand the dynamics of HR functions being used in organizations.

Course Assessment: Internal Assignments/projects/class tests/presentations - 25, Exam - 75

Suggested Readings:

1. Bohlander, G. W., & Snell, S. Principles of human resource management. South-Western/Cengage Learning”; Thomson Publications.
2. Dessler, Gray, Human Resource Management, 11ed., Pearson Education, New Delhi.

3. **K. Aswathappa** Books, Human Resource & Personnel Management, Tata McGraw-Hill Education.
4. Ivancevich, Human Resource Management, Tata McGraw-Hill.
5. Rao, V.S P., Human Resource Management, Excel Books.
6. **Robbins**. S. P., Human Resource Management Pearson Education Asia.

Note: Students are advised to use the latest editions of textbooks

Microeconomics for Human Resource Management

DSE 1.3

(4 credits: 3+1 tutorial)

Course Objectives:

This course is designed to expose students to micro economic theory along with their applications with examples. The students will learn some basic principles of microeconomics to understand how to manage human resource efficiently to achieve the objective of a firm.

Course Learning Outcomes:

1. Students will learn to think in terms of economic trade-offs and opportunities as well as learn to apply the fundamentals of market mechanism to real life situations.
2. Students will learn to think how to select different elements of a sound policy for human resource management for more productive use of available human resources.

| Unit | Unit wise weightage of marks (in %) | C&K* | A&A** |
|---|-------------------------------------|------|-------|
| Unit 1: Understanding Demand & Supply, Price and resource allocation, Elasticity, Market equilibrium. | 20% | √ | √ |
| Unit 2: Understanding Consumer Behaviour | 20% | √ | √ |
| Unit 3: Understanding Production, Costs and Profit maximization by Firm | 20% | √ | √ |
| Unit 4: Understanding Market structures. | 20% | √ | √ |
| Unit 5: Application of Microeconomics to HRM. | 20% | √ | √ |

Content (Unit-wise):

Unit 1 : Understanding Demand & Supply, Price and resource allocation, Elasticity, Market equilibrium.

Markets and competition; determinants of individual demand/supply; demand/supply schedule and demand/supply curve; market versus individual demand/supply; shifts in the demand/supply curve, determination of equilibrium output and price, how prices allocate resources; elasticity and its application; controls on prices; impact and incidence of indirect taxation.

Unit 2 : Understanding Consumer Behaviour

The consumption decision using Indifference curve analysis-budget constraint, consumption and income/price changes, demand for all other goods and price changes; preferences; consumer's optimum choice; income and substitution effects; labour supply and savings decision; choice between leisure and consumption.

Unit 3 : Understanding Production, Costs and Profit maximization by Firm

Production functions; Laws of production under short and long run, Producer's equilibrium with the help of isoquants and iso-cost line. Expansion path in the long run and short run. Short run and long run costs curves. Economies and diseconomies of scale. Short-run costs and output decisions; costs and output in the long-run, external economies of scale, agglomeration economies.

Unit 4 : Understanding Market structures.

Price and output determination under perfect competition, monopoly, monopolistic markets and oligopolistic market structure in short run and long run, allocative efficiency in perfect competition. Difference between monopoly and different forms of imperfect competition.

Unit 5 :Application of Microeconomics to HRM.

Production function, wages and productivity, wage determination, Efficiency wage, Incentive wage and skill formation, X-efficiency, education and productivity. Case Study of large firms relating HR policy with productivity.

Suggested Readings:

- Case, Karl E. & Ray C. Fair: Principles of Economics, Pearson Education, Inc., latest edition.
- Comanor, W.S. and Leibenstein, H. Allocative Efficiency, X-Efficiency and the Measurement of Welfare Losses, *Economica*, New Series, vol.36, No 143, August, 1969, pp. 304-309
- Farnham, Paul G., Economics for Managers, Pearson, latest edition.
- Lipsey, R. and Alec Chrystal: Economics, Oxford University Press, Latest edition.
- Satya P. Das, Microeconomics for Business, Sage Publications, Latest edition.

Course Assessment: Class test/Assignment - 25, Exam - 75

BA (VS) Materials Management

Materials Management: An Overview

DSC: 1.1

Credit 4 (3L+1T)

Objectives: There are following objectives:

1. To introduce conceptual framework of material management and can manage the material management process.
2. To understand both internal and external of material management, material management activities, functions and organizational structure;
3. To familiarize production processes, machines and tools used in industries.
4. To analyze the dynamics of inventory management's principles, concepts, and techniques as they relate to the entire supply chain.
5. To explain familiarize themselves with inventory management practices.
6. To Perform the material handling equipment in the stores.

Learning Outcomes: After completion of the course, Students will be able to

1. define conceptual framework of material management and can manage the material management process.
2. explain both internal and external of material management, material management activities, functions and organizational structure;
3. use and explain production processes, machines and tools used in industries.
4. analyze the dynamics of inventory management's principles, concepts, and techniques as they relate to the entire supply chain.
5. explain familiarize themselves with inventory management practices.
6. Perform the material handling equipment in the stores.

Contents

| Unit | Unit wise weightage of marks (in %) | C&K* | A&A** |
|--|--|-----------------|------------------|
| Unit 1: Materials Management and Linkages | 25 | √ | √ |
| Unit 2: Materials Planning and Budgeting | 25 | √ | √ |
| Unit 3: Purchasing and Inventory | 25 | √ | √ |
| Unit 4: Materials handling and storage systems | 25 | √ | √ |

*C&K- Comprehension & Knowledge

**A&A – Analysis & Application

Unit1: Materials Management and its linkages

Meaning and Scope, Functions of Materials Management, Objectives and Significance of Materials Management. Interfaces of Materials Management: Internal and external interfaces, Organization of Material Management, Integrated materials management system and its advantages. Linkages with other

functional areas of Management i.e. Production, Accounting and Finance, Marketing, Information Technology, Total Quality Management.

Unit2: Materials Planning and Budgeting

Introduction, Management of Production and Manufacturing, Types of Industries, Manufacturing Planning and Control, Materials Management in Manufacturing and Process Industries , Materials Planning and Budgeting in Continuous Process Industries; Broad categories of production processes used in industries. Productivity plan, commonly used machines and tools in industries.

Unit 3: Purchasing and Inventory

Purchasing in Materials management, system concept, purchasing and procurement activities under Materials management, Value Analysis and value Engineering, Purchasing and quality Assurance, Purchase Cycle, Negotiation & Bargaining , Vendor relations, Purchasing Methods.

Need of Inventory, Types of Inventory, Characteristics of Inventory, Components of Inventory, Inventory Functionality , Some basic tools and techniques of Inventory Management, Planning the Inventory Resource, Material Requirement Planning (MRP), Advantages over conventional planning (Order Point Method) , Input and output of MRP system.

Unit: 4 Materials handling and storage systems

Material handling in stores, Principles of Materials Handling system, Materials Handling Equipment, Safety issues, Physical distribution logistics, physical control of stocks: obsolete, surplus and scrap Management, Layout of stores and warehouse.

Suggested Readings

1. Arnold, Champman and Ramakrishnan, Introduction to Materials Management, Pearson Education, Inc.
2. Dutta A.K., Materials Management: Procedures, Text and cases, Prentice Hall of India Pvt. Ltd., New Delhi.
3. Gopalakrishnan, P. and Sundareson, M., Materials Management: An Integrated Approach, Prentice Hall of India Pvt. Ltd., New Delhi.
4. Pooler Victor H. Purchasing and Supply Management, Creating the Vision, New York, Chapman Hall
5. Shah N.M. An Integrated concept of Materials Management, Indian Institute of Materials Management, Baroda Branch, Baroda.
6. Sharma S.C., Material Management and Materials Handling, Khanna Publishers, New Delhi.
7. Varma, M.M., Essentials of Storekeeping and Purchasing, Sultan Chand and Sons, New Delhi.

Note: The latest edition of the readings may be used.

Assessment methods

- Internal Assessment 25 marks
- Written Theory Exam 75 marks

Keywords: Materials Management, Materials Planning, Productivity plan, Purchase Cycle, MRP

Purchase Management

DSC: 1.2

Credit 4 (3L+1T)

Objective: The objectives of the course are

1. to provide the understanding of different concepts of purchase management;
2. The Course equips the students about purchasing and its systems and procedures.
3. To give understanding of price forecasting,
4. special purchase systems, public buying and online purchasing/buying.

Learning Outcomes: After completion of the course, learners will be able to:

1. explain the conceptual framework of purchase management.
2. perform the procedure for purchase of materials from private and Government sources
3. define special purchase systems and conduct price forecasting for purchasing the material.
4. explain the procedure of online purchasing, government purchasing and its current practices

Course Contents:

| Unit | Unit wise Weightage of Marks (in %) | C&K | A&A |
|--|--|-----|-----|
| Unit-1: Introduction to Purchase Management | 30 | √ | |
| Unit-2: Source and Procedure for purchase | 20 | √ | √ |
| Unit-3: Special Purchase Systems and Price Forecasting | 30 | √ | √ |
| Unit-4: Online and International Purchase | 20 | √ | √ |

Unit 1 Introduction to Purchase Management

Introduction, importance and functions of purchase Department, Organization for purchase function, centralized and decentralized purchasing, objectives of purchasing i.e. 6 R's of purchasing. Buyer- seller Relationship: Importance of good buyer-seller relationship, Relation with supplier-policies and issues in relationship, Ethical issues in purchasing.

Unit 2 Source and Procedure for purchase

Sources of supply: vendor selection and rating, Material specifications, Pre-purchase considerations, standard purchase procedure, post-purchase issues. Standard form used in purchasing like purchase requisition, tender / quotation documents, schedule of quotations, purchase order, follow-up order, cancellation of order, Bill of Materials etc.

Unit 3 Special Purchase Systems and Price Forecasting

Special Purchase Systems and Price Forecasting: (a) Special Purchase Systems: Forward Purchase, Tender purchase, Blanket order, zero stock, Rate contract, Purchases of capital equipment and leasing. (b) Price Forecasting: Price and

pricing impact, price practices, price negotiations hard bargaining and fixing. Purchasing under fluctuating prices, purchasing under uncertainty, Negotiations regarding quality

Unit 4 Online and International Purchase

Online Purchasing: Concept, advantages, procedure of online purchasing and current online purchase practices. International Purchasing: Need for International Purchase, Direct and Indirect Buying, term of payments and Legal-Framework of International Purchasing. The eProcurement System of India

Suggested Readings

1. Bailky, P. and Farmer, D., Purchasing Principles and Techniques, Pitman, London
2. Chunawalla, S.A., Materials and Purchase Management, Himalaya Publishing House, New Delhi
3. Dutta A.K., Materials Management: Procedures, Text and cases, Prentice Hall of India Pvt. Ltd., New Delhi.
4. Gopalakrishnan, P. and Sundareson, M., Materials Management: An Integrated Approach, Prentice Hall of India Pvt. Ltd., New Delhi.
5. Shah N.M. An Integrated concept of Materials Management, Indian Institute of Materials Management, Baroda Branch, Baroda
6. Sharma S.C., Material Management and Materials Handling, Khanna Publishers, New Delhi.
7. Pooler Victor H. Purchasing and Supply Management, Creating the Vision, New York, Chapman & Hall
8. Lee, L. and Dobler, D.W., Purchasing and Materials Management, McGraw Hill, New York
9. Zenz, G.J.. Purchasing and the Management of Materials, John Wiley, New York
10. <https://www.india.gov.in/spotlight/government-e-marketplace-procurement-made-smart#tab=tab-1>

Note: Latest editions of the books should be used.

Assessment methods

- Internal Assessment 25 marks
- Written Theory Exam 75 marks

Keywords: purchase Department, vendor selection, Material specifications, Price Forecasting

Microeconomics for Materials Management

DSE 1.3

(4 credits: 3+1 tutorial)

Course Objectives:

This course is designed to expose students to micro economic theory along with their applications with examples. The students will learn some basic principles of microeconomics to understand inventory management to cope up with competition or take advantage of market opportunity with a view to maximize gain. This will help retailing business units in their decision making.

Course Learning Outcomes:

1. Students will learn to think in terms of economic trade-offs and opportunities facing a small or medium sized firm, in its attempt to manage inventories optimally
2. Students will also learn how a firm may use inventory management to cope up with competition in the market.

| Unit | Unit wise weightage of marks (in %) | C&K* | A&A** |
|---|-------------------------------------|------|-------|
| Unit 1: Understanding Demand & Supply, Price and resource allocation, Elasticity, Market equilibrium. | 20% | √ | √ |
| Unit 2: Understanding Consumer Behaviour | 20% | √ | √ |
| Unit 3: Understanding Production, Costs and Profit maximization by Firm | 20% | √ | √ |
| Unit 4: Understanding Market structures. | 20% | √ | √ |
| Unit 5: Application of Microeconomics to MM. | 20% | √ | √ |

Content (Unit-wise):

Unit 1 : Understanding Demand & Supply, Price and resource allocation, Elasticity, Market equilibrium.

Markets and competition; determinants of individual demand/supply; demand/supply schedule and demand/supply curve; market versus individual demand/supply; shifts in the demand/supply curve, demand and supply together; how prices allocate resources; elasticity and its application; controls on prices; impact and incidence of indirect taxation .

Unit 2 : Understanding Consumer Behaviour

The consumption decision - budget constraint, consumption and income/price changes, demand for all other goods and price changes; preferences; consumer's optimum choice; income and substitution effects; labour supply and savings decision; choice between leisure and consumption.

Unit 3 : Understanding Production, Costs and Profit maximization by Firm

Production functions. Laws of production. Producer's equilibrium with the help of isoquants and iso-cost line. Expansion path in the long run and short run. Short run and long run costs curves. Economies and diseconomies of scale. Short-run costs and output decisions; costs and output in the long-run.

Unit 4 : Understanding Market structures.

Price and output determination under perfect competition, monopoly, monopolistic markets and oligopoly in short run and long run, allocative efficiency in perfect competition. Difference between monopoly and different forms of imperfect competition.

Unit 5:Application of Microeconomics to MM.

Market Structure and inventory management: Feedback Loop, Cut throat Competition, Market Uncertainty, inventory and wind fall gains, Inventory for essential goods - FCI, Temporal and spatial dimension of market for inventories, Inventories for seasonally produced goods - cold storage for potatoes, fruits, etc.

Suggested Readings:

- Case, Karl E. & Ray C. Fair: Principles of Economics, Pearson Education, Inc., 3th edition, 2020.
- Emek Basker, Handbook on the Economics of Retailing and Distribution, Edward Elgar,

2016.

- Farnham, Paul G., Economics for Managers, Pearson, latest edition.
- Lipsey, R. and Alec Chrystal, A: Economics, Oxford University Press, 14th edition, 2020.
- Satya P and Goel, J.K, Managerial Economics, Sage Publications, Second Revised Edition, 2022.
- Saha, B. et al, Study on Impact of Future Markets of Potato and Mentha oil on Farm Communities, Final Report, IIM Calcutta and NISTADS, CSIR, New Delhi, 2012.
- Samuelson, William F, . Marks, Stephen G, Zagorsky, Jay L. Wiley, Managerial Economics, 9th edition, 2021

Course Assessment: Assignments/test - 25, Exam - 75

BA (VS) INSURANCE MANAGEMENT

Risk Management & Insurance

DSC- 1

(4 : credits: 3 + 1 tutorial)

Objective: The course aims to provide basic understanding of the concept & classification of risk. The student will understand the process of risk management in detail and how insurance acts as a risk management tool. It covers the special features of insurance, insurance contracts, and the critical role of law of large numbers. This will also act as a stepping-stone for pursuing a higher professional qualification in the fields of risk management and insurance.

Learning Outcomes: After completion of the course, learners will be able to:

1. understand the concept of risk and uncertainty and classify risks, level of risk, and explain the behavioural aspect of risk and economics of insurance.
2. explain insurable and non-insurable risks.
3. analyse the role of risk management and insurance in economic development and as a social security tool.
4. evaluate the managerial functions of risk management and its process and also the working of insurance
5. evaluate the insurance contract as a risk management tool

Course Contents:

| Unit | Unit wise weightage of marks (in %) | C&K* | A&A** |
|--|--|-----------------|------------------|
| Unit 1: Risk & Uncertainty | 25 | √ | √ |
| Unit 2: Risk Management & its managerial aspects | 25 | √ | √ |
| Unit 3: Role of Insurance in managing risk | 25 | √ | √ |
| Unit 4: Insurance contract: An overview | 25 | | |

*Concept & Knowledge ** Analysis & Application

Unit 1: Risk and Uncertainty - 15 Hours

Concepts, causes, degree, classification, and cost. Insurable risk. Risk and economic development. Psychology and attitude towards risk. Managing risk and uncertainty. Cash flow at risk, Value at risk.

Unit 2. Risk management & its managerial aspects - 15 Hours

Risk management-concept, evolution, purpose, scope, importance, and its future. Role of risk management in economic growth. Risk management function. Risk Manager. Managerial Aspects- goals, identification, evaluation, risk response, and plan administration, risk management in a global economy: future perspective

Unit 3. Role of Insurance in managing risk - 15 Hours

Nature, importance, purpose, functions, classification, limitations and production process of insurance. Insurance and Risk, Insurance & Economic development, Insurance as a social

security tool, Determinants of insurance market structure; Re-insurance: meaning, purpose, forms.

Unit 4. Insurance contract: An overview - 15 Hours

Nature & subject matter of insurance and insurance contracts; Salient Features - as per Contract Act, including special features, evidence and supporting documentation; Payment of premium; e-insurance policy; Insurance Repositories

Exercises:

The learners are required to:

1. Organise group discussions in class on risk management techniques (Unit1).
2. Conduct a small survey (physical or online mode) about the popularity and awareness of insurance products as a means of managing risk (Unit3).
3. Evaluate through group discussions the different types of insurance contracts through case studies (Unit4).

Course Assessment: Internal Assignments/projects/class tests/presentations – 25; Exam - 75

Suggested Readings:

1. Arunajatesan S. & T. R. Viswanathan, Risk Management and Insurance, (2009) Macmillan Publishers Ltd.
2. Dorfman S. Mark (2012, 1987) Introduction to Risk Management and Insurance, Eighth Ed, Prentice-Hall.
3. Hampton John J. (1993) Essentials of Risk Management and Insurance, (1993), American Management Association (Amacom).
4. Holyoake Julia & Weipers Bill Insurance, (2002), Institute of Financial Services, U. K. (AITBS Publishers & Distributors (Regd.), Delhi-51.
5. Patukale Kshitiz (2009) Insurance for Everyone, Macmillan India Ltd. Teaching Learning Process, Assessment Methods and Teaching
6. Rejda, G. E. & McNamara M. (2017) Principles of Risk Management and Insurance, Pearson Education.
7. Skipper D. Harold & Kwon W. Jean (2008) Risk Management & Insurance Blackwell Publishing, Wiley India
8. Vaughan E.T. & T. Vaughan (2015) Fundamentals of Risk Management and Insurance.

Note: Students are advised to use the latest editions of textbooks

Statistics for Insurance DSC- 2

(4 credits: 3 + 1 practical)

Objective: The course aims to explain the basic concepts of statistics that are essential building blocks for application and analysis of data pertaining to the insurance industry. The course will explain the relationship between multiple variables and analysis of time series data. The student will be able to evaluate decision making under uncertainty in real life situations & to insurance industry in particular.

Learning Outcomes: After completion of the course, learners will be able to:

1. understand basic statistical concepts and apply them to finding objective solutions to problems in insurance business
2. analyse the relationship between multiple variables and their applications in business analytics, especially in the insurance industry
3. analyse trends with indexing and seasonality in a time series data.
4. Evaluate different statistical techniques and develop analytical thinking skills to solve business/real-life situations.
5. apply the theory of probability in decision making involving the insurance industry and evaluate the usefulness of existing insurance products

Course Contents:

| Unit | Unit wise weightage of marks (in %) | C&K* | A&A** |
|---|-------------------------------------|------|-------|
| Unit 1: Review of Descriptive Statistics | 20 | √ | √ |
| Unit 2: Correlation & Regression | 30 | √ | √ |
| Unit 3: Time Series and Index numbers | 25 | √ | √ |
| Unit4: Probability and Probability Distribution | 25 | √ | √ |

*Concept & Knowledge ** Analysis & Application

Unit-1 Review of Descriptive Statistics 12 Hours

Data: Types and Sources, quantitative and qualitative, big data and its utility in Business analytics; Measures of central tendency: Mean, Median, Mode; Measures of dispersion: Range, Quartile Deviation, Mean Deviation, Standard Deviation, Variance, Coefficient of Variance, Moments, shape of the distribution- skewness and Kurtosis, estimation of insurable loss and risk measurement relevant in insurance.

Unit 2 Correlation Analysis and Regression – 12 Hours

Correlation and causation, types of correlation - scatter diagram, Karl Pearson correlation, Spearman's Rank correlation; Simple and Multiple regression models, (problems on simple regression only); Standard error of estimate, Tests of significance; correlation and regression analyses with reference to the insurance industry

Unit-3 Analyses of Time Series and Index numbers – 12 Hours

Analyses of Time series: meaning and significance, utility, components of time series,

measurements of trends, methods of least squares, linear and parabolic trend, measurement of seasonal variations; Index numbers: meaning and significance, methods and problems in construction of index numbers with weights and without weights, consumer price index, introduction to stock market index; time series analysis of claims, premia, and other parameters important for the insurance industry; construction of mortality table of life insurance.

Unit-4 Probability - 9 Hours

Concept: expectations, equally likely events, independent events, complementary events; Rules of probability, Random variables, Concept of probability distribution, Theoretical probability distributions: Binomial, Poisson, Normal curve & empirical rule; introduction to sampling and Central limit theorem; application of probability in insurance.

Teaching- Learning

Practical Exercises:- 30 Hours

1. Students are expected to examine the popularity of life and non-life insurance products through descriptive statistics (Unit1).
2. Students shall be encouraged to engage in primary research to study correlations between demographics and choice of insurance products (Unit2).
3. Students shall be encouraged to analyse time series data on insurance for public and private sectors (Unit3)
4. Students shall be encouraged to apply the concept of probability to simulation of risk (Unit4).

Course Assessment: Internal Assignments/projects/class tests/presentations - 25, Exam - 75
Suggested Reading:

1. Gupta SP (2021) *Statistical Methods*, Sultan Chand Publications.
2. Levin R. and Robin, D, (2017) *Statistics for Management*, Pearson.
3. Levine, D. M., Stephan, D. F., & Szobot, K. A. (2017). *Statistics for Managers using Microsoft Excel*. Pearson.
4. Vohra, N. D. (2021). *Business Statistics: Text and Problems - With Introduction to Business Analytics*. McGraw Hill
5. Keller, G (2015), *Statistics for Management and Economics*, Cengage Learning, 10th ed., New Delhi.
6. Stine, R and, Foster, Dean, *Statistics for Business Decision making and Analysis*, Pearson, 2014.
7. Barrow, Michael, *Statistics for Economics, Accounting and Business Studies*, Prentice Hall, 2006.

Note: Students are advised to use the latest editions of textbooks

Microeconomics for Insurance

DSC- 3

(4 credits: 3 + 1 tutorial)

Objective: The course aims to expose students of insurance to micro economic theory and its applications for insurance industry. It covers basic principles such as decision making by consumers and producers, interactions of supply and demand with reference to insurance industry, characteristics of perfect and imperfect markets, market failure, role of information and decision making under uncertainty that are essential to understand the field of insurance. It will help students understand fundamental economic trade-offs and allocation problems. The course uses illustrations, graphical methods and numerical problems to explain the application of microeconomic concepts to real-life situations of the insurance market. This will develop wider appreciation and provide an enriched perspective to a student studying the Insurance vocation.

Learning Outcomes: After completion of the course, learners will be able to:

1. explain the concepts of economic trade-offs and opportunities in insurance
2. apply the fundamentals of market mechanisms to real situations in the economy in general and to insurance markets in particular.
3. analyse how markets work and why they fail
4. evaluate the role of information in creation of asset markets (insurance).

Course Contents:

| Unit | Unit wise weightage of marks (in %) | C&K* | A&A** |
|--|--|-----------------|------------------|
| Unit 1: Demand & supply, Price & resource allocation, Elasticity, Market equilibrium | 20 | √ | √ |
| Unit 2: Consumer behaviour | 25 | √ | √ |
| Unit 3: Production, Costs, Profit maximisation by firms | 25 | √ | √ |
| Unit 4: Market structures, market failure and role of information | 30 | √ | √ |

*Concept & Knowledge ** Analysis & Application

Unit 1: Demand & Supply with special reference to insurance markets, Price and resource allocation, Elasticity, Market equilibrium – 15 Hours

Markets and competition; determinants of individual demand/supply; demand/supply schedule and demand/supply curve (with special reference to Insurance, including health insurance, corporatisation) ; market versus individual demand/supply; shifts in the demand/supply curve, demand and supply together; how prices allocate resources; elasticity and its application; controls on prices; taxes and the costs of taxation; consumer surplus; producer surplus and the efficiency of the markets, markets and welfare, market failure and government failure.

Unit 2. Consumer Behaviour and choosing insurance – 15 Hours

The consumption decision - budget constraint, consumption and income/price changes, demand for all other goods and price changes; preferences; consumer's optimum choice; income and substitution effects; labour supply and savings decision; choice between leisure and

consumption, Decision making under uncertainty, risk, moral hazard, adverse selection, bounded rationality

Unit 3. Production, Costs and Profit maximization by an insurance Firm - 15 Hours

Production functions. Laws of production. Producer's equilibrium with the help of isoquants and iso-cost line. Expansion path in the long run and short run. Short run and long run costs curves. Economies and diseconomies of scale. Short-run costs and output decisions; costs and output in the long-run.

Unit 4. Market structures, Market failure and Role of information and working of insurance markets – 15 Hours

Perfect competition, monopoly, monopolistic markets, Price discrimination under monopoly, equilibrium in short run and long run, allocative efficiency in perfect competition. Difference between monopoly and perfect competition. Sources of Market Failure and corrective measures, Insurance Markets with asymmetric information.

Exercises:

The learners are required to:

1. engage in a group project dealing with consumer demand for insurance products (Unit1).
2. conduct classroom discussions on the efficacy of insurance products for the poor by the government (Unit4)
3. study in small groups and analyse the costs involved, profitability and benefits of compulsory group insurance schemes offered by the government or private sector employers (Unit4)

Course Assessment: Internal Assignments/projects/class tests/presentations - 25, Exam - 75

Suggested Readings:

1. Bannerjee P. "Finance and Health" in Biswas, P.K. and Das P. (eds.) Indian economy; Reforms and Development – Essays in honour of Manoj Kumar Sanyal 2019, Springer, Singapore.
2. Satya P. Das and Goyal J. K. (2022) Managerial economics, Sage Publications, 2nd revised edition.
3. Farnham, Paul G., Economics for Managers, Pearson, 2014-2015.
4. Lipsey, R. and Alec Chrystal: Economics, Oxford University Press, 14th Edition.
5. Case, Karl E. & Ray C. Fair: Principles of Economics, Pearson Education, Inc., 13th edition, 2020
6. Bernheim and Whinston (2014) Microeconomics, Tata McGraw-Hill, Special Indian Edition
7. Rubinfeld, Pindyck and Mehta (2017) Pearson 7th Edition
8. Samuelson William F, Stephen G Marks and Jay L Zagorsky, Managerial economics, Wiley, 9th edition 2021.

Note: Students are advised to use the latest editions of textbooks

BACHELOR OF ARTS (VS) MODERN OFFICE MANAGEMENT
MODERN OFFICE MANAGEMENT
DSC 1.1-(MOM)

Marks: 100

Credits: 4

(Theory = 75, Internal Assessment = 25)

Objective: The aim of the paper is to acquaint the students with modern office and its management. The knowledge and the skills acquired by students through this would help them to manage the modern office effectively and efficiently as office managers, executives or personal secretaries

Learning Outcomes: After completion of the course, learners will be able to:

1. examine the nature and functions of conventional office, modern office, paperless office, automated and virtual office.
2. develop an understanding about the functions of modern office, office manager and office management process.
3. describe the procedure of procurement and maintenance of office stationery and supplies.
4. explain the importance of location of office, its safety and security measures.
5. create the modern system of maintenance of official records.

Course Contents:

| Unit | Unit weightage wise of marks (in %) | C&K* | A&A** |
|--|-------------------------------------|------|-------|
| Unit 1: Office and its Functions | 30 | √ | √ |
| Unit 2: Management of Office | 20 | √ | √ |
| Unit 3: Location and environment | 20 | √ | √ |
| Unit 4: Office Stationery, Supplies & Office records | 30 | √ | √ |

*C&K- Comprehension & Knowledge

**A&A – Analysis & Application

Unit 1:- 15 Hours

Office and its functions: Meaning, importance and requisites of a modern office. Relation of office with other departments. Front office and back office operations. Types of offices: Corporate, Head, Circle, Zone, Branch, Divisional.

Changing office Scenarios; Concept of Paperless office, Automated office, Virtual office, Green Office, Open and Private Office, Work from home, Co-working space

Unit 2: - 15 Hours

Management of office: Meaning, Objectives and Principles of modern office Management Office hierarchy, Development of office Practices, Office routines, Office manual. Qualifications, Skills, Experience required for an office Manager, Duties of an office Manager.

Unit 3: 15 Hours

Location and Environment: Office building and its location, factors affecting choice of location, Importance of location.

Infrastructure safety and security, office hazards. Office layout; new trends in office layout, Working Environment in office, Home environment at work, flexible working hours

Unit 4: 15 Hours

Office Stationery, Supplies & Office records:

Office Stationery &Supplies: Importance, Storage, Issue and Control.

Purchase Procedures, Online Procurement; E-tender, Governments E- Market Place (GEM)

Office forms, types of forms, design of forms and control of form

Office records: Types of records, Importance and Principles of Record keeping, Handling and Supervision of records, records preservation, Time frame of preservation of records.

Filing; Meaning, importance, essentials of a good filing system. Modern system of maintenance of official records, centralized and decentralized filing, Computerized filing system.

Indexing: Meaning, importance, types of indexing system.

Exercises:

The learners are required to:

1. Visit the administrative office of the College, Government Office or Private Office.
2. Observe the Office Building, ventilation and layout of the building.
3. study the process of procurement of office supplies, stationery used in a modern office
4. Observe and experience the type and use of communication system, furniture and office machines.
5. Interact with the Office Managers and make a list of their duties and responsibilities and create the modern system of maintenance of official records.

Suggested Readings:

1. Bhatia, R.C.. *Office Management*. Galgotia Publishing Company, New Delhi, India.
2. Chopra, R. K., & Bhatia, A. *Office Management*. 15th Edition. Himalaya Publishing House, Mumbai, India.
3. Geoffrey, M., Standingford, O., & Appleby, R. C. . *Modern Office Management*, NY, USA.
4. Mills, G., & Standingford, O. *Office Organization and Method*. Pitman.
5. O'Rourke, J. S. *Management communication: A case analysis approach*. Chapter 4, Routledge, England, UK.
6. Thukaram Rao, M. E., *Office Organization and Management*. Atlantic Publishers and Distributors, New Delhi, India.
7. P.K. Ghosh, "Office Management", Sultan Chand & Sons. New Delhi
8. Pillai R.S.N, Bagavathi, "Modern Office Management", S. Chand Publishing House
9. Chhabra, T.N., *Modern Business Organisation*, New Delhi, Dhanpat Rai & Sons.

Note: Latest edition of the readings may be used.

FUNDAMENTALS OF SECRETARIAL PRACTICE

DSC 1.2-(MOM)

Course Objective:

The main objective is to familiarize the students with the activities of a modern office, role of a private Secretary in offices. The course helps the students to acquire essential skills in handling various office processes and operations.

Learning Outcomes: After completion of the course, learners will be able to:

1. Explain the role of private secretary in a business organisation.
2. Apply acquired skills in handling public relations.
3. Learn the process of developing organisational structure and will also understand to execute managerial functions performed in a business organisation.
4. The course will help the learner to manage travel arrangements and duties of the secretary before, during and after the meetings and handling inward and outward mail service.
5. Learn to maintain petty cash account, doing basic banking services and other jobs in the business world as an effective and efficient private secretary.

Course Contents:

| Unit | Unit wise weightage of marks (in %) | C&K* | A&A** |
|--|--|-----------------|------------------|
| Unit 1: Secretary | 25 | √ | √ |
| Unit 2: Travel arrangements | 25 | √ | √ |
| Unit 3: Meetings and conferences | 25 | √ | √ |
| Unit 4: Handling of Mail, Petty cash and Bank Services | 25 | √ | √ |

*C&K- Comprehension & Knowledge

**A&A – Analysis & Application

Unit 1: Secretary - 15 Hours

Meaning of Secretary, types of Secretaries, importance of Secretary, qualifications and qualities of Secretary, duties of a Secretary, changing profile of the Secretary.

Public relations- client facing roles, attending phone calls, management of appointments. Handling and screening visitors, visitors register.

Unit 2: Travel arrangements- 15 Hours

Making itinerary, reservations -travel and hotel. Classification of hotels. Modes of travel, Travel outside the country. Selection of travel agencies. Booking sites.

Unit 3: Meetings and conferences – 15 Hours

Meaning and purpose of meetings, types of meetings, preparation for meetings. Notice, Agenda, Quorum, Minutes of meetings, Duties of Secretary before, during and after a meeting. Additional terms used in meetings. Role of Chairman.

Use of multi-media, video conferencing, virtual meetings. Preparation of reports.

Unit 4: Handling of Mail, Petty cash and Bank Services – 15 Hours

Handling of Mail: Meaning of Mail, E-mail and Physical Mail, Voice mail. Inward Mail and Outward Mail, Mail routines. Inter-Departmental Mail, Mechanizing of Mail Services, Services provided by Courier Companies. Use of Modern technology and Office Communication.

Petty Cash and Bank Services

Meaning of petty cash, handling petty cash, maintaining record of petty expenses.

Types of bank accounts, Opening and operation of bank account. Other bank services. Use of credit card, debit card and net banking.

References

1. Arora, S. P. *Office Organisation and Management*, Vikas Publishing House.
2. Austin, E. *Senior Secretarial Duties and Office Organisation*. Macdonald and Evans.
3. Austin, E. *Secretarial services*. Macdonald and Evans.
4. Bhatia, R. C. *Principles of Office Management*, Lotus Press, Darya Ganj, New Delhi.
5. Chopra, R.K. *Administrative Office Management*, Himalaya Publishing House.
6. Cook, F. S., & Forti, L. S. *Dartnell professional secretary's handbook*.
7. Duggal, B. R. *Office Management*, Kitab Mahal, New Delhi.
8. P.K Ghosh, “*Secretarial practices and office management*”.
9. Spencer, J., & Pruss, A. *The professional secretary*. Burns & Oates.

Note: Latest edition of the readings may be used.

BUSINESS ORGANISATION AND MANAGEMENT
DSC 1.3-(MOM) [BC: DSC- 1.1]

Objective: The course aims to develop an understanding about business organisations, functions and challenges of management and contemporary issues in management.

Learning Outcomes: After completion of the course, learners will be able to:

1. explain the dynamics of business organisations and recent management practices.
2. describe varied perspectives related to business environment and entrepreneurship.
3. analyse how the organisations adapt to an uncertain environment and decipher decision making techniques.
4. analyse the relationship amongst functions of management *i.e.* planning, organizing, directing and controlling.
5. analyse the change in working pattern of modern organisations.

Course Contents:

| Unit | Unit wise weightage of marks (in %) | C&K* | A&A** |
|--|-------------------------------------|------|-------|
| Unit 1: Introduction | 20 | √ | √ |
| Unit 2: Business Environment and Entrepreneurship | 20 | √ | √ |
| Unit 3: Planning and Organizing | 20 | √ | √ |
| Unit 4: Directing and Controlling | 20 | √ | √ |
| Unit 5: Salient Developments and Contemporary Issues in Management | 20 | √ | √ |

*C&K- Comprehension & Knowledge

**A&A – Analysis & Application

Unit 1: Introduction – 12 Hours

Role of organisations and management in our lives; Nature and Functions of Management (An overview); Managerial Competencies, Ownership forms; Business formats- Brick & Mortar; Click; Brick & Click; E-commerce; Franchising; Outsourcing

Unit 2: Business Environment and Entrepreneurship - 12 Hours

Meaning and layers of Business Environment (micro/immediate, meso/intermediate, macro and international); Business ethics and social responsibility; Entrepreneurship and its relevance, Business and social entrepreneurship as a process of opportunity/problem; Micro, small and medium Enterprises; Government Policy regarding MSMEs

Unit 3: Planning and Organizing - 12 Hours

Strategic Planning – Business and Corporate Level Strategies; Decision-making- process and techniques; Organizing, Formal and Informal Organisations, Centralisation and Decentralisation, Organisational structures – Divisional, Product, Matrix, Project and Virtual Organisation

Unit 4: Directing and Controlling – 12 Hours

Motivation- needs (including Maslow's theory), incentives, Equity and two factor theory (Herzberg); McGregor Theory X and Theory Y; Leadership – Leadership Styles, Transactional Vs. Transformational Leadership; Followership – meaning, importance and Kelley's Followership Model; Communication – New trends and directions (Role of IT and social media); Controlling –Techniques of Controlling Relationship between planning and controlling

Unit 5: Salient Developments and Contemporary Issues in Management - 12 Hours

Business Process Reengineering (BPR), Learning Organisation, Six Sigma, Supply Chain Management, Subaltern Management Ideas from India; Diversity & inclusion; Work life Balance; Freelancing; Flexi-time and work from home; Co-sharing/co-working.

Exercises:

The learners are required to:

1. complete the exercise wherein they are given different situations and scenarios to start their own business (in terms of capital, liability, scale of operations, etc.) and are asked to select the most suitable form of business and justify the same highlighting the advantages and disadvantages of their choice.
2. participate in role play activity for describing the various levels of Management and competencies.
3. each learner is required to identify various elements affecting the business environment and conduct SWOT analysis for the company identified.
4. participate in simulation activity wherein each learner is asked to prepare strategic plans with respect to increasing the effectiveness in their respective organisation.
5. present a role play on bounded rationality or on any aspect of decision making.
6. create a simulation exercise in class to demonstrate various types of authority, delegation, and decentralization of authority.
7. using Maslow's Need-Hierarchy Theory, analyse various needs and prepare a report.
8. demonstrate various types of Leadership Styles in the form of Role Play by identifying real life leaders from the corporate world.

Suggested Readings

1. Basu, C. (2017). *Business Organisation and Management*. McGraw Hill Education.
2. Chhabra, T. N. *Business Organisation and Management*. Sun India Publications. New Delhi.
3. Drucker, P. F. (1954). *The Practice of Management*. Newyork: Harper & Row.
4. Kaul, V. K. (2012). *Business Organisation Management*. Pearson Education.
5. Koontz, H., & Weihrich, H. (2012). *Essentials of Management: An International and Leadership Perspective*. Paperback.
6. Singh, B. P., & Singh, A. K. *Essentials of Management*. New Delhi. Excel Books Pvt. Ltd.

Note: Latest edition of the readings may be used.

B.A. (VS) Marketing Management and Retail Business

DSC 1.1

Marketing Management-I

Core Discipline - (CD) Credit: 4

Duration: 3 hours

Marks: 100

Objective:

1. To provide the basic knowledge of different concepts of marketing
2. To make the students acquainted with various environments affecting marketing decisions
3. To enable the students to learn the methods of product life cycle and pricing.
4. To aware students about latest issues and developments in marketing

Learning Outcomes: After completion of the course, learners will be able to:

1. Classify marketing environment and how to use market segmentation
2. Interpret product life cycle and pricing strategies in their day to day life.
3. appraise the role of promotion in marketing.
4. Identify issues and developments in marketing

Course Contents:

| Unit | Unit wise weightage of marks (in %) | C&K* | A&A** |
|--|--|-----------------|------------------|
| Unit 1: Introduction | 25% | √ | √ |
| Unit 2: Marketing Environment and Segmentation | 30% | √ | √ |
| Unit 3: Product Life Cycle and Pricing | 25% | √ | √ |
| Unit 4: Promotion, Issues and Developments in Marketing | 20% | √ | √ |

*C&K- Comprehension & Knowledge

**A&A – Analysis & Application

UNIT-I Introduction: 15 Hours

Evolution of Marketing concepts, meaning, nature, scope and importance of marketing, Core Concept of Marketing - Need, Want, Demand, Value and Satisfaction, Features of Marketing, Selling Vs Marketing, traditional and modern concept of marketing. Functions of marketing, Marketing Mix – The elements of marketing mix, Approaches to the study of marketing and economic development, holistic Marketing concept

UNIT-II Marketing Environment and Segmentation: 15 Hours

Definition, Types and Components of Marketing (Micro and Macro) Need & trends in the Macro environment – Demographic, Economic Natural, Technological, Political, Legal, and Cultural

environment) Market Segmentation: Concept, Importance, and Bases. Requisites of sound marketing segmentation Market Positioning: Concept & Importance, Market Repositioning. Product Differentiation Vs Market Segmentation,

Unit III Product Life Cycle and Pricing: 15 Hours

Product Life Cycle concept and process, New Product Development process, Concept of Market Targeting and Positioning; Undifferentiated marketing – Concentrated marketing; Price- concept, meaning and objectives, price determination, factors influencing pricing policy, method of pricing policies and strategies

Unit IV Promotion, Issues and Developments in Marketing: 15 Hours

Promotion – Advertising – Personal Selling – Sales Promotion – Publicity; Contemporary Issues in Marketing; Social, ethical and legal aspects of marketing; Marketing of services; International marketing; Cyber marketing; Green Marketing, Relationship marketing and other developments of marketing

Exercises:

1. you are the marketing manager of a firm producing motorcycle. On what basis will you segment the market? Outline a marketing program for these segments while highlighting how these programs vary from one segment to the other. **(Unit 2)**
2. compare the pricing strategy used by recently launched products. **(Unit 3)**
3. conduct a field survey to analyse the marketing segmentation strategy of a product of your choice. **(Unit 3)**
4. prepare a marketing mix strategy for promoting electric cars in India and present the same justifying the reasons thereof. **(Unit 1, 4)**
5. through a role play imagine you are appointed as a salesperson to market a newly launched product of your choice (high involvement and low involvement product). What steps will you undertake in developing a new product? **(Unit 1)**

Suggested Readings:

1. Kotler, P., Armstrong, G., Agnihotri, P. (2018). Principles of Marketing. Pearson Education. Indian edition.
2. Etzel, M. J., Walker, B. J., Stanton, W. J., Pandit, A. (2010). Marketing. McGraw Hill.
3. Masterson, R. (2022), Marketing, 5ed., Sage Textbook
4. Baines Et AL(2021).Fundamentals of Marketing.Oxford University Press
5. Ramaswamy, N, (2018), Marketing Management, Sage TextbookKapoor, N. (2021). Principles of Marketing. Prentice Hall of India

Note: Latest edition of the book may be use.

B.A. (VS) Marketing Management and Retail Business

DSC 1.2

Fundamental of Management and Retailing

Core Discipline - (CD) Credit: 4

Duration: 3 hours

Marks: 100

Objective:

1. To Acquaint the Students with the Fundamentals of Managing Business.
2. To provide basic understanding of retail business, and familiarize with the changing retail environment.
3. To adopt various retailing strategies and make aware of the various types of retail structure.

Learning Outcomes: After completion of the course, learners will be able to:

1. describe evolution of management and its significance and analyze how organisations adapt and changes in organisation structures over time.
2. assess the role of organisation and direction in business understand the function of controlling and contemporary issues in management
3. create an inclusive perspective on the background of retail management
4. acquire a conceptualized framework to classify and analyse the retail business structure.

Course Contents:

| Unit | Unit wise weightage of marks (in %) | C&K* | A&A** |
|---|--|-----------------|------------------|
| Unit 1: Introduction to Management | 25% | √ | √ |
| Unit 2: Planning Organizing, Directing and Controlling | 25% | √ | √ |
| Unit 3: Retailing | 25% | √ | √ |
| Unit 4: Retailing Structure | 25% | √ | √ |

*C&K- Comprehension & Knowledge

**A&A – Analysis & Application

Unit 1: Introduction to Management – 15 Hours

Principles of management - concept, nature and significance; Evolution of Management thought: Classical (Fayol's principles of management; Taylor's scientific management), Neoclassical (Hawthorne Experiments), Modern approach (Systems Approach; Contingency Approach). Coordination - concept, characteristics and importance; Functional areas of management – an overview.

Unit 2: Planning Organizing, Directing and Controlling – 15 Hours

Planning- concept and meaning, strategic and operations planning; Decision-making, Organisational structures- traditional and modern; Factors affecting organisational design, Concept and theories of Motivation- Maslow's need hierarchy, Herzberg's two-factor theory, Theory X&Y; leadership; Communication- meaning and importance. Principles of Controlling, performing controlling function; Management challenges of the 21st Century; Century

Unit 3: Retailing – 15 Hours

Retailing: Concept, Scope function and importance of Retail Management, Evolution of Indian Retail Industry, Theories of Retail Development (Wheel of Retailing, Retail Accordation, Melting Pot Theory, Polarization Theory). Retail Environment in India, Changing Scenario of Retail Business in India Fluctuations in Retail Industry, Dealing with recession in retail industry

Unit 4: Retailing Structure – 15 Hours

Environment & competition, Competitive Environment in different Retail Sectors, Govt. Policies in Retail Sectors, Changes in consumer spending, Impact of economic fluctuation on retailing industry. Know Your Customers: Focusing on the consumer, mapping out society: Psychographics, Postmodern Consumers, Learning Attitudes, Motivation and Perception, Modeling Consumer Behavior, Contemporary Issues in Retail Management
Exercises:

The learners are required to:

1. assess the applicability of managerial theories in today's corporate world. **(Unit 1)**
2. demonstrate the use of managerial functions in organizing an event **(Unit 1)**
3. prepare a comparative analysis of organization structures of various companies. **(Unit 2)**
4. discuss the impact of emerging issues in management. **(Unit 4)**
5. using Maslow's Need-Hierarchy Theory, analyse various needs and prepare a report. **(Unit 2)**
6. prepare an experiential report on the use of vending machines in a retail format of your choice. **(Unit 3)**
7. haats are popular not only in rural India, but in urban areas too. Conduct a study on the effectiveness of their location and visual merchandising display strategy that they have adopted. **(Unit 4)**
8. study the layout, merchandising and display of any store-based retail format. **(Unit 3)**

Suggested Readings:

1. Drucker, P. F. (1999). Management Challenges for the 21st Century. Harper Collins Publishers Inc.
2. Koontz, H., & Weihrich, H. (2012). Essentials of Management: An International and Leadership Perspective. McGraw Hill Publications
3. Laasch, O. (2022), Principles of Management, 2e, Sage Textbook
4. Levy, M., Weitz, B. A., & Ajay, P. (2009). Retailing Management: Tata McGraw- Hills Publg. Co. Ltd., New Delhi.
5. Newman, A.J., & Cullen, P. (2002). Retailing Environment; Operations. New Delhi: Cengage Learning India Private Limited.
6. Vedamani, G. G. (2008). Retail management. Jaico, Ed. 3rd.

B.A. (VS) Marketing Management and Retail Business**DSC 1.3****Microeconomics for Retailing Business****Core Discipline - (CD)****Duration: 3 hours****Credit: 4****Marks: 100****Course Objectives:**

This course is designed to expose students to micro economic theory along with their applications with examples. The students will learn some basic principles of microeconomics to understand functioning of different kinds of market structure. This will help retailing business units in their decision making.

Course Learning Outcomes:

1. Students will learn to think in terms of economic trade-offs and opportunities facing a retail business unit.
2. Students will also learn to apply the fundamentals of market mechanism to real life situations confronting a retail business unit

| Unit | Unit wise weightage of marks (in %) | C&K* | A&A** |
|--|--|-----------------|------------------|
| Unit 1: Understanding Demand & Supply, Price and resource allocation, Elasticity, Market equilibrium. | 20% | √ | √ |
| Unit 2: Understanding Consumer Behaviour | 20% | √ | √ |
| Unit 3: Understanding Production, Costs and Profit maximization by Firm | 20% | √ | √ |
| Unit 4: Understanding Market Structures | 20% | √ | √ |
| Unit 5: Application of Microeconomics to MMRB | 20% | √ | √ |

Content (Unit-wise):

Unit 1: Understanding Demand & Supply, Price and resource allocation, Elasticity, Market equilibrium - 12 Hours

Markets and competition; determinants of individual demand/supply; demand/supply schedule and demand/supply curve; market versus individual demand/supply; shifts in the demand/supply curve, demand and supply together; how prices allocate resources; elasticity and its application; controls on prices; impact and incidence of indirect taxation.

Unit 2 : Understanding Consumer Behaviour – 12 Hours

The consumption decision - budget constraint, consumption and income/price changes, demand for all other goods and price changes; preferences; consumer's optimum choice; income and substitution effects; labour supply and savings decision; choice between leisure and consumption.

Unit 3 : Understanding Production, Costs and Profit maximization by Firm - 12 Hours

Production functions. Laws of production, Producer's equilibrium with the help of isoquants and iso-cost line, Expansion path in the long run and short run Short run and long run costs curves. Economies and diseconomies of scale Short-run costs and output decisions; costs and output in the long-run

Unit 4: Understanding Market structures – 12 Hours

Price and output determination under perfect competition, monopoly, monopolistic markets and oligopoly in short run and long run, allocative efficiency in perfect competition. Difference between monopoly and different forms of imperfect competition

Unit 5: Application of Microeconomics to MMRB – 12 Hours

Traditional retailing versus corporate multibrand retailing, market structures; Competition, monopoly, monopsony, Waterbed effects, price flexing, case study of Shoppers Stop versus local retailing.

Suggested Readings:

1. Biswas,P.K. "Corporate Retailing in the Advanced Countries: Some Salient Features", in Das, Mausumi, Sabyasachi Kar and Nandan Nawn (eds.) Economic challenges for the contemporary world: essays in honour of Prabhat Patnaik, Sage Publications, New Delhi, 2016.
2. Case, Karl E. & Ray C. Fair: Principles of Economics, Pearson Education, Inc., 3th edition, 2020.
3. David S. Evans, eds,PLATFORM ECONOMICS,Essays on Multi-Sided Businesses, Competition International,2011.
4. Emek Basker,Handbook on the Economics of Retailing and Distribution, Edward Elgar, 2016
5. Farnham, Paul G., Economics for Managers, Pearson, latest edition.
6. Lipsey, R. and Alec Chrystal, A: Economics, Oxford University Press,14th edition, 2020.
7. Satya P and Goel, J.K,Managerial Economics, Sage Publications,Second Revised Education, 2022.
8. Samuelson, William F , Marks, Stephen G, Zagorsky, Jay L. Wiley, Managerial Economics, 9th edition, 2021

B.A. (VS) Tourism Management

Paper: TM 1.1 Basics of Tourism

Core - (DSC)

(4: credits: 3 + 1 tutorial)

Course Objective

The aim of this course is to develop the understanding of various concepts, and terminology used in travel and tourism this will help students in acquiring both theoretical and practical knowledge. To acquaint students with the selected issues those currently influence the tourism industry both locally and globally. The course is designed in a manner that trains the students by imparting skills that are mandatory in travel and tourism industry.

Course Learning Outcomes

After completing this course, the learners would be able to:

1. Demonstrate the concepts, typology and forms of tourism from the management, marketing and financial perspective.
2. Understand the structure and linkages of the travel and tourism industry.
3. To describe the tourism products, issues of tourist and host relation and community participation in the tourism development. Students will be able to understand the importance of guest and host relationship for the development of tourism.
4. Know the demand and supply characteristics of tourism and also explain the different motivational theories related to tourism. They will be able to forecast and measure the demand and supply for the tourism industry.

Course Contents

| Unit | Unit wise weightage of marks (in %) | C & K* | A & A** |
|---|-------------------------------------|--------|---------|
| Unit I: Definitions, concepts and typology of Tourism | 25 | √ | √ |
| Unit-II: Components of Tourism and Industry linkages | 25 | √ | √ |
| Unit III: Tourism Products and Determinants- | 25 | √ | √ |
| Unit IV: Demand and Supply in the Tourism Industry | 25 | √ | √ |

*C & K- Comprehension & Knowledge

**A & A – Analysis & Application

Unit-I

Definitions, concepts and typology of Tourism – Meaning, Definition and concept of tourism, Leisure and Recreation, Business tourism, VFR, Mass tourism, Adventure tourism, Sports tourism, Rural tourism, Tourism education, Forms and typology of tourism, Tourists and typologies of tourists, Difference between visitors, tourists and excursionist.

Unit-II

Components of Tourism and Industry linkages- Basic Components of Tourism - Attractions, Activities, Accessibility, Accommodation, Facilities & Amenities, Tourism as an industry & its linkage- Direct, Indirect and support services.

Unit-III

Tourism Products and Determinants- Determinants of tourism, Difference between Travel and Tourism, Holiday, Sightseeing, Tourism Products- definition and characteristics, Tourist host relationship, Community participation in tourism development.

Unit-IV

Demand and Supply in the Tourism Industry- Demand- Supply Characteristics, Concepts, Definition and indicators of demand, Measuring demand for tourism, International and Domestic tourism, Technological progress and Globalization, Concept and Resources for Ecotourism, Motivation for tourism.

Practical Exercises

The learners are required to:

1. Explain relevant concepts by way of Class presentation.
2. Understand and discuss different Tourism Management concept and function using Focused group discussion.
3. Assess the understanding of theory and practical by objective and subjective assessment (Class test, assignments, MCQs, Fill in the blanks and quiz).
4. Analyze the case studies to understand the dynamics of Tourism Management functions.

Course Assessment: Internal Assignments/projects/class tests/presentations – 25; Exam - 75

Suggested Readings:

1. Burkart, A.J & Heinemann Medlik, Tourism: Past. Present and Future, Professional Publishing, London, 1986 reprint.
2. Mill, Robert, The Tourism System: An Introductory Text, Hall International, London, 1992.
3. Kamra, Krishan, Basics of Tourism: Theory, Operation, Kanishka Publishers, New Delhi, 2002.
4. Bhatia, A.K. International Tourism Marketing, Sterling, New Delhi, 2008.
5. Dr. S. K. Kabia-Tourism and Environment.
6. Wahab, S.E. Tourism Management, Tourism International Press, London, 1986.
7. Dr. Jasbir Singh, Eco-Tourism, I.K. International Publishing, New Delhi, 2010.
8. Sunetra Rodey, Tourism Operations and Management, Oxford Publication, 2021

Note: Latest edition of the readings may be used.

B.A. (VS) Tourism Management
Semester I
Paper: DSC 1.2
Business Organization and Management
Core - (DSC)

(4: credits: 3 + 1 tutorial)

Course Objective:

The course aims to develop an understanding about business organisations, functions and challenges of management and contemporary issues in management.

Learning Outcomes: After completion of the course, learners will be able to:

1. Explain the dynamics of business organizations and recent management practices.
2. Describe varied perspectives related to business environment and entrepreneurship.
3. Analyze how the organizations adapt to an uncertain environment and decipher decision making techniques.
4. Analyze the relationship amongst functions of management *i.e.*, planning, organizing, directing and controlling.
5. Analyze the change in working pattern of modern organizations.

Course Contents:

| Unit | Unit wise weightage of marks (in %) | C&K* | A&A** |
|--|--|-----------------|------------------|
| Unit I: Introduction | 20 | √ | √ |
| Unit II: Business Environment and Entrepreneurship | 30 | √ | √ |
| Unit III: Planning and Organizing | 20 | √ | √ |
| Unit IV: Directing and Controlling and Contemporary Issues in Management | 30 | √ | √ |

*C & K- Comprehension & Knowledge

**A & A – Analysis & Application

Unit 1: Introduction

Role of organizations and management in our lives; Nature and Functions of Management (An overview); Managerial Competencies, Ownership forms; Business formats- Brick & Mortar; Click; Brick & Click; E-commerce; Franchising; Outsourcing

Unit 2: Business Environment and Entrepreneurship

Meaning and layers of Business Environment (micro/immediate, meso/intermediate, macro and international); Business ethics and social responsibility; Entrepreneurship and its relevance, Business and social entrepreneurship as a process of opportunity/problem; Micro, small and medium Enterprises; Government Policy regarding MSMEs

Unit 3: Planning and Organizing

Strategic Planning – Business and Corporate Level Strategies; Decision-making- process and techniques; Organizing, Formal and Informal Organizations, Centralization and Decentralization, Organizational structures – Divisional, Product, Matrix, Project and Virtual Organization.

Unit 4: Directing, Controlling and Contemporary Issues in Management

Motivation- needs (including Maslow's theory), incentives, Equity and two factor theory (Herzberg); McGregor Theory X and Theory Y; Leadership – Leadership Styles, Transactional Vs. Transformational Leadership; Followership – meaning, importance and Kelley's Followership Model; Communication – New trends and directions (Role of IT and social media); Controlling – Techniques of Controlling Relationship between planning and controlling. Six Sigma, Supply Chain Management, Subaltern Management Ideas from India; Diversity & inclusion; Work life Balance; Freelancing; Flexi-time.

Practical Exercises:

The learners are required to:

1. Complete the exercise wherein they are given different situations and scenarios to start their own business (in terms of capital, liability, scale of operations, etc.) and are asked to select the most suitable form of business and justify the same highlighting the advantages and disadvantages of their choice.
2. Participate in role play activity for describing the various levels of Management and competencies.

3. Each learner is required to identify various elements affecting the business environment and conduct SWOT analysis for the company identified.
4. Participate in simulation activity wherein each learner is asked to prepare strategic plans with respect to increasing the effectiveness in their respective organization.
5. Present a role play on bounded rationality or on any aspect of decision making.
6. Create a simulation exercise in class to demonstrate various types of authority, delegation, and decentralization of authority.
7. Using Maslow's Need-Hierarchy Theory, analyze various needs and prepare a report.
8. Demonstrate various types of Leadership Styles in the form of Role Play by identifying real life leaders from the corporate world.

Suggested Readings

1. Basu, C. (2017). *Business Organization and Management*. McGraw Hill Education.
2. Chhabra, T. N. *Business Organization and Management*. Sun India Publications. New Delhi.
3. Drucker, P. F. (1954). *The Practice of Management*. New York: Harper & Row.
4. Kaul, V. K. (2012). *Business Organization Management*. Pearson Education.
5. Koontz, H., & Weihrich, H. (2012). *Essentials of Management: An International and Leadership Perspective*. Paperback.
6. Singh, B. P., & Singh, A. K. *Essentials of Management*. New Delhi. Excel Books Pvt. Ltd.

Note: Latest edition of the readings may be used.

B.A. (VS) Tourism Management

Paper: DSC 1.3 Evolution of Tourism

Core - (DSC MINOR)

(4: credits: 3 + 1 tutorial)

Course Objectives-

The aim of this course to acquaint students with the understanding perceptions of people and the world. The course will develop the concepts of motivation and determinants of travel, tourism, holiday and leisure in tourism historicity. It focuses in understand the evolution of diverse cultural milieu and traditions in the ancient and medieval world and their impact on tourism practices and products.

Course Learning Outcomes

After completing this course, the learners would be able to:

1. Explain the chronological evolution of tourism. This knowledge will give them insights into the functioning of the Tourism sector in the contemporary world and society.
2. Explain the development of various traditions, practices and pilgrimages and would enable the students to understand the cultural root of the development of modern sport tourism as well.
3. Demonstrate organizing capability and virtues required to lead the group and organization in an effective and efficient manner.
4. Explain the critical analysis of the historical events and narratives. Students would be able to find the job opportunity in the field of cultural studies & practices.

Course Contents

| Unit | Unit wise weightage of marks (in %) | C & K* | A & A** |
|--|--|-------------------|--------------------|
| Unit I: Evolution of Tourism as a new discipline | 25 | √ | √ |
| Unit II: Development of Tourism in Modern Age | 25 | √ | √ |

| | | | |
|--|----|---|---|
| Unit III: Idea of Tourism as a cultural practice Ancient Civilizations | 25 | √ | √ |
| Unit IV: Concept of Discovery and Touristic Patterns- | 25 | √ | √ |

*C & K- Comprehension & Knowledge

**A & A – Analysis & Application

Unit- I

Evolution of Tourism as a new discipline- Evolution of Tourism as an academic subject, Tourism and other social sciences. Methodology for Evolution of Tourism. Primary and

Secondary sources for studying Evolution of Tourism, Chronological Division of Evolution of Tourism, Travellers and Travelogues of Ancient and Medieval world -Megasthenes, Hsuan Tsang, Ibn Battuta and Marco Polo.

Unit-II

Development of Tourism in Modern Age

Major Socio-Cultural Processes and Development of Tourism in Modern Age, Sea Voyages, Vasco De Gama and Columbus, Renaissance, Grand Tours, Reformation, French Revolution, Industrial Revolution, Imperialism, Nationalism and National Movements in Asia (including Japan) Socialism and growth of Tourism in the modern period.

Unit-III

Idea of Tourism as a cultural practice Ancient Civilizations -Social- Economic conditions and Tourism: Egypt, Mesopotamia, India, China, Rome, Greece (case studies of Giza, Ziggurat of Ur, Sanchi, Terracotta army of Shaanxi, Rome and Athens).

Medieval Civilizations

Rise and fall of early empires, Byzantine, Christian and Islamic Civilizations. Tourism activity in the ancient and medieval world, Seven Wonders of the ancient and medieval World, Pilgrimage (Hindu, Buddhist, Jain, Christian and Islamic), Tourism and Spectator Sports (Olympics, chariot races and gladiator fights), Resorts and Spas, Royal Tourism and Educational tours.

Unit-IV

Concept of Discovery and Touristic Patterns-

Urbanization- Rome and Varanasi, interlinking of politics, religion, trade, entertainment and tourism. Trade Routes- Silk Route, Spice Route and Incense Route. Cultural Interactions, Diffusion and experimentation, Birth of new art forms, music, Theatre and Sculpture.

Practical Exercises

The learners are required to:

1. Explain evolution of tourism through historical perspective by way of Class presentation.
2. Assess the understanding of theory and practical by objective and subjective assessment (Class test, assignments, MCQs, Fill in the blanks and quiz).

Course Assessment: Internal Assignments/projects/class tests/presentations – 25; Exam – 75

Suggested Readings:

1. Koshar, Rudy, ed. *Histories of Leisure*. Oxford: Berg, 2002.
2. Holden, A (Ed) *Tourism Studies and the social sciences*. Abington, UK: Routledge. 2005
3. Löfgren, Orvar. *On Holiday: A History of Vacationing*. Berkeley: University of California Press, 1999.
4. Towner, John. "Approaches to Tourism History," *Annals of Tourism Research* 15, no.1 (1988): 47-62.
5. Réau, Bertrand. "Commentary: The Historical Social Science of Tourism." *Journal of Tourism History* 6, nos. 2-3 (August-November 2014): 210-222.
6. Glover, Nikolas. "Co-produced Histories: Mapping the Uses and Narratives of History in the Tourist Age," *Public Historian* 30, no. 1 (Feb., 2008): 105-124.
7. Goodale, Thomas and Geoffrey Godbey. *The Evolution of Leisure*. State College, PA: Venture Publishing, 1988.
8. Hardy, Dennis. "Socio cultural Dimensions of Tourism History," *Annals of Tourism Research* 17, no. 4 (1990): 541-555.
9. Whitfield, Peter. *Travel: A Literary History*. Oxford: Bodleian Library, 2011.
10. Peter Hulme and Tim Youngs (ed) *Cambridge companion to travel writing*. 2002
11. Hulme Peter (2002) 'Stirrings and Searchings ', in 2 (ed.) *Cambridge companion to*

- travel writing Cambridge: Cambridge University Press, pp. 30.
12. Marafoite Tracy (2008) 'The American Dream; Technology, Tourism and the transformation of wilderness ', Environmental Communication, 2(2), pp.
 13. Amar Farouqui 'Early Social Formation', Manak Delhi .2001.
 14. Rakesh Kumar, Ancient and Medieval World: From evolution of Humans to the Crisis of Feudalism, Sage Texts, new Delhi, 2018.
 15. Burkhardt and Madlik 'Tourist Past, Present and Future': Butterworth Heinemann, several editions.
 16. Gilbert Sigeauxz "History of Tourism".
 17. Herbert "Heritage Tourism and Society".
 18. J. Christopher Holloway "The Business of Tourism.
 19. Maisels "Early Civilisations of the Old World"- Business Books Communication, 1978.
 20. McIntosh, Goldner, Ritchie "Tourism: Principles, Practices, Philosophy"- John Wiley, New York, 1995.
 21. Nisbet "Social Change and History"- Oxford University Press, 1972.
 22. Nora Starr. "Viewpoint"- Prentice Hall, 1997.
 23. Ratnagar "Trading Ecounters"- Oxford University Press. New Press, 2004.
 24. T. Walter Wallbank "Civilisations Past and Present"- Scott Foresman, London, 1978.
 25. Urry, J (1990), The Tourist Gaze: Leisure and Travel in contemporary Societies. Sage Publication: London.
 26. Aitchison, C and F. Jordon (1998), Gender, Space and Identity: Leisure, Culture and Commerce. Eastbourne.
 27. K Kinnaird, D Hall (ed) 1994. Tourism a Gender Analysis. Wiley.
 28. Himanshu Prabha Ray. 1987. Monastery and Guild: Commerce under Satavahana. Oxford University Press.

Note: Latest edition of the readings may be used.

10. Amendment to Appendix -II-A to the Ordinance V (2-A) of the Ordinances of the University vide EC Resolution 18-1-4 dated 18.08.2022 regarding Syllabi of 1st Semester of Departments under Faculty of Mathematical Sciences

Add the following:

Syllabi of Semester-I of the following departments under Faculty of Mathematical Sciences based on Under Graduate Curriculum Framework -2022 to be implemented from the Academic Year 2022-23.

FACULTY OF MATHEMATICAL SCIENCES

DEPARTMENT OF MATHEMATICS

B.SC. (H) MATHEMATICS

Category-I

DISCIPLINE SPECIFIC CORE COURSE – 1: ALGEBRA

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Algebra | 4 | 3 | 1 | 0 | Class XII pass with Mathematics | Nil |

Learning Objectives

The primary objective of this course is to introduce:

- The basic tools of theory of equations, number theory, and group theory.
- Symmetry group of a plane figure, basic concepts of cyclic groups.
- Classification of subgroups of cyclic groups.

Learning Outcomes:

This course will enable the students to:

- Determine number of positive/negative real roots of a real polynomial.

- Solve cubic and quartic polynomial equations with special condition on roots and in general.
- Employ De-Moivre's theorem in a number of applications to solve numerical problems.
- Use modular arithmetic and basic properties of congruences.
- Recognize the algebraic structure, namely groups, and classify subgroups of cyclic groups.

SYLLABUS OF DSC-1

Theory

Unit – 1 (24 hours)

Theory of Equations and Complex Numbers

General properties of polynomials and equations, Fundamental theorem of algebra, Relations between the roots and the coefficients, Upper bounds for the real roots; Theorems on imaginary, integral and rational roots; Newton's method for integral roots, Descartes' rule of signs; De-Moivre's theorem for integer and rational indices and their applications, The n th roots of unity, Cardan's solution of the cubic, Descartes' solution of the quartic equation.

Unit – 2 (16 hours)

Basic Number Theory

Division algorithm in \mathbb{Z} , Divisibility and the Euclidean algorithm, Fundamental theorem of arithmetic, Modular arithmetic and basic properties of congruences.

Unit – 3 (20 hours)

Basics of Group Theory

Groups, Basic properties, Symmetries of a square, Dihedral group, Order of a group, Order of an element, Subgroups, Center of a group, Centralizer of an element, Cyclic groups and properties, Generators of a cyclic group, Classification of subgroups of cyclic groups.

Practical component (if any) - NIL

Essential Readings

1. Andreescu, Titu & Andrica, D. (2014). Complex numbers from A to...Z. (2nd ed.). Birkhäuser.
2. Dickson, Leonard Eugene (2009). First Course in the Theory of Equations. John Wiley & Sons, Inc. The Project Gutenberg eBook: <http://www.gutenberg.org/ebooks/29785>
3. Gallian, Joseph. A. (2017). Contemporary Abstract Algebra (9th ed.). Cengage Learning India Private Limited, Delhi. Indian Reprint 2021.
4. Goodaire, Edgar G., & Parmenter, Michael M. (2006). Discrete Mathematics with Graph Theory (3rd ed.). Pearson Education Pvt. Ltd. Indian Reprint 2018.

Suggestive Readings

- Burnside, W.S., & Panton, A.W. (1979), The Theory of Equations, Vol. 1. Eleventh

Edition, (Fourth Indian Reprint. S. Chand & Co. New Delhi), Dover Publications, Inc.

- Burton, David M. (2011). Elementary Number Theory (7th ed.). McGraw-Hill Education Pvt. Ltd. Indian Reprint.
- Rotman, Joseph J. (1995). An Introduction to The Theory of Groups (4th ed.). Springer-Verlag, New York.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

**DISCIPLINE SPECIFIC CORE COURSE – 2:
ELEMENTARY REAL ANALYSIS**

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Elementary Real Analysis | 4 | 3 | 1 | 0 | Class XII pass with Mathematics | NIL |

Learning Objectives

The course will develop a deep and rigorous understanding of:

- Real line \mathbb{R} with algebraic.
- Order and completeness properties to prove the results about convergence and divergence of sequences and series of real numbers.

Learning Outcomes

This course will enable the students to:

- Understand the fundamental properties of the real numbers, including completeness and Archimedean, and density property of rational numbers in \mathbb{R} .
- Learn to define sequences in terms of functions from \mathbb{N} to a subset of \mathbb{R} and find the limit.
- Recognize bounded, convergent, divergent, Cauchy and monotonic sequences and to calculate the limit superior and limit inferior of a bounded sequence.
- Apply limit comparison, ratio, root, and alternating series tests for convergence and absolute convergence of infinite series of real numbers.

SYLLABUS OF DSC - 2

Theory

Unit – 1

(16 hours)

Real Number System

Algebraic and order properties of \mathbb{R} , Absolute value of a real number, Bounded above and bounded below sets, Supremum and infimum of a non-empty subset of \mathbb{R} , The completeness property of \mathbb{R} , Archimedean property, Density of rational numbers in \mathbb{R} .

Unit – 2

(24 hours)

Sequences

Sequences and their limits, Convergent sequence, Limit theorems, Monotone sequences, Monotone convergence theorem, Subsequences, Bolzano-Weierstrass theorem for sequences, Limit superior and limit inferior for bounded sequence, Cauchy sequence, Cauchy's convergence criterion.

Unit – 3

(20 hours)

Infinite Series

Convergence and divergence of infinite series of real numbers, Necessary condition for convergence, Cauchy criterion for convergence, Tests for convergence of positive term series, Integral test, Basic comparison test, Limit comparison test, D'Alembert's ratio test, Cauchy's nth root test, Raabe's test, Alternating series, Leibniz test, Absolute and conditional convergence.

Practical component (if any) – NIL

Essential Readings

1. Bartle, Robert G., & Sherbert, Donald R. (2011). Introduction to Real Analysis (4th ed.). John Wiley & Sons. Wiley India Edition 2015.
2. Bilodeau, Gerald G., Thie, Paul R., & Keough, G. E. (2010). An Introduction to Analysis (2nd ed.). Jones and Bartlett India Pvt. Ltd. Student Edition. Reprinted 2015.
3. Denlinger, Charles G. (2011). Elements of Real Analysis. Jones and Bartlett India Pvt. Ltd. Student Edition. Reprinted 2015.

Suggestive Readings

- Aliprantis C. D., & Burkinshaw, O. (1998). Principles of Real Analysis (3rd ed.). Academic Press.
- Ross, Kenneth A. (2013). Elementary Analysis: The Theory of Calculus (2nd ed.). Undergraduate Texts in Mathematics, Springer. Indian reprint.
- Thomson, B. S., Bruckner, A. M., & Bruckner, J. B. (2001). Elementary Real Analysis. Prentice Hall.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 3: PROBABILITY AND STATISTICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Probability and Statistics | 4 | 3 | 0 | 1 | Class XII pass with Mathematics | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To make the students familiar with the basic statistical concepts and tools which are needed to study situations involving uncertainty or randomness.
- To render the students to several examples and exercises that blend their everyday experiences with their scientific interests to form the basis of data science.

Learning Outcomes

This course will enable the students to:

- Understand some basic concepts and terminology - population, sample, descriptive and inferential statistics including stem-and-leaf plots, dotplots, histograms and boxplots.
- Learn about probability density functions and various univariate distributions such as binomial, hypergeometric, negative binomial, Poisson, normal, exponential and lognormal.
- Understand the remarkable fact that the empirical frequencies of so many natural populations, exhibit bell-shaped (i.e., normal) curves, using the Central Limit Theorem.
- Measure the scale of association between two variables, and to establish a formulation helping to predict one variable in terms of the other, i.e., correlation and linear regression.

SYLLABUS OF DSC – 3

Theory

Unit – 1

(15 hours)

Descriptive Statistics, Probability, and Discrete Probability Distributions

Descriptive statistics: Populations, Samples, Stem-and-leaf displays, Dotplots, Histograms, Qualitative data, Measures of location, Measures of variability, Boxplots; Sample spaces and events, Probability axioms and properties, Conditional probability, Bayes' theorem and independent events; Discrete random variables and probability

distributions, Expected values; Probability distributions: Binomial, geometric, hypergeometric, negative binomial, Poisson, and Poisson distribution as a limit.

Unit – 2 (15 hours)

Continuous Probability Distributions

Continuous random variables, Probability density functions, Uniform distribution, Cumulative distribution functions and expected values, The normal, exponential and lognormal distributions.

Unit – 3 (15 hours)

Central Limit Theorem and Regression Analysis

Sampling distribution and standard error of the sample mean, Central Limit Theorem and applications; Scatterplot of bivariate data, Regression line using principle of least squares, Estimation using the regression lines; Sample correlation coefficient and properties.

Practical (30 hours)

Software labs using Microsoft Excel or any other spreadsheet.

- 1) Presentation and analysis of data (univariate and bivariate) by frequency tables, descriptive statistics, stem-and-leaf plots, dotplots, histograms, boxplots, comparative boxplots, and probability plots ([1] Section 4.6).
- 2) Fitting of binomial, Poisson and normal distributions.
- 3) Illustrating the Central Limit Theorem through Excel.
- 4) Fitting of regression line using the principle of least squares.
- 5) Computation of sample correlation coefficient.

Essential Reading

1. Devore, Jay L. (2016). Probability and Statistics for Engineering and the Sciences (9th ed.). Cengage Learning India Private Limited. Delhi. Indian Reprint 2020.

Suggestive Reading

- Mood, A. M., Graybill, F. A., & Boes, D. C. (1974). Introduction to the Theory of Statistics (3rd ed.). Tata McGraw-Hill Pub. Co. Ltd. Reprinted 2017.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

B.A. (Prog.) with Mathematics as Major

Category II

DISCIPLINE SPECIFIC CORE COURSE – 1: ELEMENTS OF DISCRETE MATHEMATICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Elements of Discrete Mathematics | 4 | 3 | 1 | 0 | Class XII pass with Mathematics | Nil |

Learning Objectives

Students are introducing to:

- Order (or partial order) and related properties.
- Notion of a lattice which is also a step towards abstract algebra.
- Concept of Boolean algebra and its applications to minimizing a Boolean polynomial and switching circuits, which has further applications in computer science.

Learning outcomes

This course will enable the students to:

- Understand the basic concepts of sets, relations, functions, and induction.
- Understand mathematical logic and logical operations to various fields.
- Understand the notion of order and maps between partially ordered sets.
- Minimize a Boolean polynomial and apply Boolean algebra techniques to decode switching circuits.

SYLLABUS OF DSC - 1

Theory

Unit – 1

(24 hours)

Sets, Relations and Functions

Sets, Propositions and logical operations, Conditional statements, Mathematical induction, Relations and equivalence relation, Equivalence classes, Partial order relation, Partially ordered set, Hasse diagrams, Chain, Maximal and minimal elements, least and greatest elements, Least upper bound, Greatest lower bound, Zorn's lemma, Functions and bijective functions, Functions between POSETS, Order isomorphism.

Unit – 2

(16 hours)

Lattices

Lattice as a POSET, Lattice as an algebra and their equivalence, Bounded lattices, Sublattices, Interval in a lattice, Products and homomorphism of lattices, Isomorphism of lattices; Distributive, Complemented, Partition and pentagonal lattices.

Unit – 3**(20 hours)****Boolean Algebra and Switching Circuits**

Boolean algebra, De Morgan's laws, Boolean expressions, Truth tables, Logic diagrams, Boolean functions, Disjunctive normal forms (as join of meets), Minimal forms of Boolean polynomials, Quine Mc-Cluskey method, Karnaugh maps, Switching circuits, Applications of switching circuits.

Practical component (if any) – NIL**Essential Readings**

- Rudolf Lidl, & Gunter Pilz (2004). Applied Abstract Algebra (2nd ed.). Undergraduate text in Mathematics, Springer (SIE), Indian Reprint.
- Bernard Kolman, Robert C. Busby, & Sharon Cutler Ross (2009). Discrete Mathematical Structures (6th ed.). Pearson education Inc., Indian reprint.

Suggestive Reading

- Rosen, Kenneth H. (2017). Discrete Mathematics and its applications with combinatorics and Graph Theory (7th ed.). McGraw Hill Education.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2: TOPICS IN CALCULUS
CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Topics in Calculus | 4 | 3 | 1 | 0 | Class XII pass with Mathematics | Nil |

Learning Objectives

The primary objective of this course is to:

- Introduce the basic tools of calculus which are helpful in understanding their applications in many real-world problems.
- Understand/create various mathematical models in everyday life.

Learning Outcomes

This course will enable the students to:

- Understand continuity and differentiability in terms of limits and graphs of certain functions.
- Describe asymptotic behaviour in terms of limits involving infinity.
- Use of derivatives to explore the behaviour of a given function locating and classify its

extrema and graphing the function.

- Apply the concepts of asymptotes, and inflexion points in tracing of cartesian curves.
- Compute the reduction formulae of standard transcendental functions with applications.

SYLLABUS OF DSC - 2

Theory

Unit – 1 (20 hours)

Limits, Continuity and Differentiability

Limit of a function, ε - δ definition of a limit, Infinite limits, Continuity and types of discontinuities; Differentiability of a function, Successive differentiation: Calculation of the n th derivatives, Leibnitz theorem; Partial differentiation, Euler's theorem on homogeneous functions.

Unit – 2 (20 hours)

Mean Value Theorems and its Applications

Rolle's theorem, Mean value theorems and applications to monotonic functions and inequalities; Taylor's theorem, Taylor's series, Maclaurin's series expansions of e^x , $\sin x$, $\cos x$, $\log(1+x)$ and $(1+x)^m$; Indeterminate forms.

Unit – 3 (20 hours)

Tracing of Curves and Reduction Formulae

Asymptotes (parallel to axes and oblique), Concavity and inflexion points, Singular points, Tangents at the origin and nature of singular points, Curve tracing (cartesian and polar equations). Reduction formulae for $\int \sin^n x dx$, $\int \cos^n x dx$, and $\int \sin^m x \cos^n x dx$ and their applications.

Practical component (if any) – NIL

Essential Readings

- Prasad, Gorakh (2016). Differential Calculus (19th ed.). Pothishala Pvt. Ltd. Allahabad.
- Prasad, Gorakh (2015). Integral Calculus. Pothishala Pvt. Ltd. Allahabad.

Suggestive Readings

- Apostol, T. M. (2007). Calculus: One-Variable Calculus with An Introduction to Linear Algebra (2nd ed.). Vol. 1. Wiley India Pvt. Ltd.
- Ross, Kenneth. A. (2013). Elementary Analysis: The Theory of Calculus (2nd ed.). Undergraduate Texts in Mathematics, Springer. Indian reprint.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

B.A/ B.Sc. (Prog.) with Mathematics as Non-Major

Category III

DISCIPLINE SPECIFIC CORE COURSE: TOPICS IN CALCULUS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Topics in Calculus | 4 | 3 | 1 | 0 | Class XII pass with Mathematics | Nil |

Learning Objectives

The primary objective of this course is to:

- Introduce the basic tools of calculus which are helpful in understanding their applications in many real-world problems.
- Understand/create various mathematical models in everyday life.

Learning outcomes

This course will enable the students to:

- Understand continuity and differentiability in terms of limits and graphs of certain functions.
- Describe asymptotic behaviour in terms of limits involving infinity.
- Use of derivatives to explore the behaviour of a given function locating and classify its extrema and graphing the function.
- Apply the concepts of asymptotes, and inflexion points in tracing of cartesian curves.
- Compute the reduction formulae of standard transcendental functions with applications.

SYLLABUS OF DSC

Theory

Unit – 1

(20 hours)

Limits, Continuity and Differentiability

Limit of a function, $\varepsilon - \delta$ definition of a limit, Infinite limits, Continuity and types of discontinuities; Differentiability of a function, Successive differentiation: Calculation of the n th derivatives, Leibnitz theorem; Partial differentiation, Euler's theorem on homogeneous functions.

Unit – 2

(20 hours)

Mean Value Theorems and its Applications

Rolle's theorem, Mean value theorems and applications to monotonic functions and inequalities; Taylor's theorem, Taylor's series, Maclaurin's series expansions of

e^x , $\sin x$, $\cos x$, $\log(1+x)$ and $(1+x)^m$; Indeterminate forms.

Unit – 3

(20 hours)

Tracing of Curves and Reduction Formulae

Asymptotes (parallel to axes and oblique), Concavity and inflexion points, Singular points, Tangents at the origin and nature of singular points, Curve tracing (cartesian and polar equations). Reduction formulae for $\int \sin^n x dx$, $\int \cos^n x dx$, and $\int \sin^m x \cos^n x dx$ and their applications.

Practical component (if any) – NIL

Essential Readings

- Prasad, Gorakh (2016). Differential Calculus (19th ed.). Pothishala Pvt. Ltd. Allahabad.
- Prasad, Gorakh (2015). Integral Calculus. Pothishala Pvt. Ltd. Allahabad.

Suggestive Readings

- Apostol, T. M. (2007). Calculus: One-Variable Calculus with An Introduction to Linear Algebra (2nd ed.). Vol. 1. Wiley India Pvt. Ltd.
- Ross, Kenneth. A. (2013). Elementary Analysis: The Theory of Calculus (2nd ed.). Undergraduate Texts in Mathematics, Springer. Indian reprint.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

B.Sc. (Physical Sciences/ Mathematical Sciences) with Mathematics as one of the Core Disciplines

Category III

DISCIPLINE SPECIFIC CORE COURSE: TOPICS IN CALCULUS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Topics in Calculus | 4 | 3 | 1 | 0 | Class XII pass with Mathematics | Nil |

Learning Objectives

The primary objective of this course is to:

- Introduce the basic tools of calculus which are helpful in understanding their applications in many real-world problems.
- Understand/create various mathematical models in everyday life.

Learning outcomes

This course will enable the students to:

- Understand continuity and differentiability in terms of limits and graphs of certain functions.
- Describe asymptotic behaviour in terms of limits involving infinity.
- Use of derivatives to explore the behaviour of a given function locating and classify its extrema and graphing the function.
- Apply the concepts of asymptotes, and inflexion points in tracing of cartesian curves.
- Compute the reduction formulae of standard transcendental functions with applications.

SYLLABUS OF DSC

Theory

Unit – 1

(20 hours)

Limits, Continuity and Differentiability

Limit of a function, $\varepsilon - \delta$ definition of a limit, Infinite limits, Continuity and types of discontinuities; Differentiability of a function, Successive differentiation: Calculation of the n th derivatives, Leibnitz theorem; Partial differentiation, Euler's theorem on homogeneous functions.

Unit – 2**(20 hours)****Mean Value Theorems and its Applications**

Rolle's theorem, Mean value theorems and applications to monotonic functions and inequalities; Taylor's theorem, Taylor's series, Maclaurin's series expansions of

e^x , $\sin x$, $\cos x$, $\log(1+x)$ and $(1+x)^m$; Indeterminate forms.

Unit – 3**(20 hours)****Tracing of Curves and Reduction Formulae**

Asymptotes (parallel to axes and oblique), Concavity and inflexion points, Singular points, Tangents at the origin and nature of singular points, Curve tracing (cartesian and polar equations). Reduction formulae for $\int \sin^n x dx$, $\int \cos^n x dx$, and $\int \sin^m x \cos^n x dx$ and their applications.

Practical component (if any) – NIL

Essential Readings

- Prasad, Gorakh (2016). Differential Calculus (19th ed.). Pothishala Pvt. Ltd. Allahabad.
- Prasad, Gorakh (2015). Integral Calculus. Pothishala Pvt. Ltd. Allahabad.

Suggestive Readings

- Apostol, T. M. (2007). Calculus: One-Variable Calculus with An Introduction to Linear Algebra (2nd ed.). Vol. 1. Wiley India Pvt. Ltd.
- Ross, Kenneth. A. (2013). Elementary Analysis: The Theory of Calculus (2nd ed.). Undergraduate Texts in Mathematics, Springer. Indian reprint.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

**COMMON POOL OF GENERIC ELECTIVES (GE) COURSES
OFFERED BY DEPARTMENT OF MATHEMATICS
CATEGORY-IV**

GENERIC ELECTIVES: FUNDAMENTALS OF CALCULUS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Fundamentals of Calculus | 4 | 3 | 1 | 0 | Class XII pass with Mathematics | NIL |

Learning Objectives

The Learning Objectives of this course is as follows:

- Understand the quantitative change in the behaviour of the variables and apply them on the problems related to the environment.

Learning Outcomes

Upon completion of this course, students will be able to:

- Understand continuity and differentiability in terms of limits.
- Describe asymptotic behavior in terms of limits involving infinity.
- Understand the importance of mean value theorems and its applications.
- Learn about Maclaurin's series expansion of elementary functions.
- Use derivatives to explore the behavior of a given function, locating and classifying its extrema, and graphing the polynomial and rational functions.

SYLLABUS OF GE

Theory

Unit – 1

(20 hours)

Continuity and Differentiability of Functions

Limits and continuity, Types of discontinuities; Differentiability of functions; Successive differentiation: Calculation of the n th derivatives, Leibnitz theorem; Partial differentiation, Euler's theorem on homogeneous functions.

Unit – 2**(20 hours)****Mean Value Theorems and its Applications**

Rolle's theorem, Mean value theorems and applications to monotonic functions and inequalities; Expansion of functions: Taylor's theorem, Taylor's series, Maclaurin's series expansion of e^x , $\sin x$, $\cos x$, $\log(1+x)$ and $(1+x)^m$; Indeterminate forms.

Unit – 3**(20 hours)****Tracing of Curves**

Concavity and inflexion points, Asymptotes (parallel to axes and oblique), Relative extrema, Tracing graphs of polynomial functions, rational functions, and polar equations.

Practical component (if any) – NIL**Essential Readings**

- Anton, Howard, Bivens, Irl, & Davis, Stephen (2013). Calculus (10th ed.). Wiley India Pvt. Ltd. New Delhi. International Student Version. Indian Reprint 2016.
- Prasad, Gorakh (2016). Differential Calculus (19th ed.). Pothishala Pvt. Ltd. Allahabad.

Suggestive Reading

- Thomas Jr., George B., Weir, Maurice D., & Hass, Joel (2014). Thomas' Calculus (13th ed.). Pearson Education, Delhi. Indian Reprint 2017.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES: THEORY OF EQUATIONS AND SYMMETRIES**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Theory of Equations and Symmetries | 4 | 3 | 1 | 0 | Class XII pass with Mathematics | NIL |

Learning Objectives

The goal of this course is to acquaint students with certain ideas about:

- Integral roots, rational roots, an upper bound on number of positive or negative roots of a polynomial.
- Finding roots of cubic and quartic equations in special cases using elementary symmetric functions.
- Using Cardon's and Descartes' methods, respectively.

Learning outcomes

After completion of this course, the students will be able to:

- Understand the nature of the roots of polynomial equations and their symmetries.
- Solve cubic and quartic polynomial equations with special condition on roots and in general.
- Find symmetric functions in terms of the elementary symmetric polynomials.

SYLLABUS OF GE

Theory

Unit - 1

(24 hours)

Polynomial Equations and Properties

General properties of polynomials and equations; Fundamental theorem of algebra and its consequences; Theorems on imaginary, integral and rational roots; Descartes' rule of signs for positive and negative roots; Relations between the roots and coefficients of equations, Applications to solution of equations when an additional relation among the roots is given; De Moivre's theorem for rational indices, the n th roots of unity and symmetries of the solutions.

Unit - 2

(16 hours)

Cubic and Biquadratic (Quartic) Equations

Transformation of equations (multiplication, reciprocal, increase/diminish in the roots by a given quantity), Removal of terms; Cardon's method of solving cubic and Descartes' method of solving biquadratic equations.

Unit - 3

(20 hours)

Symmetric Functions

Elementary symmetric functions and symmetric functions of the roots of an equation; Newton's theorem on sums of the like powers of the roots; Computation of symmetric functions such as $\sum \alpha^2 \beta$, $\sum \alpha^2 \beta^2$, $\sum \alpha^2 \beta \gamma$, $\sum \frac{1}{\alpha^2 \beta \gamma}$, $\sum \alpha^{-3}$, $\sum (\beta + \gamma - \alpha)^2$, $\sum \frac{\alpha^2 + \beta \gamma}{\beta + \gamma}$, ... of polynomial equations; Transformation of equations by symmetric functions and in general.

Practical component (if any) – NIL

Essential Readings

- Burnside, W.S., & Panton, A.W. (1979). The Theory of Equations (11th ed.). Vol. 1. Dover Publications, Inc. (4th Indian reprint. S. Chand & Co. New Delhi).
- Dickson, Leonard Eugene (2009). First Course in the Theory of Equations. John Wiley & Sons, Inc. The Project Gutenberg eBook: <http://www.gutenberg.org/ebooks/29785>

Suggestive Reading

- Prasad, Chandrika (2017). Text Book of Algebra and Theory of Equations. Pothishala Pvt Ltd.

DEPARTMENT OF STATISTICS

B.Sc. (H) Statistics

Category-I

DISCIPLINE SPECIFIC CORE COURSE – 1: DESCRIPTIVE STATISTICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Descriptive Statistics | 4 | 3 | 0 | 1 | Class XII pass with Mathematics | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

- To tabulate statistical information given in descriptive form and to use graphical techniques to interpret
- To understand various measures of central tendency, dispersion, skewness and kurtosis. Moments and its properties.
- Familiarize with quantitative and qualitative data and available statistical tools to analyse them.
- Finding linear correlation between two variates using different measures and studying their properties. Least square method of fitting of curves, regression lines and their elementary properties.

Learning Outcomes:

The Learning Outcomes of this course are as follows:

- Understand concepts of sample vs. population and get acquainted with different types of data /scales. Distinguish between primary and secondary data. Tabulate and plot frequency distribution. Deals with numerical and graphical ways to describe and display data using histograms, stem and leaf plot and box plots.
- Calculate measures of central locations like mean, geometric mean, harmonic mean, median and mode and explain their properties
- Calculate measures of the spread: variance, standard deviation, range and inter-quartile range and explain their properties.
- Understand the meaning of probability and probabilistic experiment. Familiarize with the four approaches to probability theory and particularly, the axiomatic approach and use and manipulate the four axioms of probability comfortably to derive the results of other set operations

- Understand and exploit Addition and Multiplicative laws of probability
- understand the meaning of conditional probability, conditioning, and reduced sample space, compute joint and conditional probabilities. independence, total probability, Bayes' rule and applications.
- Understand the concept of a random variable, differentiate between independent and uncorrelated random variables, distinguish between discrete, continuous, random variables and be able to represent them using probability mass, probability density, and cumulative distribution functions, Univariate transformation and its application.
- Understand expectation and its properties, Compute variance and covariance in terms of expectation. Solve problems based on expectation and its properties.

SYLLABUS OF DSC-1

Theory

Unit – 1 (09 hours)

Data Visualization

Statistical Methods: Definition and scope of Statistics, concepts of statistical population and sample. Types of Data: Concepts of population and sample, quantitative and qualitative data, cross-sectional and time-series data, discrete and continuous data. Different types of scales: Nominal, ordinal, interval and ratio. Collection and Scrutiny of Data: Primary data. Secondary data – its major sources. Complete enumeration. Construction of tables with one or more factors of classification, frequency distributions and cumulative frequency distributions and their graphical representations (Histograms, frequency polygon), stem and leaf displays.

Unit – 2 (15 hours)

Data Summarization

Measures of Central Tendency: Mathematical and positional, partition values, Measures of Dispersion: range, quartile deviation, mean deviation, standard deviation, coefficient of variation, graphical representation of various measures of location and dispersion (Ogives, Histograms, Box Plot) Moments: Raw moments, Central moments, Absolute moments, Factorial moments, Sheppard's corrections, skewness and kurtosis, Types of frequency distributions.

Unit – 3 (06 hours)

Theory of Attributes

Theory of attributes: consistency and independence of data with special reference to attributes, Association of attributes: concept, Yules coefficient of Colligation and Coefficient of Colligation.

Unit – 4 (15 hours)

Correlation and Regression

Bivariate data: Definition, scatter diagram, Karl Pearson's coefficient of correlation. Spearman's rank correlation coefficient (Introductory with interpretation). Principle of least squares and

fitting of polynomials and exponential curves, lines of regression, properties of regression coefficients, angle between two regression lines, and residual variance.

Practical – 30 Hours

List of Practicals:

1. Graphical representation of data- frequency polygon, histogram and ogive.
2. Practical based on arithmetic mean and to find missing frequencies given arithmetic mean.
3. Practical based on median and partition values using formulae and to find them graphically also.
4. Practical based on mode by using formula, graphically, method of grouping.
5. Practical based on combined mean and combined variance.
6. Practical based on quartile deviation using formula and graphically.
7. Practical based on mean deviation and standard deviation.
8. Practical based on coefficient of variation.
9. Practical based on moments about origin and moments about any arbitrary point.
10. Practical on skewness based on mean, median, mode and standard deviation.
11. Practical based on central moments, skewness and kurtosis.
12. Practical based on fitting of polynomials.
13. Practical based on fitting of exponential curves, power curves.
14. Practical based on association and independence of attributes.
15. Practical based on fundamental set of class frequencies in attributes (find missing frequencies given fundamental set of class frequencies).
16. Practical based on Karl Pearson correlation coefficient.
17. Practical based on correlation coefficient for a bivariate frequency distribution.
18. Practical based on lines of regression, angle between lines and estimated values of variables.
19. Practical based on rank correlation with ties.
20. Practical based on rank correlation without ties.

Essential Readings

- Goon, A.M., Gupta, M.K. and Dasgupta, B. (2016). Fundamentals of Statistics, Vol. I, 8th Ed. The World Press, Kolkata.
- Gupta, S. C. and Kapoor, V. K. (2020). Fundamentals of Mathematical Statistics, 12th Edn., S. Chand and Sons. Delhi.
- Bernstein, S. and Bernstein, R. (2020). Schaums: Outline of Elements of Statistics I Descriptive Statistics and Probability. McGraw Hill.
- Heumann, C., Schomaker, M. and Shalabh (2016). Introduction to Statistics and Data Analysis with Exercises, Solutions and Applications in R. Springer.

Suggestive Readings

- Tukey, J.W. (1977). Exploratory Data Analysis, Addison-Wesley Pub. Co. N.Y.
- Myatt, G. J. and Johnson, W.P. (2014). Making sense of data: A practical guide to

exploratory data analysis and data mining. 2nd Edn, John Wiley & Sons, Inc. N. J.

- Agresti, A., Christine Franklin, C. and Klingenberg, B. (2017). Statistics: the art and science of learning from data. Pearson. Boston.
- Dudewicz, E. and Mishra, S. N. (1988). Modern Mathematical Statistics. Wiley.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2: INTRODUCTION TO PROBABILITY

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction to Probability | 4 | 3 | 0 | 1 | Class XII pass with Mathematics | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- Familiarize students with the mathematical basis of probability theory.
- Prepare students with important tools for statistical analyses at the undergraduate level.
- Promote understanding through real-world statistical applications.

Learning Outcomes

The Learning Outcomes of this course are as follows:

- Understand the meaning of probability and probabilistic experiment. Familiarize with the four approaches to probability theory and particularly, the axiomatic approach, use and manipulate the four axioms of probability comfortably to derive the results of other set operations.
- Understand and use addition and multiplicative laws of probability, understand the meaning of conditional probability, conditioning, and reduced sample space, compute joint and conditional probabilities. independence, total probability, Bayes' rule and applications.
- Understand the concept of a random variable, differentiate between independent and uncorrelated random variables, distinguish between discrete and continuous, random variables and be able to represent them using probability mass, probability density, and cumulative distribution functions. Acquaint with Univariate transformation and its application.
- Understand expectation and its properties, Compute variance and covariance in terms of expectation. Solve problems based on expectation and its properties.

SYLLABUS OF DSC - 2

Theory

Unit – 1 (12 hours)

Elements of Probability

Probability: Introduction, random experiments, sample space, events and algebra of events. Definitions of Probability – Classical, Statistical. Limitations of Classical definition. Probability of union and intersection of events, Probability of occurrence of exactly m and at least m events out of n events, Examples based on classical approach and repeated trials, Kolmogorov's Axiomatic definition and problems based on it, Matching problems.

Unit – 2 (09 hours)

Laws of Probability

Conditional Probability, laws of addition and multiplication, theorem of total probability, Examples based on conditional probability and laws of addition and multiplication, independent events – Pairwise mutual independence, Bayes' theorem and its applications, Geometric probability.

Unit – 3 (15 hours)

Random variables

Distribution function and properties, Discrete random variables - p.m.f., discrete distribution function, Continuous random variables - p.d.f, illustrations and properties of random variables. Measures of central tendency, dispersion, skewness and kurtosis for continuous probability distributions, Examples based on random variables, Continuous distribution functions and their properties, Univariate transformation of random variables, Examples based on univariate transformations.

Unit – 4 (09 hours)

Mathematical Expectation

Expectation of random variable and its properties (addition and multiplication theorem of expectation), Variance and Covariance in terms of expectation and their properties, Examples based on Expectation and its properties.

Practical – 30 Hours

List of Practicals:

1. Problem based long run relative frequency to establish statistical definition of probability
2. Problem based on geometric probability.
3. Problem based on permutations and combinations when all objects are distinguishable.
4. Problem based on permutations and combinations when not all objects are different.
5. Computation of probability related to occurrence of exactly m and at least m events out of n events.

6. Computation of probabilities related to matching problems
7. Computation of conditional probabilities using addition and multiplication laws.
8. Problem related to application of Bayes Theorem.
9. Computation of distribution function of discrete and continuous random variables and calculations of probabilities of events thereof.
10. Graphical representation of probability function and distribution function of discrete/continuous arbitrary random variables.
11. Finding expectation, variance and covariances of discrete as well as continuous random variables
12. Finding expectation, variance and covariances of linear function of discrete as well as continuous random variables.
13. Constructing sample space for two-dimensional random variable.

Essential Readings

- Goon, A.M., Gupta, M.K. and Dasgupta, B. (2016). Fundamentals of Statistics, Vol. I, 8th Ed. The World Press, Kolkata.
- Goon, A.M., Gupta, M.K. and Dasgupta, B. (2017). An Outline of statistical theory, Vol. I, The World Press, Kolkata.
- Gupta, S. C. and Kapoor, V. K. (2020). Fundamentals of Mathematical Statistics, 12th Edn., S. Chand and Sons. Delhi.
- Ross, S.M. (2002). A first course in Probability, 6th Ed., Pearson.
- Miller, I. and Miller, M. (2006). John E. Freund's Mathematical Statistics with Applications, 7th Ed., Pearson Education, Asia.

Suggestive Readings

- Chung, K.L. (2000). A Course in Probability Theory, 3rd Edn. Academic Press.
- Parzen, E. (1960). Modern probability theory and its applications. John Wiley.
- Feller, W. (1968) An introduction to probability theory and its applications. Vol. I, 3rd Edn. John Wiley & Sons Inc., New York.
- Blake, I. F. (1987). Introduction to Applied Probability. Krieger Publishing Co.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 3: CALCULUS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course | Credits | Credit distribution of the course | Eligibility | Pre-requisite |
|--------|---------|-----------------------------------|-------------|---------------|
|--------|---------|-----------------------------------|-------------|---------------|

| title & Code | | Lecture | Tutorial | Practical/ Practice | criteria | of the course (if any) |
|--------------|---|---------|----------|---------------------|---------------------------------|------------------------|
| Calculus | 4 | 3 | 0 | 1 | Class XII pass with Mathematics | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To familiarize students with the basic mathematical tools.
- It helps students to understand the other statistical concepts.

Learning Outcomes

The Learning Outcomes of this course are as follows:

- Understand to solve applied problems using differentiation and integration.
- Understand to solve applied problems under integral sign and changes of order of integration.

SYLLABUS OF DSC – 3

Theory

Unit – 1

(15 hours)

Differential Calculus

Review of limits, continuity and differentiability, partial differentiation and total differentiation. Indeterminate forms: L-Hospital's rule, Leibnitz rule for successive differentiation. Euler's theorem on homogeneous functions.

Unit – 2

(15 hours)

Integral Calculus

Review of integration and definite integral. Differentiation under integral sign, double integral, changes of order of integration. Beta and Gamma functions: Properties and relationship between them.

Unit – 3

(15 hours)

Differential Equations

Exact differential equations. Differential equations of first order and first degree. Higher Order Differential Equations: Linear differential equations of order n, Homogeneous and non-homogeneous linear differential equations of order n with constant coefficients, Different forms of particular integrals. The Cauchy-Euler's equation of order n. Formation and solution of a partial differential equations. Equations easily integrable. Linear partial differential equations of first order. Homogeneous linear partial differential equations with constant coefficients. Different cases for complimentary functions and particular integrals.

Practical – 30 Hours

List of Practicals:

- 1) Verification of Euler's Theorem.
- 2) Applications of differentiation
 - a. Calculate income and price elasticity of demand.
 - b. Determination of price and quantity for which total revenue is maximum.

- c. Find the level of output for which the average cost is minimum.
 - d. Solve profit maximization problems.
 - e. Evaluate first and second order partial derivatives of functions of the form $Z = f(x, y)$.
 - f. Examine a function of two variables for relative maxima and relative minima.
 - g. Find the nature of the commodities by using the concept of partial marginal demand functions.
 - h. Find four partial elasticities for a demand function of two variables.
- 3) Applications of Integration
- a) Derive total cost function from given marginal cost function.
 - b) Derive total revenue function and demand function from a given marginal revenue function.
 - c) Calculate the maximum profit if marginal revenue and marginal cost are given.
 - d) Find the demand function when the price elasticity of demand is given.
- 4) Applications of Differential Equations
- a) Application on growth and decay.
 - b) Application of the form $\frac{d^2y}{dx^2} = f(x)$ and $\frac{d^2y}{dx^2} = f(y)$ to physical problems.
 - c) Application on coordinate geometry.
- 5) Verify that the area under the curve is unity under the given p.d.f. and also calculate
- a) Arithmetic Mean
 - b) Median
 - c) Mode
 - d) Standard Deviation

Essential Reading

- Prasad, G. (2017). Differential Calculus, 19th Ed. (Revised), Pothishala Pvt. Ltd., Allahabad.
- Prasad, G. (2017). Integral Calculus, 17th Ed. (Revised), Pothishala Pvt. Ltd., Allahabad.
- Ahsan, Z. (2004). Differential Equations and their Applications, 2nd Ed., PHI, Pvt. Ltd., New Delhi.
- Shanti Narayan and P K Mittal (2018). Differential Calculus. 15th Ed (Revised), S Chand Publication, New Delhi
- Shanti Narayan and P K Mittal (2016). Integral Calculus. 11th Ed (Revised), S Chand Publication, New Delhi.
- Business Mathematics Theory and Applications, V. K. Kapoor (2012), Sultan Chand & Sons.

Suggestive Reading

- R. S. Soni (2000) Business Mathematics with applications in Business and Economics, 3rd ed., Pitamber Publishing Company (P) Ltd.
- Brahma Nand, B. S. Tyagi and B. D. Sharma, Integral Calculus, Kedar Nath Ram Nath.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

B.A (Program) with Statistics as Major **Category II**

DISCIPLINE SPECIFIC CORE COURSE – 1: DESCRIPTIVE STATISTICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Descriptive Statistics | 4 | 3 | 0 | 1 | Class XII pass with Mathematics | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

- To motivate students towards intrinsic interest in statistical thinking.
- To analyze and interpret data.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Understand the basic concepts of Statistics.
- Able to employ different types of data.
- Employ the graphical methods of displaying data.
- Use measures of locations.

SYLLABUS OF DSC - 1

Theory

Unit – 1

(15 hours)

Data Representation

Introduction: Definition, importance, scope and limitations of Statistics. Population and Sample Concept of statistical population with illustrations, concept of sample with illustrations. Raw data, Attributes and variables, discrete and continuous variables, classification and construction of frequency distribution. Graphical Representation: Histogram, Frequency polygon, Frequency curve, Ogive curves and their uses. Examples and Problems.

Unit – 2

(15 hours)

Measures of central tendency

Concept of central tendency, Criteria for good measures of central tendency. Arithmetic mean: Definition, computation for ungrouped and grouped data, combined mean, weighted mean, merits and demerits. Median: Definition, computation for ungrouped and grouped data, graphical method, merits and demerits. Mode: Definition, computation for ungrouped and grouped data, graphical method, merits and demerits. Quartiles: Definition, computation for ungrouped and grouped data graphical method. Numerical problems.

Unit – 3

(15 hours)

Measures of Dispersion

Concept of dispersion and measures of dispersion, absolute and relative measures of dispersion. Range and Quartile Deviation: definition for ungrouped and grouped data, and their coefficients, merits and demerits. Mean Deviation: Definition for ungrouped and grouped data, minimal property (statement only). Standard deviation and Variance: definition for ungrouped and grouped data, coefficient of variation, combined variance and standard deviation for two groups, merits and demerits. Numerical problems.

Practical

List of Practicals:

1. Problems based on graphical representation of data: Histograms, Frequency polygon, Ogive curve for equal class intervals.
2. Problems based on graphical representation of data: Histograms, Frequency polygon, Ogive curve for unequal class intervals.
3. Problems based on measures of central tendency using raw data, grouped data.
4. Problems based on change of origin and scale.
5. Problems based on measures of dispersion using raw data, grouped data.
6. Problems based on measures of dispersion for change of origin and scale.
7. Problems based on combined mean.
8. Problems based on combined variance.
9. Problems based on coefficient of variation.
10. Problems based on standard deviation of two groups

Essential Readings

- Goon, A.M., Gupta, M.K. and Dasgupta, B. (2002). Fundamentals of Statistics, Vol. I, 8th Ed. The World Press, Kolkata.
- Miller, I. and Miller, M. (2006). John E. Freund's Mathematical Statistics with Applications, 7th Ed., Pearson Education, Asia.
- Mood, A.M., Graybill, F.A. and Boes, D.C. (2007). Introduction to the Theory of Statistics, 3rd Ed., (Reprint), Tata McGraw-Hill Pub. Co. Ltd.

Suggestive Reading

- Gupta, S.P. (2022) Statistical Methods 46th ed, S. Chand and Sons
- Gupta, S. C. and Kapoor V. K. (). Fundamentals of Mathematical Statistics, S. Chand and Sons

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2: STATISTICAL METHODS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------|---------|-----------------------------------|----------|------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ | | |

| | | | | Practice | | (if any) |
|---------------------|---|---|---|----------|---------------------------------|----------|
| Statistical Methods | 4 | 3 | 0 | 1 | Class XII pass with Mathematics | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

- Acquainting the students with various statistical methods.
- Students should be able to understand and compute various statistical measures of correlation, fitting of curve and regression.

Learning Outcomes

Upon successful completion of this course students will demonstrate knowledge of:

- Correlation and regression.
- Theory of attributes.

SYLLABUS OF DSC - 2

Theory

Unit – 1 (15 hours)

Correlation

Introduction and meaning of Correlation, Scatter diagram, Karl Pearson's coefficient of correlation, limits for correlation coefficient, correlation coefficient for bivariate distribution, rank correlation: tied and repeated rank, correlation ratio, measure of correlation ratio, Intra class correlation, multiple and partial correlation.

Unit – 2 (15 hours)

Regression

Introduction to Linear regression, regression coefficient, properties of regression coefficients, angle between two lines of regression, regression curve, curvilinear regression. Principle of least-squares and fitting of polynomials and exponential curves.

Unit – 3 (15 hours)

Theory of Attributes

Theory of attributes: Notion and terminology, class frequencies, ultimate class frequencies, Contingency table, consistency, association of attributes, independence, measure of association for 2x2 table, Yule's coefficient of association.

Practical – 30 Hours

List of Practicals:

1. Problems based on Karl Pearson correlation coefficient.
2. Problems based on Karl Pearson correlation coefficient with change of scale and origin.

3. Problem based on multiple correlation
4. Problem based on partial correlation
5. Problems based on lines of regression.
6. Problems based on angle between two lines of regression.
7. Problems based on Spearman rank correlation.
8. Problems based on fitting of polynomials and exponential curves.
9. Problems based on association and independence of attributes.
10. Problems based on fundamental set of class frequencies in attributes (find missing frequencies given fundamental set of class frequencies)

Essential Readings

- Goon, A. M., Gupta, M. K. and Dasgupta, B. (2003). An Outline of Statistical Theory (4th ed., Vol. I). World Press, Kolkata.
- Gupta, S. C. and Kapoor, V. K. (2007). Fundamentals of Mathematical Statistics (11th ed.). Sultan Chand and Sons.
- Miller, I. and Miller, M. (2006). John E. Freund's Mathematical Statistics with Applications, 7th Ed., Pearson Education, Asia.

Suggestive Readings

- Gupta, S.P. (2022) Statistical Methods 46th ed, S. Chand and Sons
- Hogg, R. V., Craig, A. T. and McKean, J. W. (2005). Introduction to Mathematical Statistics (6th ed.). Pearson Education

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

B.A. (Program) with Statistics as Non-Major
Category III

**DISCIPLINE SPECIFIC CORE COURSE: DESCRIPTIVE STATISTICS
AND PROBABILITY THEORY**

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Descriptive Statistics and probability theory | 4 | 3 | 0 | 1 | Class XII pass with Mathematics | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

- Introduction to Statistics.
- Graphical representation of data.
- Understanding the concept of Probability.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Apply the fundamental concepts of statistics.
- Understand handling various types of data and their graphical representation.
- Employ measures of location and dispersion.
- Bivariate data. Significance of various coefficients of correlation.
- Employ fitting of linear curve.
- Use probability theory and its applications.

SYLLABUS OF DSC

Theory

Unit – 1

(15 hours)

Basic Statistics

Fundamentals of statistics. Diagrammatic representation of data. Measures of central tendency: location and positional. Partition values, Measures of Dispersion: range, quartile deviation, mean deviation, standard deviation, coefficient of variation. Moments: raw and central, Measures of skewness and kurtosis.

Unit – 2

(15 hours)

Correlation and Regression

Bivariate data: definition, scatter diagram. Correlation and regression: Karl Pearsons coefficient of correlation, Spearman's rank correlation coefficient, lines of regression, properties of regression coefficients, angle between two regression lines. Principle of least-square and fitting of linear curve.

Unit – 3

(15 hours)

Probability

Probability: Introduction, Random experiment, sample point and sample space, event, algebra of events, Definition of Probability - classical, relative frequency and axiomatic approaches to probability, merits and demerits of these approaches (only general ideas to be given). Theorems on probability, conditional probability, independent events: pairwise and mutually independent. Bayes theorem and its applications.

Practical – 30 Hours

List of Practicals:

1. Problems based on graphical representation of data. Histograms (equal class intervals and unequal class intervals), frequency polygon, ogive curve.
2. Problems based on mean using raw data, grouped data for change of origin and scale.
3. Problems based on arithmetic mean and to find missing frequencies given arithmetic mean.
4. Problems based on median and partition values using formulae and to find them graphically also.
5. Problems based on mode by using formula, graphically, method of grouping.
6. Problems based on mean deviation and standard deviation.
7. Problems based on combined mean and variance.
8. Problems based on coefficient of variation.
9. Comparison of data using consistency approach.
10. Problems on skewness based on mean, median, mode and standard deviation.
11. Problems based on central moments.
12. Relationships between moments about origin and central moments.
13. Problems based on skewness and kurtosis.
14. Problems based on Karl Pearson correlation coefficient.
15. Problems based on Spearman's rank correlation with ties.
16. Problems based on Spearman's rank correlation without ties.
17. Problems based on lines of regression and estimated values of variables.
18. Problems on regression coefficients.

Essential Readings

- Goon, A.M., Gupta, M.K. and Dasgupta, B. (2005). Fundamentals of Statistics, Vol. I, 8th Ed., World Press, Kolkatta.
- Gupta, S.C. and Kapoor, V.K. (2014). Fundamentals of Mathematical Statistics, 11th Ed., Sultan Chand and Sons.
- Hogg, R. V., McKean, J., and Craig, A. T. (2005). Introduction to mathematical statistics. Pearson Education.
- Freund, J.E. (2009). Mathematical Statistics with Applications, 7th Ed., Pearson Education.

Suggestive Readings

- Mood, A.M., Graybill, F.A. and Boes, D.C. (2007). Introduction to the Theory of Statistics, 3rd Ed., Tata McGraw Hill Publication
- Miller, Irwin and Miller, Marylees (2006): John E Freund's Mathematical Statistics with Applications, (7th ed.) Pearson Education, Asia.
- Nagar and Das (1997) Basic Statistics. 2nd ed., Oxford University Press

B.A. (Prog.) with Statistics as one of the Core Disciplines

DISCIPLINE SPECIFIC CORE COURSE: DESCRIPTIVE STATISTICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Descriptive Statistics | 4 | 3 | 0 | 1 | Class XII pass with Mathematics | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

- To motivate students towards intrinsic interest in statistical thinking.
- To analyze and interpret data.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Understand the basic concepts of Statistics.
- Able to employ different types of data.
- Employ the graphical methods of displaying data.
- Use measures of locations.

SYLLABUS OF DSC

Theory

Unit – 1

(15 hours)

Basics of Statistics

Introduction: Definition, importance, scope and limitations of Statistics. Population and Sample Concept of statistical population with illustrations, concept of sample with illustrations. Raw data, Attributes and variables, discrete and continuous variables, classification and construction of frequency distribution. Graphical Representation: Histogram, Frequency polygon, Frequency curve, Ogive curves and their uses. Examples and Problems.

Unit – 2

(15 hours)

Measures of Central Tendency

Concept of central tendency, Criteria for good measures of central tendency. Arithmetic mean: Definition, computation for ungrouped and grouped data, combined mean, weighted mean, merits and demerits. Median: Definition, computation for ungrouped and grouped data, graphical method, merits and demerits. Mode: Definition, computation for ungrouped and grouped data,

graphical method, merits and demerits. Quartiles: Definition, computation for ungrouped and grouped data graphical method. Numerical problems.

Unit – 3

(15 hours)

Measures of Dispersion

Concept of dispersion, absolute and relative measures of dispersion. Range and Quartile Deviation: definition for ungrouped and grouped data, and their coefficients, merits and demerits. Mean Deviation: Definition for ungrouped and grouped data, minimal property (statement only). Standard deviation and Variance: definition for ungrouped and grouped data, coefficient of variation, combined variance and standard deviation for two groups, merits and demerits. Numerical problems.

Practical

List of Practicals:

1. Problems based on graphical representation of data: Histograms, Frequency polygon, Ogive curve for equal class intervals.
2. Problems based on graphical representation of data: Histograms, Frequency polygon, Ogive curve for unequal class intervals.
3. Problems based on measures of central tendency using raw data, grouped data.
4. Problems based on change of origin and scale.
5. Problems based on measures of dispersion using raw data, grouped data.
6. Problems based on measures of dispersion for change of origin and scale.
7. Problems based on combined mean.
8. Problems based on combined variance.
9. Problems based on coefficient of variation.
10. Problems based on standard deviation of two groups

Essential Readings

- Goon, A.M., Gupta, M.K. and Dasgupta, B. (2002). Fundamentals of Statistics, Vol. I, 8th Ed. The World Press, Kolkata.
- Mood, A.M., Graybill, F.A. and Boes, D.C. (2007). Introduction to the Theory of Statistics, 3rd Ed., (Reprint), Tata McGraw-Hill Pub. Co. Ltd.
- Gupta, S.C., and Kapoor, V.K. (2014). Fundamental of Mathematical Statistics, 11th Ed., Sultan Chand

Suggestive Reading

- Gupta, S.P. (2022) Statistical Methods 46th ed, S. Chand and Sons
- Miller, I. and Miller, M. (2006). John E. Freund's Mathematical Statistics with Applications, 7th Ed., Pearson Education, Asia.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

**COMMON POOL OF GENERIC ELECTIVES (GE) COURSES
OFFERED BY DEPARTMENT OF STATISTICS
CATEGORY-IV**

GENERIC ELECTIVES: INTRODUCTION TO STATISTICS

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE
COURSE**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre- requisite of the course (if any) |
|-------------------------------|---------|-----------------------------------|----------|------------------------|---------------------------------------|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction to Statistics | 4 | 3 | 0 | 1 | Class XII pass with Mathematics | NIL |

Learning Objectives

The Learning Objectives of this course is as follows:

- Acquainting the students with descriptive data analysis.
- To introduce students to different measurement scales, qualitative and quantitative and discrete and continuous data.
- To help students to organise data into frequency distribution graphs, including bar graphs, histograms, polygons and ogives.
- Students should be able to understand the purpose for measuring central tendency, dispersion, skewness and kurtosis and should be able to compute them as well.
- Students should be able to understand theory of attributes, independence and association of attributes.

Learning Outcomes

The Learning Outcomes of this course are as follows:

- Introduction to Statistics, definitions and data classification
- Employ graphical displays of data, frequency distributions, analysing graphs.
- Apply numerical descriptions of data, measures of center tendency, measures of dispersion, skewness and kurtosis.
- Understand theory of attributes.

SYLLABUS OF GE

Theory

Unit – 1

(15 hours)

Introduction to Statistics and Data

Introduction: Definition and scope of Statistics, concepts of statistical population and sample. Data: quantitative and qualitative, attributes, variables, scales of measurement -nominal, ordinal, interval and ratio. Presentation: tabular and graphic, including histogram and ogives.

Unit – 2

(15 hours)

Descriptive Statistics

Measures of Central Tendency: Arithmetic mean, median, mode, geometric mean, harmonic mean, partition values. Measures of Dispersion: Range, quartile deviation, mean deviation, standard deviation, variance, coefficient of dispersion: coefficient of variation. Moments, Measure of skewness and kurtosis.

Unit – 3

(15 hours)

Theory of Attributes

Theory of Attributes: Consistency of data, independence of attributes, association of attributes, Yule's coefficient of association, coefficient of colligation.

Practical – 30 Hours

List of Practicals:

1. Tabular representation of data
2. Graphical representation of data using histogram
3. Graphical representation of data using ogives
4. Problems based on arithmetic mean
5. Problems based on geometric mean
6. Problems based on harmonic mean
7. Problems based on median
8. Problems based on mode
9. Problems based on partition values
10. Verifying the relationship between arithmetic mean, geometric mean and harmonic mean
11. Problems based on range and quartile deviation.
12. Problems based on mean deviation
13. Problems based on standard deviation and variance
14. Problems based on combined mean and combined variance
15. Problems based on coefficient of variation.
16. Problems based on moments,
17. Problems based on skewness
18. Problems based on kurtosis
19. Checking consistency of data.
20. Checking the independence of attributes
21. Measuring the association between the attributes

Essential Readings

- Goon, A.M., Gupta, M.K. and Dasgupta, B. (2002). Fundamentals of Statistics, 8th Ed. Vol. I & II, The World Press, Kolkata.
- Mood, A.M. Graybill, F.A. and Boes, D.C. (2007). Introduction to the Theory of Statistics,

3rd Ed., (Reprint), Tata McGraw-Hill Pub. Co. Ltd.

- Gupta, S.C., and Kapoor, V.K. (2014). Fundamental of Mathematical Statistics, 11th Ed., Sultan Chand.

Suggestive Reading

- Miller, I. and Miller, M. (2006). John E. Freund's Mathematical Statistics with Applications, 7th Ed., Pearson Education, Asia.
- Ross, Sheldon M. (2010): Introductory Statistics, 3rd Edition, Academic Press

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES: TIME SERIES ANALYSIS AND INDEX NUMBERS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Time Series Analysis and Index Numbers | 4 | 3 | 0 | 1 | Class XII pass with Mathematics | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- Introduce the concept of time series, its components, and their estimation.
- Introduce the application of time series.
- Introduce the concept, formulation, and application of index numbers.

Learning outcomes

After completion of this course, the students will be able to:

- Understand the concepts of time series and index numbers.
- Formulate, solve, and analyze the use of time series and index numbers for real-world problems.

SYLLABUS OF GE

Theory

Unit - 1

(15 hours)

Components of Time Series

Introduction to Time Series, Components of time series, Decomposition of time series- Additive and multiplicative model with their merits and demerits, Illustrations of time series, Measurement of trend by method of free-hand curve, method of semi-averages and method of least squares (linear, quadratic and exponential).

Unit - 2

(15 hours)

Trend and Seasonality

Fitting of modified exponential, Gompertz and logistic curve, Moving average method, Measurement of seasonal variations by method of simple averages, ratio to trend method, and ratio to moving average method.

Unit - 3

(15 hours)

Index Numbers

Introduction to Index numbers, Problems in the construction of index numbers, Construction of price and quantity index numbers: simple aggregate, weighted aggregate (Laspeyres, Paasche's, Drobish-Bowley, Marshall-Edgeworth's, Walsch and Fisher's Formula), simple and weighted average of price relatives, and chain base method, Criteria for a good index number, Errors in the measurement of price and quantity index numbers, Consumer price index number, its construction and uses, Uses and limitations of index numbers.

Practical – 30 Hours

List of Practicals:

- a. Fitting of linear trend
- b. Fitting of quadratic trend
- c. Fitting of an exponential curve
- d. Fitting of modified exponential curve by the method of
 - Three selected points
 - Partial sums
- e. Fitting of Gompertz curve by the method of
 - Three selected points
 - Partial sums
- f. Fitting of logistic curve by the method of three selected points
- g. Fitting of trend by moving average method (for n even and odd)
- h. Measurement of seasonal indices by
 - Method of simple averages
 - Ratio-to-trend method
 - Ratio-to-moving-average method
- i. Construction of price and quantity index numbers by simple aggregate method.
4. Construction of price and quantity index numbers by Laspeyres, Paasche's, Drobish-Bowley, Marshall-Edgeworth, Walsch and Fisher's Formula.
5. Construction of price and quantity index numbers by simple and weighted average of price relatives.
6. Construction of index number by Chain base method.
7. Construction of consumer price index number by
 - a. Family budget method
 - b. Aggregate expenditure method

14. Time Reversal Test and Factor Reversal Test

Essential Readings

- Croxton, Fredrick E, Cowden, Dudley J. and Klein, S. (1973): Applied General Statistics, 3rd edition, Prentice Hall of India Pvt. Ltd.
- Gun, A.M., Gupta, M.K. and Dasgupta, B. (2008). Fundamentals of Statistics, Vol. II, 9th Ed., World Press, Kolkata.
- Gupta, S.C. and Kapoor, V.K. (2014). Applied Statistics, 11th Ed., Sultan Chand.

Suggestive Reading

- Allen R.G.D. (1975): Index Numbers in Theory and Practice, Macmillan
- Mukhopadhyay, P. (1999). Applied Statistics, New Central Book Agency, Calcutta.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES: BASIC STATISTICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Statistics | 4 | 3 | 0 | 1 | Class XII pass with Mathematics | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To summarize the data and to obtain its salient features from the vast mass of original data.
- To understand the concepts of probability and its applications.
- To understand the concept of random variables, probability distributions and expectation..

Learning outcomes

After completion of this course, the students will be able to:

- Apply the concepts of statistical population and sample, variables and attributes.
- Present tabular and graphical representation of data based on variables.
- Measures of central tendency, Dispersion, Skewness and Kurtosis.
- Employ moments and their use in studying various characteristics of data.
- Employ correlation and regression analysis of bivariate data.

SYLLABUS OF GE

Theory

Unit - 1 (15 hours)

Elementary Statistics

Concepts of a statistical population and sample from a population, quantitative and qualitative data, nominal, ordinal and time-series data, discrete and continuous data. Presentation of data by tables and by diagrams, frequency distributions for discrete and continuous data, graphical representation of a frequency distribution by histogram and frequency polygon, cumulative frequency distributions (inclusive and exclusive methods).

Unit - 2 (15 hours)

Descriptive Statistics

Measures of location (or central tendency) and dispersion, moments, measures of skewness and kurtosis, cumulants. Bi-variate data: Scatter diagram, principle of least-squares and fitting of polynomials and exponential curves.

Unit - 3 (15 hours)

Correlation and Regression

Bivariate data: Definition, scatter diagram, simple, partial and multiple correlation (3 variables only), rank correlation. Simple linear regression, principle of least squares and fitting of polynomials and exponential curves.

Practical - 30 Hours

List of Practicals:

1. Problems based on graphical representation of data.
2. Problems based on measures of central tendency using raw data, grouped data and for change of origin and scale.
3. Problems based on measures of dispersion using raw data, grouped data and for change of origin and scale.
4. Problems based on combined mean and variance and coefficient of variation.
5. Problems based on Moments using raw data, grouped data and for change of origin and scale.
6. Problems based on relationships between moments about origin and central moments.
7. Problems based on Skewness and kurtosis.
8. Problems based on Karl Pearson correlation coefficient (with/without change of scale and origin).
9. Problems based on Lines of regression, angle between two lines of regression
10. Problems based on Spearman rank correlation.
11. Fitting of polynomials and exponential curves.

Essential Readings

- Goon, A. M., Gupta, M. K. and Dasgupta, B. (2003). An Outline of Statistical Theory (4th ed., Vol. I). World Press, Kolkata.

- Gupta, S. C. and Kapoor, V. K. (2021). Fundamentals of Mathematical Statistics (60th ed.). Sultan Chand and Sons.
- Hogg, R. V., Craig, A. T. and McKean, J. W. (2005). Introduction to Mathematical Statistics (6th ed.). Pearson Education.

Suggestive Reading

- Miller, I. and Miller, M. (2006). John E. Freund's Mathematical Statistics with Applications, 7th Ed., Pearson Education, Asia
- Elhance, D. N. , Elhance, V. and Agrawal, B. M. (2021), Kitab Mahal

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DEPARTMENT OF COMPUTER SCIENCE
B.Sc. (H) Computer Science

CATEGORY-I

**DISCIPLINE SPECIFIC CORE COURSE – 1:
PROGRAMMING USING PYTHON**

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Programming using Python | 4 | 3 | 0 | 1 | Class XII pass | Nil |

Learning Objectives

This course is designed as the first course that:

- Introduces programming concepts using Python to Computer Science students.
- Focuses on the development of Python programming to solve problems of different domains.
- Introduces the concept of object- oriented programming.

Learning Outcomes:

On successful completion of the course, students will be able to:

- Understand the basics of programming language
- Develop, document, and debug modular Python programs.
- Apply suitable programming constructs and built-in data structures to solve a problem.
- Use and apply various data objects in Python.
- Use classes and objects in application programs and handle files.

SYLLABUS OF DSC-1

Theory

Unit – 1 (6 hours)

Introduction to Programming

Problem solving strategies; Structure of a Python program; Syntax and semantics; Executing simple programs in Python.

Unit – 2 (12 hours)

Identifiers and keywords; Literals, numbers, and strings; Operators; Expressions; Input/output statements; Defining functions; Control structures (conditional statements, loop control statements, break, continue and pass, exit function), default arguments.

Built-in Data Structures

Mutable and immutable objects; Strings, built-in functions for string, string traversal, string operators and operations; Lists creation, traversal, slicing and splitting operations, passing list to a function; Tuples, sets, dictionaries and their operations.

Object Oriented Programming

Introduction to classes, objects and methods; Standard libraries.

File and Exception Handling

File handling through libraries; Errors and exception handling.

List of Practicals:

1. WAP to find the roots of a quadratic equation
2. WAP to accept a number 'n' and
 - j. Check if 'n' is prime
 - k. Generate all prime numbers till 'n'
 - l. Generate first 'n' prime numbersThis program may be done using functions
3. WAP to create a pyramid of the character '*' and a reverse pyramid

```
*
**
***
****
*****
******
*****
****
***
**
*
```

8. WAP that accepts a character and performs the following:
 - a. print whether the character is a letter or numeric digit or a special character
 - b. if the character is a letter, print whether the letter is uppercase or lowercase
 - c. if the character is a numeric digit, prints its name in text (e.g., if input is 9, output is NINE)

9. WAP to perform the following operations on a string
 - a. Find the frequency of a character in a string.
 - b. Replace a character by another character in a string.
 - c. Remove the first occurrence of a character from a string.
 - d. Remove all occurrences of a character from a string.
10. WAP to swap the first n characters of two strings.
11. Write a function that accepts two strings and returns the indices of all the occurrences of the second string in the first string as a list. If the second string is not present in the first string then it should return -1.
12. WAP to create a list of the cubes of only the even integers appearing in the input list (may have elements of other types also) using the following:
 - a. 'for' loop
 - b. list comprehension
13. WAP to read a file and
 - m. Print the total number of characters, words and lines in the file.
 - n. Calculate the frequency of each character in the file. Use a variable of dictionary type to maintain the count.
 - o. Print the words in reverse order.
 - p. Copy even lines of the file to a file named 'File1' and odd lines to another file named 'File2'.
14. WAP to define a class Point with coordinates x and y as attributes. Create relevant methods and print the objects. Also define a method distance to calculate the distance between any two point objects.
15. Write a function that prints a dictionary where the keys are numbers between 1 and 5 and the values are cubes of the keys.
16. Consider a tuple t1=(1, 2, 5, 7, 9, 2, 4, 6, 8, 10). WAP to perform following operations:
 - a. Print half the values of the tuple in one line and the other half in the next line.
 - b. Print another tuple whose values are even numbers in the given tuple.
 - c. Concatenate a tuple t2=(11,13,15) with t1.
 - d. Return maximum and minimum value from this tuple
17. WAP to accept a name from a user. Raise and handle appropriate exception(s) if the text entered by the user contains digits and/or special characters.

Essential Readings

- Taneja, S., Kumar, N. Python Programming- A modular Approach, 1st edition, Pearson Education India, 2018.

- Balaguruswamy E. Introduction to Computing and Problem Solving using Python, 2nd edition, McGraw Hill Education, 2018.

Suggestive Readings

- Brown, Martin C. Python: The Complete Reference, 2nd edition, McGraw Hill Education, 2018.
- Guttag, J.V. Introduction to computation and programming using Python, 2nd edition, MIT Press, 2016.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2: COMPUTER SYSTEM ARCHITECTURE

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Computer System Architecture | 4 | 3 | 0 | 1 | Class XII pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- Introduces the students to the fundamental concepts of digital computer organization, design and architecture.
- Develop a basic understanding of the building blocks of the computer system and highlights how these blocks are organized together to architect a digital computer system.

Learning Outcomes

On successful completion of the course, students will be able to:

- Design Combinational Circuits using basic building blocks. Simplify these circuits using Boolean algebra and Karnaugh maps. Differentiate between combinational circuits and sequential circuits.
- Represent data in binary form, convert numeric data between different number systems and perform arithmetic operations in binary.
- Determine various stages of instruction cycle, pipelining and describe interrupts and their handling.
- Explain how CPU communicates with memory and I/O devices and distinguish between different types of processors.
- Simulate the design of a basic computer using a software tool.

SYLLABUS OF DSC - 2

Theory

Unit – 1 (6 hours)

Digital Logic Circuits

Logic Gates, Truth Tables, Boolean Algebra, Digital Circuits, Combinational Circuits, Introduction to Sequential Circuits, Circuit Simplification using Karnaugh Map, Don't Care Conditions, Flip-Flops, Characteristic Tables, Excitation Table.

Unit – 2 (9 hours)

Digital Components (Fundamental building blocks)

Designing of combinational circuits- Half Adder, Full Adder, Decoders, Encoders, Multiplexers, Registers and Memory (RAM, ROM and their types), Arithmetic Microoperations, Binary Adder, Binary Adder-Subtractor.

Unit – 3 (6 hours)

Data Representation and Basic Computer Arithmetic

Number System, r and $(r-1)$'s Complements, data representation and arithmetic operations.

Unit – 4 (9 hours)

Basic Computer Organization and Design

Bus organization, Microprogrammed vs Hardwired Control, Instruction Codes, Instruction Format, Instruction Cycle, Instruction pipelining, Memory Reference, Register Reference and Input Output Instructions, Program Interrupt and Interrupt Cycle..

Unit – 5 (6 hours)

Processors

General register organization, Stack Organization, Addressing Modes, Overview of Reduced Instruction Set Computer (RISC), Complex Instruction Set Computer (CISC), Multicore processor and Graphics Processing Unit (GPU).

Unit – 6 (9 hours)

Memory and Input-Output Organization

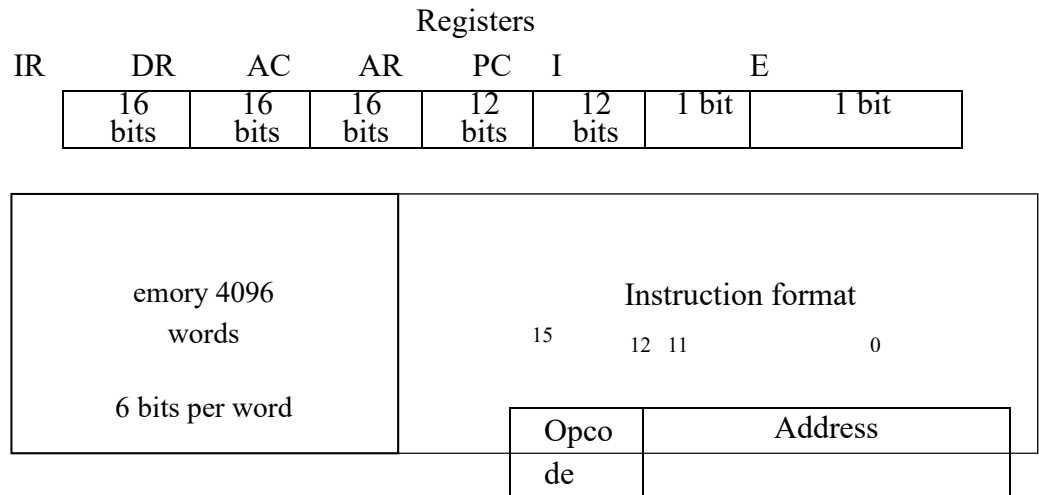
Memory hierarchy (main, cache and auxiliary memory), Input-Output Interface, Modes of Transfer: Programmed I/O, Interrupt initiated I/O, Direct memory access.

Practical (30 hours)

List of Practicals:

(Use Simulator – CPU Sim 3.6.9 or any higher version for the implementation)

1. Create a machine based on the following architecture:



Basic Computer Instructions

| Memory Reference | | | Register Reference | |
|------------------|------|---------------------|--------------------|------|
| Symbol | Hex | | Symbol | Hex |
| AND | 0xxx | Direct Addressing | CLA | 7800 |
| ADD | 1xxx | | CLE | 7400 |
| LDA | 2xxx | | CMA | 7200 |
| STA | 3xxx | | CME | 7100 |
| BUN | 4xxx | | CIR | 7080 |
| BSA | 5xxx | | CIL | 7040 |
| ISZ | 6xxx | | INC | 7020 |
| AND_I | 8xxx | Indirect Addressing | SPA | 7010 |
| ADD_I | 9xxx | | SNA | 7008 |
| LDA_I | Axxx | | SZA | 7004 |
| STA_I | Bxxx | | SZE | 7002 |
| BUN_I | Cxxx | | HLT | 7001 |
| BSA_I | Dxxx | | INP | F800 |
| ISZ_I | Exxx | | OUT | F400 |

Refer to Chapter-5 of reference 1 for description of instructions.

Design the register set, memory and the instruction set. Use this machine for the assignments of this section.

2. Create a Fetch routine of the instruction cycle.

3. Write an assembly program to simulate ADD operation on two user-entered numbers.
4. Write an assembly program to simulate SUBTRACT operation on two user-entered numbers.
5. Write an assembly program to simulate the following logical operations on two user-entered numbers.
 - i. AND
 - ii. OR
 - iii. NOT
 - iv. XOR
 - v. NOR
 - vi. NAND
6. Write an assembly program for simulating following memory-reference instructions.
 - i. ADD
 - ii. LDA
 - iii. STA
 - iv. BUN
 - v. ISZ
7. Write an assembly language program to simulate the machine for following register reference instructions and determine the contents of AC, E, PC, AR and IR registers in decimal after the execution:
 - i. CLA
 - ii. CMA
 - iii. CME
 - iv. HLT
8. Write an assembly language program to simulate the machine for following register reference instructions and determine the contents of AC, E, PC, AR and IR registers in decimal after the execution:
 - i. INC
 - ii. SPA
 - iii. SNA
 - iv. SZE

9. Write an assembly language program to simulate the machine for following register reference instructions and determine the contents of AC, E, PC, AR and IR registers in decimal after the execution:
 - i. CIR
 - ii. CIL
10. Write an assembly program that reads in integers and adds them together; until a negative non-zero number is read in. Then it outputs the sum (not including the last number).
11. Write an assembly program that reads in integers and adds them together; until zero is read in. Then it outputs the sum.

Essential Readings

- David A. Patterson and John L. Hennessy. “Computer Organization and Design: The Hardware/Software interface”, 5th edition, Elsevier, 2012.
- Mano, M. Computer System Architecture, 3rd edition, Pearson Education, 1993.

Suggestive Readings

- Mano, M. Digital Design, Pearson Education Asia, 1995.
- Null, L., & Lobur, J. The Essentials of Computer Organization and Architecture. 5th edition, (Reprint) Jones and Bartlett Learning, 2018.
- Stallings, W. Computer Organization and Architecture Designing for Performance 8th edition, Prentice Hall of India, 2010.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 3: MATHEMATICS FOR COMPUTING

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------|---------|-----------------------------------|----------|---------------------|--|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| Mathematics for Computing | 4 | 3 | 0 | 1 | | Class XII pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- Introduces the students to the fundamental concepts and topics of linear algebra and vector calculus.
- To build the foundation for some of the core courses in later semesters.

Learning Outcomes

This course will enable the students to:

- Perform operations on matrices and sparse matrices.
- Compute the determinant, rank and eigenvalues of a matrix.
- Perform diagonalization.
- Perform operations on vectors, the dot product and cross product.
- Represent vectors geometrically and calculate the gradient, divergence, curl.
- Apply linear algebra and vector calculus to solve problems in sub-disciplines of computer science.

SYLLABUS OF DSC – 3

Theory

Unit – 1 (6 hours)

Introduction to Matrix Algebra

Echelon form of a Matrix, Rank of a Matrix, Determinant and Inverse of a matrix, Solution of System of Homogeneous & Non-Homogeneous Equations: Gauss elimination and Solution of System of Homogeneous Equations: Gauss Jordan Method.

Unit – 2 (21 hours)

Vector Space and Linear Transformation

Vector Space, Sub-spaces, Linear Combinations, Linear Span, Convex Sets, Linear Independence/Dependence, Basis & Dimension, Linear transformation on finite dimensional vector spaces, Inner Product Space, Schwarz Inequality, Orthonormal Basis, Gram-Schmidt Orthogonalization Process.

Unit – 3 (9 hours)

EigenValue and EigenVector

Characteristic Polynomial, Cayley Hamilton Theorem, Eigen Value and Eigen Vector of a matrix, Eigenspaces, Diagonalization, Positive Definite Matrices, Applications to Markov Matrices.

Unit – 4

(9 hours)

Vector Calculus

Vector Algebra, Laws of Vector Algebra, Dot Product, Cross Product, Vector and Scalar Fields, Ordinary Derivative of Vectors, Space Curves, Partial Derivatives, Del Operator, Gradient of a Scalar Field, Directional Derivative, Gradient of Matrices, Divergence of a Vector Field, Laplacian Operator, Curl of a Vector Field.

Practical

(30 hours)

List of Practicals:

1. Create and transform vectors and matrices (the transpose vector (matrix) conjugate transpose of a vector (matrix))
2. Generate the matrix into echelon form and find its rank.
3. Find cofactors, determinant, adjoint and inverse of a matrix.
4. Solve a system of Homogeneous and non-homogeneous equations using Gauss elimination method.
5. Solve a system of Homogeneous equations using the Gauss Jordan method.
6. Generate basis of column space, null space, row space and left null space of a matrix space.
7. Check the linear dependence of vectors. Generate a linear combination of given vectors of R^n / matrices of the same size and find the transition matrix of given matrix space.
8. Find the orthonormal basis of a given vector space using the Gram-Schmidt orthogonalization process.
9. Check the diagonalizable property of matrices and find the corresponding eigenvalue and verify the Cayley- Hamilton theorem.
10. Application of Linear algebra: Coding and decoding of messages using nonsingular matrices.
eg code “Linear Algebra is fun” and then decode it.
11. Compute Gradient of a scalar field.
12. Compute Divergence of a vector field.
13. Compute Curl of a vector field.

Essential Reading

- Strang Gilbert. Introduction to Linear Algebra, 5th Edition, Wellesley-Cambridge Press, 2021.
- Kreyszig Erwin. Advanced Engineering Mathematics, 10th Edition, Wiley, 2015.
- Strang Gilbert. Linear Algebra and Learning from Data, 1st Edition, Wellesley-Cambridge Press, 2019.
- Jain R. K., Iyengar S.R. K. Advanced Engineering Mathematics, 5th Edition, Narosa, 2016.

Suggestive Reading

- Deisenroth, Marc Peter, Faisal A. Aldo and Ong Cheng Soon. Mathematics for Machine Learning, 1st Edition, Cambridge University Press, 2020.
- (Lipschutz Seymour and Lipson Marc. Schaum's Outline of Linear Algebra, 6th Edition, McGraw Hill, 2017.

B.A (Prog) with Computer Science as Major

CATEGORY-II

DISCIPLINE SPECIFIC CORE COURSE – 1: INTRODUCTION TO PROGRAMMING USING C++

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction to Programming using C++ | 4 | 3 | 0 | 1 | Class XII pass | Nil |

Learning Objectives

This course is designed to:

- Introduce programming concepts using C++ to students.
- Develop structured as well as object-oriented programming skills using C++ programming language.
- Achieve competence amongst its students to develop correct and efficient C++ programs to solve problems spanning multiple disciplines.

Learning outcomes

On successful completion of the course, students will be able to:

- Write simple programs using built-in data types of C++.
- Implement arrays and user defined functions in C++.
- Solve problems spanning multiple disciplines using suitable programming constructs in C++.
- Solve problems spanning multiple disciplines using the concepts of object oriented programming in C++.

SYLLABUS OF DSC - 1

Theory

Unit – 1

(3 hours)

Introduction to C++

Need and characteristics of Object-Oriented Programming, Structure of a C++ Program (main () function, header files, output, input, comments), compile and execute a simple program

Unit – 2 (9 hours)

Data types and Expressions

Keywords, built in data types, variables and constants, naming convention, Input-Output statements, operators and their precedence, expressions, typecasting, library functions

Unit – 3 (12 hours)

Control Constructs in C++

Decision making using selection constructs, iteration using looping constructs.

Unit – 4 (6 hours)

Arrays, Pointers and User Defined Functions

Defining and initializing single and multi-dimensional arrays, user defined functions, passing arguments to functions, returning values from functions, inline functions, default arguments, introduction to pointers

Unit – 5 (15 hours)

Classes and Objects

Need and implementation of abstraction, encapsulation, inheritance and polymorphism, creating classes, objects as function arguments, modifiers and access control, constructors and destructors.

Practical (30 hours)

List of Practicals:

1. Write a program to find the largest of n natural numbers.
2. Write a program to find whether a given number is prime or not.
3. Write a program that takes a positive integer n and the produce n lines of output as shown:
*

* *

* * *

* * * *

(for n = 4)
4. Write a menu driven program for following:
 - a. to check whether a given number is odd or even.
 - b. display a fibonacci series
 - c. compute factorial of a number
5. Write a program to accept a number, reverse it and print the sum of its digits.
6. Write a program using functions to print the series and its sum:
 $1 + 1/2! + 1/3! + \dots + 1/n!$
7. Write a program to perform the following operations on an input string
 - a. Print length of the string

- b. Find frequency of a character in the string
 - c. Print whether characters are in uppercase or lowercase
 - d. to check whether a given string is palindrome or not.
8. Write a program that will prompt the user for a list of 5 prices. Compute the average of the prices and find out all the prices that are higher than the calculated average.
9. Design a class named Vehicle, having registration number and year as its private members. Define a suitable constructor and a method to print the details of a vehicle. Write a C++ program to test the above class.
10. Inherit a class Car from the Vehicle class defined above. Add model to the Car class. Define a suitable constructor and a method to print the details of a car. Write a C++ program to test inheritance of this class.

Essential Readings

- E. Balaguruswamy, Object Oriented Programming with C++, 7th edition, McGraw-Hill Education, 2017.
- 2. Robert Lafore, Object Oriented Programming in C++, 4th edition, SAMS Publishing, 2008.

Suggestive Reading

- D.S. Malik, C++ Programming: From Problem Analysis to Program Design, 6th edition, Cengage Learning, 2013.
- (ii) Herbert Schildt, C++: The Complete Reference, 4th Edition, McGraw Hill, 2003.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2: PROGRAMMING FUNDAMENTALS USING PYTHON

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre- requisite of the course (if any) |
|---|---------|-----------------------------------|----------|------------------------|-------------------------|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Programming Fundamentals Using Python | 4 | 3 | 0 | 1 | Class XII pass | Nil |

Learning Objectives

This course is designed to:

- Introduce programming concepts using Python to students.

- Develop structured as well as object-oriented programming skills using Python.
- Achieve competence amongst its students to develop correct and efficient Python programs to solve problems spanning multiple disciplines.

Learning Outcomes

On successful completion of this course, a student will be able to:

- Write simple programs using built-in data types of Python.
- Implement arrays and user defined functions in Python.
- Solve problems spanning multiple disciplines using suitable programming constructs in Python.
- Solve problems spanning multiple disciplines using the concepts of object-oriented programming in Python.

SYLLABUS OF DSC - 2

Theory

Unit – 1 (6 hours)

Introduction to Python Programming

Problem solving strategies; Structure of a Python program; Syntax and semantics; Python interpreter/shell, indentation; Executing simple programs in Python.

Unit – 2 (12 hours)

Creating Python Programs

Identifiers and keywords; literals, numbers, and strings; Operators and expressions; Input and output statements; control structures (conditional statements, loop control statements, break, continue and pass), Errors and exception handling.

Unit – 3 (9 hours)

User Defined Functions

Defining functions, passing arguments and returning values, default arguments

Unit – 4 (18 hours)

Built-in Data Structures

Strings, Lists, Tuples, Sets, Dictionaries; their built-in functions, operators and operations

Practical (30 hours)

List of Practicals:

1. WAP to calculate total marks, percentage and grade of a student. Marks obtained in each of three subjects are to be input by the user. Assign grades according to the following criteria:

Grade A : if Percentage ≥ 80

Grade B : if Percentage ≥ 60 and Percentage < 80

Grade C : if Percentage ≥ 40 and Percentage < 60

Grade D : if Percentage ≤ 40

2. WAP to print factors of a given number.
3. WAP to add N natural numbers and display their sum.
4. WAP to print the following conversion table (use looping constructs):

| Height (in Feet) | Height (in inches) |
|------------------|--------------------|
| 5.0 ft | 60 inches |
| 5.1 ft | 61.2 inches |
| 5.8 ft | 69.6 inches |
| 5.9 ft | 70.8 inches |
| 6.0 ft | 72 inches |

5. WAP that takes a positive integer n and the produce n lines of output as shown:

```
*
* *
* * *
* * * *
```

(for n =4)

6. Write a menu driven program using user defined functions to print the area of rectangle, square, circle and triangle by accepting suitable input from user.
7. Write a function that calculates factorial of a number n.
8. WAP to print the series and its sum: (use functions)
 $1/1! + 1/2! + 1/3! + \dots + 1/n!$
9. WAP to perform the following operations on an input string
 - a. Print length of the string
 - b. Find frequency of a character in the string
 - c. Print whether characters are in uppercase or lowercase
10. WAP to create two lists: one of even numbers and another of odd numbers. The program should demonstrate the various operations and methods on lists.
11. WAP to create a dictionary where keys are numbers between 1 and 5 and the values are the cubes of the keys.
12. WAP to create a tuple $t1 = (1,2,5,7,2,4)$. The program should perform the following:
 - a. Print tuple in two lines, line 1 containing the first half of tuple and second line having the second half.
 - b. Concatenate tuple $t2 = (10,11)$ with $t1$.

Essential Readings

- Kamthane, A. N., & Kamthane, A.A. Programming and Problem Solving with Python, McGraw Hill Education, 2017.
- Balaguruswamy E. “Introduction to Computing and Problem Solving using Python”, 2nd edition, McGraw Hill Education, 2018.
- Taneja, S., Kumar, N. Python Programming- A modular Approach, Pearson Education India, 2018.

Suggestive Readings

- Guttag, J. V. Introduction to computation and programming using Python, MIT Press, 2018.
- (ii) Downey, A. B. Think Python–How to think like a Computer Scientist 2nd edition. O’Reilly 2015.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

B.A. (Prog) with Computer Science as Non-Major

CATEGORY-III

DISCIPLINE SPECIFIC CORE COURSE: PROGRAMMING FUNDAMENTALS USING C++

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction to Programming using C++ | 4 | 3 | 0 | 1 | Class XII pass | Nil |

Learning Objectives

This course is designed to:

- Introduce programming concepts using C++ to students.
- Develop structured as well as object-oriented programming skills using C++ programming language.
- Achieve competence amongst its students to develop correct and efficient C++ programs to solve problems spanning multiple disciplines.

Learning outcomes

On successful completion of the course, students will be able to:

- Write simple programs using built-in data types of C++.
- Implement arrays and user defined functions in C++.
- Solve problems spanning multiple disciplines using suitable programming constructs in C++.
- Solve problems spanning multiple disciplines using the concepts of object oriented programming in C++.

SYLLABUS OF DSC - 1

Theory

Unit – 1

(3 hours)

Introduction to C++

Need and characteristics of Object-Oriented Programming, Structure of a C++ Program (main () function, header files, output, input, comments), compile and execute a simple program

Unit – 2

(9 hours)

Data types and Expressions

Keywords, built in data types, variables and constants, naming convention, Input-Output statements, operators and their precedence, expressions, typecasting, library functions

Unit – 3 (12 hours)

Control Constructs in C++

Decision making using selection constructs, iteration using looping constructs.

Unit – 4 (6 hours)

Arrays, Pointers and User Defined Functions

Defining and initializing single and multi-dimensional arrays, user defined functions, passing arguments to functions, returning values from functions, inline functions, default arguments, introduction to pointers

Unit – 5 (15 hours)

Classes and Objects

Need and implementation of abstraction, encapsulation, inheritance and polymorphism, creating classes, objects as function arguments, modifiers and access control, constructors and destructors.

Practical (30 hours)

List of Practicals:

1. Write a program to find the largest of n natural numbers.
2. Write a program to find whether a given number is prime or not.
3. Write a program that takes a positive integer n and the produce n lines of output as shown:
*

* *

* * *

* * * *
(for n = 4)
4. Write a menu driven program for following:
 - a. to check whether a given number is odd or even.
 - b. display a fibonacci series
 - c. compute factorial of a number
5. Write a program to accept a number, reverse it and print the sum of its digits.
6. Write a program using functions to print the series and its sum:
 $1 + 1/2! + 1/3! + \dots + 1/n!$
7. Write a program to perform the following operations on an input string
 - a. Print length of the string
 - b. Find frequency of a character in the string
 - c. Print whether characters are in uppercase or lowercase
 - d. to check whether a given string is palindrome or not.

8. Write a program that will prompt the user for a list of 5 prices. Compute the average of the prices and find out all the prices that are higher than the calculated average.
9. Design a class named Vehicle, having registration number and year as its private members. Define a suitable constructor and a method to print the details of a vehicle. Write a C++ program to test the above class.
10. Inherit a class Car from the Vehicle class defined above. Add model to the Car class. Define a suitable constructor and a method to print the details of a car. Write a C++ program to test inheritance of this class.

Essential Readings

- E. Balaguruswamy, Object Oriented Programming with C++, 7th edition, McGraw-Hill Education, 2017.
- 2. Robert Lafore, Object Oriented Programming in C++, 4th edition, SAMS Publishing, 2008.

Suggestive Reading

- D.S. Malik, C++ Programming: From Problem Analysis to Program Design, 6th edition, Cengage Learning, 2013.
- (ii) Herbert Schildt, C++: The Complete Reference, 4th Edition, McGraw Hill, 2003.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BSc. Physical Sciences/ Mathematical Sciences with Computer Science as one of the Core disciplines

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------------------|----------------|--|-----------------|----------------------------|-----------------------------|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Programming fundamentals using C++ | 4 | 3 | 0 | 1 | Class XII pass | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

- Introduce programming concepts using C++ to students.
- Develop structured as well as object-oriented programming skills using C++ programming language.
- Achieve competence amongst its students to develop correct and efficient C++ programs to solve problems spanning multiple domains.

Learning outcomes

This course will enable the students to:

- Write simple programs using built-in data types of C++.
- Implement arrays and user defined functions in C++.
- Write programs using dynamic memory allocation, handling external files, interrupts and exceptions.
- Solve problems spanning multiple domains using suitable programming constructs in C++.
- Solve problems spanning multiple domains using the concepts of object oriented programming in C++.

SYLLABUS OF DSC

Theory

Unit – 1

(3 hours)

Introduction to C++

Need and characteristics of Object-Oriented Programming, Structure of a C++ Program (main () function, header files, output, input, comments), compile and execute a simple program

Unit – 2

(12 hours)

Programming Fundamentals

Data types, Variables, Operators, Expressions, Arrays, Keywords, Decision making constructs, Iteration, Type Casting, Input-output statements, Functions, Command Line Arguments/Parameters

Unit – 3 (9 hours)

Object Oriented Programming

Concepts of Abstraction, Encapsulation. Creating Classes and objects, Modifiers and Access Control, Constructors, Destructors, Implementation of Inheritance and Polymorphism, Template functions and classes.

Unit – 4 (9 hours)

Pointers and References

Static and dynamic memory allocation, Pointer and Reference Variables, Implementing Runtime polymorphism using pointers and references.

Unit – 5 (12 hours)

Exception and File Handling

Using try, catch, throw, throws and finally; Nested try, File I/O Basics, File Operations

Practical (30 hours)

List of Practicals:

1. Write a program to compute the sum of the first n terms of the following series:

$$S = 1 - 2^n + 3^n - 4^n + \dots$$

The number of terms n is to be taken from the user through the command line. If the command line argument is not found then prompt the user to enter the value of n.

2. Write a program to display the following pattern:

A
BA
CBA
DCBA

The number of rows n, is to be taken from the user.

3. Write a program to compute the factors of a given number using the default argument.
4. Write a menu driven program to perform the following operations on an array:
 - a. Find the minimum, maximum and average of the array elements
 - b. Search an element in the array using linear search
 - c. Search an element in the array using binary search (both iterative and recursive versions)
 - d. Display the address of every element of the array
5. Write a menu driven program to perform the following operations on a string:

- a. Calculate length of the string (use pointers)
 - b. Check whether the first character of every word in the string is in uppercase or not
 - c. Reverse the string
 - d. Display the address of every character in the string
6. Create a class Triangle. Include overloaded functions for calculating the area of a triangle.
7. Create a template class TwoDim which contains x and y coordinates. Define default constructor, parameterized constructor and void print() function to print the coordinates. Now reuse this class in ThreeDim adding a new dimension as z. Define the constructors and void print() in the subclass. Implement main() to show runtime polymorphism.
8. Copy the contents of one text file to another file and display the number of characters copied.

Essential Readings

- Stephen Prata, C++ Primer Plus, 6th Edition, Pearson India, 2015.
- E Balaguruswamy, Object Oriented Programming with C++, 8th edition, McGraw-Hill Education, 2020.
- D.S. Malik, C++ Programming: From Problem Analysis to Program Design, 6th edition, Cengage Learning, 2013.

Suggestive Readings

- Herbert Schildt, C++: The Complete Reference, 4th Edition, McGraw Hill, 2003.
- A. B. Forouzan, Richard F. Gilberg, Computer Science: A Structured Approach using C++, 2nd edition, Cengage Learning, 2010.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

LIST OF COMMON POOL OF GENERIC ELECTIVES (GE) COURSES OFFERED BY DEPARTMENT OF COMPUTER SCIENCE

CATEGORY-IV

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

GENERIC ELECTIVES: PROGRAMMING USING C++

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre- requisite of the course (if any) |
|---------------------------------------|---------|-----------------------------------|----------|------------------------|-------------------------|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Programming using C++ Code: | 4 | 3 | 0 | 1 | Class XII pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- Introduce programming concepts using C++ to students.
- Develop structured as well as object-oriented programming skills using C++ programming language.
- Achieve competence amongst its students to develop correct and efficient C++ programs to solve problems in their respective domains

Learning Outcomes

Upon completion of this course, students will be able to:

- Write simple programs using built-in data types of C++.
- Implement arrays and user defined functions in C++.
- Solve problems in the respective domain using suitable programming constructs in C++.
- Solve problems in the respective domain using the concepts of object oriented programming in C++.

SYLLABUS OF GE

Theory

Unit – 1

Introduction to C++

(9 hours)

Overview of Procedural and Object-Oriented Programming, Using main() function, Header Files, Compiling and Executing Simple Programs in C++.

Unit – 2 (15 hours)

Programming Fundamentals

Data types, Variables, Operators, Expressions, Arrays, Keywords, Decision making constructs, Iteration, Type Casting, Input-output statements, Functions

Unit – 3 (21 hours)

Object Oriented Programming

Concepts of Abstraction, Encapsulation. Creating Classes and objects, Modifiers and Access Control, Constructors, Destructors, Implementation of Inheritance and Polymorphism, Template functions and classes

Practical (30 hours)

List of Practicals:

1. Write a program to compute the sum of the first n terms of the following series:

$$S = 1 - 2 + 3 - 4 + \dots n$$

The number of terms n is to be taken from the user through the command line. If the command line argument is not found then prompt the user to enter the value of n.

2. Write a program to display the following pattern:

```
1
22
333
4444
55555
```

The number of rows n, is to be taken from the user.

3. Write a program to compute the factors of a given number.
4. Write a menu driven program to perform the following operations on an array:
 - a. Find the minimum, maximum and average of the array elements
 - b. Search an element in the array using linear and binary search
5. Write a menu driven program to perform the following operations on a string:
 - a. Calculate length of the string

- b. Check whether the first character of every word in the string is in uppercase or not
 - c. Reverse the string
6. Create a class Triangle. Include overloaded functions for calculating the area of a triangle.
7. Create a template class TwoDim which contains x and y coordinates. Define default constructor, parameterized constructor and void print() function to print the co-ordinates. Now reuse this class in ThreeDim adding a new dimension as z. Define the constructors and void print() in the subclass. Implement main() to show runtime polymorphism.

Essential Readings

- Stephen Prata, C++ Primer Plus, 6th Edition, Pearson India, 2015.
- E Balaguruswamy, Object Oriented Programming with C++, 8th edition, McGraw-Hill Education, 2020.
- D.S. Malik, C++ Programming: From Problem Analysis to Program Design, 6th edition, Cengage Learning, 2013.

Suggestive Reading

- Herbert Schildt, C++: The Complete Reference, 4th edition, McGraw Hill, 2003.
- A. B. Forouzan, Richard F. Gilberg, Computer Science: A Structured Approach using C++, 2nd edition, Cengage Learning, 2010.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES: PROGRAMMING WITH PYTHON

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Programming with Python Code: | 4 | 3 | 0 | 1 | Class XII pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- Introduce programming concepts using Python to students.
- Develop structured as well as object-oriented programming skills using Python.

- Achieve competence amongst its students to develop correct and efficient Python programs to solve problems in their respective domains.

Learning outcomes

On successful completion of the course, students will be able to:

- Write simple programs using built-in data structures in Python.
- Implement arrays and user defined functions in Python.
- Solve problems in the respective domain using suitable programming constructs in Python.
- Solve problems in the respective domain using the concepts of object oriented programming in Python.

SYLLABUS OF GE

Theory

Unit - 1 (6 hours)

Introduction to Programming

Problem solving strategies; Structure of a Python program; Syntax and semantics; Executing simple programs in Python.

Unit - 2 (15 hours)

Creating Python Programs

Identifiers and keywords; Literals, numbers, and strings; Operators; Expressions; Input/output statements; Defining functions; Control structures (conditional statements, loop control statements, break, continue and pass, exit function), default arguments.

Unit - 3 (15 hours)

Built-in Data Structures

Mutable and immutable objects; Strings, built-in functions for string, string traversal, string operators and operations; Lists creation, traversal, slicing and splitting operations, passing list to a function; Tuples, sets, dictionaries and their operations.

Unit - 4 (9 hours)

File and Exception Handling

File handling through libraries; Errors and exception handling.

Practical (30 hours)

List of Practicals:

1. WAP to find the roots of a quadratic equation.
2. WAP to accept a number 'n' and
 - a. Check if 'n' is prime
 - b. Generate all prime numbers till 'n'

- c. Generate first 'n' prime numbers
 - d. This program may be done using functions.
3. WAP to create a pyramid of the character '*' and a reverse pyramid

```

      *
     ***
    *****
   ********
  **********
 **********

          *****
         *****
        *****
       *****
      *****
     *****
    *****
   *****
  *****
 *****

```

4. WAP that accepts a character and performs the following:
- a. print whether the character is a letter or numeric digit or a special character
 - b. if the character is a letter, print whether the letter is uppercase or lowercase
 - c. if the character is a numeric digit, prints its name in text (e.g., if input is 9, output is NINE)
5. WAP to perform the following operations on a string
- a. Find the frequency of a character in a string.
 - b. Replace a character by another character in a string.
 - c. Remove the first occurrence of a character from a string.
 - d. Remove all occurrences of a character from a string.
6. WAP to swap the first n characters of two strings.
7. Write a function that accepts two strings and returns the indices of all the occurrences of the second string in the first string as a list. If the second string is not present in the first string then it should return -1.
8. WAP to create a list of the cubes of only the even integers appearing in the input list (may have elements of other types also) using the following:
- a. 'for' loop
 - b. list comprehension
9. WAP to read a file and

- a. Print the total number of characters, words and lines in the file.
 - b. Calculate the frequency of each character in the file. Use a variable of dictionary type to maintain the count.
 - c. Print the words in reverse order.
 - d. Copy even lines of the file to a file named 'File1' and odd lines to another file named 'File2'.
10. Write a function that prints a dictionary where the keys are numbers between 1 and 5 and the values are cubes of the keys.
11. Consider a tuple t1=(1, 2, 5, 7, 9, 2, 4, 6, 8, 10). WAP to perform following operations:
- a. Print half the values of the tuple in one line and the other half in the next line.
 - b. Print another tuple whose values are even numbers in the given tuple.
 - c. Concatenate a tuple t2=(11,13,15) with t1.
 - d. Return maximum and minimum value from this tuple
12. WAP to accept a name from a user. Raise and handle appropriate exception(s) if the text entered by the user contains digits and/or special characters.

Essential Readings

- Taneja, S., Kumar, N., Python Programming- A modular Approach, Pearson Education India, 2018.
- Balaguruswamy E., Introduction to Computing and Problem Solving using Python, 2nd edition, McGraw Hill Education, 2018.

Suggestive Reading

- Brown, Martin C., Python: The Complete Reference, 2nd edition, McGraw Hill Education, 2018.
- Guttag, J.V. Introduction to computation and programming using Python, 2nd edition, MIT Press, 2016.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DEPARTMENT OF OPERATIONAL RESEARCH
B.Sc. (H) Operational Research
Category-I

**DISCIPLINE SPECIFIC CORE COURSE - 1: INTRODUCTION TO
 OPERATIONAL RESEARCH AND LINEAR PROGRAMMING**

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|------------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction to Operational Research and Linear Programming | 4 | 3 | 0 | 1 | Class XII pass with Mathematics | Nil |

Learning Objectives

The Learning Objective of the course is to introduce:

- Basic concepts of Operational Research and Linear Programming to the students.

Learning Outcomes:

After completion of the course, students will possess knowledge and skills required to:

- Gain an understanding of key concepts of Operational Research and Linear Programming and their role in various organizations.
- Describe the basic concepts of convex analysis and explain the theoretical foundations of various issues related to linear programming modelling.
- Formulate real-world problems as a linear programming model and describe the theoretical workings of the graphical and simplex method, demonstrate the solution process by hand and solver.
- Implement advanced and more economic algorithm to solve linear programming problems.

SYLLABUS OF DSC-1

Theory

Unit – 1 (9 hours)

Basics of Operational Research: Origin & Development of Operational Research, Definition and Meaning of Operational Research, Different Phases of an Operational Research Study, Scope and Limitations of Operational Research, Mathematical Formulation of Real-Life Problems.

Unit – 2 (15 hours)

Introduction to Linear Programming, Linear Programming Problem Formulation, Solution by Graphical Method. Concepts of Basis and Basic Feasible solution. Convex sets, Extreme points, Hyperplanes and Halfspaces, Convex cones, Polyhedral sets and cones.

Unit – 3 (9 hours)

Theory of Simplex Method, Simplex Algorithm, Two phase Method, Charne's-M Method.

Unit – 4 (12 hours)

Degeneracy in Linear Programming, Charnes' Perturbation method, Revised Simplex method.

Practical

Practical/Lab to be performed on a computer using OR/Statistical packages

- To solve Linear Programming Problem (LPP) using Graphical Method with
 - Unbounded solution.
 - Infeasible solution.
 - Alternative or multiple solutions.
- Solution of LPP with simplex method.
- Problem solving using Charnes-M method.
- Problem solving using Two Phase method.
- Illustration of following special cases in LPP using Simplex method
 - Unrestricted variables.
 - Unbounded solution.
 - Infeasible solution.
 - Alternative or multiple solutions.
- Solution to linear programming problem through revised simplex method.

Essential Readings

- Hadley, G. (2002). Linear programming. New Delhi: Narosa Publishing House.
- Hadley, G. (2002). Linear Algebra. New Delhi: Narosa Publishing House.
- Hillier, F.S., & Lieberman, G. J. (2010). Introduction to operations research- concepts and cases (9th ed.). New Delhi: Tata McGraw Hill (Indian print).
- Taha, H. A. (2017). Operations research - An Introduction (10th ed.). Pearson Education.
- Ravindran, A., Phillips, D. T., & Solberg, J. J. (2005). Operations research- principles and practice (2nd ed.). New Delhi: Wiley India (P.) Ltd. (Indian print).

DISCIPLINE SPECIFIC CORE COURSE - 2: LINEAR ALGEBRA AND CALCULUS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Linear Algebra and Calculus | 4 | 3 | 1 | 0 | Class XII pass with Mathematics | NIL |

Learning Objectives

The Learning Objectives of the course is to provide a platform for:

- Introduction to linear algebra and calculus.
- Providing the rudimentary idea of Mathematics to be useful in the course of Operational Research.

Learning Outcomes

After completion of the course, students will possess knowledge and skills required to:

- Gain an understanding of key concepts of Linear Algebra and Calculus and their role in Operations Research.
- Describe the basic concepts of matrices and system of linear equations.
- Demonstrate the understanding of linear combinations, Linear span, Basis and Eigen values and related theorems.
- Explain the fundamentals of Limit, Continuity and Differentiability.
- Demonstrate the utility of Maxima, Minima and Lagrangian function.

SYLLABUS OF DSC - 2

Theory

Unit – 1

(16 hours)

Matrices & System of Linear Equations: Matrix Algebra, Types of Matrices, Elementary row operations on a Matrix, Echelon form of a Matrix, Rank of a Matrix, Inverse of a matrix, Solution of System of Homogeneous & Non-Homogeneous Equations.

Unit – 2

(16 hours)

Vector Spaces: Definition, Sub-spaces, Linear Combinations, Linear independence and dependence of vectors, Linear Span, Basis & Dimension, Eigen Values, Eigen Vectors, Characteristic Polynomial, Diagonalization, Cayley Hamilton Theorem.

Unit – 3

(16 hours)

Calculus: Functions of one variable: Limit, continuity, Differentiability, Intermediate value theorem, Rolle's Theorem, Mean value theorem, Cauchy's mean value theorem, Taylor series, Maclaurin series.

Unit – 4

(12 hours)

Concepts of Maxima and Minima, Lagrangian function and its geometric interpretation.

Practical component (if any) – NIL

Essential Readings

- Lay, D. C. (2015). Linear Algebra and its Applications (5th ed.). Pearson.
- Lang, S. (2004). Linear Algebra (3rd ed.). Springer.
- George, B. T. Jr. and Finney, R. L. (2010). Calculus and Analytic Geometry (9th ed.). Pearson.

- Strang, G. (2016). Introduction to Linear Algebra (5th ed.). Wellesey-Cambridge Press.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE - 3: PRODUCTION AND INVENTORY MANAGEMENT

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-------------------------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Production and Inventory Management | 4 | 3 | 0 | 1 | Class XII pass with Mathematics | NIL |

Learning Objectives

The Learning Objectives of this course is to:

- Introduce fundamental concepts in production and inventory management.
- Develop the students' modelling and analytical skills.

Learning Outcomes

After completion of the course, students will possess knowledge and skills required to:

- Gain an understanding of key concepts of Production and Inventory management and its role in various organizations.
- Apply selective inventory control techniques and understand its significance.
- Determine optimal order quantity for various deterministic and probabilistic inventory models.
- Understand quantity discount models in inventory management.
- Formulate and develop Production Planning and Scheduling models.
- To apply and extend production and inventory models to analyse real world systems.

SYLLABUS OF DSC – 3

Theory

Unit – 1

(9 hours)

Introduction to Production and Inventory Management, Different types of costs in inventory system, Selective inventory classification (VED, XML, FNSD, ABC) and its use in controlling inventory.

Unit – 2

(15 hours)

Deterministic continuous review models: Economic order quantity (EOQ) model with and without shortages, Finite replenishment rate Inventory models without and with planned shortages. Determination of reorder point, Quantity discount models.

Unit – 3

(9 hours)

Probabilistic inventory models: Single period probabilistic inventory models with discrete and continuous demand.

Unit – 4

(12 hours)

Introduction to Production Planning and Scheduling, Aggregate production plan, Formulation of lot size production problem: Wagner and Whitin algorithm. Basic concepts of Just-in-Time (JIT) and Material Requirement Planning (MRP).

Practical

(30 hours)

Practical/Lab to be performed on a computer using OR/Statistical packages

1. Problems based on selective inventory classification. (ABC and FNS analysis)
2. To find optimal inventory policy for EOQ model.
3. To find optimal inventory policy for EOQ model with finite supply.
4. To find optimal inventory policy for EOQ model with backorders.
5. To solve all units quantity discounts model.
6. To solve Incremental quantity discount model
7. To find optimal inventory policy for Probabilistic inventory model with discrete demand.
8. To find optimal inventory policy for Probabilistic inventory model with continuous.
9. Solution of procurement/production scheduling model.

Essential Readings

- Axsäter, S. (2015). Inventory control (3rd Edition). Springer.
- Buffa, Elwood S., & Sarin, Rakesh, K. (2009). Modern Production/Operations Management (8th ed.). Wiley, India.
- Hadley, G., & Whitin, T. M. (1963). Analysis of inventory systems. Prentice-Hall.
- Heizer, J., & Render, B. (2011). Operations Management (10th ed.). Pearson's Publication.
- Johnson, L.A., & Montgomery, D.C. (1974) Operations Research in Production Planning, Scheduling and Inventory Control. Wiley, New York.
- Naddor, E. (1966). Inventory Systems. Wiley.
- Silver, E. A., Pyke, D. F., & Peterson, R. (1998). Inventory management and production planning and scheduling (3rd ed.). Wiley.
- Waters, D. (2008). Inventory control and management. (2nd ed.). John Wiley & Sons.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

B.A. (Prog.) with Operational Research as Major Category II

DISCIPLINE SPECIFIC CORE COURSE – 1: INTRODUCTION TO OPERATIONAL RESEARCH AND LINEAR PROGRAMMING

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction to Operational Research and Linear Programming | 4 | 3 | 0 | 1 | Class XII pass with Mathematics | Nil |

Learning Objectives

The Learning Objective of the course is to introduce:

- Basic concepts of Operational Research and Linear Programming to the students.

Learning Outcomes:

After completion of the course, students will possess knowledge and skills required to:

- Gain an understanding of key concepts of Operational Research and Linear Programming and their role in various organizations.
- Describe the basic concepts of convex analysis and explain the theoretical foundations of various issues related to linear programming modelling.
- Formulate real-world problems as a linear programming model and describe the theoretical workings of the graphical and simplex method, demonstrate the solution process by hand and solver.
- Implement advanced and more economic algorithm to solve linear programming problems.

SYLLABUS OF DSC-1

Theory

Unit – 1

(9 hours)

Basics of Operational Research: Origin & Development of Operational Research, Definition and Meaning of Operational Research, Different Phases of an Operational Research Study, Scope and Limitations of Operational Research, Mathematical Formulation of Real-Life Problems.

Unit – 2 **(15 hours)**

Introduction to Linear Programming, Linear Programming Problem Formulation, Solution by Graphical Method. Concepts of Basis and Basic Feasible solution. Convex sets, Extreme points, Hyperplanes and Halfspaces, Convex cones, Polyhedral sets and cones.

Unit – 3 **(9 hours)**

Theory of Simplex Method, Simplex Algorithm, Two phase Method, Charne's-M Method.

Unit – 4 **(12 hours)**

Degeneracy in Linear Programming, Charnes' Perturbation method, Revised Simplex method.

Practical

Practical/Lab to be performed on a computer using OR/Statistical packages

1. To solve Linear Programming Problem (LPP) using Graphical Method with
 - (i) Unbounded solution.
 - (ii) Infeasible solution.
 - (iii) Alternative or multiple solutions.
2. Solution of LPP with simplex method.
3. Problem solving using Charnes-M method.
4. Problem solving using Two Phase method.
5. Illustration of following special cases in LPP using Simplex method
 - (i) Unrestricted variables.
 - (ii) Unbounded solution.
 - (iii) Infeasible solution.
 - (iv) Alternative or multiple solutions.
6. Solution to linear programming problem through revised simplex method.

Essential Readings

- Hadley, G. (2002). Linear programming. New Delhi: Narosa Publishing House.
- Hadley, G. (2002). Linear Algebra. New Delhi: Narosa Publishing House.
- Hillier, F.S., & Lieberman, G. J. (2010). Introduction to operations research- concepts and cases (9th ed.). New Delhi: Tata McGraw Hill (Indian print).
- Taha, H. A. (2017). Operations research - An Introduction (10th ed.). Pearson Education.
- Ravindran, A., Phillips, D. T., & Solberg, J. J. (2005). Operations research- principles and practice (2nd ed.). New Delhi: Wiley India (P.) Ltd. (Indian print).

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE - 2: PRODUCTION AND INVENTORY MANAGEMENT

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-------------------------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Production and Inventory Management | 4 | 3 | 0 | 1 | Class XII pass with Mathematics | NIL |

Learning Objectives

The Learning Objectives of this course is to:

- Introduce fundamental concepts in production and inventory management.
- Develop the students' modelling and analytical skills.

Learning Outcomes

After completion of the course, students will possess knowledge and skills required to:

- Gain an understanding of key concepts of Production and Inventory management and its role in various organizations.
- Apply selective inventory control techniques and understand its significance.
- Determine optimal order quantity for various deterministic and probabilistic inventory models.
- Understand quantity discount models in inventory management.
- Formulate and develop Production Planning and Scheduling models.
- To apply and extend production and inventory models to analyse real world systems.

SYLLABUS OF DSC – 2

Theory

Unit – 1

(9 hours)

Introduction to Production and Inventory Management, Different types of costs in inventory system, Selective inventory classification (VED, XML, FNSD, ABC) and its use in controlling inventory.

Unit – 2

(21 hours)

Deterministic continuous review models: Economic order quantity (EOQ) model with and without shortages, Finite replenishment rate Inventory models without and with planned shortages. Determination of reorder point, Quantity discount models.

Unit – 3**(6 hours)**

Probabilistic inventory models: Single period probabilistic inventory models with discrete and continuous demand.

Unit – 4**(9 hours)**

Introduction to Production Planning and Scheduling, Aggregate production plan, Formulation of lot size production problem: Wagner and Whitin algorithm. Basic concepts of Just-in-Time (JIT) and Material Requirement Planning (MRP).

Practical – 30 Hours**Practical/Lab to be performed on a computer using OR/Statistical packages**

1. Problems based on selective inventory classification. (ABC and FNS analysis)
2. To find optimal inventory policy for EOQ model.
3. To find optimal inventory policy for EOQ model with finite supply.
4. To find optimal inventory policy for EOQ model with backorders.
5. To solve all units quantity discounts model.
6. To solve Incremental quantity discount model
7. To find optimal inventory policy for Probabilistic inventory model with discrete demand.
8. To find optimal inventory policy for Probabilistic inventory model with continuous.
9. Solution of procurement/production scheduling model.

Essential Readings

- Axsäter, S. (2015). Inventory control (3rd Edition). Springer.
- Buffa, Elwood S., & Sarin, Rakesh, K. (2009). Modern Production/Operations Management (8th ed.). Wiley, India.
- Hadley, G., & Whitin, T. M. (1963). Analysis of inventory systems. Prentice-Hall.
- Heizer, J., & Render, B. (2011). Operations Management (10th ed.). Pearson's Publication.
- Johnson, L.A., & Montgomery, D.C. (1974) Operations Research in Production Planning, Scheduling and Inventory Control. Wiley, New York.
- Naddor, E. (1966). Inventory Systems. Wiley.
- Silver, E. A., Pyke, D. F., & Peterson, R. (1998). Inventory management and production planning and scheduling (3rd ed.). Wiley.
- Waters, D. (2008). Inventory control and management. (2nd ed.). John Wiley & Sons.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

B.A. (Prog.) with Operational Research as Non-Major

Category III

DISCIPLINE SPECIFIC CORE COURSE - 1: INTRODUCTION TO OPERATIONAL RESEARCH AND LINEAR PROGRAMMING

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction to Operational Research and Linear Programming | 4 | 3 | 0 | 1 | Class XII pass with Mathematics | Nil |

Learning Objectives

The Learning Objective of the course is to introduce:

- Basic concepts of Operational Research and Linear Programming to the students.

Learning Outcomes:

After completion of the course, students will possess knowledge and skills required to:

- Gain an understanding of key concepts of Operational Research and Linear Programming and their role in various organizations.
- Describe the basic concepts of convex analysis and explain the theoretical foundations of various issues related to linear programming modelling.
- Formulate real-world problems as a linear programming model and describe the theoretical workings of the graphical and simplex method, demonstrate the solution process by hand and solver.
- Implement advanced and more economic algorithm to solve linear programming problems.

SYLLABUS OF DSC-1

Theory

Unit – 1

(9 hours)

Basics of Operational Research: Origin & Development of Operational Research, Definition and Meaning of Operational Research, Different Phases of an Operational Research Study, Scope and Limitations of Operational Research, Mathematical Formulation of Real-Life Problems.

Unit – 2 (15 hours)

Introduction to Linear Programming, Linear Programming Problem Formulation, Solution by Graphical Method. Concepts of Basis and Basic Feasible solution. Convex sets, Extreme points, Hyperplanes and Halfspaces, Convex cones, Polyhedral sets and cones.

Unit – 3 (9 hours)

Theory of Simplex Method, Simplex Algorithm, Two phase Method, Charne's-M Method.

Unit – 4 (12 hours)

Degeneracy in Linear Programming, Charnes' Perturbation method, Revised Simplex method.

Practical (30 hours)

Practical/Lab to be performed on a computer using OR/Statistical packages

1. To solve Linear Programming Problem (LPP) using Graphical Method with
 - (i) Unbounded solution.
 - (ii) Infeasible solution.
 - (iii) Alternative or multiple solutions.
2. Solution of LPP with simplex method.
3. Problem solving using Charnes-M method.
4. Problem solving using Two Phase method.
5. Illustration of following special cases in LPP using Simplex method
 - (i) Unrestricted variables.
 - (ii) Unbounded solution.
 - (iii) Infeasible solution.
 - (iv) Alternative or multiple solutions.
6. Solution to linear programming problem through revised simplex method.

Essential Readings

- Hadley, G. (2002). Linear programming. New Delhi: Narosa Publishing House.
- Hadley, G. (2002). Linear Algebra. New Delhi: Narosa Publishing House.
- Hillier, F.S., & Lieberman, G. J. (2010). Introduction to operations research- concepts and cases (9th ed.). New Delhi: Tata McGraw Hill (Indian print).
- Taha, H. A. (2017). Operations research - An Introduction (10th ed.). Pearson Education.
- Ravindran, A., Phillips, D. T., & Solberg, J. J. (2005). Operations research- principles and practice (2nd ed.). New Delhi: Wiley India (P.) Ltd. (Indian print).

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

**BSc. Physical Sciences/ Mathematical Sciences with Operational Research
as one of the Core Disciplines**

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction to Operational Research and Linear Programming | 4 | 3 | 0 | 1 | Class XII pass with Mathematics | Nil |

Learning Objectives

The Learning Objective of the course is to introduce:

- Basic concepts of Operational Research and Linear Programming to the students.

Learning Outcomes:

After completion of the course, students will possess knowledge and skills required to:

- Gain an understanding of key concepts of Operational Research and Linear Programming and their role in various organizations.
- Describe the basic concepts of convex analysis and explain the theoretical foundations of various issues related to linear programming modelling.
- Formulate real-world problems as a linear programming model and describe the theoretical workings of the graphical and simplex method, demonstrate the solution process by hand and solver.
- Implement advanced and more economic algorithm to solve linear programming problems.

SYLLABUS OF DSC-1

Theory

Unit – 1 (9 hours)

Basics of Operational Research: Origin & Development of Operational Research, Definition and Meaning of Operational Research, Different Phases of an Operational Research Study, Scope and Limitations of Operational Research, Mathematical Formulation of Real-Life Problems.

Unit – 2 (15 hours)

Introduction to Linear Programming, Linear Programming Problem Formulation, Solution by Graphical Method. Concepts of Basis and Basic Feasible solution. Convex sets, Extreme points, Hyperplanes and Halfspaces, Convex cones, Polyhedral sets and cones.

Unit – 3 **(9 hours)**

Theory of Simplex Method, Simplex Algorithm, Two phase Method, Charne's-M Method.

Unit – 4 **(12 hours)**

Degeneracy in Linear Programming, Charnes' Perturbation method, Revised Simplex method.

Practical **(30 hours)**

Practical/Lab to be performed on a computer using OR/Statistical packages

1. To solve Linear Programming Problem (LPP) using Graphical Method with
 - (iv) Unbounded solution.
 - (v) Infeasible solution.
 - (vi) Alternative or multiple solutions.
2. Solution of LPP with simplex method.
3. Problem solving using Charnes-M method.
4. Problem solving using Two Phase method.
5. Illustration of following special cases in LPP using Simplex method
 - (v) Unrestricted variables.
 - (vi) Unbounded solution.
 - (vii) Infeasible solution.
 - (viii) Alternative or multiple solutions.
6. Solution to linear programming problem through revised simplex method.

Essential Readings

- Hadley, G. (2002). Linear programming. New Delhi: Narosa Publishing House.
- Hadley, G. (2002). Linear Algebra. New Delhi: Narosa Publishing House.
- Hillier, F.S., & Lieberman, G. J. (2010). Introduction to operations research- concepts and cases (9th ed.). New Delhi: Tata McGraw Hill (Indian print).
- Taha, H. A. (2017). Operations research - An Introduction (10th ed.). Pearson Education.
- Ravindran, A., Phillips, D. T., & Solberg, J. J. (2005). Operations research- principles and practice (2nd ed.). New Delhi: Wiley India (P.) Ltd. (Indian print).

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES OFFERED
BY DEPARTMENT OF OPERATIONAL RESEARCH

CATEGORY-IV

**GENERIC ELECTIVES: INTRODUCTION TO OPERATIONAL
RESEARCH AND LINEAR PROGRAMMING**

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction to Operational Research and Linear Programming | 4 | 3 | 0 | 1 | Class XII pass with Mathematics | Nil |

Learning Objectives

The Learning Objective of the course is to introduce:

- Basic concepts of Operational Research and Linear Programming to the students.

Learning Outcomes:

After completion of the course, students will possess knowledge and skills required to:

- Gain an understanding of key concepts of Operational Research and Linear Programming and their role in various organizations.
- Describe the basic concepts of convex analysis and explain the theoretical foundations of various issues related to linear programming modelling.
- Formulate real-world problems as a linear programming model and describe the theoretical workings of the graphical and simplex method, demonstrate the solution process by hand and solver.
- Implement advanced and more economic algorithm to solve linear programming problems.

SYLLABUS OF GE

Theory

Unit – 1

(9 hours)

Basics of Operational Research: Origin & Development of Operational Research, Definition and Meaning of Operational Research, Different Phases of an Operational Research Study, Scope and Limitations of Operational Research, Mathematical Formulation of Real-Life Problems.

Unit – 2 **(15 hours)**

Introduction to Linear Programming, Linear Programming Problem Formulation, Solution by Graphical Method. Concepts of Basis and Basic Feasible solution. Convex sets, Extreme points, Hyperplanes and Halfspaces, Convex cones, Polyhedral sets and cones.

Unit – 3 **(9 hours)**

Theory of Simplex Method, Simplex Algorithm, Two phase Method, Charne's-M Method.

Unit – 4 **(12 hours)**

Degeneracy in Linear Programming, Charnes' Perturbation method, Revised Simplex method.

Practical **(30 hours)**

Practical/Lab to be performed on a computer using OR/Statistical packages

1. To solve Linear Programming Problem (LPP) using Graphical Method with
 - (i) Unbounded solution.
 - (ii) Infeasible solution.
 - (iii) Alternative or multiple solutions.
2. Solution of LPP with simplex method.
3. Problem solving using Charnes-M method.
4. Problem solving using Two Phase method.
5. Illustration of following special cases in LPP using Simplex method
 - (i) Unrestricted variables.
 - (ii) Unbounded solution.
 - (iii) Infeasible solution.
 - (iv) Alternative or multiple solutions.
6. Solution to linear programming problem through revised simplex method.

Essential Readings

- Hadley, G. (2002). Linear programming. New Delhi: Narosa Publishing House.
- Hadley, G. (2002). Linear Algebra. New Delhi: Narosa Publishing House.
- Hillier, F.S., & Lieberman, G. J. (2010). Introduction to operations research- concepts and cases (9th ed.). New Delhi: Tata McGraw Hill (Indian print).
- Taha, H. A. (2017). Operations research - An Introduction (10th ed.). Pearson Education.
- Ravindran, A., Phillips, D. T., & Solberg, J. J. (2005). Operations research- principles and practice (2nd ed.). New Delhi: Wiley India (P.) Ltd. (Indian print).

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

11. Amendment to Appendix -II-A to the Ordinance V (2-A) of the Ordinances of the University vide EC Resolution 18-1-8 dated 18.08.2022 regarding Syllabi of 1st Semester of Departments under Faculty of Applied Social Sciences & Humanities

Add the following:

Syllabi of Semester-I of the following departments under Faculty of Applied Social Sciences & Humanities based on Under Graduate Curriculum Framework -2022 to be implemented from the Academic Year 2022-23.

FACULTY OF APPLIED SOCIAL SCIENCES AND HUMANITIES
(FASSH)

DEPARTMENT OF FINANCE & BUSINESS ECONOMICS

Bachelor in Management Studies (Honours)

Category I

DISCIPLINE SPECIFIC CORE COURSE -1 (DSC-1) – FUNDAMENTALS OF MANAGEMENT

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DSC-1 FUNDAMENTALS OF MANAGEMENT | 4 | 3 | 1 | NIL | CLASS XII PASS | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To acquaint the students with the fundamentals of managing business
- To introduce the broad functions of management
- Enable students to identify the contemporary issues and challenges in the field of management and ethical workplace practices.

Learning outcomes

On completion of this course students will be able to:

- Summarize the elementary concepts, principles and theories of management
- Examine the managerial functions having an impact on the organizational effectiveness
- Identify the contemporary issues and challenges in management

SYLLABUS OF DSC-1

UNIT – I: Introduction to Management (12 hours)

Definition – nature, process and significance of management – Role of managers – Managerial Skills and Roles - Evolution of Management Thought: Classical Management Approaches, Behavioural Management Approaches, Quantitative Management Approach, Modern Management Approaches - Management as a Science or Art - Management as a profession- Administration and Management Functions of Management – Functional Areas of Management.

UNIT - 2: Planning and Decision Making (12 hours)

Planning - Nature and Importance of Planning- Types of Plans - Levels of Planning - Steps in planning – Making Effective Plans- Objectives and Management by Objective (MBO) – Management by Exception (MBE) - Policy and Strategy- Forecasting and Decision Making - Nature of decision making - Types of decisions – Decision Making Process – Rational Perspectives and Behavioural Aspects of decision making.

UNIT- 3: Organizing, Directing and Controlling (16 hours)

Organizing, Principles of Organization - Organisational Structure and Design – Line, Staff and functional authority. Departmentation - Span of control – Authority – Types of Departmentalization – Contemporary Organizational Designs, Responsibility and Accountability - Principles of Delegation - Steps - Centralization Vs Decentralization – Factors determining the degree of Decentralization of authority. Directing – Nature of Directing function - Principles – Importance of Effective Direction. Controlling - Concept, Nature and Importance- Techniques of Managerial control.

UNIT- 4: Contemporary Perspectives of Indian Management Thought (20 hours)

Relevance of gurukul concepts in modern corporate world-shadowing, mentoring and coaching; roots of Indian Wisdom-welfare-oriented economy based on moral values. Unique

Indian Business Scenarios-population density, crowd behavior, role of the unorganized sector in trade and commerce, cultural issues in India, infrastructure development, public private partnerships and regulation, how taxation drives business behavior, logistics management, saving habits of Indians. Indian Business Practices-community-based business management (Chettias of Tamil Nadu, Marwaris of Rajasthan, Angadias of Gujrat), Indian Family Business Management, Community level success stories-Gupta Empire, Gujrati, Marwari, Punjabi traders. Studying Indian Business Success Stories such as dabbawallas, Amul, Swachh Bharat, Atmanirbhar Bharat, PLI Scheme Initiatives, Indian Corporates working abroad, success of Indians as individuals abroad- in domains such as IT, Merchant Navy, Higher Education, Medicine. Indian perspectives on sustainability, creativity, inter-personal skills, business ethics, environment.

Practical component (if any) - NIL

Essential/recommended readings

1. Stephen P. Robbins & Mary Coulter, *Management*. 13th Ed. Pearson
2. Stoner, Freeman, Gilbert Jr. (2014). *Management* (6th edition), New Delhi: Prentice Hall India.
3. Koontz, H., & Weihrich, H. *Essentials of Management*, McGraw Hill Publishers.
4. Mahadevan, B., Bhat, V. R., Pavana, N. (2022) *Introduction to Indian Knowledge System Concepts and Applications*. PHI Learning

Note: Latest edition of the readings may be used.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2): STATISTICS FOR BUSINESS DECISIONS

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|----------|-----------------------------------|----------|---------------------|-----------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DSC-2 STATISTICS FOR BUSINESS DECISIONS | 4 | 3 | 1 | NIL | CLASS XII WITH MATHEMATICS | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To familiarize the students with various Statistical Data Analysis tools that can be used for effective decision making.
- To learn the application of the statistical concepts to various financial and managerial situations.
- The course will enhance students' critical thinking and problem solving that rests on Statistical Methods and Data Analysis approaches.

Learning outcomes

On completion of the course students will be able to:

- Summarize data sets using Descriptive statistics
- Analyze the relationship between two variables of various managerial situations and geometrically Interpret Correlation and Regression
- Develop managerial decision problems using Probability Density Functions and Cumulative Density Functions

SYLLABUS OF DSC- 2

UNIT- 1: Data and its Descriptive Analysis (12 hours)

Quantitative and Qualitative Data, Attributes and variables, Scales of measurement: nominal, ordinal, interval and ratio, Measures of Central Value: Mean, Median, Mode, Measures of Dispersion: Absolute and Relative measures of dispersion – Range, Quartile Deviation, Mean Deviation, Standard Deviation, Moments, Skewness, Kurtosis. Visualization of Data: Histograms, Stem and Leaf Plots, Five Number Summary and Box Plots. Introduction to Big Data: Characteristics and Stages.

UNIT- 2: Correlation and Regression Analysis (20 hours)

Correlation Analysis: Meaning and significance. Correlation and Causation, Types of Correlation, Methods of studying Simple correlation - Scatter diagram, Karl Pearson's coefficient of correlation, Spearman's Rank correlation coefficient.

Regression Analysis: Meaning and significance, Regression vs. Correlation, Simple Regression model: Linear Regression, Assumptions for simple linear regression model, Violations of the assumptions of the model, R-square and MSE in Regression, Geometric Interpretation of Regression.

UNIT- 3: Random Variable Analysis (16 hours)

Probability: Meaning and need, Conditional probability, Bayes' theorem, Random Variable- discrete and continuous. Probability Distribution: Meaning, characteristics (Expectation and variance) of Binomial, Poisson, Exponential and Normal distribution, z-score, Chebyshev and empirical rule, Central limit theorem.

UNIT-4: Introduction to Estimation and Hypothesis Testing (12 hours)

Estimation: Point and Interval estimation of population mean, Confidence intervals for the parameters of a normal distribution (one sample only), Hypothesis Testing: Level of Significance; Type I and Type II error, Test of hypothesis concerning Mean: z-test & t-test.

Practical component (if any) - NIL

Essential/recommended readings

1. Gupta, S.P., Statistical Methods, Sultan Chand & Sons
2. Levine, D., Stephan, D., & Szabat, K., Statistics for Managers using MS Excel, Pearson India
3. Keller, G., Statistics for Management and Economics, Cengage Learning, New Delhi
4. Stine, R. and Foster, D., Statistics for Business (Decision making and Analysis). Pearson India
5. Evans, J., Business Analytics, Pearson India

Note: Latest edition of the readings may be used.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-3) FINANCIAL ACCOUNTING AND ANALYSIS

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|----------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DSC-3 FINANCIAL ACCOUNTING AND ANALYSIS | 4 | 3 | 1 | NIL | CLASS XII PASS | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To familiarize students with the mechanics of preparation of Financial Statements
- To enable understanding of Corporate Financial Statements in the light of IFRS or Indian Accounting Standards, their analysis and interpretation
- Equip students with understanding of beyond Balance Sheet indicators to project corporate performance; prediction of financial crisis of a business enterprise.

Learning outcomes

On completion of this course students will be able to

- Understand the process of recording and classifying business transactions and events
- Creating and understanding Financial Statements of Sole Proprietor, viz., Profit & Loss Account, Balance Sheet; Understand the financial statements of company as per IFRS/Ind-AS
- Analyse the Financial Statements from the perspective of different stakeholders using Ratio analysis, Cash flow analysis, Net working capital analysis , Trend analysis and learning to use beyond balance sheet indicators for analysing corporate performance
- Understanding of financial distress or bankruptcy prediction, introduction to earnings management

SYLLABUS OF DSC-3

UNIT-1:Introduction to Financial Accounting. Basic Concepts and Conventions

(16 hours)

Business Entity, Dual Aspect, Going Concern, Accounting Period, Money Measurement, Accrual, Disclosure, Materiality, Consistency, and Conservatism. The Accounting Equation. Understanding Assets, Liabilities, Revenues, and Expenses. Understanding Capital Expenditure, Revenue Expenditure, Deferred Revenue Expenditure, Capital Receipts, and Revenue Receipts. Nature of Accounts and Rules of Debit and Credit. Recording transactions in General Journal. Preparation of Ledger Accounts. Opening and Closing Entries. Preparation of Trial Balance.

UNIT- 2: Preparation of Financial Statements

(16 hours)

Preparing Trading Account, Profit & Loss Account and Balance Sheet for a Sole Proprietor. Format for preparing financial statements for IND-AS companies as per Division II, Schedule III, Companies Act, 2013. Understanding of Financial Statements of a Joint Stock Company as per new accounting standards: IND-AS (Balance sheet, Profit & Loss, Statement of Comprehensive Income, Cash Flow Statement); Understanding the contents of a Corporate Annual Report (Actual latest annual reports to be used).

UNIT-3: Global Accounting Standards/IFRS

(12 hours)

Meaning & need for globalisation of accounting standards, Adoption versus Convergence, need for convergence of Indian GAAP with IFRS; Benefits of achieving Convergence with IFRS to different stakeholders in India. Salient features of Ind-AS/IFRS (Fair Value Accounting, Substance versus form, Time value of money). Introduction to Indian Accounting Standards (Ind-AS); Understanding IND-AS 1: Presentation of Financial Statements, IND-AS 7: Cash Flow Statement, IND-AS 109: Financial Instruments.

UNIT- 4: Analysing Financial Statements

(16 hours)

Objectives of Financial Statement Analysis; Sources of information; Standards of Comparison; Techniques of Financial Statement Analysis (Through a case study of real company) - Ratio analysis, Cash flow analysis, Net working capital analysis, Trend analysis.

Use of ratios to predict financial crisis of a company by using Altman Z –score. Use of Beyond the Balance Sheet indicators of analysing financial position of a company. Introduction to Earnings Management.

Practical component (if any) - NIL

Essential/recommended readings

1. Narayanaswamy R. Financial Accounting: A Managerial Perspective. PHI Learning Private Limited, Delhi.
2. Robert N. Anthony, David F. Hawkins, Kenneth A. Merchant. Accounting- Text and Cases. McGraw Hill Education (India) Private Limited, New Delhi.
3. Garg CA Kamal, and Sehrawat Neeraj Kumar. Beginner's Guide to Ind-AS & IFRS. Bharat Law House Pvt. Ltd., New Delhi.
4. Maheshwari S.N., Maheshwari Suneel K., and Maheshwari Sharad K. An Introduction to Accountancy. Vikas Publishing House Private Limited, Noida.
5. Bhattacharyya Asish K. Corporate Financial Reporting and Analysis. PHI Learning Private Limited, Delhi.

Suggestive readings

1. Lal Jawahar. Corporate Financial Reporting: Theory, Practice & Cases. Taxmann Publications Private Limited.
2. Patricia M. Dechow, Richard G. Sloan and Amy P. Sweeney: Detecting Earning Management, the Accounting Review. 70, No. 2 (Apr., 1995), pp. 193-225.

Note: Latest edition of the readings may be used

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES

Category IV

GENERIC ELECTIVES (GE-1): MANAGEMENT WISDOM FROM INDIA

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department offering the course |
|--------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|--------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| GE-1 MANAGEMENT WISDOM FROM INDIA | 4 | 3 | 1 | NIL | CLASS XII PASS | NIL | MANAGEMENT STUDIES |

Learning Objectives

The Learning Objectives of this course are as follows:

- This course aims to bring management education and research in India in line with its needs to tackle contemporary challenges
- The course helps students develop management models that are rooted in India's spiritual and cultural ethos.
- This course attempts to highlight relevant contemporary issues.

Learning outcomes

At the end of this course, students should be able to:

- Understand the various theories, concepts and ideas that constitute 'received knowledge' of Indian Management.
- Learn how to compare and contrast Indian management thought with Western concepts.
- Apply Indian management thought more effectively in an organisation setting.
- Understand how Indian thoughts help enable growth and development of the self, organisations, society and environment in the present as well as future context.

SYLLABUS OF GE-1

UNIT- 1: Indian Wisdom

(12 hours)

Understand the principles of materialism (abhyudhaya), spiritualism (nisreyasa), nivr̥tti (spiritual contemplation), prav̥tti (worldly duties), coexistence (loka sagraham), cohesion

(samanva), arkashastra (Analysis, Reasoning, Argumentation), Diversity Management (Anekanthavada). Relevance of Gurukul concepts in modern corporate world - shadowing, mentoring and coaching; Roots of Indian wisdom - welfare-oriented economy based on moral values. Using Indian wisdom to solve modern management problems.

UNIT- 2: Management Paradigms from Ancient Texts (16 hours)

Relevant concepts: Spiritual dimensions, Karma, Organisation tension, Positive thinking, Integrity, Leadership, Work Ethic. Management learnings from the Bhagavad Gita. Interpersonal Relations in Ramayana and Mahabharata. Pauranic Jagruti and Tourism Management. Management principles from the Guru Granth Sahib. Management learning and Organisational Policies from the Thirukural. Government administration from Kautilya's Arthashastra. Learnings from a study of Manusmriti.

UNIT- 3: Indian Management Practices (20 hours)

Uniquely Indian business scenarios – population density, crowd behaviour, role of the unorganized sector in trade and commerce, or cultural issues in business, infrastructure development, public private partnerships and regulation, how taxation drives business behaviour, logistics management, saving habits of Indians. Indian business practices- Community-based Business Management (Chettiars in Tamil Nadu, Marwaris of Rajasthan, Angadias of Gujarat), Indian family business management, community level success stories- Gupta empire, Gujarati, Marwari, Punjabi traders. Studying Indian business success stories such as Dabbawallas, Amul, Swachh Bharat, Atmanirbhar Bharat, PLI scheme initiatives, Indian corporates working abroad, success of Indians as individuals abroad in domains such as IT, Merchant Navy, Higher Education, Medicine.

UNIT-4: Future for Indian Management Thoughts (12 hours)

Indian models like OSHA, Theory K and Corporate Rishi Model. Management education should be based on four Ds (decision, direction, determination and dedication) and four Es (explore, experience, enjoy and excel) in students. Indian perspectives on sustainability, creativity, interpersonal skills, business ethics, environment friendly.

Practical component (if any) - NIL

Essential/recommended readings:

1. Srinivasan, V.: New Age Management Philosophy from Ancient India. Lotus.
2. Peetham, Sri Sharada: Ancient Wisdom for Modern Management. Springer.
3. Bansal, Ipshita: Management Concepts In Ancient Indian Psycho-Philosophic Thought. Wisdom-Banasthali Vidyapith.
4. Sharma, Subhash: Indian Management. New Age International.
5. Swami Ranganathananda, (2001), “Universal Message of the Bhagavad Gita”, 3 Volumes, Advaita Ashrama, Kolkata.
6. Swami Dayananda Saraswati, (2007), “The value of values”, Arsha Vidya Research & Publication Trust, Chennai.

Suggestive readings:

1. Mahadevan, B. Writings on Gita & Management, <http://www.iimb.ernet.in/webpage/b-mahadevan/bhagavad-gita-amp-management>.
2. Swami Chinmayananda, (1996), "Holy Geeta", Central Chinmaya Mission Trust, Mumbai.
3. Bhattathiri, M.P. "Bhagavad Gita and Management".
4. Houston, D.J. and Cartwright K.E. (2007), "Spirituality and Public Service". Public Administration Review, Jan. – Feb., 2007, 88 – 102.
5. Poole, E. (2007). "Organizational Spirituality – A literature review", Journal of Business Ethics, 84, pp. 577 – 588.
6. Mahadevan, B., (2013). "Inspirational Leadership: Perspectives from Gītā", Chapter 13 in Sanskrit and Development of World Thought, Kutumba Sastry V. (Ed.), D K Print World, New Delhi, pp 199 - 210.
7. Ehrenfeld, J. R. (2005). "The Roots of Sustainability", MIT Sloan Management Review, 46 (2), pp. 23-25.

Note: Latest edition of the readings may be used.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-2:) FUNDAMENTALS OF ORGANISATION

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|----------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GE-2 FUNDAMENTALS OF ORGANISATION BEHAVIOUR | 4 | 3 | 1 | NIL | CLASS XII PASS | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- Explain the concepts in Organisational behaviour
- Understand application of its concepts to improve the understanding of human behaviour
- Link human and group behavior with enhancing the functioning of an organizational

unit.

Learning outcomes

At the completion of the course students will be able to:

- Identify and define organisational behaviour concepts
- Explain how individual differences—such as personalities, perceptions, and learning affect employee performance
- Analyse motivation and leadership styles and determine their effectiveness in employee situations
- Develop an understanding of group behaviour and group dynamics

SYLLABUS OF GE-2

UNIT- 1: Fundamental Concepts in OB

(16 hours)

Importance and Key concepts in OB. Perception, Factors affecting Perception, Perceptual Process, and Errors in Perception. Personality: Concept and Factors affecting personality. Learning: Concept and Theories of Learning, Concept of Reinforcement.

UNIT- 2: Motivation and Interpersonal Relations

(16 hours)

Motivation: Concepts and their application, Content theories (Maslow and Herzberg's Theories); Process theories (Expectancy theory). Managing Interpersonal Relationships; Transactional Analysis; Ego states, Types of Transactions, Importance of Transactional Analysis. Johari window.

UNIT- 3: Group Processes and Leadership at Work

(16 hours)

Leadership: Trait Approach, Behavioural theories (Ohio and Michigan State Studies, and Blake & Mouton's Managerial grid), and Concept of Situational/Contingency approach to Leadership. Groups: Definition Stages of Group Development, Group Processes-Group Cohesiveness.

UNIT-4: Organizational Dynamics of Politics, Conflict and Change (12 hours)

Organisational Power: Concept, Sources of Power, Tactics to gain power in Organizations. Conflict: Concept, Sources, Types, Stages of conflict, Management of conflict. Organisational Change: Concept, Resistance to change, managing resistance to change, Implementing Change.

Practical component (if any) - NIL

Essential/recommended readings

1. Stephen P. Robbins, T. A. Organisational Behavior. Pearson
2. Aswathappa, K., & Reddy, G. S. (2009). Organisational behaviour . Mumbai: Himalaya Publishing House.
3. Luthans Fred, Organisational Behaviour, Tata Mc Graw Hill.
4. Singh Kavita, Organisational Behaviour, Pearson.

5. Greenberg Jerald and Baron Robert A.: Behavior in Organisations: Understanding and Managing Human side of work, Prentice Hall of India

Note: Latest edition of the readings may be used.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Bachelor of Business Administration (Financial Investment Analysis)BBA (FIA)

Category I

DSC 1: FINANCIAL ACCOUNTING & ANALYSIS

| Course Title | Total Credits | Components | | | Eligibility Criteria/ Prerequisite | Prerequisite if any |
|-----------------------------------|---------------|------------|---|---|---------------------------------------|---------------------|
| | | L | T | P | | |
| Financing Accounting and Analysis | 4 | 3 | 1 | 0 | Class XII Pass | NIL |

Course Objectives: To familiarize students with the mechanics of preparation of Financial Statements; understanding Corporate Financial Statements in the light of IFRS or Indian Accounting Standards, their analysis and interpretation; understanding of beyond Balance Sheet indicators to project corporate performance; prediction of financial crisis of a business enterprise.

Learning Outcomes: with this course the student will:

Understand the process of recording and classifying business transactions and events, Creating and understanding Financial Statements of Sole Proprietor, viz., Profit & Loss Account, Balance Sheet. Understand the financial statements of company as per IFRS/Ind-AS. Analyse the Financial Statements from the perspective of different stakeholders using horizontal and vertical analysis tools; and learning to use beyond balance sheet indicators for analysing corporate performance. Understanding of financial distress or bankruptcy prediction, introduction to earnings management

Course Contents:

Unit 1 (16 hours)

Introduction to Financial Accounting. Basic Concepts and Conventions: Business Entity, Dual Aspect, Going Concern, Accounting Period, Money Measurement, Accrual, Disclosure, Materiality, Consistency, and Conservatism. The Accounting Equation. Understanding Assets, Liabilities, Revenues, and Expenses. Understanding Capital Expenditure, Revenue Expenditure, Deferred Revenue Expenditure, Capital Receipts, and Revenue Receipts. Nature of Accounts and Rules of Debit and Credit. Recording transactions in General Journal. Preparation of Ledger Accounts. Opening and Closing Entries. Preparation of Trial Balance.

Unit 2 (16 hours)

Preparation of Financial Statements: Preparing Trading Account, Profit & Loss Account and Balance Sheet for a Sole Proprietor. Format for preparing financial statements for IND-AS companies as per Division II, Schedule III, Companies Act, 2013. Understanding of Financial Statements of a Joint Stock Company as per new accounting standards: IND-AS (Balance

sheet, Profit & Loss, Statement of Comprehensive Income, Cash Flow Statement); Understanding the contents of a Corporate Annual Report (Actual latest annual reports to be used).

Unit 3 (12 hours)

Global Accounting Standards/IFRS: Meaning & need for globalisation of accounting standards, Adoption versus Convergence, Need for convergence of Indian GAAP with IFRS; Benefits of achieving Convergence with IFRSs to different stakeholders in India. Salient features of Ind-AS/IFRS (Fair Value Accounting, Substance versus form, Time value of money). Introduction to Indian Accounting Standards (Ind-AS); Understanding IND-AS 1:

Presentation of Financial Statements, IND-AS 7: Cash Flow Statement, IND-AS 109: Financial Instruments.

Unit 4 (16 hours)

Analysing Financial Statements: Objectives of Financial Statement Analysis; Sources of information; Standards of Comparison; Techniques of Financial Statement Analysis (Through a case study of real company) - Ratio analysis, Cash flow analysis, Net working capital analysis, Trend analysis. Use of ratios to predict financial crisis of a company by using Altman Z –score. Use of Beyond the Balance Sheet indicators of analysing financial position of a company. Introduction to Earnings Management.

Essential Readings: Latest editions of the following to be used:

1. Narayanaswamy R. Financial Accounting: A Managerial Perspective. PHI Learning Private Limited, Delhi.
2. Robert N. Anthony, David F. Hawkins, Kenneth A. Merchant. Accounting- Text and Cases. McGraw Hill Education (India) Private Limited, New Delhi.
3. Garg CA Kamal, and Sehrawat Neeraj Kumar. Beginner's Guide to Ind-AS & IFRS. Bharat Law House Pvt. Ltd., New Delhi.
4. Maheshwari S.N., Maheshwari Suneel K., and Maheshwari Sharad K. An Introduction to Accountancy. Vikas Publishing House Private Limited, Noida.

Additional Readings: Latest editions of the following to be used:

1. Lal Jawahar. Corporate Financial Reporting: Theory, Practice & Cases. Taxmann Publications Private Limited.
2. Patricia M. Dechow, Richard G. Sloan and Amy P. Sweeney: Detecting Earning Management, the Accounting Review. 70, No. 2 (Apr., 1995), pp. 193-225.

Teaching Learning Process:

Class room lectures, Case study discussion, Numerical problem solving, Class presentation on the assigned topic by students - individually or in groups, Workshops and Tutorials.

Assessment

Total Marks: 100

Internal Assessment: 25 Marks

End Semester University Exam: 75 Marks

The Internal Assessment of the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Key Words

Generally Accepted Accounting Principles, Financial Statements, Financial Ratios, IFRS, Indian Accounting Standards.

DSC 2: MICROECONOMICS

| Course Title | Total Credits | Components | | | Eligibility Criteria/ Prerequisite | Prerequisite if any |
|----------------|---------------|------------|---|---|---------------------------------------|---------------------|
| | | L | T | P | | |
| Microeconomics | 4 | 3 | 1 | 0 | Class XII Pass | NIL |

Course Objectives: The purpose of this course is to apply micro economic concepts and techniques in evaluating business decisions taken by firms. The emphasis is on explaining how tools of standard price theory can be employed to formulate a decision problem, evaluate alternative courses of action and finally choose among alternatives.

Learning Outcomes:

- Explain the mechanics of supply and demand in allocating goods and services and resources.
- Understand the choices made by a rational consumer.
- Identify relationships between production and costs.
- Define key characteristics and consequences of different forms of markets.

Course Contents:

Unit 1 (12 hours)

Individual demand, market demand, individual supply, market supply, market equilibrium; Elasticities of demand and supply; Price elasticity of demand, income elasticity of demand, cross price elasticity of demand, elasticity of supply.

Unit 2 (16 hours)

Cardinal utility theory; ordinal utility theory: indifference curves, budget line, consumer choice, price effect, substitution effect, income effect for normal, inferior and Giffen goods.

Unit 3 (16 hours)

Optimizing behaviour in short run: product curves, law of diminishing marginal productivity, stages of production; optimizing behaviour in long run: isoquants, isocost line, optimal combination of resources; traditional theory of cost: short run and long run; modern theory of cost.

Unit 4 (16 hours)

Perfect competition: basic features, short run equilibrium of firm/industry, long run

equilibrium of firm/industry, monopoly: basic features, short run equilibrium, long run equilibrium, comparison with perfect competition, welfare cost of monopoly; price discrimination; monopolistic competition: basic features, demand and cost, short run equilibrium, long run equilibrium, excess capacity; oligopoly kinked demand curve model, dominant price leadership model.

Essential Readings:

1. Dominick Salvatore (2009): Principles of Microeconomics (5th edition), Oxford University Press.
2. Pindyck, Rubinfeld and Mehta (2009): Micro Economics (7th Edition), Pearson.

Additional Readings:

Lipsey and Chrystal (2008): Economics (11th edition), Oxford University. Please Note: Latest edition of the readings to be used.

Teaching Learning Process:

Lectures, problems and numerical, term paper, presentations, case studies

Assessment

Total Marks: 100

Internal Assessment: 25 Marks

End Semester University Exam: 75 Marks

The Internal Assessment of the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Key Words

Equilibrium, Rationality, Utility Maximization, Profit Maximization, Market Form.

DSC 3: STATISTICS FOR BUSINESS DECISIONS

| Course Title | Total Credits | Components | | | Eligibility Criteria/ Prerequisite | Prerequisite if any |
|-----------------------------------|---------------|------------|---|---|---------------------------------------|---------------------|
| | | L | T | P | | |
| Statistics for Business Decisions | 4 | 3 | 1 | 0 | Class XII Pass | NIL |

Course Objectives: To familiarize the students with various Statistical Data Analysis tools that can be used for effective decision making. Emphasis will be on the application of the concepts learnt to various financial and managerial situations.

Learning outcomes: After the end of the course, students should be able to

- ☐ Summarize data sets using Descriptive statistics.
- ☐ Analyze the relationship between two variables of various managerial situations.
- ☐ Geometrically Interpret Correlation and Regression.

- Develop managerial decision problems using Probability Density Functions and Cumulative Density Functions.

Critical thinking and problem solving: The course will help students understand the characteristics of Analytical thinking that rests on Statistical Methods and Data Analysis approaches.

Course Contents:

Unit 1: Data and its Descriptive Analysis (12 hours)

Quantitative and Qualitative Data, Attributes and variables, Scales of measurement: nominal, ordinal, interval and ratio, Measures of Central Value: Mean, Median, Mode, Measures of Dispersion: Absolute and Relative measures of dispersion – Range, Quartile Deviation, Mean Deviation, Standard Deviation, Moments, Skewness, Kurtosis. Visualization of Data: Histograms, Stem and Leaf Plots, Five Number Summary and Box Plots. Introduction to Big Data: Characteristics and Stages.

Unit 2: Correlation and Regression Analysis (16 hours)

Correlation Analysis: Meaning and significance. Correlation and Causation, Types of Correlation, Methods of studying Simple correlation – Scatter diagram, Karl Pearson's coefficient of correlation, Spearman's Rank correlation coefficient.

Regression Analysis: Meaning and significance, Regression vs. Correlation, Simple Regression model: Linear Regression, R-square and MSE in Regression, Geometric Interpretation of Regression.

Unit 3: Random Variable Analysis (16 hours)

Probability: Meaning and need, Conditional probability, Bayes' theorem, Random Variable-discrete and continuous. Probability Distribution: Meaning, characteristics (Expectation and variance) of Binomial, Poisson, Exponential and Normal distribution, z-score, Chebyshev and empirical rule, Central limit theorem.

Unit 4: Introduction to Estimation and Hypothesis Testing (16 hours)

Estimation: Point and Interval estimation of population mean, Confidence intervals for the parameters of a normal distribution (one sample only), Hypothesis Testing: Null and

Alternate Hypothesis, One Tail and Two tail tests, Level of Significance, Type I and Type II error, Test of hypothesis concerning Mean: z-test & t-test.

Essential Readings:

1. Gupta, S.P., Statistical Methods, Sultan Chand & Sons.
2. Levine, D., Stephan, D., & Szabat, K., Statistics for Managers using MS Excel, Pearson India.
3. Miller, I., & Miller, M., John E. Freund's Mathematical Statistics with Applications, Pearson India.

Suggested Readings:

1. Keller, G., Statistics for Management and Economics, Cengage Learning, New Delhi.
2. Stine, R. and Foster, D., Statistics for Business (Decision making and Analysis). Pearson India.

3. Levin, R. and Rubin, D., Statistics for Management, Pearson India.
4. Evans, J., Business Analytics, Pearson India.

Recommendation:

The students are encouraged to solve real life case studies using Spreadsheet.

Teaching Learning Process:

Class room lectures, Case study discussion, Numerical problem solving, Class presentation on the assigned topic by students - individually or in groups, Workshops and Tutorials.

Assessment

Total Marks: 100

Internal Assessment: 25 Marks

End Semester University Exam: 75 Marks

The Internal Assessment of the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Key Words

Descriptive Statistics, Inferential Statistics, Central Tendency, Measures of Dispersion, Correlation, Regression, Random Variable, Probability Distribution, Testing of Hypothesis.

GENERIC ELECTIVE (GE) COURSES

Category-IV

GE1: FUNDAMENTALS OF FINANCIAL MANAGEMENT

| Course Title | Total Credits | Components | | | Eligibility Criteria | Prerequisite if any | Department offering the course |
|--------------------------------------|---------------|------------|---|---|----------------------|---------------------|--------------------------------|
| | | L | T | P | | | |
| Fundamentals of Financial Management | 4 | 3 | 1 | 0 | Class XII Pass | NIL | Finance and Business Economics |

Course Objectives: To provide an understanding of the essential elements of the financial environment in which the business firm operates. To acquaint students with the techniques of financial management and their applications for business decision making.

Learning Outcome: At the end of this course, students will be equipped with the basic concepts of financial management. Students would understand how to coordinate various decisions to maximise wealth of an organisation in today's financial environment. Students will be equipped to arrive at strategic corporate finance decisions with the required accuracy which will be aided by using various excel functions.

Course Contents:

Unit 1 (12 hours)

Nature of Financial Management: Finance and related disciplines; Scope of Financial Management; Functions of finance – Finance Decision, Investment Decision, Dividend Decision; Objectives of Financial Management; Organisation of finance function; Concept of Time Value of Money – present value, future value, annuity.

Unit 2 (20 hours)

Strategic Investment Decisions: Capital Budgeting -; Nature and meaning of capital budgeting; Principles and Process; Estimation of relevant cash flows and terminal value; Evaluation techniques– Payback period, Accounting Rate of Return, Net Present Value, Internal Rate of Return, Net Terminal Value, Profitability Index Method.

Cost of Capital: Meaning and concept, Measurement of cost of capital – Cost of debt, Cost of Equity Share; Cost of Preference Share; Cost of Retained Earning; Computation of over-all cost of capital based on Historical and Market weights (WACC).

Unit 3 (16 hours)

Strategic Financing Decisions - Capital Structure, Theories and Value of the firm – Net Income approach, Net Operating Income approach, Traditional approach, Modigliani Miller (MM) model. Leverage analysis and EBIT-EPS Analysis: Concept of leverage, Types of leverage: Operating leverage, Financial leverage, Combined leverage; EBIT-EPS Analysis.

Guidelines for capital structure planning, Link between capital structure and capital budgeting. Dividend Decisions: Factors determining dividend policy, Theories of dividend- Gordon model, Walter model, MM Hypothesis. Dividend policies in practice.

Unit 4

(12 hours)

Working Capital Management: Determination of Working Capital. Determining financing mix of working capital. Receivables Management – Objectives; Credit Policy, Cash Discount, Debtors Outstanding and Ageing Analysis; Costs – Collection Cost, Capital Cost, Default Cost, Delinquency Cost. Management of Cash (Theory only) – Need for Cash, Cash Management Techniques (Lock box, Concentration Banking). Inventory Management (Theory only) – ABC Analysis; Minimum Level; Maximum Level; Reorder Level; Safety Stock; EOQ (Basic Model).

Essential Readings:

1. Berk and DeMarzo, 5th ed., Pearson - Prentice Hall.
2. Horne, James C V. and John M. Wachowicz, Jr. “Fundamentals of Financial Management. 13th ed; FT Prentice Hall, Pearson Education.
3. Pandey, I.M. Financial Management, Pearson.

Additional Readings:

1. Khan, M.Y. & Jain, P.K. Financial Management Text Problem and Cases, Tata McGrawHill Publishing Co. Ltd.
2. Brealey, R. R., Myers. S., Allen, F., & Mohanty, P.. Principles of Corporate Finance. NewDelhi: Tata Mc-Graw Hill.

Teaching – Learning Process:

The teaching-learning process for this paper would include classroom lectures and tutorials; Case study discussions; class presentations; Workshops.

Assessment

Total Marks: 100

Internal Assessment: 25 Marks

End Semester University Exam: 75 Marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Key Words

Finance, Capital Budgeting, Wealth Maximisation, Cost of Capital, Dividends, Leverage, Working Capital Management.

GE 3: FUNDAMENTALS OF STOCK TRADING

| Course Title | Total Credits | Components | | | Eligibility Criteria | Prerequisite if any | Department offering the course |
|-------------------------------|---------------|------------|---|---|----------------------|---------------------|--------------------------------|
| | | L | T | P | | | |
| Fundamentals of Stock Trading | 4 | 3 | 1 | 0 | Class XII Pass | NIL | Finance and Business Economics |

Course Objectives: To familiarize students with the essential concepts and skills needed to be able to appropriately choose securities and operate in Stock markets.

Learning Outcomes: On successful completion of his course, the students will be able to:

- ☐ Understand the fundamentals of investments and the investment environment.
- ☐ Able to compare and evaluate different investment opportunities.
- ☐ Comprehend the structure and composition of Indian Securities market.
- ☐ Learn the mechanism involved in online stock trading.
- ☐ Grasps the concepts associated with investing in Mutual funds.

Course Contents

Unit 1: Basics of Investment & Investment Environment (12 hours)

Fundamentals of Investment, Features of Investment, Investment Environment. Principles of sound Investment. The Investment Decision Process. Modes of Investment – Direct Investing and Indirect Investing, Approaches to Investing – Active Investing and Passive Investing. Risk Return Trade Off. Types of Securities – Equity Shares, Bonds and Debentures, and Government Securities. Alternative Investments (Briefly) – Mutual Funds, Derivatives, Unit Linked Insurance Policy (ULIP), Exchange-traded funds (ETFs), Collective Investment Schemes (CIS), Real Estate Investment Trusts (REITs). Criteria for Evaluation of Investment Alternatives.

Unit 2: Indian Securities Market (16 hours)

Securities Market – Capital Market and Money Market, Difference between Capital and Money Market, Primary and Secondary Market, Difference between Primary and Secondary Market. Over the Counter (OTC) and Exchange Traded market. Modes of offering Equity Shares – Initial Public Offering (IPO), Follow-on Public Offering (FPO), Difference between IPO and FPO, Difference between Offer for sale (OFS) and Public offer (IPO/FPO). Methods of IPO Pricing – Fixed Price Method and Book Building Method, The Book Building Process, Fixed Price method v/s Book building Method. Market Participants – Issuer of Securities, Investors, and Intermediaries. Role of Stock Exchange. Stock Exchanges in India. Securities (Stock) Indices – Broad Market Indices, Sectoral Indices and Thematic Indices.

Unit 3: Online Security Trading (16 hours)

Trading Mechanism on Exchanges, Trading and Settlement at NSE – National Securities Clearing Corporation Limited (NSCCL), Clearing Mechanism, Clearing & Settlement (Equities).

Online Trading – Introduction, Online Trading Mechanism. Online Real Time Price Quotations – Bid Price, Ask Price, Bid-Ask Spread, Tick Size, LTP, ATP. Circuit Breakers – Upper Circuit, Lower Circuit, NSE rules regarding Circuit Breaks. Price Bands, Rules regarding Price Bands on NSE. Electronic Order Book. Types of Orders – Market Order, Limit Order, Stop Loss Order, Stop Loss (Limit) Order, Stop Loss (Market) Order, After Market Order (AMO). Order Conditions – Price related conditions, Time related conditions, Quantity related conditions. Placing an Order, View/Modify/Cancel an Order.

Unit 4: Investing in Mutual Funds (16 hours)

Concept of Mutual Funds, Mutual Funds are an Indirect Mode of Investment, Evolution of Mutual Funds in India, Structure of Mutual Funds (Sponsor, Board of Trustees, AMC and Custodian). Advantages of Investing in Mutual Funds, Limitations of Investing in Mutual Funds. Types of Mutual Fund Schemes – Open ended, Close ended, and Interval funds; Domestic Funds and Off-Shore funds; Growth funds, Income funds and Balanced funds; Equity Fund schemes, Debt fund schemes, Gilt Funds, Money Market Funds, Tax Saving or Equity Linked Savings Scheme (ELSS), Index schemes, Sectoral Funds, Ethical Funds, Load and No-Load Fund, Fund of Funds, Systematic Investment Plans (SIP), Systematic Withdrawal Plans (SWP), Systematic Transfer Plans (STP), and Exchange Traded Funds. Net Asset Value, Cost incurred and Return from Mutual funds, Types of Loads. Performance Evaluation of Mutual Funds. Factors affecting choice of Mutual funds. Mutual funds in India. CRISIL and their Rankings for mutual funds – Ranking Methodology and Usage of Mutual Fund Rankings.

Essential Readings:

1. Tripathi, Vanita and Panwar, Neeti: Investing in Stock Markets. Taxmann Publications.
2. Chandra, Prasanna: Investment Analysis and Portfolio Management. McGraw Hill Education.

Additional Readings:

1. Rustagi, R.P., Investment Management. Sultan Chand Publications.
2. Tripathi, Vanita: Security Analysis and Portfolio Management. Taxmann Publications.

Teaching Learning Process:

Class room lecture, Numerical Problem solving, Case study discussion, Class presentation on the assigned topic by students individually or in group, Workshop, Tutorials, Role play.

Assessment

Total Marks: 100

Internal Assessment: 25 Marks

End Semester University Exam: 75 Marks

The Internal Assessment for the course may include Class participation, Assignments, Class

tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Key Words

Investments, Indian Securities Market, Initial Public Offer (IPO), Online Security Trading, and Investing in Mutual Funds.

GE5: ESSENTIALS OF FINANCIAL INVESTMENTS

| Course Title | Total Credits | Components | | | Eligibility Criteria | Prerequisite if any | Department offering the course |
|-------------------------------------|---------------|------------|---|---|----------------------|---------------------|--------------------------------|
| | | L | T | P | | | |
| Essentials of Financial Investments | 4 | 3 | 1 | 0 | Class XII Pass | NIL | Finance and Business Economics |

Course Objectives: To familiarize students with the essential concepts and fundamentals of financial investments. The course will enable them to understand and make informed choice about the various available financial investment alternatives.

Learning Outcomes: On successful completion of his course, the students will be able to:

- Understand the fundamentals of financial investments and the investment decision process.
- Able to compute various measures of risk and return, and understand their role in evaluating investments.
- Understand and carry out security analysis using different approaches.
- Learn basic approaches to valuation of securities and carry out portfolio analysis.

Course Contents

Unit 1: Investments – An Overview (12 hours)

Concept of Investment, Financial Investment Vs. Real Investment, Investment Vs Speculation, Objectives or Features of Investment, Risk Return Trade Off, Investment Environment – Overview of Securities Market and Different Types of Financial Investment. Investment Decision Process, Direct Investing Vs Indirect Investing, Approaches to Investing – Active Vs Passive. Diversification, Hedging and Arbitrage.

Unit 2: Risk – Return Analysis (16 hours)

Concepts of Return and Risk, Types of Return - their Calculation & Utility: Absolute Return, Average Return, Expected Return, Portfolio Return, Holding Period Return, Effective Annualized Return, Risk-Adjusted Return. Causes (or Sources) and Types of Risk – Systematic and Unsystematic Risk, Components of Systematic and Unsystematic Risk, Calculation of Total, Systematic and Unsystematic Risk. Impact of Taxes and Inflation on Investment – Computation of Post Tax and Real Returns.

Unit 3: Security Analysis (16 hours)

Approaches to Security Analysis – Fundamental Analysis, Technical Analysis, and Efficient Market Hypothesis (EMH). Fundamental Analysis – EIC Framework, Economic Analysis, Industry Analysis, and Company Analysis. Technical Analysis – Basic Tenets of Technical Analysis, Tool of Technical Analysis – Charts, and Technical Indicators, Limitations of Technical Analysis. Difference between Fundamental Analysis and Technical Analysis. Efficient Market Theory (EMH) – Concept, Forms of Market Efficiency, Weak Form Hypothesis, Semi Strong Form, and Strong Form of Market Efficiency. Implications of EMH.

Unit 4: Fundamentals of Valuation and Portfolio Analysis (16 hours)

Valuation of Equity Shares – Peculiar features of Equity Shares, Dividend Discount Model, Earning Multiplier or Price-Earnings (P/E) Model, and Capital Asset Pricing Model (CAPM). Valuation of Fixed Income Securities – Bond Fundamentals, Types of Bonds, Bond Valuation. Portfolio Analysis – Portfolio Management Process, Portfolio Analysis – Markowitz Model, Portfolio Risk, Portfolio Return.

Essential Readings:

1. Tripathi, Vanita: Security Analysis and Portfolio Management. Taxmann Publications.
2. Chandra, Prasanna: Investment Analysis and Portfolio Management. McGraw Hill Education.

Additional Readings:

1. Rustagi, R.P., Investment Management. Sultan Chand Publications.
2. Reilly, F. K. & Brown, K.C. Analysis of Investments and Management of Portfolios, Cengage India Pvt. Ltd.

Teaching Learning Process:

Class room lecture, Numerical Problem solving, Case study discussion, Class presentation on the assigned topic by students individually or in group, Workshop, Tutorials, Role play.

Assessment

Total Marks: 100

Internal Assessment: 25 Marks

End Semester University Exam: 75 Marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Key Words

Financial Investment, Risk and Return, Fundamental Analysis, Technical Analysis, Efficient Market Hypothesis, Portfolio Analysis, Valuation of Securities.

GE7: EMERGING BANKING AND FINANCIAL SERVICES

| Course Title | Total Credits | Components | | | Eligibility Criteria | Prerequisite if any | Department offering the course |
|---|---------------|------------|---|---|----------------------|---------------------|--------------------------------|
| | | L | T | P | | | |
| Emerging Banking and Financial Services | 4 | 3 | 1 | 0 | Class XII Pass | NIL | Finance and Business Economics |

Course Objective: The objective of this paper is to familiarize students with banking reforms in the last decade, concept of neo banks, rising issue of non-performing asset and its impact on day-to-day functioning. They will learn about financial services such as Leasing, Hire Purchase, Credit Rating, Securitization and Venture Capital Financing.

Learning Outcomes: On successful completion of his course, the students will be able to:

- ☐ Understand the relevance of financial reforms introduced in Indian banking sector.
- ☐ Understand the rising problem of non-performing assets in Indian banking sector.
- ☐ Learn the importance of neo banks and M&A in Indian banking sector.
- ☐ Understand the various financial services available in India along with the latest innovations and technological integration in the field of finance.

Course Contents:

Unit 1 (16 hours)

An overview of the Indian Banking system; Major Banking Reforms in the last decade: Payment banks, Monetary Policy Committee, MCLR Based Lending, Innovative Remittance Services; Issues in financial reforms and restructuring; Future agenda of reforms: Assessing Non- Performing Assets in Indian Banking, Previous methodologies for recovery, Impact of Gross NPAs on a bank's bottom line – burning need for bad banks, Functioning of Bad Banks, Government backing for bad banks - National Asset Reconstruction Company Ltd. (NARCL).

Unit 2 (16 hours)

Introduction to neobanks, Functions of neobanks, Operating Model of neobanks, Regulatory requirements for setting up and running neobanks, Emerging need for neobanks, neo banks vs traditional banks. Merger & Acquisition: Introduction, Benefits of mergers, Synergies accruing out of mergers, Regulatory mechanisms surrounding M&A in banking, Case-studies of recent banking mergers and related outcomes.

Unit 3 (20 hours)

Leasing and Hire Purchase: Concepts of leasing, types of leasing – financial & operating lease, direct lease and sales & lease back, advantages and limitations of leasing, Lease rental determination; Finance lease evaluation problems Lessee's angle (PV and IRR methods) and

Lessor's perspective, Hire Purchase interest & Instalment, difference between Hire Purchase & Leasing, Choice criteria between Leasing and Hire Purchase, mathematics of HP.

Unit 4

(12 hours)

Venture Capital: Concept, history and evolution of VC, the venture investment process, various steps in venture financing, incubation financing. Credit Ratings: Introduction, types of credit rating, advantages and disadvantages of credit ratings, Credit rating agencies and their methodology, International credit rating practices. Securitization: Concept and Process, Credit Enhancement parties to a Securitization Transaction, Instruments of Securitization, Types of Securities, Securitization in India.

Essential Readings:

1. Pathak, B. Indian Financial System (4th ed). Pearson Publication.
2. Khan, M. Y. (2013). Financial services. New Delhi: McGraw Hill Education.
3. Machiraju, H. R. (2002). Indian financial system. New Delhi, Vikas Publication House.

Additional Readings:

1. Verma, J. C. (1996). Bharat's manual of merchant banking: Concept, practices and procedures with SEBI clarifications, guidelines, rules and regulations. New Delhi: Bharat Law House.
2. K. Sriram: Hand Book of Leasing, Hire Purchase & Factoring, ICFAI, Hyderabad.
3. Ennew. C. Trevor Watkins & Mike Wright: Marketing of Financial Services, Heinemann Professional.

Teaching Learning Process:

Class room lecture, Numerical Problem solving, Case study discussion, Class presentation on the assigned topic by students individually or in group, Workshop, Tutorials, Role play.

Assessment

Total Marks: 100

Internal Assessment: 25 Marks

End Semester University Exam: 75 Marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Key Words

Banking, Merger and Acquisition, Neo banks, NPA, Leasing, Hire Purchase, Credit Ratings, Securitization, Venture Capital.

GE9: ECONOMIC LEGISLATION

| Course Title | Total Credits | Components | | | Eligibility Criteria | Prerequisite if any | Department offering the course |
|----------------------|---------------|------------|---|---|----------------------|---------------------|--------------------------------|
| | | L | T | P | | | |
| Economic Legislation | 4 | 3 | 1 | 0 | Class XII Pass | NIL | Finance and Business Economics |

Course Objective(s): It focuses on laws related to competition in Indian business and trade environment. The course relies predominantly on Insolvency and bankruptcy code, money laundering and foreign exchange management laws.

Learning Outcomes:

- Recognise the economic issues in a legal problem and apply the economic way of thinking to analyse it.
- Assess the efficiency effects of legal rules and policies.
- Practice case analyses and evaluation of corporate conduct.

Course Contents:

Unit 1: Competition Act and Fugitive Economic Offenders Act (20 hours)

The Competition Act, 2002: Introduction, Prohibition of certain agreements, abuse of dominant position and regulation of combinations, Competition Commission of India, Duties, Powers and Functions of Commission, Penalties, Appellate Tribunal.

The Fugitive Economic Offenders Act: Scope and applicability of Act, Confiscation of property, Powers of Directors, Power of Survey, Search and Seizure, notice, procedure for hearing application, Declaration of Fugitive Economic Offender, Power to disallow civil claims, Management of properties confiscated under this Act, Rules of evidence, Appeals.

Unit 2: The Insolvency and Bankruptcy Code (12 hours)

The Insolvency and Bankruptcy Code, 2016: Introduction of Insolvency and bankruptcy code, Corporate Insolvency Resolution Process, Liquidation Process, Fast Track Insolvency Resolution for Corporate Persons, Voluntary Liquidation of Corporate Persons, Adjudicating Authority for Corporate Persons, Offences and Penalties, Insolvency resolution and bankruptcy for individuals and partnership firms, Regulation of Insolvency professionals, agencies and information utilities.

Unit 3: The Prevention of Money Laundering Act (16 hours)

The prevention of money laundering Act, 2002: Introduction and definitions, Punishment for the offence of Money Laundering, Attachment, Adjudication and Confiscation, Obligation of Banking Companies, Financial Institutions and Intermediaries, Summons, Searches And Seizures, Appellate Tribunal and Special Courts, Recovery of fine or penalty.

Unit 4: The Foreign Exchange Management Act (12 hours)

The Foreign Exchange Management Act, 1999: Introduction of FEMA, Difference between

FERA and FEMA, Application and Commencement of FEMA, Regulation and Management of Foreign Exchange, Authorised Person, Contraventions and Penalties, Compounding of Offences, Adjudication and Appeal, Directorate of Enforcement.

Essential Readings:

1. Maheshwari & Maheshwari, Principle of Mercantile Law, National Publishing Trust.
2. Aggarwal Rohini, Mercantile & Commercial Law, Taxmann
3. Kucchal M. C., Mercantile Law, Vikas Publishing House (P) Ltd.
4. Kapoor N. D., Elements of Mercantile Law, Sultan Chand,

Teaching – Learning Process:

Lecture, Discussion, Power Point Presentations. Course contents shall be discussed in the light of relevant case laws.

Assessment

Total Marks: 100

Internal Assessment: 25 Marks

End Semester University Exam: 75 Marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

Key Words

CCI, Prevention of Money Laundering, Insolvency and Bankruptcy Code, FEMA, Fugitive Economic Offenders Act.

B.A. (Hons.) Multi Media and Mass Communication

Category-I

DISCIPLINE SPECIFIC CORE COURSE – 1: Communication, Media & Society

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Communication, Media & Society | 4 | 3 | 1 | 0 | Class XII Pass | NIL |

Learning Objectives

1. To familiarize the student with the nature of communication, mediated by societal mores, culture, structures of power and the technology of multimedia and mass communication.
2. To emphasise the process of coding of messages at all levels of human and societal existence using both verbal language and paralanguage.
3. To explain the process of decoding messages, with its dependence on reception, target group profile and means of transmission.
4. Analysis of the communication chain to understand how and why messages are generated and ways in which these are consumed.

Learning outcomes

1. Understanding the problematics of language, paralanguage, silence etc. in the communication chain and contexts.
2. Understanding of cultural codes, semiotics and technology in the communicative process.
3. Understanding the relationship between ideology and communication, encoding and decoding and reception and audiences.
4. Critical evaluation of some traditional theories and models.

SYLLABUS OF DSC-1

UNIT – I (20 hours)

Introduction to Communication

- Defining Communication, Encoding and Decoding
- Modes of Communication: Verbal (oral and written), Non-Verbal, Intra-personal, Interpersonal, Group, Public and Mass Communication
- Barriers to Communication: Culture, Codes, Medium, Literacy, Technological Challenges, Barrier Free Technology, Fluid Identities
- Communication as Subversion: Silence, Satire, Subterfuge

UNIT – II (20 hours)

Determinants and Shifting Paradigms

- Ideology: Communication, Media and Political Economy
- Culture and Communication: Critical Cultural Theory
- Semiotics and Communication: Critical Theory and Practice (sign, object, interpretant/ icon, index and symbol, signifier and signified)
- Communicating in Cyberspace: Interactivity, Hypertextuality, Multimodality and Multimediality

UNIT – III (20 hours)

Mass Communication Theory and Models

- Early Theories: Bullet Theory, Two Step, Multi Step Theory, Cognitive Dissonance Theory
- Media Effect Theories: Agenda Setting, Spiral of Silence, Uses and Gratification, Cultivation Theory
- Normative Theories
- Models: George Gerbner's Model, Wilbur Schramm's Model, Laswell's Model, Shannon-Weaver's Mathematical Model

Essential Readings

- Fiske, J. (2011). *Introduction to communication studies*. London: Routledge.
- Gupta, N. (2006). *Cultural studies*. New Delhi: World View Publishers.
- Hall, S. (1984). Encoding/Decoding. *Culture, media, language*. Ed. S. Hall, D. Hobson, A. Lowe, and P. Wills. London: Hutchinson.
- Hall, S., & Morley, D. (2019). *Essential essays*. Durham: Duke University Press.
- Herman, E. S., & Chomsky, N. (2010). *Manufacturing consent: the political economy of the mass media*. London: Vintage Digital.
- Kumar, K. J. (2000). *Mass communication in India*. Mumbai: Jaico Publishing House.
- McQuail, D. (2012). *Mass communication theory*. Los Angeles: Sage.
- Narula, U. (2008). *Mass communication: Theory and practice*. New Delhi: Har-Anand Publications.
- Saraf, B.M. (2008). In Search of the Miracle Women: Returning the Gaze. *Translation and Interpreting Studies (TIS)*, Vol.Nos.1 and 2, Spring/Fall 2008.

Suggested Readings

- Baran, S. J., & Davis, D. K. (2015). *Mass communication theory: Foundations, ferment, and future*. Belmont, Calif.: Cengage Learning.
- Bel, B. (2005). *Media and mediation*. New Delhi: Sage Publications.
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- Hasan, S. (2013). *Mass communication principles and concepts*. New Delhi: CBS Publishers and Distributors.
- Kuruc, K. (2008). Fashion as Communication: Semiotic Analysis of "Sex and the City." *Semotica* 17(1): 193-214.
- Miller, K. (2007). *Communication theories: Perspectives, processes, and contexts*.

Beijing: Peking University Press.

- Simons, H.W. (1970). Requirements, Problems, and Strategies: A Theory of Persuasion for Social Movements. *Quarterly Journal of Speech* 56 (1970): 1-11.
- Stone, G., Singletary, M.W., & Richmond, V.P. (1999). *Clarifying communication theories: A hands-on approach*. Ames: Iowa State University Press.
- पारख, जवरीमल्ल. (2001) जनसंचार के सामाजिक संदर्भ, नई दिल्ली, भारत: अनामिका पब्लिशिंग्स एंड डिस्ट्रीब्यूटर्स (प्रा) लिमिटेड

DISCIPLINE SPECIFIC CORE COURSE – 2: Application & Project Work (Training to Write for Media)

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Application & Project Work (Training to Write for Media) | 4 | 0 | 0 | 4 | Class XII Pass | NIL |

Learning Objectives

1. To train students to undertake specific forms of writing suited to the demands of different kinds of media and their specific forms.
2. To emphasise on writing grammatically with correct expressions and other requirements like word limits and number of characters.
3. To train students to write for different formats like reviews and editorials, geared towards multiple forms of media used in mass communication.

Learning outcomes

1. Understanding of the rules of good grammar, punctuation, spelling, registers and idioms of language.
2. Learning to write creatively for multi-media formats.
3. Learning to read and edit proofs on specialized programmes.

SYLLABUS OF DSC-2

UNIT – I (5 weeks)

Introduction- Back to Basics

- A-B-C-D of Media Writing: Authenticity, Brevity, Clarity and Discernment
- Media Styles: Print, Radio, TV, Cinema, Digital Media
- Language Input Tools for Scripting

- Editing a Document on MS Word, Speech to Text
- Ethical Writing and Disclaimers, Confidentiality of Interlocutors

UNIT – II (5 weeks)

Writing for Multi Media

- Writing for Print: News, Feature, Editorial, Story
- Scripting for Radio: News, Feature, Discussion, Talk
- Scripting for Television: Storyboard
- Screenplay for Cinema: The Audio-Visual Format
- Writing for New Media: Messaging, Social Media, Blog, Emoticons

UNIT – III (5 weeks)

Specialized Writing

- Book Review
- Film Review
- Press Release
- Reportage

Essential Readings

- Abend-David, D. (2014). *Media and translation: An interdisciplinary approach*, London: Bloomsbury
- Goldstein, N. (2007). *Associated press stylebook and briefing on media law*. Basic Books.
- Briggs, M. (2009). *Journalism Next: A practical guide to digital reporting and publishing*. Washington D.C: CQ Press
- Burgess, G., et al. (2009). *YouTube: Online video and participatory culture*. Cambridge: Polity Press
- Desjardins, R. (2017). *Translation and social media: In theory, in training and in professional practice*. London: Palgrave Macmillan
- Garrand, T. P. (2017). *Writing for multimedia and the web: A practical guide to content development for interactive media*. Oxford: Routledge.
- Gillmor, D. (2006). *We the media: Grassroots journalism by the people, for the people*. Massachusetts: O'Reilly Media, Inc
- Hilliard, R.L. (2011). *Writing for television, radio, and new media (Broadcast and Production)*. Boston: Cengage Learning
- Johnson, M. C. (2000). *New script writers journal*. Oxford: Focal Press.

Suggested Readings

- Jaikumar, P. (2006). *Cinema at the end of empire*. Durham: Duke University Press
- McLuhan, M. (1964). *Understanding the media*. London: Routledge
- Murrow, E. (2004). *Birth of broadcast journalism*. Nashville: Turner Publishing Company
- Reardon, N. (2013). *On camera: How to report, anchor & interview*. London: Routledge
- Shirky, C. (2009). *Here comes everybody: The power of organizing without organizations*. London: Penguin Books
- Sinha, P. K. (2006). *Media writing*. Delhi: Indian Distributors.

- Strunk, W., & White, E.B. (2008). *The elements of style: 50th anniversary edition*. London: Longman
- Vander Mey, R. Meyer V., Rys J.V. & Sebranek P. (2019). *The college writer: A guide to thinking, writing and researching*. Boston: Houghton Mifflin.
- Viridi, J. (2003). *The cinematic imagination: Indian popular films as social history*. New Jersey: Rutgers University Press
- Whitaker, W. R. et al. (2012). *Media writing: print, broadcast, and public relations*. New York: Routledge.
- जोशी, मनोहरश्याम. (2000). पटकथालेखन : एकपररचय . नईददल्ली, र्ारत: राजकमलप्रकाशन
- वजाहत, असगरएवंरंजन, प्रर्ात (2001). टेमलववज़नलेखन. नईददल्ली, र्ारत: राधाकृष्णप्रकाशन

E-Resources

- Caroll, B. (2003). Culture Clash: *Journalism and the Communal Ethos of the Blogosphere*. Into the Blogosphere, Retrieved from https://conservancy.umn.edu/bitstream/handle/11299/172831/Carroll_Culture%20Clash.pdf?sequence=1&isAllowed=y
- Schuh, K.L. (2006). Student Effort, Media Preference, and Writing Quality When Using Print and Electronic Resources in Expository Writing, *SAGE Journals*, Retrieved from <https://doi.org/10.2190/QJ4N-2863-Q6L0-6360>
- *The New York Times Ethical Journalism Handbook*, (2004). retrieved from <https://www.nytimes.com/editorial-standards/ethical-journalism.html>

DISCIPLINE SPECIFIC CORE COURSE – 3: Print Media Production

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Print Media Production | 4 | 2 | 0 | 2 | Class XII Pass | NIL |

Learning Objectives

1. To study the historic growth and changing dynamics of print media in India.
2. To understand different forms of print journalism and reporting formats.
3. Designing the layout and formats for print media production.
4. To use various software for producing newsletters and magazine pages.

Learning outcomes

1. Understand the structure and functions of a news organisation.

2. Understand the relationship between the political economy and editorial policy.
3. Gain practical knowledge of the technology and skills necessary to produce a
4. newspaper.
5. Practical knowledge of planning, designing & editing a newspaper.

SYLLABUS OF DSC-3

UNIT – I (15 hours)

Print Journalism

- Determinants of News Values: Meaning of News, Types (hard and soft news/objective, interpretative and investigative)
- Dignity, Ethics and Journalistic Responsibilities
- Ownership, Revenue and Editorial Policy
- News Agencies and News Pools

UNIT – II (15 hours)

The News Room

- Structure of a News Organization
- Allocation of Tasks: Roles, Skills and Sourcing
- Functions and Responsibilities of an Editor
- Planning, Dummy and Design, Typography, Preparing a Copy

UNIT – III (15 hours)

Print Technology and Newspaper Production

- Introduction to Publishing Software: Adobe InDesign, other Open Sources
- Use of Graphics, Photographs, Cartoons and Print Info-graphics
- Page Layout (print and electronic copy), Size, Anatomy, Grid Design, Frontpage, Editorial page and Supplements, Single and Multiple Editions
- Printing Process: Letter Press, Screen, Offset Style Sheet, Handling Text (headlines, pictures, advertisements)

Practical (30 hours)

Producing a Newsletter using Design Software

Essential Readings

- Ahuja, B. N. (1996). *History of Indian press: Growth of newspapers in India*. New Delhi: Surjeet Publications.
- Davis, M. (2012). *Graphic design theory*. London: Thames and Hudson
- Gupta, V. S. Aggarwal, V. B. (2001). *Handbook of journalism and mass communication*. India: Concept.
- Graham, L. (2012). *Basics of design: Layout & typography for beginners*. United States: Cengage Learning.
- Raman, U. (2009). *Writing for the media*. India: Oxford University Press.
- Sarkar, N. N. (2013). *Art and print production*. India: OUP India.

Suggested Readings

- Natarajan, J. (1955). *History of Indian journalism*. New Delhi: Publications Division, Ministry of Information and Broadcasting.
- Keeble, R. (2005). *Print journalism a critical introduction*. Routledge.
- Sarkar, N. N. (1998). *Designing print communication*. India: Sagar Publications.
- Luttrupp, J. C., & Greenwald, M. L. (2009). *Designing for print production: Essential concepts*. United States: Delmar/Cengage Learning.
- Hiteshi, B., & Ahuja, C. (2016). *Print Journalism: A complete book of journalism*. United States: Author Solutions, Incorporated.
- Joss, M. & Nelson, L. (1977). *Graphic design tricks and techniques*. Ohio: North Light Books.
- Kenly, E. & Beach, M. (2004). *Getting it printed*. United States: F+W Media.

LIST OF GENERIC ELECTIVE COURSES

GENERIC ELECTIVES (GE-1) – Social Media

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department offering the course |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|--------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| Social Media | 4 | 3 | 1 | 0 | Class XII Pass | NIL | Finance and Business Economics |

Learning Objectives

The Learning Objectives of this course are as follows:

1. To enable student to understand the new paradigms of social media like technology and literacy, nuances of digital experience and ethics.
2. To familiarize student with various social media technologies and applications like
3. digitization of media and media convergence.
4. To understand the impact of social media on society, individual and democracy.

Learning outcomes

The Learning Outcomes of this course are as follows:

1. Ability to define new paradigms of social media.
2. Familiarizing with the different types of social media.
3. Understanding social media technologies and its application.
4. Learn to critically evaluate the impact of social media.

SYLLABUS OF GE-1

UNIT – I (20 hours)

Social Media: A New Paradigm

- Technology and Literacy Redefined: Internet, Intranet, WWW (Web 1.0, 2.0, 3.0)
- The Digital Experience: Mobile, Cyberspace and Apps
- The User and The Fourth Screen: Representation and Reproduction
- Media Convergence: ICT - Scope and Role

UNIT – II (20 hours)

- Social Networking Platforms
- Blogging and Vlogging
- Video Conferencing, Webcasting, Podcasting
- Social Bookmarking

UNIT – III (20 hours)

Impact of Social Media

- Internet/Online Activism
- Citizen Journalism
- Cyber Crimes and Ethics
- Democratization/Digital Divide

Essential Readings

- Barker, M. S., Barker, D., Bormann, N. F., Neher, K. (2013). *Social media marketing: A strategic approach*. New York: Cengage Learning.
- Castells, M. (2005). *The network society: A cross-cultural perspective*. Cheltenham: Edward Elgar.
- D. Satish, Rajesh Prabhakar Kaila. (2006). *Blogs: Emerging communication media*. The ICFAI University Press.

Suggestive Readings

- Forsyth, T. (2011). *Encyclopaedia of international development*. Milton Park. Abingdon, Oxon: Routledge.
- Lister, M. (2009). *New media: A critical introduction*. London: Routledge.
- Mishra, R.C., (2008). *Cyber-crime: Impacts in the new millennium*. Author Press.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

B.A. (HONS.) BUSINESS ECONOMICS

Category-I

DSC - 1: Microeconomics – I

| Course Title | Total Credits | Components | | | Eligibility Criteria | Prerequisite if any |
|------------------|---------------|------------|---|---|----------------------|---------------------|
| | | L | T | P | | |
| Microeconomics-I | 4 | 3 | 1 | 0 | Class XII Pass | NIL |

DSC - 1: Microeconomics – I

Objectives

This is the first course in a group of two that together cover the basic concepts of Microeconomics. This course covers the areas of consumer demand, production, cost and different types of commodity markets. It introduces the concept of economics, market equilibrium, elasticity, and consumer and producer behaviour at the basic level. It is a core foundation paper giving the students a micro aspect of different economic activities.

Learning Outcomes

- To analyse the market behaviour by understanding the basic concepts of microeconomics.
- To provide students with an understanding of the standard theoretical analysis of consumer and producer behaviour.
- To know the applications of theory of production and cost structure

Course Structure

Unit 1: Basic Concepts

(8 hours)

Scope and method of microeconomics; Scarcity and Choice; Positive and normative economics; Production possibility frontier, concepts of opportunity cost, rate of growth; Demand, Supply and Market equilibrium; Market Failure: Public goods and externalities; types of externalities – production and consumption externalities, asymmetric information and moral hazard: principal agent problem.

Unit 2: Theory of Consumer Behaviour**(20 hours)**

Elasticity: Price elasticity of demand, price elasticity of supply, cross elasticity and income elasticity of demand; Preference; utility; budget constraint; Cardinal theory & Ordinal theory: Budget sets and Preferences under different situations; Utility; Indifference curves: Consumer equilibrium; utility maximization; Engels curve, Derivation of demand curve, Income and substitution effects: Hicks and Slutsky equation; inferior, normal and Giffen goods Applications of indifference curves to other economic problems; Revealed preference theory; revealed preference: weak axiom, compensated law of demand; consumer surplus, equivalent variation and compensating variation, WARP, SARP.

Unit 3: Choice under Uncertainty**(10 hours)**

Choice under uncertainty – Comparative statics, utility function and expected utility, measures of risk, risk aversion and risk preference; intertemporal choice: savings and borrowing; Duality in consumption.

Unit 4: Technology, Production and Cost**(30 hours)**

Technology; isoquants; production functions with one and more variable inputs; returns to scale; Law of variable proportion, total, average and marginal product, marginal rate of technical substitution, iso-cost line and firm's equilibrium, elasticity of substitution; cost minimization; expansion path, short run and long run costs; various cost curves in the short run and long run and its relation; economies of scale; increasing and decreasing cost industries; envelope curve; economies of scale. Prices as parameters: Firm equilibrium and profit; short and long-run supply function; taxes and subsidies.

References*Essential*

1. McConnell et al. (2021). Microeconomics. McGraw-Hill Education.
2. Varian, H.R. (2020). Intermediate Microeconomics: A modern approach. W. W. Norton.
3. Bernheim, B. and Whinston, M. (2009). Microeconomics. Tata McGraw- Hill.

Additional

1. Hall, Robert E. and Lieberman, Marc (2009). Microeconomics - Principles and Applications. South Western Educational Publishing.
2. Snyder, C., Nicholson, W. (2010). Fundamentals of Microeconomics. Cengage Learning.
3. Pindyck, Robert, Rubinfeld, Daniel (2017). Microeconomics (Eighth Edition). Pearson

Teaching - Learning Process

3 Lectures and 1 tutorial each week.

Assignments, Term Paper, Presentations, Project, Classroom discussions

Assessment Method

Total Marks: 100

Practical: 0

Internal Assessment: 25 Marks

End Semester Exam: Duration: 3 Hours & Maximum Marks: 75

Keywords

Demand, Supply, Elasticity, Market failure, Externalities, Consumer Preference, Production, Cost

DSC - 2: Accounting for Managers

| Course Title | Total Credits | Components | | | Eligibility Criteria | Prerequisite if any |
|-------------------------|---------------|------------|---|---|----------------------|---------------------|
| | | L | T | P | | |
| Accounting for Managers | 4 | 3 | 1 | 0 | Class XII Pass | NIL |

DSC - 2: Accounting for Managers

Course Objectives

The course imparts knowledge of accounting principles particularly in the context of the preparation of financial statements and cost information of a business entity. The course concerns analysis and interpretation of these statements and their applications to managerial decision-making.

Learning Outcomes

- To understand the process of financial, cost and management accounting.
- To make a critical analysis of the financial statements of a business entity.
- To identify the steps for rational managerial decision making with respect to financial and cost aspects of a business.

Course Structure

Unit 1: Financial Accounting

(16 hours)

Meaning of Financial Accounting, Functions and Limitations of Financial Accounting, Users of Financial Accounting Information, Basis of Accounting: Cash and Accrual. Principles of Financial Accounting (GAAP), Overview of International Financial Reporting Standards (IFRS) and Ind AS.

Overview of Process of Financial Accounting: Journalizing, Ledger Posting and Preparation of Trial Balance.

Preparation of final Accounts (with adjustments) of a Sole Proprietor: Trading and Profit and Loss Account and Balance Sheet.

Understanding the Financial Statements of a Joint Stock Company: Format of Income Statement and Position Statement as per revised schedule VI of Companies Act, 2013.

Unit 2: Analysis and Interpretation of Financial Statements (12 hours)

Financial Statements: Meaning and types, importance and limitations of Financial Analysis

Techniques of Analysis: Cash Flow Statement (Indirect Method as per Revised AS 3): Preparation, Utility and Limitations.

Ratio Analysis with emphasis on the purpose and interpretation of the ratios: Liquidity, Turnover, Profitability and Solvency Ratios. Advantages and Limitations of Ratio Analysis.

Unit 3: Cost and Management Accounting (20 hours)

Cost and Management Accounting: Meaning, Functions, Utility and Limitations, Financial Accounting vs Cost Accounting, Financial Accounting vs Management Accounting, Tools of Management Accounting, Methods of Costing, Techniques of Costing, Basic Cost Concepts, Classification of Costs, Absorption Vs Marginal Costing.

Unit Costing: Preparation of Cost Sheet and computation of profits.

Cost Volume Profit Analysis, Break-even Analysis, Margin of Safety.

Managerial Decisions involving Alternate Choices: fixing the selling price, exploring new markets, make or buy decision, product/ sales mix decision (with and without key factor), shut down or continue.

Unit 4: Planning and Control (12 hours)

Meaning of Standard Costing, process of determination of Standard Costs.

Meaning of Budget and Budgetary Control, Benefits and Limitations of Budgetary Control, Classification of Budgets, Preparation of Master Budget, Fixed and Flexible Budgets, Difference between Standard and Budgeted Costs.

Variance Analysis: Cost Variances: problems related to Material and Labour Variances.

References:

Essential

1. Arora, M.N. Accounting For Management. Himalaya Publishing House
2. Lal, J. Accounting For Management. Himalaya Publishing House (P) Ltd.
3. Maheshwari, S.N. Accounting for Management. Vikas Publishing House.
4. Sahoo, B.P. Accounting for Managers. Wisdom Publications.

Additional

1. Gupta, R.L. Introductory Corporate Accounting. Sultan Chand & Sons.
2. Horngren, C.T., Sundem, G.L., Burgstahler, D. Schatzberg, J.O. Introduction to Management Accounting. Pearson.
3. Monga, J.R. Financial Accounting Concepts and Applications. Mayur Paperbacks.

4. Monga, J.R. Basic Corporate Accounting. Mayur Paperback.
5. Rustagi, R.P. Fundamentals of Management Accounting. Taxmann.
6. Singh, S. Management Accounting. PHI Learning
7. Stice, J. & Stice, E.K. Financial Accounting Reporting and Analysis. Cengage Learning

Teaching - Learning Process

3 Lectures and 1 tutorial each week.

Emphasis on interpretation and applications of accounting methods and techniques for taking managerial decisions. Assignments, Term Paper, Presentations, Project, Classroom discussions

Assessment Method

Total Marks: 100

Practical: 0

Internal Assessment: 25

End Semester Exam: Duration: 3 Hours & Maximum Marks: 75

Key Words

Financial Accounting, Final Accounts, Management Accounting, Cost Accounting, Cost Sheet, Cost Volume Profit Analysis, Variance Analysis.

DSC - 3: Mathematics for Business Economics – I

| Course Title | Total Credits | Components | | | Eligibility Criteria | Prerequisite if any |
|--------------------------------------|---------------|------------|---|---|----------------------|---------------------|
| | | L | T | P | | |
| Mathematics for Business Economics-I | 4 | 3 | 0 | 1 | Class XII Pass | NIL |

DSC - 3: Mathematics for Business Economics - I

Course Objectives

The objective of this course is to provide instruction on basic mathematics that enables the study of economic theory and business applications at the undergraduate level. This shall be required for the teaching of the courses on microeconomic theory, macroeconomic theory, statistics, and econometrics set out in this syllabus. This course introduces mathematical techniques that will be new to most students through examples of their application to economic concepts. The economic and business models are a means for illustrating the method of applying mathematical techniques to economic theory and business applications in general. Mathematics has become the language of

modern analytical economics and it quantifies the relationship between economic variables and among economic actors.

Learning Outcomes

- To build the mathematical base necessary for other courses and to understand the basic functional forms used in economic analysis.
- To develop the mathematical knowledge required in business decision-making and to study the mathematics in which economic theories are expressed.
- To make and refute arguments by developing mathematical understanding.

Course Structure

Unit 1: Introduction (9 hours)

Algebra concepts, number systems, inequalities, mathematical logic, proof techniques; sets and set operations; functions and their properties.

Unit 2: Univariate Analysis (16 hours)

Curves and graphs; elementary functions: linear, quadratic, polynomial, power, exponential, logarithmic; sequences and series: convergence, algebraic properties and applications; Continuous functions: characterisations, properties with respect to various operations and applications; Differentiable functions: characterisations, properties with respect to various operations and applications; Second and higher order derivatives: properties and applications. Geometric properties of functions: convex functions, their characterisations and applications; local and global optima: geometric and calculus-based characterisations, and applications.

Unit 3: Linear Algebra (12 hours)

Linear Algebra: Vector spaces: algebraic and geometric properties, scalar products, norms, orthogonality; linear transformations: properties, matrix representations and elementary operations; systems of linear equations: properties of their solution sets; determinants: characterization, properties and applications. Eigenvalues and eigenvectors, diagonalization, Spectral Theorem.

Unit 4: Integration (8 hours)

Integrals: indefinite and definite. Methods of integration. Economic applications.

Readings

Essential

1. Sydsaeter, K., Hammond, P. (2002). Mathematics for Economic Analysis. Pearson Education.

Additional

1. Chiang, Alpha C., and Wainwright, K.(2005). Fundamental Methods of Mathematical Economics. Boston, Mass: McGraw-Hill/Irwin.

2. Hoy, Michael, Livernois John, McKenna Chris, Ray Rees, and Thanasis Stengos. (©2011) Mathematics for Economics. Cambridge, Mass. : MIT Press
3. Lay, David C., Judi J. McDonald, Steven R. Lay.(2022). Linear Algebra and Its Applications. Pearson.

Practical : 30 Hours

Teaching - Learning Process

3 Lectures and 1 practical each week.

Assignments, Tests, Presentations, Classroom discussions.

Spreadsheet Software for logical and other functions. Problem solving.

Assessment Methods

Total Marks: 100

Practical: 25

Internal Assessment: 25 Marks

End Semester Exam: Duration: 3 Hours & Maximum Marks: 50

Key Words

Set theory, Univariate, Limits, Continuity, Optimisation, Calculus, Differentiation, Concavity, Convexity, Optimisation, Spreadsheet

COMMON POOL OF GENERIC ELECTIVE COURSES

Category-IV

GE - 1: Principles of Economics

| Course Title | Total Credits | Components | | | Eligibility Criteria | Prerequisite if any |
|-------------------------|---------------|------------|---|---|----------------------|---------------------|
| | | L | T | P | | |
| Principles of Economics | 4 | 3 | 1 | 0 | Class XII Pass | NIL |

GEC - 1: Principles of Economics

Course Objectives

This course aims to offer basic understanding of the principles of economics. Specifically, this course intends to expose the student to the basic principles and concepts in Microeconomics and in Macroeconomics. In this course the students are introduced to the problem of scarcity and choice, demand and supply, elasticity, basic consumer theory, production and costs, definition, measurement of the macroeconomic variables -- GDP, consumption, savings, investment, money and credit etc.

Learning Outcome:

- To understand the principles of economics of the modern economy.
- To understand the consumer theory, production, and costs etc.
- To understand the basic principles of macroeconomics, national income accounting and determination of GDP.
- To understand the functioning of the money market.

Course Structure

Unit 1: Introduction

(8 hours)

Problem of scarcity and choice: scarcity, choice and opportunity cost; production possibility frontier; economic systems.

Demand and supply: law of demand, determinants of demand, shifts of demand versus movements along a demand curve, market demand, law of supply, determinants of supply, shifts of supply versus movements along a supply curve, market supply, market equilibrium.

Applications of demand and supply: price rationing, price floors, consumer surplus, producer surplus.

Elasticity: price elasticity of demand, calculating elasticity, determinants of price elasticity, other elasticities.

Unit 2: Consumer Theory (12 hours)

Budget constraint, concept of utility, diminishing marginal utility, Diamond-water paradox, income and substitution effects; consumer choice: indifference curves, derivation of demand curve from indifference curve and budget constraint.

Unit 3: Production and Costs (12 hours)

Production: behaviour of profit maximising firms, production process, production functions, law of variable proportions, choice of technology, isoquant and isocost lines, cost minimizing equilibrium condition.

Costs: costs in the short run, costs in the long run, revenue and profit maximizations, minimizing losses, short run industry supply curve, economies and diseconomies of scale, long run adjustments.

Unit 4: Introduction to Macroeconomics (8 hours)

What is macroeconomics? Macroeconomic issues in an economy.

Unit 5: National Income Accounting (8 hours)

Concepts of GDP Aggregates and National Income; measurement of national income and related aggregates; nominal and real income; GDP and welfare and the limitations of the GDP concept.

Unit 6: Determination of GDP (8 hours)

Actual and potential GDP; aggregate expenditure; consumption function; investment function; equilibrium GDP; concepts of MPS, APS, MPC, APC; autonomous expenditure; Concept of multiplier.

Unit 7: Money and Credit (4 hours)

Money in a Modern Economy: Concept of money in a modern economy; monetary aggregates; demand for money; quantity theory of money; liquidity preference and rate of interest; money supply and credit creation; monetary policy

References:

1. Case, K.E., Fair, R. C., and Oster, S. E. (2017). Principles of Economics (12th Ed.). Pearson.
2. Dornbusch, R., Fischer, S. and Startz. R. Macroeconomics (11th Edition). McGraw-Hill.
3. Mankiw, N.G. (2021). Principles of Economics, (9th Edition). Cengage Learning.

Teaching - Learning Process**Assessment Method**

Total Marks: 100

Practical: 0

Internal Assessment: 25

End Semester Exam: Duration: 3 Hours & Maximum Marks: 75

Keywords

Principles of Economics, Scarcity, Consumer Theory, Production, Costs, Gross Domestic Product, money and credit.

GE - 3: Legal Environment of Business

| Course Title | Total Credits | Components | | | Eligibility Criteria | Prerequisite if any |
|-------------------------------|---------------|------------|---|---|----------------------|---------------------|
| | | L | T | P | | |
| Legal Environment of Business | 4 | 3 | 1 | 0 | Class XII Pass | NIL |

GEC - 3

Legal Environment of Business

Pre requisites: None

Course Objective(s): The course intends to familiarize the student with the legal environment which govern business for its efficient conduct and to apply them in real life situations. The purpose is to widen their scope of knowledge by appreciating the different branches of law covering some important legislations from Indian Contract Act, Companies Act, LLP Act, Consumer Protection Act, Sale of Goods Act and IT Act including the relevant cases and amendments.

Learning Outcomes:

The students will be able:

- To understand the basic rules and provisions of Contract and Agreements.
- To know the provisions to Formation and functioning of company and LLP.
- To understand the significance and role of law of sale of goods act
- To have in- depth knowledge of Information Technology Act And legal framework of right to Privacy, Data Security and Data Protection.
- Apply the law correctly to different facts and in different contexts

Unit 1: Indian Contract Act (16 hours)

Meaning and Essentials of a Contract; Valid, Void and Voidable Contract; Offer and Acceptance; Consideration; Capacity of Parties; Free Consent; Discharge of Contract and Remedies for Breach of a Contract.

Unit 2: Companies Act (16 hours)

Meaning and Nature of Company; Promotion and Incorporation of a Company; Memorandum of Association; Articles of Association; Misleading Prospectus and remedies available to the parties; Board of Directors and their qualification, duties, powers. Company Meetings and Resolutions.

Unit 3: Sale of Goods Act and Consumer Protection Act (16 hours)

Essentials of a Contract of Sale; Sale and Agreement to Sell, Conditions and Warranties; Transfer of Title by Non-Owners; Doctrine of Caveat Emptor; Rights of Unpaid Seller. **Consumer Protection Act 2009:** Scope and Applicability of the Act. Rights of consumer. Procedure for complaints. Duties and power of Central Consumer Protection Authority.

Unit 4: Limited Liability Partnership Act and IT Act (12 hours)

Meaning and nature of LLP; LLP and Company; LLP Agreement, Partners and Designated Partners, Incorporation of LLP; Partners and their Relations, Extent and limitation of liability of LLP. **Information Technology Act 2000** Concept and role; Digital signature, Electronic governance, Attribution, Acknowledgement and dispatch of electronic records, Regulation of certifying authorities, Digital signatures certificates, Duties of subscribers, Penalties and adjudication, Appellate Tribunal, Offences.

Essential References:

1. Bansal, V & Arora, A. Corporate Laws. Vikas Publishing, House (P) Ltd. New Delhi.
2. Kuchhal M.C & Vivek K. Business Legislation for Management. VIKAS Publishing House (P) Ltd.
3. Kumar, A. Corporate Laws. International Book House (P) Ltd.
4. Bare Acts relating to the laws.

Additional References

1. Chadha, R., Chadha, S. Corporate Laws. Mayur Paperbacks. New Delhi.
2. Maheshwari & Maheshwari. Business Law. National Publishing House. New Delhi.
3. Singh, Avtar. The Principles of Mercantile Law. Eastern Book Company. Lucknow.
4. Tulsian, P.C. Business Law. Tata McGraw Hill. New Delhi

Teaching - Learning Process:

3 lectures and One Tutorial class per week. Classroom teaching with interactive discussion of relevant case laws to enable student to have better understanding of legal text and to prepare them to present legal arguments in the cases of real life situations.

Assessment Methods:

Total Marks 100

Practical NA

Internal Assessment 25

End semester exam: Duration:3 Hours Marks: 75

Key Words: Contract, LLP, Goods, Company, Information technology, Consumer, Digital signature.

GE - 5: Quantitative Techniques in Management

| Course Title | Total Credits | Components | | | Eligibility Criteria | Prerequisite if any |
|---------------------------------------|---------------|------------|---|---|----------------------|---------------------|
| | | L | T | P | | |
| Quantitative Techniques in Management | 4 | 3 | 1 | 0 | Class XII Pass | NIL |

GEC - 5: Quantitative Techniques in Management**Course Objectives**

To apprise students with the construction of mathematical models for managerial decision making. The emphasis is on understanding the concepts, formulation and interpretation of linear programming methods and its application in diverse problems. An introduction to game theory and network analysis forms part of the course.

Learning Outcomes

- Identify and develop operational research models from the verbal description of the real system.
- Understand the mathematical tools that are needed to solve optimization problems.
- Develop critical thinking and use PERT and CPM techniques to improve decision making.

Course Structure**Unit 1: Introduction - Operations Research, Linear Programming (20 hours)**

- Introduction to Operations Research, characteristics, Phases, Methodology, Applications and scope
- Formulation of Linear Programming problems, Graphical Solutions (Special cases: Multiple optimal solution, infeasibility, unbounded solution); Simplex Method, Special cases, Big-M method and Two-phase method; Duality (emphasis on formulation & economic interpretation); Sensitivity Analysis. (Excel Solver application)

Unit 2: Transportation and Assignment Problem**(16 hours)**

- (i) Transportation Problem: Formulation, Solution by N.W. Corner Rule, Least Cost method, Vogel's Approximation Method (VAM), Modified Distribution Method; Special cases: Multiple Solutions, Maximization case, unbalanced case, prohibited routes.
- (ii) Assignment Problem: Hungarian Method, Special cases: Multiple Solutions, Maximization case, Unbalanced case, Restrictions on assignment.

Unit 3: Network Analysis**(12 hours)**

Basic Concept, Construction of the Network diagram, Critical Path Analysis, float and slack analysis (Total float, free float, independent float), probability consideration in PERT (Interface with Project Management open-source software)

Unit 4: Decision Theory:**(12 hours)**

- (i) Decision making environment, Construction of Pay off Table, Opportunity Loss Table, Decision under uncertainty. Decision under Conflict: Game Theory, Two-person Zero-Sum games, Maximin Minimax Principle, Games without Saddle point - Mixed strategy, Dominance Rule.

References:

1. Vohra, N.D., Quantitative Techniques in Management (5th ed.). Tata McGraw Hill
2. Swarup, K., Gupta, P.K. and Mohan, Man, Introduction to Management Science Operations Research (19th ed.). Sultan Chand & Sons.
3. Sharma, J.K., Operations Research: Theory and Applications (6th ed.). Trinity.
4. Taha, H.A., Operations Research: An Introduction (9th ed.). Pearson.

Teaching - Learning Process

Three lectures and one tutorial class per week. Lectures devoted to teaching the theory of operations research and solving of numerical problems.

Assessment Method

Total Assessment Marks: 100

Practical exam: 0 marks

Internal Assessment: 25 marks

End semester exam 75 marks

Keywords

Linear programming, simplex method, duality, transportation problem, assignment problem, network analysis, PERT, CPM, decision making, game theory

GE - 7: Economics of Startups

| Course Title | Total Credits | Components | | | Eligibility Criteria | Prerequisite if any |
|-----------------------|---------------|------------|---|---|----------------------|---------------------|
| | | L | T | P | | |
| Economics of Startups | 4 | 3 | 1 | 0 | Class XII Pass | NIL |

GEC – 7 Economics of Startups

Pre-requisites: None

Course Objective:

To give the students an overview of startups and its types that would help students to understand basics of starting up new ventures. The challenges they could face while starting up with new business. To enable students to explore, launch entrepreneurial ventures in their own areas of interest.

Learning Outcomes

After successful compilation of the course students will be able to

- Understand the process and working of a startup.
- Identify the different ways in which entrepreneurs manifest in start-ups.
- Know how to create one's own business venture and the various factors that influence successful set-up and sustainable operations.
- Explore the funding and other institutions supporting small business units.

Course Structure

Unit 1: Startup, Generation & Experimentation (12 hours)

Concept of Startup, Role of digital technologies, Startup ecosystems, the startup movement in India; Generating a value proposition, how valuable are new ideas, Design thinking principles; Experimenting with the prototype, Introduction to lean start-ups, Lean startup principles, Learning and failing fast.

Unit 2: Building the Business Plan (20 hours)

Beginning Considerations: Building a competitive advantage. The strategic management processes. Conducting a feasibility analysis. Forms of Business ownership. Franchising and entrepreneurship. Buying an existing business, marketing and financial considerations: Building a powerful marketing plan. E-commerce and Entrepreneur. Pricing strategies. Creating a successful financial plan. Choosing the right location and layout.

Unit 3: Crafting business models and Lean Start-ups: (16 hours)

Introduction to business models; Creating value propositions-conventional industry logic, value innovation logic; customer focused innovation; building and analysing business models; Business model canvas, Business Pitching.

Unit 4. Institutions Supporting Small Business Enterprises and ethics: (12 hours)

Central level institutions. State level institutions. Other agencies. Industry Associations. Class exercise- discussions on current government schemes supporting entrepreneurship and finding out which scheme will most suit the business plan devised by the student. Importance of Ethical Entrepreneurship, value of ethics to an entrepreneur.

References:

1. Scarborough, N. M., Cornwall, J. R., & Zimmerer, T. (2016). Essentials of entrepreneurship and small business management. Boston. Pearson Publications.
2. Hishrich, R.D., Manimala, M.J., Peters, M.P., Shepherd, D.A., Entrepreneurship, Tata McGraw Hill.
3. Shukla, M.B., Entrepreneurship and Small Business Management. Kitab Mahal Publishers.

Additional Readings

1. Hishrich, R.D. and Peters, M. Entrepreneurship. Irwin Publications.
2. Barringer, B.R. and Ireland, R. Duane. Entrepreneurship: Successfully launching new ventures. (6th Edition) Pearson
3. Kuratko, D.F., and Rao, T.V., Entrepreneurship: A South-Asian Perspective. Cengage Publications.
4. Shankar, R., Entrepreneurship: Theory and Practice. Tata McGraw Hill.
5. Kathleen, R Allen. Launching New Ventures: An Entrepreneurial Approach. Cengage Learning.
6. Fisher, Steve and Duane, Ja-Nae. The Startup Equation - A Visual Guidebook for Building Your Startup. Mc Graw Hill Education India Pvt. Ltd.

Teaching - Learning Process

Three lecture and one tutorial per week. Case study discussion, Class presentation on the assigned topic by students individually or in group, Workshop, Role play.

Class exercise- select an industry that has several competing small firms in your area. Contact these firms and compare their approaches to determining prices, financial plan and location. Based on this analysis build your “own” business plan

Assessment Method

Total Marks – 100

Practical – 0

IA -25

End semester exam - 75

Keywords

Entrepreneurship process, Start-up Idea, Entrepreneurial Venture, Business Incubators

GE - 9: International Economics

| Course Title | Total Credits | Components | | | Eligibility Criteria | Prerequisite if any |
|-------------------------|---------------|------------|---|---|----------------------|---------------------|
| | | L | T | P | | |
| International Economics | 4 | 3 | 1 | 0 | Class XII Pass | NIL |

GEC – 9 International Economics

Pre-requisites: Basic courses in Microeconomics and Macroeconomics

Course Objectives

This course aims at inculcating basic understanding of fundamentals of international economics. It will enable students to identify basis and gain from international trade with the help of different theoretical models and their applications to real world challenges and its solutions.

Learning Outcomes :

- To understand basic concept and origin of International economics through the prism of classical and new classical trade theories
- To understand different terms of trade and their applicability
- To differentiate between Modern and Classical Trade theories.
- To gain knowledge about the foreign exchange markets and its working
- To learn about global capital market

Course Contents:

Unit 1: Introduction to International Trade

[16 hours]

Globalization and its growing importance in the world economy; Impact of globalization; International business contrasted with domestic businesses; Cost and benefit analysis of tariff, Effective rate of protection and welfare arguments of tariff and developing countries. Foreign direct investment (FDI) in world economy: Trends, Direction, and flow of FDI; Theories of FDI; Political ideology and FDI.

Unit 2: International Trade Theory

[20 hours]

World Trade: An overview; Theories of international trade – Mercantilism; Absolute advantage theory, Comparative advantage theory, Factor proportion theory and Leontief paradox, Product life cycle theory, New trade theory, National competitive advantage: Porter's diamond. International Business Environment: Economic, Demographic, Cultural and Political-legal environment.

Unit 3: Balance of Payment (BoP)**[8 hours]**

Balance of Payment : Meaning, Components (Current, Capital and Official reserve), Reasons for disequilibrium in BoP, Measures to correct disequilibrium, Understanding India's BoP and comparing it with markets like USA and China.

Unit 4: Foreign Exchange and Global Capital Market**[16 hours]**

Exchange Rate Determination: Currency Demand and Supply Curves, Factors Affecting Exchange Rate, Global Capital Market: Introduction, Benefits of global capital market, Growth of global capital market, Global capital market risk, Eurocurrency market, Global bond market, Global equity market, Exchange rate risk, Managing exchange rate risk, Methods of Financing International Trade.

References:

1. Hill, C. (2021). International business: Competing in the global market place (13th Edition). *Strategic Direction*.
2. Krugman, P. R., & Obstfeld, M. (2009). International economics: Theory and policy. Pearson Education.
3. Levi, M.D. (2009). *International Finance* (5th Edition), Taylor and Francis Ltd.
4. Madura, J. (2020). *International financial management*. Cengage Learning.

Teaching-Learning

Three lecture and one tutorial class per week. Classroom teaching with assignment, tests, presentation.

Assessment Method

Total Marks: 100

Practical: 0

IA: 25

End semester exam: 75

Keywords

International Trade, Exchange rate, FDI, Balance of Payment.

GE - 11: Economic Policy Framework

| Course Title | Total Credits | Components | | | Eligibility Criteria | Prerequisite if any |
|---------------------------|---------------|------------|---|---|----------------------|---------------------|
| | | L | T | P | | |
| Economic Policy Framework | 4 | 3 | 1 | 0 | Class XII Pass | NIL |

GEC-11: Economic Policy Framework

Pre-Requisites: None

Course Objectives

This course will help students to understand the importance of macroeconomic policies. Each section is complemented with contemporary issues in the sphere of these policies.

Learning Outcome:

- To learn the basic concept of macroeconomics
- To understand how different parameters of macroeconomics work under Indian economy.
- To understand how monetary and fiscal policy works.
- To know different exchange rate regimes.

Unit 1: Meaning and objectives of economic policy (16 hours)

Tools and goals (objectives and instruments of policy) Circular flow of income (start with a two sector model and go up to a five sector model); National Income aggregates and the related concepts of national income; input-output table to calculate national income using the income, expenditure and the value added methods.

Unit 2: Fiscal policy (16 hours)

Objectives and meaning; effect of fiscal policy - role of tax policy (T) and government expenditure (G), Aggregate Demand, Meaning of the multiplier. Government expenditure multiplier and balanced budget multiplier Budget –meaning and purpose – example of India's latest Budget (and various heads). Meaning of fiscal, revenue and primary deficits.

Unit 3: Monetary policy (12 hours)

Meaning and objectives; money and credit – credit creation and instruments of credit control; Inflation targeting, Banking in India – structure, recent developments; issues of NPAs and how to resolve it.

Unit 4: Exchange rate policy

(16 hours)

Structure of BOP; meaning of current account deficit and trade deficit; exchange rate definition (real and nominal); fixed vs flexible exchange rate, efficacy of fiscal/monetary policy under fixed and flexible exchange rate, effect of a change in exchange rate on the current account (imports and exports); structure of capital account and role of capital outflows and inflows.

References:

1. Gupta G.S (2016), Macroeconomics - Theory and Applications (4th edition). McGraw Hill,
2. Shapiro, Edward (1982), Macroeconomic Theory, 5th edition
3. Mankiw, Gregory N. (2010), Macroeconomics (7th edition), Worth Publishers.
4. Sikdar, Soumyen (2011), Principles of Macroeconomics, Oxford University Press
5. Krugman, P.R., Obstfeld, M. and Melitz, M. (2015). International Economics: Theory and Policy, Pearson Education Limited.
6. Dua, P. (2020). Monetary Policy Framework in India, Indian Economic Review, 55(1), June 2020, pp. 117-154.
7. <http://www.inclusivejournal.in/about.html>.
8. Sengupta, R. and Vardhan, H., Non-Performing Assets in Indian Banks, Economic and Political Weekly, 52(12) March 25, 2017, Money, Banking and Finance Special.
9. Economic Survey, India, latest issue
10. Union Budget Statement, India, Latest issue

Additional References:

1. Abel, Andrew, Bernanke, Ben and Croushore, Dean (2011). Macroeconomics (7th edition). Pearson
2. Ghate, C., & Kletzer, K. M. (eds.) (2016). Monetary policy in India: A modern macroeconomic perspective. Springer.
3. Kaul, Vivek (2020) Bad Money: Inside the NPA Mess and how it threatens the Indian Banking System, Harper Collins Publisher India.
4. Chhibber, Ajay and Anees, Salman Soz (2021) India's Financial Sector: A Whodunnit. In Unshackling India. Haper Collins Publishers India.

Teaching - Learning Process

The teaching learning process has internal assessment based on performance of students in class tests, projects including group activity based projects as well as external end semester assessment.

Assessment Method

Total Marks: 100

Practical: 0

Internal Assessment: 25

End Semester Exam: Duration: 3 Hours & Maximum Marks: 75

Keywords

circular flow of income, national income aggregates, fiscal policy, monetary policy, exchange rate policy.

12. Amendment to Appendix -II-A to the Ordinance V (2-A) of the Ordinances of the University vide EC Resolution 18-1-12 dated 18.08.2022 regarding Syllabi of 1st Semester of Vocational Courses

Following addition be made to Appendix-II-A to the Ordinance V (2-A) of the Ordinances of the University;

Add the following:

Syllabi of Semester-I of the following vocational courses based on Under Graduate Curriculum Framework -2022 to be implemented from the Academic Year 2022-23.

1. B.Voc. Retail Management & IT
2. B.Voc. Healthcare Management
3. B.Voc. Software Development
4. B.Voc. Banking, Financial Service & Business

B.Voc. (Retail Management & IT)

DSC-1

Evolution of Indian Retail System

Credit-4

Course Objectives:

Create awareness of trade and retail in ancient India and its evolution, Emerging retail sector in India.

Teaching and Learning Strategies

- Lectures, discussions, presentations, case discussions, exercises, practical and exposure to current practices. The pedagogy for the course is more students centric.
- Understanding of history of trade and retail in India.
- Basic knowledge of retailing and its evolution in India.
- Introduction of retail industry in India and role of globalization.

Course Contents:

| Unit | Unit wise weightage of marks (in %) | C&K* | A&A** |
|---------------|--|-----------------|------------------|
| Unit 1 | 20 | √ | √ |
| Unit 2 | 20 | √ | √ |
| Unit 3 | 30 | √ | √ |
| Unit 4 | 30 | √ | √ |

*C&K- Comprehension & Knowledge **A&A – Analysis & Application

Unit -1

Economic history of India - Trade in ancient India, Evolving from Barter to Coins in India, Trade in pre and post colonial India.

Unit-2

Evolution of retail In India- Indian retail market, History of shops, Organized and unorganized retail sector.

Unit 3

Shift from manufacturing to pure retailing, Importance of retailing in Indian economy, Globalization and liberalization of Economy, Major players in retailing.

Unit 4

Indian Retail Industry-, Importance of retailing in India, trends in organized retailing, Current and Future trends of retail in India. Types of Retail Formats, FDI in Indian organized retail sector, Challenges faced by Indian retail sector.

Assessment & Evaluation

Student learning outcomes and competencies will be assessed using a combination of formative and summative methods including:

1. Objective/knowledge testing,
 2. Competency based evaluation using validated assessment tools and practical skill demonstration.
- Projects/assignments with a grading rubric/scale emphasizing module competencies

Suggested Readings-

1. Bajaj C, Tuli R. Shrivastava N.V. (2010) Retail Management, Oxford University Press.
2. K.V.S. Madaan, (2009) Fundamental of Retailing, Tata MC Graw Hill.
3. Michael Levy, Barton Weitz, AjayPandit (2017) Retailing Management, Tata McGrawHill.
4. Piyush Kumar Sinha and Dwarika Prasad Uniyal (2018) Managing Retailing 3rd edition, Oxford University Press (OUP).

DSC-2

Consumer Buying Behavior and Retail Sales

Credit -4

Course Objectives:

Create understanding of consumer behavior, its effects on retail sales.

Teaching and Learning Strategies

- Lectures, discussions, presentations, case discussions, exercises, practical and exposure to current practices. The pedagogy for the course is more students centric.
- understanding of market strategy, analysis and consumer behavior
- Proficiency in understanding shopper behavior
- Basic understanding of the process of buyers' decision making
- Understanding of consumer behavior in terms of perception and attitude.

Course Contents:

| Unit | Unit wise weightage of marks (in %) | C&K* | A&A** |
|--------|-------------------------------------|------|-------|
| Unit 1 | 20 | √ | √ |
| Unit 2 | 20 | √ | √ |
| Unit 3 | 30 | √ | √ |
| Unit 4 | 30 | √ | √ |

*C&K- Comprehension & Knowledge **A&A – Analysis & Application

Unit 1: Introduction

Concept of Consumer and consumer market, Importance of consumer behavior, Consumer Buying Process, Factors affecting buyer behavior, Types of buying decisions, Post-Purchase behavior.

Unit 2

Nature of markets: Liberalization and Globalization of the Indian Consumer Market, online and offline markets, Organized and unorganized market, Grey market Concept of price in retail and wholesale.

Unit 3

Different types of purchase situations, retailing and the purchase process, determinants of retail success or failure, point -of- purchase materials, consumer logistics, location based retailing, importance of customer satisfaction, factors affecting satisfaction level, motivating consumer.

Unit 4

Group and personal influences on individuals, reference group and its influence on individuals, word of mouth and opinion leaders in advertising and marketing strategy, reaching the consumer, gaining consumer's attention, shaping consumer's opinion; opinions change, product's and advertising's role in shaping consumer opinion, company's role in helping consumers to remember.

Assessment & Evaluation

Student learning outcomes and competencies will be assessed using a combination of formative and summative methods including:

1. Objective/knowledge testing,
 2. Competency based evaluation using validated assessment tools and practical skill demonstration.
- Projects/assignments with a grading rubric/scale emphasizing module competencies

Suggested Readings-

- Blackwell, Roger, Miniard, Paul & Engel, James; Consumer Behaviour; Thomson Learning; New Delhi
- Loudon, David J. & Dellabitta, Albert; Consumer Behaviour; Tata McGraw Hill; New Delhi
- Schiffman, Leon G. & Kanuk, Leslie Lazar; Consumer Behaviour; Pearson Education; New Delhi
- Solomon, Michael R.; Consumer Behaviour – Buying, Having and Being; Pearson Education; New Delhi

DSC-3

Customer Service and Customer Relationship Management

Credit- 4

Course Objectives:

Fundamental understanding of customer and customer relationship management (CRM)

Teaching and Learning Strategies

- Lectures, discussions, presentations, case discussions, exercises, practical and exposure to current practices. The pedagogy for the course is more students centric.
- Perspective on business intelligence and application service providers
- Ability to analyze Sales force automation and its implication for CRM
- Proficiency in skills evaluate CRM
- Skills involved in implementation of CRM

Course Contents:

| Unit | Unit wise weightage of marks (in %) | C&K* | A&A** |
|--------|-------------------------------------|------|-------|
| Unit 1 | 30 | √ | √ |
| Unit 2 | 30 | √ | √ |
| Unit 3 | 20 | √ | √ |
| Unit 4 | 20 | √ | √ |

*C&K- Comprehension & Knowledge **A&A – Analysis & Application

Unit 1: Introduction

Definition of customer and CRM, CRM technology components, customer life style, customer interaction, Difference between CRM and e-CRM, features of e-CRM, CRM Theory & Development and Relationship Marketing.

Unit 2:

CRM Evaluation: measurement of CRM effectiveness including CRM's impact on company efficiency, effectiveness, and employee behavior, Positive Image Building, Customer Relationship Management.

Unit 3:

Customer perception of services, Customer needs and expectations, Personalized and Post-Sales Service Support, Resolving customer concerns.

Unit 4:

Ethics and Future of CRM, Monitoring and Solving Customer Service Issues, Continuous Service improvement, Organizing Service Delivery.

Assessment & Evaluation

Student learning outcomes and competencies will be assessed using a combination of formative and summative methods including:

1. Objective/knowledge testing,
 2. Competency based evaluation using validated assessment tools and practical skill demonstration.
- Projects/assignments with a grading rubric/scale emphasizing module competencies

Suggested Readings-

- Kumar V. & Werner J. (2008) Customer relationship management, Willey India.
- Mukherjee Kaushik (2008) Customer relationship management, Prentice Hall of India Private Limited, New Delhi.
- Rai Kumar Alok (2011) Customer relationship management- Concept and Cases, Prentice Hall of India Private Limited, New Delhi. 2011
- S. Shanmugasundaram (2008) Customer relationship management, Prentice Hall of India Private Limited, New Delhi

GE-1

Computer Fundamentals

Credit- 4

Course Objectives:

Create basic understanding of computer fundamentals and its uses.

Teaching and Learning Strategies

1. Lectures, discussions, presentations, case discussions, exercises, practical and exposure to current practices. The pedagogy for the course is more students centric.
2. Basic knowledge of computer concepts and components
3. Understanding of the operating system, windows interface, control panel, system tools, and files
4. Proficiency in applications such as word, power point, and excel
5. Basic knowledge of information technology, Value Chain Reconstruction, IT Management, network and telecommunications

Course Contents:

| Unit | Unit wise weightage of marks (in %) | C&K* | A&A** |
|--|-------------------------------------|------|-------|
| Unit 1: Introduction | 20 | √ | √ |
| Unit 2 Devices: Input and output devices | 30 | √ | √ |
| Unit 3: Computer Organisation and Architecture | 30 | √ | √ |
| Unit 4: Overview of Emerging Technologies | 20 | √ | √ |

*C&K- Comprehension & Knowledge **A&A – Analysis & Application

Unit 1:

- Introduction: Introduction to computer system,uses, types.
- Data Representation: Number systems and character representation, binary arithmetic
- Human Computer Interface: Types of software, Operating system as user interface, utility programs

Unit 2:

Devices: Input and output devices (with connections and practical demo),keyboard, mouse, joystick, scanner, OCR, OMR, bar code reader, web camera, monitor, printer,plotter

Memory: Primary, secondary, auxiliary memory, RAM, ROM, cache memory, hard disks, optical disks

Unit 3:

Computer Organisationand Architecture: C.P.U., registers, system bus, main memory unit, cache memory, Inside a computer, SMPS, Motherboard, Ports and Interfaces, expansion cards, ribbon cables, memory chips, processors.

Unit 4:

Overview of Emerging Technologies: Bluetooth, cloud computing, big data, data mining, mobile computing and embedded systems, Orientation to POS software(s).

Practical :The practical assignment must include connecting parts of a computer and assembling it to an extent, media formatting and installation of software

Assessment & Evaluation

Student learning outcomes and competencies will be assessed using a combination of formative and summative methods including:

1. Objective/knowledge testing,
2. Competency based evaluation using validated assessment tools and practical skill demonstration.

Projects/assignments with a grading rubric/scale emphasizing module competencies

Suggested Readings-

- Goel, Computer Fundamentals, Pearson Education,2010.
- P. Aksoy, L. DeNardis, Introduction to Information Technology, Cengage Learning,2006.
- P. K.Sinha, P. Sinha, Fundamentals of Computers, BPB Publishers,2007.

GE-1

Principles of Management

Credit- 4

Course Objectives:

The course aims to equip learners with essential management related knowledge and skills and their applicability in real world.

Teaching and Learning Strategies

- Understand the evolution of management and its significance
- Comprehend and analyze applicability of managerial functions
- Recognize the role of decision-making in business
- Analyze the role of directing in management
- Appreciate the function of controlling and contemporary issues in management

Course Contents:

| Unit | Unit wise weightage of marks (in %) | C&K* | A&A** |
|----------------------------------|-------------------------------------|------|-------|
| Unit 1: Principles of management | 25 | √ | √ |
| Unit 2 Management functions | 25 | √ | √ |
| Unit 3: Planning | 25 | √ | √ |
| Unit 4: Directing | 25 | √ | √ |

*C&K- Comprehension & Knowledge **A&A – Analysis & Application

Unit 1:

Principles of management - concept, nature and significance; Evolution of Management thought: Classical (Fayol's principles of management; Taylor's scientific management), Neoclassical (Hawthorne Experiments), Modern approach (Systems Approach; Contingency Approach).

Unit 2:

Management functions and their relationship- planning, organizing, staffing, directing and controlling; Functional areas of management – an overview; Coordination - concept, characteristics and importance.

Unit 3:

Planning- meaning, strategic and operations planning; Decision-making- concept, importance and bounded rationality; Organizing- division of labour& specialization; Organisational structures; Factors affecting organisational design.

Unit 4:

Directing- concept and importance; Concept and theories of Motivation- Maslow's need hierarchy, Herzberg's two-factor theory, Theory X&Y; Leadership-meaning and importance; Communication-meaning and importance; Staffing- concept, importance and process.

Assessment & Evaluation

Student learning outcomes and competencies will be assessed using a combination of formative and summative methods including:

1. Objective/knowledge testing,
 2. Competency based evaluation using validated assessment tools and practical skill demonstration.
- Projects/assignments with a grading rubric/scale emphasizing module competencies

Suggested Readings-

- Drucker, P. F. (1954). The Practice of Management. Newyork: Harper & Row.
- Drucker, P. F. (1999). Management Challenges for the 21st Century. Harper Collins Publishers Inc.
- Griffin. Management Principles and Application. Cengage.
- Koontz, H., &Weihrich, H. (2012). Essentials of Management: An International and

Leadership Perspective. McGraw Hill Publications

- Kumar, Pardeep. Management: Principles and Applications. JSR Publication House LP, Delhi.

Bachelor of Vocation (Health Care management)

DSC-1

Evolution of Indian Healthcare

Credits: 4

Course Objectives:

- Create basic awareness of evolution of Indian Healthcare, indigenous system of medicine, historical development of hospitals in India and different systems of Medicine available.

Teaching and Learning Strategies

- Lectures, discussions, presentations, case discussions, exercises, practical and exposure to current practices. The pedagogy for the course is more student centric; Visit to healthcare facilities.
- Lectures would be delivered by experts drawn from the fields of both management and healthcare

Content of the Module

| Unit | Unit wise weightage of marks (in %) | C&K* | A&A** |
|---|-------------------------------------|------|-------|
| Unit 1: History of Indian Healthcare | 25 | √ | √ |
| Unit 2: Evolution of Hospitals in India- | 25 | √ | √ |
| Unit 3: Introduction to Healthcare Delivery System in India | 20 | √ | √ |
| Unit 4: Introduction to Hospital Departments | 15 | √ | √ |
| Unit 5: Current Trends in Healthcare Industry | 15 | √ | √ |

*C&K- Comprehension & Knowledge **A&A – Analysis & Application

Unit-1-History of Indian Healthcare-Healthcare in Ancient Period & Medieval Period , history and introduction of Ayurveda, Yoga, Naturopathy, Unani, Siddha & homeopathy, role of AYUSH-integration of 6 indigenous systems of medicines practiced in India

Unit 2- Evolution of Hospitals in India-hospitals in ancient India, historical development of hospitals, Systems of medicine, Modern medicine, changing concept of hospitals, present status of hospitals (public & private) in India, Classification of Hospitals, Hospital as System, Hospital Organization, Overview on Healthcare facilities

Unit 3- Introduction to Healthcare Delivery System in India-Definition of Health, healthcare delivery system in India, Importance of Voluntary health agencies and health programs in delivering healthcare in India, Dimension of health, Spectrum of health, Determination of health and Indicators of Health, Levels of prevention, and modes of intervention for diseases and condition **Unit-4**-

Introduction to Hospital Departments :-Detailed Clinical services Detailed Support Services, Detailed Utility Services.

Unit-5-Current Trends in Healthcare Industry

1. Healthcare Industry – An Overview
2. Changing Healthcare - Determinants
3. Current Trends
 - Medical Tourism or, Medical Value Travel
 - Public private partnership (PPP)

- Information Technology and Health Care, Telemedicine, Video Conferencing, Bioinformatics, Robotic Surgery
- Health Insurance and TPA's

Assessment & Evaluation

Student learning outcomes and competencies will be assessed using a combination of formative and summative methods including:

1. Objective/knowledge testing,
2. Competency based evaluation using validated assessment tools and practical skill demonstration in clinical settings.

Projects/assignments with a grading scale emphasizing module competencies

Resource Materials

Business Journals, Healthcare status reports

Books-

1. Public Healthcare in India-Historical background & Current Realities by Sanjay Kumar & Jugal Kishore
2. History of Indian Medicine by Girindranath Mukhopadhyaya
3. Hospital Management by K.V.Ramani
4. Management of Hospital (4 Vols), S.L Goel & R. Kumar, Deep & Deep Publications Pvt. Ltd.

DSC-2

Human Body-Basics-Anatomy and Physiology

Credits: 4

Course Objectives:

Demonstrate skilled, safe, effective and sensitive practice in the care of patients approaching front office

Teaching and Learning Strategies:-

Class room sessions, interactive learning, Models, Simulation

Content of the Module

| Unit | Unit wise weightage of marks (in %) | C&K* | A&A** |
|---------------------------------------|-------------------------------------|------|-------|
| Unit 1: Introduction to Human Biology | 20 | √ | √ |
| Unit 2: Organ Systems-1 | 40 | √ | √ |
| Unit 3: Organ Systems-2 | 40 | √ | √ |

*C&K- Comprehension & Knowledge **A&A – Analysis & Application

Basic structure, function & common associated diseases of the following:

Unit-1 - Introduction to Human Biology: – Cell, Tissues and Organs (10 hours)

Unit-2 - Organ Systems-1

- Skeletal System - Bones, cartilage, tendons and ligaments
- Muscular System - Skeletal muscles and smooth muscles throughout the body
- Circulatory System - Heart, blood vessels and blood
- Nervous System - Brain, spinal cord and peripheral nerves
- Respiratory System - Nose, trachea and lungs

Unit-3-Organ Systems-2

- Digestive System - Mouth, esophagus, stomach, small and large intestines
- Excretory System: - Kidneys, ureters, bladder and urethra
- Endocrine System: - hypothalamus, pituitary, thyroid, pancreas and adrenal glands, etc
- Reproductive System: Male & Female Reproductive System
- Lymphatic/Immune System - Lymph, lymph nodes and vessels, White blood cells, T- and B-cells.

Assessment & Evaluation

Student learning outcomes and competencies will be assessed using a combination of formative and summative methods including:

- Objective/knowledge testing,
- Competency based evaluation using validated assessment tools and practical skill demonstration in both lab and clinical settings.

Projects/assignments with a grading rubric/scale emphasizing module competencies

Resource Materials

Textbooks, and on-line reference and training materials

Books:-Human Anatomy and Physiology by Dr.A.K.Jain

Basic Anatomy & Physiology by N.Murugesh

DSC-3

Medical Terminology-1

Credits: 4

Course Objectives:

Includes structure, recognition, analysis, definition, spelling, pronunciation, and combination of medical terms from prefixes, suffixes, roots, and combining forms.

Teaching and Learning Strategies:-

Class room sessions, interactive learning, Role plays

Content of the Module

| Unit | Unit wise weightage of marks (in %) | C&K* | A&A** |
|--|-------------------------------------|------|-------|
| Unit 1: Building Blocks of Medical Terminologies | 30 | √ | √ |
| Unit 2: General Body Terminology | 40 | √ | √ |
| Unit 3: Pharmacology | 30 | √ | √ |

*C&K- Comprehension & Knowledge **A&A – Analysis & Application

Unit-1-Building Blocks of Medical Terminologies (10 hours)

- Roots
- Prefixes
- Suffixes
- Pronunciation rules

Unit-2-General Body Terminology (10 hours)

- Medical Terms related to different organ systems

Unit-3-Pharmacology (10 hours)

- Prescriptions and OTC medications
- Routes of Administration
- Medication actions and effects
- Abbreviations

Assessment & Evaluation

Student learning outcomes and competencies will be assessed using a combination of formative and summative methods including:

1. Objective/knowledge testing,
2. Competency based evaluation using validated assessment tools and practical skill demonstration.

Projects/assignments with a grading rubric/scale emphasizing module competencies

Resource Materials

Reference texts and online material

Books:-STEDMAN'S Medical Dictionary

Medical Terminology For Dummies by Beverley Henderson, Jennifer lee Dorsey

Introduction to Medical Terminology by Linda Stanhope, Kimberly Turnbull

GE-1

Computer Fundamentals

Credit- 4

Course Objectives:

Create basic understanding of computer fundamentals and its uses.

Teaching and Learning Strategies

- Lectures, discussions, presentations, case discussions, exercises, practical and exposure to current practices. The pedagogy for the course is more students centric.

Content of the Module

| Unit | Unit wise weightage of marks (in %) | C&K* | A&A** |
|--|-------------------------------------|------|-------|
| Unit 1: Introduction | 20 | √ | √ |
| Unit 2 Devices: Input and output devices | 30 | √ | √ |
| Unit 3: Computer Organization and Architecture | 30 | √ | √ |
| Unit 4: Overview of Emerging Technologies | 20 | √ | √ |

*C&K- Comprehension & Knowledge **A&A – Analysis & Application

Unit 1:

- Introduction: Introduction to computer system, uses, types.
- Data Representation: Number systems and character representation, binary arithmetic
- Human Computer Interface: Types of software, Operating system as user interface, utility programs

Unit 2:

Devices: Input and output devices (with connections and practical demo), keyboard, mouse, joystick, scanner, OCR, OMR, bar code reader, web camera, monitor, printer, plotter

Memory: Primary, secondary, auxiliary memory, RAM, ROM, cache memory, hard disks, optical disks

Unit 3:

Computer Organisation and Architecture: C.P.U., registers, system bus, main memory unit, cache memory, Inside a computer, SMPS, Motherboard, Ports and Interfaces, expansion cards, ribbon cables, memory chips, processors.

Unit 4:

Overview of Emerging Technologies: Bluetooth, cloud computing, big data, data mining, mobile computing and embedded systems, Orientation to POS software(s).

Practical : The practical assignment must include connecting parts of a computer and assembling it to an extent, media formatting and installation of software

Assessment & Evaluation

Student learning outcomes and competencies will be assessed using a combination of formative and

summative methods including:

1. Objective/knowledge testing,
 2. Competency based evaluation using validated assessment tools and practical skill demonstration.
- Projects/assignments with a grading rubric/scale emphasizing module competencies

Suggested Readings-

- Goel, Computer Fundamentals, Pearson Education,2010.
- P. Aksoy, L. De Nardis, Introduction to Information Technology, Cengage Learning,2006
- P. K.Sinha, P. Sinha, Fundamentals of Computers, BPB Publishers,2007

GE-1

Principles of Management

Credit- 4

Course Objectives:

The course aims to equip learners with essential management related knowledge and skills and their applicability in real world.

Teaching and Learning Strategies

1. Understand the evolution of management and its significance
2. Comprehend and analyze applicability of managerial functions
3. Recognize the role of decision-making in business
4. Analyze the role of directing in management
5. Appreciate the function of controlling and contemporary issues in management

Content of the Module

| Unit | Unit wise weightage of marks (in %) | C&K* | A&A** |
|----------------------------------|-------------------------------------|------|-------|
| Unit 1: Principles of management | 25 | √ | √ |
| Unit 2 Management functions | 25 | √ | √ |
| Unit 3: Planning | 25 | √ | √ |
| Unit 4: Directing | 25 | √ | √ |

*C&K- Comprehension & Knowledge **A&A – Analysis & Application

Unit 1:

Principles of management - concept, nature and significance; Evolution of Management thought: Classical (Fayol's principles of management; Taylor's scientific management), Neoclassical (Hawthorne Experiments), Modern approach (Systems Approach; Contingency Approach).

Unit 2:

Management functions and their relationship- planning, organizing, staffing, directing and controlling; Functional areas of management – an overview; Coordination - concept, characteristics and importance.

Unit 3:

Planning- meaning, strategic and operations planning; Decision-making- concept, importance and bounded rationality; Organizing- division of labour & specialization; Organisational structures; Factors affecting organisational design.

Unit 4:

Directing- concept and importance; Concept and theories of Motivation- Maslow's need hierarchy, Herzberg's two-factor theory, Theory X&Y; Leadership-meaning and importance; Communication-meaning and importance; Staffing- concept, importance and process.

Assessment & Evaluation

Student learning outcomes and competencies will be assessed using a combination of formative and summative methods including:

1. Objective/knowledge testing,

2. Competency based evaluation using validated assessment tools and practical skill demonstration.
Projects/assignments with a grading rubric/scale emphasizing module competencies

Suggested Readings-

1. Drucker, P. F. (1954). The Practice of Management. Newyork: Harper & Row.
2. Drucker, P. F. (1999). Management Challenges for the 21st Century. Harper Collins Publishers Inc.
3. Griffin. Management Principles and Application. Cengage.
4. Koontz, H., & Weihrich, H. (2012). Essentials of Management: An International and Leadership Perspective. McGraw Hill Publications
5. Kumar, Pardeep. Management: Principles and Applications. JSR Publication House LP, Delhi.

Bachelor in Vocation - Software Development

Category-I

DISCIPLINE SPECIFIC CORE COURSE – 1: Programming using Python

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Programming using Python | 4 | 2 | 0 | 2 | Class XII pass with Mathematics | NIL |

Learning Objectives

1. To introduce the programming concepts using Python.
2. The course focuses on the development of Python programming to solve problems of different domains.
3. To introduce the concept of object- oriented programming.

Learning outcomes

1. Understand the basics of programming language
2. Develop, document, and debug modular Python programs.
3. Apply suitable programming constructs and built-in data structures to solve a problem.
4. Use and apply various data objects in Python.
5. Use classes and objects in application programs and handle files.

Unit I

(6 hours)

Introduction to Programming: Problem solving strategies; Structure of a Python program; Syntax and semantics; executing simple programs in Python.

Unit II

(6 hours)

Creating Python Programs: Identifiers and keywords; Literals, numbers, and strings; Operators; Expressions; Input/output statements; Defining functions; Control structures (conditional statements, loop control statements, break, continue and pass, exit function), default arguments.

Unit III

(6 hours)

Built-in data structures: Mutable and immutable objects; Strings, built-in functions for string, string traversal, string operators and operations; Lists creation, traversal, slicing and splitting operations,

Unit IV **(6 hours)**
Object Oriented Programming: Introduction to classes, objects and methods; Standard libraries.

1. Liang, Y. D. (2013). *Introduction to Programming using Python*. Pearson Education.
2. Kamthane, A. N., & Kamthane, A.A. (2017) *Programming and Problem Solving with Python*, McGraw Hill Education

1. WAP to find the roots of a quadratic equation.
2. WAP to accept a number 'n' to compute the following:
 - a. Check if 'n' is prime
 - b. Generate all prime numbers till 'n'
 - c. Generate first 'n' prime numbers
 - d. Calculate sum of first 'n' natural numbers
3. WAP to create a pyramid of the character '*' and a reverse pyramid

4. WAP that accepts a character and performs the following:
 - a. print whether the character is a letter or numeric digit or a special character
 - b. if the character is a letter, print whether the letter is uppercase or lowercase
 - c. if the character is a numeric digit, prints its name in text (e.g., if input is 9, output is NINE)
5. WAP to perform the following operations on a string
 - a. Find the frequency of a character in a string.
 - b. Replace a character by another character in a string.
 - c. Remove the first occurrence of a character from a string.
 - d. Remove all occurrences of a character from a string.
6. WAP to swap the first n characters of two strings.
7. Write a function that accepts two strings and returns the indices of all the occurrences of the second string in the first string as a list. If the second string is not present in the first string then it should return -1.
8. WAP to create a list of the cubes of only the even integers appearing in the input list (may have elements of other types also) using for loop and list comprehension.

9. WAP to read a file and
 - a. Print the total number of characters, words and lines in the file.
 - b. Calculate the frequency of each character in the file. Use a variable of dictionary type to maintain the count.
 - c. Print the words in reverse order.
 - d. Copy even lines of the file to a file named 'File1' and odd lines to another file named 'File2'.
10. WAP to define a class Point with coordinates x and y as attributes. Create relevant methods and print the objects. Also define a method distance to calculate the distance between any two point objects.
11. Write a function that prints a dictionary where the keys are numbers between 1 and 5 and the values are cubes of the keys.
12. Consider a tuple t1=(1, 2, 5, 7, 9, 2, 4, 6, 8, 10). WAP to perform following operations:
 - a. Print half the values of the tuple in one line and the other half in the next line.
 - b. Print another tuple whose values are even numbers in the given tuple.
 - c. Concatenate a tuple t2=(11,13,15) with t1.
 - d. Return maximum and minimum value from this tuple
13. WAP to accept a name from a user. Raise and handle appropriate exception(s) if the text entered by the user contains digits and/or special characters.

DISCIPLINE SPECIFIC CORE COURSE – 2: Computer Fundamentals

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Computer Fundamentals | 4 | 2 | 0 | 2 | Class XII pass with Mathematics | NIL |

Learning Objectives:

1. To introduce the fundamentals of computing devices.
2. To understand the use of computer hardware and software, the Internet, networking and mobile computing.
3. To focus on computer literacy that prepares students for life-long learning of computer concepts and skills.

Learning Outcomes:

1. Bridge the fundamental concepts of computers with the present level of knowledge of the students.

2. Familiarize operating systems, programming languages, peripheral devices, networking, multimedia and internet.
3. Understand binary number system.
4. Understand use of computers in education and research.

UNIT-I

(6 hours)

Computer Fundamentals: Generations of Computers, Definition, Block Diagram along with its components, characteristics & classification of computers, Limitations of Computers, Applications of computers in various Fields.

UNIT- II

(6 hours)

Data Representation: Number systems and character representation, binary arithmetic, definition of software, types of software, operating systems as user interface, utility programs.

UNIT-III

(6 hours)

Devices: Input-Output Devices (with connections and practical demo), memory, primary, secondary, auxiliary memory, RAM, ROM, cache memory, hard disk, optical disk.

UNIT-IV

(6 hours)

Computer Organization and Architecture: CPU, registers, system bus, main memory unit(MMU),cache memory, inside a computer, SMPS, motherboard, ports and interfaces, expansion code, ribbon cables, memory chips, processors, overview of emerging technology

UNIT-V

(6 hours)

Use of Computers in Education and Research: Data analysis, heterogeneous storage, e-Library, Google scholar, Domain specific packages such as SPSS, Mathematica etc.

Essential/Recommended readings:

1. *Balagurusamy E, Computing Fundamentals and C Programming, Tata McGraw Hill.*
2. *Norton, Peter, Introduction to Computer, McGraw-Hill*
3. *Leon, Alexis & Leon, Mathews, Introduction to Computers, Leon Tech World*

Practical Component (60 hours)

The practical assignment must include connecting parts of a computer and assembling it to an extent, media formatting and installation of some software. Practical exercises based on Open Office tools using document preparation and spreadsheets handling packages.

A. Text Editor

1. Prepare a **grocery list** having four columns (Serial number, the name of the product, quantity and price) for the month of April, 06.
- Font specifications for Title (Grocery List): 14-point Arial font in bold and italics.
 - The headings of the columns should be in 12-point and bold.
 - The rest of the document should be in 10-point Times New Roman.
 - Leave a gap of 12-points after the title.

2. Design a **time-table form** for your college.
 - The first line should mention the name of the college in 16-point Arial Font and should be bold.
 - The second line should give the course name/teacher's name and the department in 14-point Arial.
 - Leave a gap of 12-points.
 - The rest of the document should use 10-point Times New Roman font.
 - The footer should contain your specifications as the designer and date of creation.
3. Create the following **one page documents**.
 - a. Compose a note inviting friends to a get-together at your house, including a list of things to bring with them.
 - b. Design a certificate in landscape orientation with a border around the document.
 - c. Design a Garage Sale sign.
 - d. Make a sign outlining your rules for your bedroom at home, using a numbered list.
4. Create the following documents:
 - (a) A newsletter with a headline and 2 columns in portrait orientation, including at least one image surrounded by text.
 - (b) Use a newsletter format to promote upcoming projects or events in your classroom or college.
5. Convert **following text to a table**, using comma as delimiterType the following as shown

Color, Style, Item Blue, A980, Van Red, X023, Car
 Green, YL724, Truck Name, Age, Sex
 Bob, 23, M
 Linda, 46, F
 Tom, 29, M

B. Spreadsheet

1. Enter the Following data in Excel Sheet

REGIONAL SALES PROJECTION

| State | Qtr1 | Qtr2 | Qtr3 | QTR4 | QTR Total | Rate | Amount |
|------------------|------|------|------|------|-----------|------|--------|
| Delhi | 2020 | 2400 | 2100 | 3000 | | 15 | |
| Punjab | 1100 | 1300 | 1500 | 1400 | | 20 | |
| U.P. | 3000 | 3200 | 2600 | 2800 | | 17 | |
| Haryana | 1800 | 2000 | 2200 | 2700 | | 15 | |
| Rajasthan | 2100 | 2000 | 1800 | 2200 | | 20 | |
| TOTAL AVERAGE | | | | | | | |

- (a) Apply Formatting as follow:
 - i. Title in TIMES NEW ROMAN
 - ii. Font Size - 14
 - iii. Remaining text - ARIAL, Font Size -10
 - iv. State names and Qtr. Heading Bold, Italic with Gray Fill Color.

- v. Numbers in two decimal places.
- vi. Qtr. Heading in center Alignment.
- vii. Apply Border to whole data.
- (b) Calculate State and Qtr. Total
- (c) Calculate Average for each quarter
- (d) Calculate Amount = Rate * Total.

2. Given the following worksheet

| | A | B | C | D |
|---|----------|-----------|-------|-------|
| 1 | Roll No. | Name | Marks | Grade |
| 2 | 1001 | Sachin | 99 | |
| 3 | 1002 | Sehwag | 65 | |
| 4 | 1003 | Rahul | 41 | |
| 5 | 1004 | Sourav | 89 | |
| 6 | 1005 | Harbhajan | 56 | |

Calculate the grade of these students on the basis of following guidelines:

| <u>If Marks</u> | <u>Then Grade</u> |
|-----------------|-------------------|
| ≥ 80 | A+ |
| $\geq 60 < 80$ | A |
| $\geq 50 < 60$ | B |
| < 50 | |

3. Given the following worksheet

| | A | B | C | D | E | F | G |
|---|-----------------|-----------------------|------|-------|-------|-------|------------|
| 1 | Salesman | Sales in (Rs.) | | | | | |
| 2 | No. | Qtr1 | Qtr2 | Qtr3 | Qtr4 | Total | Commission |
| 3 | S001 | 5000 | 8500 | 12000 | 9000 | | |
| 4 | S002 | 7000 | 4000 | 7500 | 11000 | | |
| 5 | S003 | 4000 | 9000 | 6500 | 8200 | | |
| 6 | S004 | 5500 | 6900 | 4500 | 10500 | | |
| 7 | S005 | 7400 | 8500 | 9200 | 8300 | | |
| 8 | S006 | 5300 | 7600 | 9800 | 6100 | | |

Calculate the commission earned by the salesmen on the basis of following Candidates:

| <u>If Total Sales</u> | <u>Commission</u> |
|-------------------------|-------------------|
| < 20000 | 0% of sales |
| > 20000 and < 25000 | 4% of sales |
| > 25000 and < 30000 | 5.5% of sales |
| > 30000 and < 35000 | 8% of sales |
| ≥ 35000 | 11% of sales |

The total sales is sum of sales of all the four quarters.

4. A company XYZ Ltd. pays a monthly salary to its employees which consists of basic salary, allowances & deductions. The details of allowances and deductions are as follows:

Allowances

- HRA Dependent on Basic :
30% of Basic if Basic \leq 1000
25% of Basic if Basic $>$ 1000 & Basic \leq 3000
20% of Basic if Basic $>$ 3000
- DA Fixed for all employees :
30% of Basic
- Conveyance Allowance :
Rs. 50/- if Basic is \leq 1000
Rs. 75/- if Basic $>$ 1000 & Basic \leq 2000
Rs. 100 if Basic $>$ 2000
- Entertainment Allowance :
NIL if Basic is \leq 1000
Rs. 100/- if Basic $>$ 1000

Deductions

- Provident Fund :
6% of Basic
- Group Insurance Premium :
Rs. 40/- if Basic is \leq 1500
Rs. 60/- if Basic $>$ 1500 & Basic \leq 3000
Rs. 80/- if Basic $>$ 3000

Calculate the following:

Gross Salary = Basic + HRA + DA + Conveyance + Entertainment

Total deduction = Provident Fund + Group Insurance Premium

Net Salary = Gross Salary – Total Deduction

5. The following table gives year wise sale figure of five salesmen in Rs.

| Salesman | 2000 | 2001 | 2002 | 2003 |
|----------|-------|-------|--------|-------|
| S1 | 10000 | 12000 | 20000 | 50000 |
| S2 | 15000 | 18000 | 50000 | 60000 |
| S3 | 20000 | 22000 | 70000 | 70000 |
| S4 | 30000 | 30000 | 100000 | 80000 |
| S5 | 40000 | 45000 | 125000 | 90000 |

- (a) Calculate total sale year wise.
- (b) Calculate the net sale made by each salesman
- (c) Calculate the maximum sale made by the salesman
- (d) Calculate the commission for each salesman under the condition.
 - (i) If total sales $>$ 4, 00,000 give 5% commission on total sale made by the salesman.
 - (ii) Otherwise give 2% commission.
- (e) Draw a bar graph representing the sale made by each salesman.
- (f) Draw a pie graph representing the sale made by salesman in 2000.

DISCIPLINE SPECIFIC CORE COURSE – 3: Mathematics for Computing - I

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-------------------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Mathematics for Computing - I | 4 | 3 | 1 | 0 | Class XII pass with Mathematics | NIL |

Learning Objectives:

1. To introduce the fundamental concepts and topics of linear algebra and vector calculus.
2. To build the foundation for some of the core courses in later semesters.

Learning Outcomes:

1. Perform operations on matrices and sparse matrices.
2. Compute the determinant, rank and eigenvalues of a matrix.
3. Perform operations on vectors, the dot product and cross product.
4. Represent vectors geometrically and calculate the gradient, divergence, curl.
5. Apply linear algebra and vector calculus to solve problems in sub-disciplines of computer science.

Unit I

(12 hours)

Introduction to Matrix Algebra: Echelon form of a Matrix, Rank of a Matrix, Determinant and Inverse of a matrix, Solution of System of Homogeneous & Non-Homogeneous Equations: Gauss elimination and Solution of System of Homogeneous Equations: Gauss Jordan Method.

Unit II

(16 hours)

Vector Space and Linear Transformation: Vector Space, Sub-spaces, Linear Combinations, Linear Span, Convex Sets, Linear Independence/Dependence, Basis & Dimension, Linear transformation on finite dimensional vector spaces, Inner Product Space, Schwarz Inequality, Orthonormal Basis, Gram-Schmidt Orthogonalization Process.

Unit III

(16 hours)

EigenValue and EigenVector: Characteristic Polynomial, Cayley Hamilton Theorem, Eigen Value and Eigen Vector of a matrix, Eigenspaces, Diagonalization, Positive Definite Matrices, Applications to Markov Matrices

Unit IV

(16 hours)

Vector Calculus: Vector Algebra, Laws of Vector Algebra, Dot Product, Cross Product, Vector and Scalar Fields, Ordinary Derivative of Vectors, Space Curves, Partial Derivatives, Del Operator, Gradient of a Scalar Field, Directional Derivative, Gradient of Matrices, Divergence of a Vector Field, Laplacian

Operator, Curl of a Vector Field.

Essential/Recommended readings:

1. *Gilbert Strang, Introduction to Linear Algebra, 5th Edition, Wellesley-Cambridge Press, 2021.*
2. *Erwin Kreyszig, Advanced Engineering Mathematics, 10th Edition, Wiley, 2015.*
3. *Gilbert Strang, Linear Algebra and Learning from Data, 1st Edition, Wellesley-Cambridge Press, 2019.*
4. *R. K. Jain, S. R. K. Iyengar, Advanced Engineering Mathematics, 5th Edition, Narosa, 2016.*

COMMON POOL OF GENERIC ELECTIVES COURSES

GENERIC ELECTIVE – 1: Web Designing (HTML, CSS and PHP)

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) | Department offering the course |
|-----------------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|--------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| Web Designing (HTML, CSS and PHP) | 4 | 2 | 0 | 2 | 12 th Pass | NIL | |

Learning Objectives

1. The course aims at introducing the basic concepts and techniques of client side web programming.
2. The student shall be able to develop simple websites using HTML, CSS and JavaScript.

Learning Outcomes:

1. Understanding of the principles of creating an effective web page, including an in-depth consideration of information architecture.
2. Apply intermediate and advanced web development practices.
3. Implement basic JavaScript.
4. Create webpages that function using external data.
5. Basic understanding of PHP.

Unit 1: Introduction to Internet

(6 hours)

Concept of WWW, internet and WWW, protocols and programs, secure connections, application and development tools, web browser, URL, web server, web site designing principles, Domain Name.

Unit-2: Introduction to HTML

(6 hours)

Development process, HTML Tags and Attributes, HTML Basic Tags, forms and website structure, HTML Color Coding, Div and Span Tags, hyperlinks, lists, tables, images, URL, character entities, frames and frame sets, overview and features of HTML5.

Unit-3: Cascading Style Sheets (CSS)

(6 hours)

Introduction to CSS, Features and benefits of CSS, basics, CSS syntax and structure, using and linking CSS, using selectors, background images, colors and properties, manipulating texts, using fonts, borders and boxes, margins, padding lists, positioning using CSS and CSS2, overview and features of CSS3.

Unit-4: Introduction to JavaScript

(6 hours)

JavaScript Introduction, JavaScript Output, JavaScript Variables, JavaScript Operators, JavaScript

Arithmetic, JavaScript Data Types, JavaScript Assignment, JavaScript Functions, JavaScript Objects, JavaScript Scope, JavaScript Events, JavaScript Strings and String Methods, JavaScript Numbers and Number Methods, JavaScript Math, JavaScript Dates: Formats and Methods, JavaScript Booleans , JavaScript Comparisons, JavaScript Conditions, JavaScript Switch, JavaScript Loops, JavaScript Break, JavaScript Type, JavaScript Forms (API and Validation), JavaScript Objects, JavaScript Functions, JavaScript DOM, JavaScript Browser BOM, JavaScript Frameworks

Unit-5: Introduction to PHP

(6 hours)

Introduction and basic syntax of PHP, Installing PHP, PHP Variables, PHP Data Types, PHP Strings, PHP Constants, PHP Operators, PHP Programming Loops, PHP Functions, PHP Arrays, PHP Forms and PHP Form Handling, PHP Form Validation.

Essential/recommended readings:

1. Robin Nixon, *Learning PHP, MYSQL, JavaScript, CSS & HTML5 3ed: A Step-by-Step Guide to Creating Dynamic Websites*, O'Reilly
2. Jon Duckett, *HTML and CSS: Design and Build Websites*, Wiley.
3. Jon Duckett, *JavaScript and JQuery: Interactive Front-End Web Development*, Wiley.
4. Jennifer Niederst Robbins, *Learning Web Design: A Beginner's Guide to HTML, CSS, JavaScript, and Web Graphics*, O'reilly.
5. Dt Editorial Services, *Html 5 Black Book - Covers CSS 3, JavaScript, XML, XHTML, AJAX, PHP and JQuery*, DreamTech Press Publication.

Practical Component: (60 hours)

1. Design a home page which displays information about your college department using headings, HTML entities and paragraphs.
2. Implement different types of list tags, hyperlinks, marquee tag and HTML formatting tags in the college department homepage.
3. Create a web page having two frames, Frame 1 containing links and another with contents of the link. When a link is clicked appropriate contents should be displayed on Frame 2. Also, insert an iframe in the same page.
4. Design your course timetable and display it in tabular format.
5. Design an admission form for any course in your college with text, password fields, drop-down list, check-boxes, and radio buttons, submit and reset button etc. with proper CSS formatting.
6. Create a website for online book stores with Home, Login, Catalogue, Registration page with links to all these pages in a menu on top of every page. Embed heading, paragraph, images, video, .iframe, form controls, table, and list in this website. Use both Internal and external CSS in this.
7. Write a JavaScript program to display the current day and time.
8. Write a JavaScript program to
 - a) Remove a character at the specified position of a given string and return the new string.
 - b) Change the case of a string. (I.e. upper case to lower case and vice-versa).
9. Write a JavaScript program to compute the sum of elements of a given array of integers.
10. Develop and demonstrate a HTML file that includes JavaScript script for taking full name in a text field and display first, middle, last name *in 3 different labels. Middle and last name may be optional, thus messages like "NA" should be displayed in corresponding labels. If input contains 2 words, then they should be considered as first and last names.

11. Design HTML form for keeping student record, apply JavaScript validation for restriction of mandatory fields, numeric field, email-address field, specific value in a field etc.
12. Write a JavaScript code that displays text "Bigger Text" with increasing font size in the interval of 10ms in red color, when the font size reaches 50 pt. it displays "Smaller Text" in green color. Then the font size should decrease to 5pt and then stop.
13. Write a PHP script that removes the whitespaces from a string.
14. Create a login page having user name and password. On clicking submit, a welcome message should be displayed if the user is already registered (i.e.name is present in the database) otherwise error message should be displayed.
15. Create a simple 'birthday countdown' script, the script will count the number of days between current day and birth day.

GENERIC ELECTIVE – 2: Database Management Systems

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) | Department offering the course |
|-----------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|--------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| Database Management Systems | 4 | 2 | 0 | 2 | 12 th Pass | NIL | |

Learning Objectives:

1. To introduce the fundamentals of database management system and its architecture.
2. Students will learn about the importance of database structure and it's designing using conceptual approach using Entity Relationship Model and formal approach using Normalization.
3. The course would give students hands-on practice of structured query language in a relational database management system.

Learning Outcomes

1. Identify the basic concepts and various data model used in database design.
2. Use relational database management software to create and manipulate the database.
3. ER modelling concepts and architecture use and design queries using SQL.
4. Create conceptual data models using entity relationship diagrams for modelling real-life situations and map it to corresponding relational database schema.
5. Use the concept of functional dependencies to remove redundancy and update anomalies.
6. Implement relational databases and formulate queries for data retrieval and data update problems using SQL.
7. Use of PHP to connect with database and understand how to design web applications.

Unit-1: (6 hours)

Introduction and applications of DBMS, Basic Concepts: DBMS Architecture, Data Independence, Data modelling for a database, abstraction and data integration, three level architecture of a DBMS, Database users and DBA.

Unit-2: (6 hours)

Database Design: Entities and attributes, Entity types, Entity set, Attribute and keys, Defining the E-R diagram, Concept of Generalization, Aggregation and Specialization.

Unit-3: (6 hours)

Relational Model: Relational Data Manipulations: Relation, conversion of ER diagrams to relations, integrity constraints, Functional dependencies and Normalization.

Unit-4: (6 hours)

Structured Query Language: DDL, DML, DDL queries like create database, drop database, create table, drop table, alter table.

DML Queries like inserting into a table, update a table, delete data from table, and filter data. Create relationships between tables, SQL sub queries, SQL clauses, SQL aggregate functions, SQL Joins.

Unit-5: (6 hours)

PHP with MYSQL: PHP MYSQL Database, PHP Connecting to Database, PHP Creating Records, PHP Selecting Records, PHP Deleting Records, PHP Updating Records, PHP Limit Data, PHP Insert Multiple.

Essential/recommended readings:

1. R. Elmasri, S.B. Navathe Database Systems Models, Languages, Design and application Programming, 7th Edition, Pearson Education.
2. R. Ramakrishnan and J. Gehrke, Database Management Systems, 3rd Edition, McGraw Hill, 2014.
3. A. Silberschatz, H. Korth and S. Sudarshan, Database System Concepts, 6th Edition, McGraw Hill, 2014.
4. Robin Nixon, Learning PHP, MYSQL, JavaScript, CSS & HTML5 3ed: A Step-by-Step Guide to Creating Dynamic Websites, O'Reilly.

Practical component: (60 hours)

1. Create a database having two tables with the specified fields, to computerize a library system of a Delhi University College.

- LibraryBooks (Accession number, Title, Author, Department, PurchaseDate, Price)
- IssuedBooks (Accession number, Borrower)

a) Identify primary and foreign keys. Create the tables and insert at least 5 records in each table.

b) Delete the record of a book titled “Database System Concepts”.

c) Change the Department of the book titled “Discrete Maths” to “BVoc”.

d) List all books that belong to the “BVoc” department.

e) List all books that belong to the “BVoc” department and are written by author “Navathe”.

f) List all computers (Department = “BVoc”) that have been issued.

g) List all books which have a price less than 500 or purchased between “01/01/2022” and “31/12/2022”.

2. Create a database having three tables to store the details of students of Computer Department in your college, as per the given schema.

- Personal information about Student (College roll number, Name of student, Date of birth, Address, Marks(rounded off to whole number) in percentage at 10 + 2, Phone number)
- Paper Details (Paper code, Name of the Paper)
- Student's Academic and Attendance details (College roll number, Paper code, Attendance, Marks in home examination).

- a) Identify primary and foreign keys. Create the tables and insert at least 5 records in each table.
- b) Design a query that will return the records (from the second table) along with the name of student from the first table, related to students who have more than 75% attendance and more than 60% marks in paper 2.
- c) List all students who live in "Delhi" and have marks greater than 60 in paper 1.
- d) Find the total attendance and total marks obtained by each student.
- e) List the name of student who has got the highest marks in paper 2

3. Create the following tables and answer the queries given below:

- Customer (CustID, email, Name, Phone, ReferrerID)
- Bicycle (BicycleID, DatePurchased, Color, CustID, ModelNo) BicycleModel (ModelNo, Manufacturer, Style)
- Service (StartDate, BicycleID, EndDate)

- a) Identify primary and foreign keys. Create the tables and insert at least 5 records in each table.
- b) List all the customers who have the bicycles manufactured by manufacturer "Honda".
- c) List the bicycles purchased by the customers who have been referred by customer "C1".
- d) List the manufacturer of red colour bicycles.
- e) List the models of the bicycles given for service.

4. Create the following tables, enter at least 5 records in each table and answer the queries given below.

- EMPLOYEE (Person_Name, Street, City) WORKS (Person_Name, Company_Name, Salary)
- COMPANY (Company_Name, City)
- MANAGES (Person_Name, Manager_Name)

- a) Identify primary and foreign keys.
- b) Alter table employee, add a column "email" of type varchar (20).
- c) Find the name of all managers who work for both Samba Bank and NCB Bank.
- d) Find the names, street address and cities of residence and salary of all employees who work for "Samba Bank" and earn more than \$10,000.
- e) Find the names of all employees who live in the same city as the company for which they work.
- f) Find the highest salary, lowest salary and average salary paid by each company.
- g) Find the sum of salary and number of employees in each company.
- h) Find the name of the company that pays the highest salary.

5. Create the following tables, enter at least 5 records in each table and answer the queries given below.

- Suppliers (SNo, Sname, Status, SCity)
- Parts (PNo, Pname, Colour, Weight, City)
- Project (JNo, Jname, Jcity)
- Shipment (Sno, Pno, Jno, Quantity)

- a) Identify primary and foreign keys.

- b) Get supplier numbers for suppliers in Paris with status>20.
- c) Get supplier details for suppliers who supply part P2. Display the supplier list in increasing order of supplier numbers.
- d) Get suppliers names for suppliers who do not supply part P2.
- e) For each shipment get full shipment details, including total shipment weights.
- f) Get all the shipments where the quantity is in the range 300 to 750 inclusive.
- g) Get part nos. for parts that either weigh more than 16 pounds or are supplied by suppliers S2, or both.
- h) Get the names of cities that store more than five red parts.
- i) Get full details of parts supplied by a supplier in London.
- j) Get part numbers for parts supplied by a supplier in London to a project in London. k) Get the total number of projects supplied by a supplier (say, S1).
- k) Get the total quantity of a part (say, P1) supplied by a supplier (say, S1)

BVOC –Banking, Financial Services and Insurance

Category-I

BVOC –Banking, Financial Services and Insurance course for Undergraduate Programme of study with Banking, Financial Services and Insurance as a Single Core Discipline

DISCIPLINE SPECIFIC CORE COURSE – 1: Basics of Financial Accounting

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basics of Financial Accounting | 4 | 3 | 0 | 1 | Class XII pass | NIL |

Learning Objective

The basic purpose of this course is to develop an insight of postulates, principles and techniques of accounting and application of financial and accounting information for planning, decision-making and control.

Learning Outcomes

After completion of the course, learners will be able to:

1. Describe various accounting concepts and principles while recording transactions and preparing financial statements;
2. Measure business income applying relevant Accounting Standards;
3. Prepare cash book and other accounts necessary while running a business;
4. Prepare financial statements of sole proprietors and partnership firms; and
5. Understand and analyse financial statements from the perspective of different stakeholders using ratio analysis.

SYLLABUS OF DSC-1

Unit I

(9 hours)

Introduction to Financial Accounting: Accounting as an Information System. Importance, Scope, and Limitations. Users of Accounting Information. Need for Generally Accepted Accounting Principles. Basic Concepts and Conventions: Business Entity, Dual Aspect, Going Concern, Accounting Period, Money Measurement, Accrual, Disclosure, Materiality, Consistency, and Conservatism. The Accounting Equation. Understanding Assets, Liabilities, Revenues, and Expenses. Understanding Capital Expenditure, Revenue Expenditure, Deferred Revenue

Expenditure, Capital Receipts, and Revenue Receipts. Nature of Accounts and Rules of Debit and Credit. Recording Transactions in General Journal. Journal entries passed for accounting of transactions including GST. Preparation of Ledger Accounts. Opening and Closing Entries. Preparation of Trial Balance. Recording Transactions in three-column Cash Book.

Unit II (9 hours)

Bank Reconciliation Statement, Need for Bank Reconciliation; Causes of Differences; Preparation of Bank Reconciliation Statement; How to prepare a Bank Reconciliation Statement when Extracts of Cash Book and Pass Book are given; adjusting the Cash Book Balance; Advantages of Bank Reconciliation Statement. Preparation of Financial Statements: Preparing Trading Account, Profit & Loss Account and Balance.

Unit III (9 hours)

Accounting standards: Concept, benefits and Process of formulation of Accounting Standards including Ind AS (IFRS converged standards) and IFRSs; convergence vs. adoption; Application of accounting standards (AS and Ind AS) on various entities in India. International Financial Accounting Standards (IFRS) – meaning, need and scope; Process of issuing IFRS. Understanding of financial Statements of a Joint Stock Company as per Companies Act 2013. Understanding the contents of a Corporate Annual General Report.

Unit IV (9 hours)

Analysing Financial Statement : Objectives of Financial Statement Analysis; Sources of information; Standards of Comparison; Techniques of financial statement Analysis- Horizontal Analysis and Vertical Analysis; Meaning and usefulness of Financial Ratios; Analysis of financial ratios from the perspective of different Stakeholders like investors, Lenders, Short-term creditors: Profitability ratios, Solvency Ratios, Liquidity Ratios and turnover Ratios; Limitations of Ratio Analysis; Concept of Earning Management and its Detection.

Unit V (9 hours)

Computerized Accounting Systems: Computerized Accounts by using any popular accounting software Creating a Company; Configure and Features settings; Creating Accounting Ledgers and Groups; Creating Stock Items and Groups; Vouchers Entry; Generating Reports - Cash Book, Ledger Accounts, Trial Balance, Profit and Loss Account, Balance Sheet, and Cash Flow Statement. Selecting and shutting a Company; Backup, and Restore data of a Company.

Practical component- (30 hours)

Students will perform practical problems based upon the concepts given in theory and practice the same on any accounting software.

Suggested Readings:

- Anthony, R. N., Hawkins, D., & Merchant, K. A. “Accounting: Text and Cases” McGrawHill Education India.
- Dam, B. B., & Gautam, H. C. “Financial Accounting” Gayatri Publications, Guwahati.

- Goldwin, N., Alderman, W., & Sanyal, D. “Financial Accounting” Cengage Learning, Boston.
- Kumar, A. “Financial Accounting” Singhal Publication.
- Lal, J., Srivastava, S. & Abrol. Shivani. “Financial Accounting Text & Problems” Himalaya Publishing House, Mumbai.
- Maheshwari, S. N., Maheshwari, S. K., & Maheshwari, S. K. “Financial Accounting” Vikas Publishing House Pvt. Ltd., New Delhi.
- Monga, J. R. & Bahadur, R. “Financial Accounting: Concepts and Applications” Scholar Tech Press, New Delhi.
- Sehgal, A. & Sehgal D. “Fundamentals of Financial Accounting” Taxmann.
- Sehgal, D. “Financial Accounting” Vikas Publishing House Pvt. Ltd., New Delhi.
- Tulsian, P. C. “Financial Accounting” S CHAND LTD., New Delhi.

Additional Resources:

- Accounting Standards at the Website of the Institute of Chartered Accountants of India
- Indian Accounting Standards at the Website of the Ministry of Corporate Affairs.

Teaching Learning Process:

Class room lecture, Numerical Problem solving, Case study discussion, Class presentation on the assigned topic by students individually or in group, Workshop, Tutorials, Role play.

Assessment

Total Marks: 100

Internal Assessment: 25 Marks

End Semester University Exam: 75 Marks (including practical of 20 marks)

The Internal Assessment for the course may include Class participation, Assignments, Class test Projects, Field Work, Presentations, amongst others as decided by the faculty.

Keywords: Accounting, Financial Statements, Final Accounts, Computerized Accounting, IFRS

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2: Business Organisation and Management

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Business Organisation and Management | 4 | 3 | 1 | 0 | Class XII pass | NIL |

Learning Objective

The basic purpose of this course is to acquaint learners with the basics of business concepts and functions, forms of business organization, and Dimensions & Modes of management.

Learning Outcomes

After completion of the course, the learners will be able to:

1. Distinguish and explain each form of business.
2. Understand issues of business organization.
3. Understand and explain the basics of management.
4. Explain dimensions and mode of management implemented in the organization.

SYLLABUS OF DSC-2

UNIT-I: Introduction to Business Organisation and Management (12 hours)

Meaning and role of organisations and management in our lives; Relationship between organisation and management; Overview of functions of management; Multiple perspectives of business organisations- Consumers, Employees, Entrepreneurs, Community/Society at large; Perspective as a student & researcher- underlying disciplines; Ownership forms; Business formats- Brick & Mortar; Click; Brick & Click; Franchising location & scale- local, national, global; Micro, small, medium and large.

UNIT-II: Business Environment and Entrepreneurship (12 hours)

Meaning, layers (micro/immediate, meso/intermediate, macro and international), characteristics of business friendly environment; Ideals of business ethics, social responsibility and conscientious commerce; Business and social entrepreneurship as a process of opportunity/problem recognition and their realization/resolution.

UNIT-III: Planning and Organizing (12 hours)

Planning- meaning of project, strategic and operations planning; Decision-making process and techniques; Organizing- orderly division of labour & specialization; Organisational structures and organograms- staffed/manned structures-traditional and modern.

UNIT-IV: Directing and Controlling

(12 hours)

Motivation- needs (including Maslow's theory), incentives, rewards, equity and two factor theory (Herzberg); Leadership and followership- meaning and importance; Organisation-wide leadership; Communication- meaning and importance; determinants of effectiveness; Principles of controlling; Relationship between planning, organizing, directing & controlling; Financial, quality and operating standards/controls.

UNIT-V: Salient Development and Contemporary Issues in Management

(12 hours)

Subaltern management ideas from India; Diversity & inclusion, democracy and sociocracy at work; Freelancing; Flexi-time and work from home; Co-sharing/coworking.

Suggested Readings:

- Basu, C. (2017). Business Organisation and Management. McGraw Hill Education.
- Drucker, P. F. (1954). The Practice of Management. Newyork: Harper & Row.
- Kaul, V. K. (2012). Business Organisation Management. Pearson Education .
- Koontz, H., & Weihrich, H. (2012). Essentials of Management: An International and Leadership Perspective. Paperback.

Assessment

Total Marks: 100

Internal Assessment: 25 Marks

End Semester University Exam: 75 Marks

The Internal Assessment for the course may include Class participation, Assignments, Class test Projects, Field Work, Presentations, amongst others as decided by the faculty.

Keywords: Business organization, Decision Making, Management, Sociocracy.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 3: Business Economics

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Business Economics | 4 | 3 | 1 | 0 | Class XII pass | NIL |

Learning Objective

The objective of this course is to acquaint the students with the concepts and techniques used in the field of economics and to enable them to apply this knowledge in business decision-making.

Learning Outcomes

After completion of the course, learners will be able to:

1. Explain different theories of managerial economics.
2. Evaluate the effectiveness of various models and theories of managerial economics in demand, supply, production and costs related decision making procedures.
3. Understand the choices made by a rational consumer.
4. Explain relationships between production and costs.
5. Define key characteristics and consequences of different forms of markets.

SYLLABUS OF DSC-3

Unit I (12 hours)

Scope and Importance of Business Economics - basic tools- Opportunity Cost principle Incremental and Marginal Concepts. Basic economic relations – functional relations: equations- Total, Average and Marginal relations- use of Marginal analysis in decision making, The basics of market demand, market supply and equilibrium price- shifts in the demand and supply curves and equilibrium.

Unit II (16 hours)

Demand Analysis: Demand Function - nature of demand curve under different markets Meaning, significance, types and measurement of elasticity of demand (Price, income cross and promotional) - relationship between elasticity of demand and revenue concepts. Demand estimation and forecasting: Meaning and significance - methods of demand estimation: survey and statistical methods (numerical illustrations on trend analysis and simple linear regression).

Unit III (16 hours)

Supply and Production Decisions and Cost of Production: Production function: short run analysis with Law of Variable Proportions- Production function with two variable inputs- 22 isoquants, ridge lines and least cost combination of inputs- Long run production function and Laws of

Returns to Scale - expansion path -Economies and diseconomies of Scale. Cost concepts: Accounting cost and economic cost, implicit and explicit cost, fixed and variable cost - total, average and marginal cost - Cost Output Relationship in the Short Run and Long Run LAC and Learning curve - Break even analysis (with business applications).

Unit IV

(16 hours)

Pricing & Market Theory of pricing- cost plus pricing, target pricing, marginal cost pricing, going rate pricing; Objective of business firm, Concept of Market, classification of market- perfect competition, monopoly, monopolistic competition and oligopoly. Price determination and equilibrium of firm in different market situations; Factor pricing. Macro Aspect of Business Economics National Income and it's measurement, Gross National Product, Net National Product, Net National Income. Business Cycle phases and causes; Inflation and Deflation causes and remedial action; Consumption, Income, Savings and investment.

Suggested Readings:

- Ahuja, H. L. (2019). Theory of Micro Economics. New Delhi: Sultan Chand Publishing House.
- Koutsoyannis, A. (1975). Modern Microeconomics. London: Palgrave Macmillan.
- Chaturvedi, D. D., & Gupta, S. L. (2010). Business Economics Theory & Applications. New Delhi: International Book House Pvt. Ltd.
- Adhikari, M. (2000). Business Economics. New Delhi: Excel Books.
- Kennedy, M. J. (2010). Micro Economics. Mumbai: Himalaya Publishing House.
- Seth, M. L. (2017). Micro Economics. Agra: Lakshmi Narain Agarwal Educational Publishers.

Assessment

Total Marks: 100

Internal Assessment: 25 Marks

End Semester University Exam: 75 Marks

The Internal Assessment for the course may include Class participation, Assignments, Class test Projects, Field Work, Presentations, amongst others as decided by the faculty.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

13. Amendment to Appendix -II-A to the Ordinance V (2-A) of the Ordinances of the University vide EC Resolution 18-1-5 dated 18.08.2022 regarding Syllabi of 1st Semester of Departments under Faculty of Interdisciplinary & Applied Sciences

Sub: Amendment to Ordinance V

[E.C Resolution No. 18-1-5 dated 18.08.2022]

Following addition be made to Appendix-II-A to the Ordinance V (2-A) of the Ordinances of the University;

Add the following:

Syllabi of Semester-I of the following departments under Faculty of Interdisciplinary & Applied Sciences based on Under Graduate Curriculum Framework -2022 to be implemented from the Academic Year 2022-23.

DEPARTMENT OF BIOCHEMISTRY

BSc (H) Biochemistry

Category-I

DISCIPLINE SPECIFIC CORE COURSE -1 (DSC-1) – : Biomolecules

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------|---------|-----------------------------------|----------|---------------------|---|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Biomolecules DSC 1 | 4 | 2 | 0 | 2 | Class XII Science Combination I: Chemistry + Biology/ Biological Studies/ Biotechnology/ Biochemistry + | NIL |

| | | | | | | |
|--|--|--|--|--|---|--|
| | | | | | Physics OR Combination II: Chemistry + Biology/ Biological Studies/ Biotechnology/ Biochemistry + Mathematics | |
|--|--|--|--|--|---|--|

Learning Objectives

This paper will provide an understanding of biomolecules, the basic building blocks of living organisms, focusing on their structural underpinnings, unique properties of molecules, biological roles and functions for students. Emphasis will be on the association between structure and function of various biomolecules at a chemical level with a biological perspective and hands-on approach and laboratory techniques.

Learning outcomes

On successful completion of the course students will be:

- Able to comprehend the structure, function and acid-base properties of amino acids.
- Introduced to the structure, properties and roles of carbohydrates, lipids and nucleic acids.
- Aware of the importance of vitamins in biological systems.
- Able to independently identify various biomolecules in the laboratory by qualitative test methods.
- Acquainted with chemical and molecular foundations of life and appreciate the role of buffer in biological systems.

SYLLABUS OF DSC - 1

THEORY

Unit – 1

(07 Hours)

Amino acids: Amino acids as bifunctional molecules and their biological significance; Classification of amino acids (Standard, Semi-standard, Non-standard; Proteinogenic, Non-proteinogenic; Essential, Non-essential; Polar, Non-polar). Physical properties (variations in structures, sizes, polarity, charges; resonance hybrid), optical properties (stereoisomerism; chirality; R- and S-; D- and L-; light absorption); and chemical properties (protonation/deprotonation; zwitterions; acid base properties, titration curve, pH and pKa, pI; reactivity of side chains) of amino acids, Amino acids as constituents of proteins, peptide bond. Uncommon amino acids and their functions.

Unit – 2

(08 Hours)

Carbohydrates: Introduction, classification and importance of carbohydrates. Monosaccharides - the structure of aldoses and ketoses; Optical properties of sugars: conformations of sugars, mutarotation, anomers, epimers and enantiomers; Chemical properties (Oxidation and reduction of sugars); reducing and non-reducing sugars; Glycosidic linkages (O- and N-type), formation of disaccharides (sucrose, maltose, lactose, trehalose), tri- and oligosaccharides (raffinose, rhamnose, and stachyose) Polysaccharides: homo- and heteropolysaccharides, structural (cellulose and chitin) and storage polysaccharides (starch and glycogen); Role of glycoconjugates with examples - proteoglycans, glycoproteins and glycolipids; Carbohydrates as recognition molecules.

Unit –3

(07 Hours)

Lipids: Introduction, importance, and classification of lipids (simple, complex and derived lipid); Structure, properties, and classification of fatty acids (based on chain length and degree of unsaturation); Storage lipids- triacylglycerol and waxes. Structural lipids in membranes- glycerolipids, glycerophospholipids, galactolipids, ether-lipids, sphingolipids, and sterols; Importance of eicosanoids. Role of lipids as storage, signals, hormones, pigments, and in membranes.

Unit – 4

(05 Hours)

Nucleic Acids: Structure and properties of bases (purines and pyrimidines). Formation of nucleosides and nucleotides (phosphodiester and glycosidic bond); Nucleic acid structure: Watson-Crick model of DNA double helix, comparison of different forms of DNA (A, B and Z DNA); Structure and functions of major species of RNA (mRNA, tRNA and rRNA). Nucleic acid chemistry - UV absorption, the effect of acid and alkali on DNA; Biologically important nucleotides (source of energy, a component of coenzymes and second messengers)

Unit – 5

(03 Hours)

Vitamins: Active forms and major functions of water-soluble and fat-soluble vitamins; Major dietary sources, deficiency diseases, symptoms, and hypervitaminosis.

PRACTICAL

(60 Hours)

- 1) Laboratory safety and standards (precision, accuracy and sensitivity). Preparation of solutions (w/w, w/v, Molar, Normal)
- 2) Concept of buffer, buffering capacity and Henderson-Hasselbalch equation. Preparation of acetate buffer/phosphate buffer
- 3) Titration graph of acetic acid and Glycine.

- 4) Qualitative analysis of Amino acids (Ninhydrin, Xanthoproteic, Millon's, and lead acetate test)
- 5) Qualitative test for Carbohydrates: monosaccharides, disaccharides, and polysaccharides (Molisch, Fehling/ Benedict, Barfoed, Seliwanoff's, Osazone and Iodine test)
- 6) To determine the Iodine Number of oil/fat.
- 7) Qualitative test for Nucleic acid (Orcinol and DPA).

ESSENTIAL/RECOMMENDED READINGS

- 1) Nelson, D.L. and Cox, M.M. (2017). Lehninger: Principles of Biochemistry (7th ed.). W.H. Freeman & Company (New York), ISBN:13: 9781464126116 / ISBN:10-1464126119.
- 2) Berg, J. M., Tymoczko J. L. and Stryer L. (2011) 7th Edition. Biochemistry. New York, USA: W. H. Freeman and Co. ISBN-13: 978142927635.
- 3) An Introduction to Practical Biochemistry (1998) 3rd ed., Plummer D. T., Tata McGraw Hill Education Pvt. Ltd. (New Delhi), ISBN:13: 978-0-07-099487-4 / ISBN:10: 0-07-099487-0.

SUGGESTIVE READING:

- 1) Devlin, T.M., (2011). Textbook of Biochemistry with Clinical Correlations. 7th edition John Wiley & Sons, Inc. (New York). ISBN: 978-0-4710-28173-4.
- 2) Campbell, M.K. and Farrel, S.O. (2017). 9th Edition. Biochemistry. Boston, USA: Brooks/Cole Cengage Learning. ISBN-13: 978-1305961135

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2): Proteins

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|---|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Proteins | 4 | 2 | 0 | 2 | Class XII Science (Combination I: Chemistry + Biology/ Biological Studies/ Biotechnology/ | NIL |
| DSC 2 | | | | | | |

Biochemistry +
Physics OR

Combination II:
Chemistry +
Biology/ Biological
Studies/
Biotechnology/
Biochemistry +
Mathematics)

Learning Objectives

The course aims to introduce “proteins” and their importance to modern biochemistry, highlighting their structural features and unique characteristics that help them participate in every physiological process in life, thus also playing an important role in disease manifestation and their interventions.

Learning Outcomes

After completion of the course, a student will

- Understand the diverse functions of proteins in a cell
- Understand the hierarchy of protein architecture – primary, secondary, tertiary & quaternary structure, with the ability to distinguish features of globular & fibrous proteins
- Be able to comprehend the fundamental mechanisms of protein folding and stability and their relation to conformational diseases
- Understand specialized proteins like structural proteins
- Gain comprehension of structure-function relationship of proteins and their significance in physiology, diseases and applications in industry and medicine.

SYLLABUS OF DSC - 2

THEORY

Unit – 1

(2 Hours)

Introduction to proteins: Introduction to peptides and proteins. Structural and functional diversity. Classification of proteins – simple and conjugated proteins; monomeric and multimeric proteins.

Unit – 2

(12 Hours)

Hierarchy of protein structure organization: Organization of protein structure into primary, secondary, tertiary and quaternary structures. Forces stabilizing the protein structure - covalent

(disulfide bridges) and non-covalent (electrostatic interactions and salt bridges, hydrophobic, hydrogen bonding, van der Waals). The peptide bond, dihedral angles psi and phi, helices, sheets, turns and loops, Ramachandran map. Motifs and domains. Structural proteins - α -keratin, silk fibroin, collagen. Globular and fibrous proteins, membrane proteins.

Unit – 3

(05 Hours)

Protein sequencing and Databases: Sequencing techniques - N-terminal and C-terminal amino acid analysis, Edman degradation. Generation of overlap peptides using different enzymes and chemical reagents. Disulfide bonds and their location. Solid phase peptide synthesis. Protein databases – sequence and structure based.

Unit – 4

(05 Hours)

Protein folding and conformational diseases: Denaturation and renaturation of Ribonuclease A – discovery of protein folding. Introduction to thermodynamics of protein folding. Assisted folding by molecular chaperones, chaperonins and PDI. Diseases associated with protein misfolding – Alzheimer's and Creutzfeldt-Jakob disease.

Unit – 4

(6 Hours)

Specialized proteins: Transport protein: myoglobin and haemoglobin - Oxygen binding curves, influence of 2,3-BPG, CO₂ and H⁺; Cooperativity between subunits and models to explain the phenomena - concerted and sequential models. Haemoglobin disorders – Sickle cell anemia.

PRACTICAL

(60 Hours)

- 1) Scanning of proteins using UV-visible absorbance method
- 2) Solvent perturbation and denaturation studies of a protein
- 3) Estimation of proteins using Biuret method.
- 4) Estimation of proteins using Lowry/Bradford method.
- 5) Determination of isoelectric point of protein
- 6) Understanding protein sequence databases and homology modeling of proteins
- 7) Molecular Visualization Softwares: Pymol and Rasmol for protein structures from PDB

ESSENTIAL/ RECOMMENDED READINGS

- 1) Nelson, D.L., Cox, M.M. (2017). Lehninger: Principles of Biochemistry (7th ed.). New York, WH: Freeman and Company. ISBN13: 9781464126116, ISBN10: 1464126119
- 2) Schulz, G.E., Schirmer, R.H. (1979). Principles of protein structure. Springer, ISBN 978-1-4612-6137-7
- 3) Scopes, R.K. (1994) Protein Purification. Principles and Practice (3rd ed). Springer, ISBN 978-1-4737-2333-5

- 4) Stryer, L., Berg, J., Tymoczko, J., Gatto, G. (2019). Biochemistry (9th ed.). New York, WH:Freeman ISBN-13: 9781319114671
- 5) Voet. D., Voet. J.G. (2013) Biochemistry (4th ed.). New Jersey, John Wiley & Sons Asia Pvt. Ltd. ISBN : 978-1-11809244-6.

SUGGESTIVE READING:

- 1) Whitford, D. (2004). Protein Structure and function. Southern Gate, Chichester, West Sussex: John Wiley & Sons, Inc. ISBN-13: 978-047149894 ISBN-10: 0471498947.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE- 3 (DSC-3): Biochemical Techniques

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-------------------------------------|---------|-----------------------------------|----------|---------------------|---|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Biochemical Techniques DSC 3 | 4 | 2 | 0 | 2 | Class XII Science (Combination I: Chemistry + Biology/ Biological Studies/ Biotechnology/ Biochemistry + Physics OR Combination II: Chemistry + Biology/ Biological Studies/ Biotechnology/ Biochemistry + Mathematics) | NIL |

Learning Objectives

The objective of the course is to introduce various techniques to students that are used in a biochemistry lab. It will provide them an understanding of the principles underlying various

techniques. They will develop skills in the form of practical exercises and gain knowledge, which can be applied to pursue research and will be helpful in getting a suitable placement.

Learning Outcomes

On successful completion of this course, the students will

- Acquire knowledge about the principles and applications of spectrophotometric and chromatographic techniques used in a biochemistry lab.
- Learn about the principle and applications of electrophoresis and centrifugation techniques.
- Will be able to identify biochemical techniques for separation and purification of biomolecules.
- Students will obtain hands-on experience to develop their experimental skills expected from any biochemistry student working in a research lab.

SYLLABUS OF DSC – 3

THEORY

Unit – 1

(07 Hours)

Spectroscopic Technique: Introduction to electromagnetic radiation. Principle of UV-visible absorption spectrophotometry. Working, instrumentation and applications of spectrophotometer, Lambert's law, Beer's law. Factors affecting UV-vis absorption, bathochromic shift and hypsochromic shift. Fluorescence spectrophotometry: Phenomena of fluorescence, stoke's shift, quantum yield, intrinsic and extrinsic fluors with example, working and applications of fluorimeter.

Unit – 2

(06 Hours)

Centrifugation: Principle of centrifugation, basics of sedimentation, svedberg unit, correlation of 'rpm' with 'g' value, factors affecting sedimentation (density, viscosity, size and shape). Types of rotors (fixed angle, vertical and swinging bucket rotors) and relevant applications. Differential centrifugation and density gradient centrifugation - zonal and isopycnic.

Unit – 3

(09 Hours)

Chromatography: Introduction to chromatography, Principle and applications of partition chromatography: Paper and thin layer chromatography. Concept of mobile phase, stationary phase, partition coefficient, retention factor, factors affecting separation. Types of partition chromatography: Ascending and descending chromatography. Methods of detecting separated samples.

Principle and applications of ion exchange, molecular sieve and affinity chromatography. Concept of distribution coefficient, types of matrix, mesh size, water regain value, packing of the column, void volume, elution volume, theoretical plates, exclusion limit and resolution. Factors affecting binding, elution and resolution. Methods of detecting eluted samples.

Unit – 4

(08 Hours)

Electrophoresis: Principle of electrophoresis. Factors affecting the mobility of molecules: Buffer, electrical field strength and charge. Types of electrophoresis: Polyacrylamide gel (native), SDS PAGE, isoelectric focusing and agarose gel electrophoresis. Continuous and discontinuous buffer systems in electrophoresis. Staining, detection, identification and molecular weight determination of molecules.

PRACTICAL

(60 Hours)

- 1) Determination of absorption maxima (λ_{max}).
- 2) Verification of Beer's Law and calculation of molar extinction coefficient.
- 3) Preparation of cell free extract from a biological sample.
- 4) Separation and identification of amino acid acids by thin layer chromatography.
- 5) Separation of molecules by Ion-exchange chromatography.
- 6) Separation of molecules by gel filtration chromatography.
- 7) To perform PAGE (native) / SDS-PAGE.

ESSENTIAL/RECOMMENDED READINGS

- 1) Wilson, K. & Walker J (2010) Principles and Techniques of Biochemistry and Molecular Biology, (7th ed.), Cambridge University Press; ISBN 978-0-521-51635-8.
- 2) Boyer, R. F. (2012) Biochemistry Laboratory: Modern Theory and Techniques, (6th ed.), Boston, Mass: Prentice Hall; ISBN-13: 978-0136043027.
- 3) Sheehan, D. (2010). Physical biochemistry: Principles and applications (2nd ed.). Chichester: Wiley-Blackwell.
- 4) Plummer, D.T. (1998). An Introduction to Practical Biochemistry (3rd ed.), Tata McGraw Hill Education Pvt. Ltd. (New Delhi); ISBN: 13: 978-0-07-099487-4 / ISBN:10: 0-07-099487-0.

SUGGESTIVE READING:

- 1) Cooper, T.G. (2011). The Tools of Biochemistry (2nd ed.), Wiley-Interscience Publication (New Delhi); ISBN: 13:9788126530168.
- 2) Freifelder, D. (1982). Physical Biochemistry: Applications to Biochemistry and Molecular Biology, (2nd ed.), W.H. Freeman and Company (New York); ISBN:0-7167- 1315-2 / ISBN:0-7167-1444-2.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

**COMMON POOL OF GENERIC ELECTIVES (GE) COURSES
OFFERED BY DEPARTMENT OF BIOCHEMISTRY
Category-IV**

**GENERIC ELECTIVE
(GE-1: MOLECULES OF LIFE)**

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Molecules of Life GE 1 | 4 | 2 | 0 | 2 | Class XII Science | NIL |

Learning Objectives

The objective of the course is to provide students with an understanding of biomolecules, the basic building blocks that are vital for various life forms. The course emphasizes on studying the importance of water as a biological solvent, different types of molecules of life, focusing on their key properties, biological roles and functions. The course also aims to outline chemical and physical aspects of biomolecules by hands on approach through laboratory experiments.

Learning outcomes

- The course will provide an understanding of how the structures of biomolecules determine their chemical properties and functions.
- Students will develop understanding of biochemistry at atomic level and appreciate the biological importance of molecules of life.
- Students will gain insight into basic structures, classification, and biological importance of amino acids, carbohydrates, lipids and nucleic acid.

SYLLABUS OF GE - 1

THEORY

Unit – 1

(2 Hours)

Water and Concept of Buffer: Chemistry of water and biological importance of water, Henderson-Hasselbalch equation, concept of buffer and buffering capacity.

Unit – 2

(6 Hours)

Structure and functions of Amino Acids: Introduction and classification of amino acids, peptide bond, zwitterions, L and D form of amino acids, standard and non-standard amino acids and their biological importance.

Unit – 3 (7 Hours)

Biochemistry of Carbohydrates: Introduction, and classification of carbohydrates. Monosaccharides, disaccharides, polysaccharides (glycogen, starch, cellulose and chitin). D-and L- isomerism, epimers, and anomers. Carbohydrates as fuel and structural molecules, antigens and cell recognition unit.

Unit – 4 (7 Hours)

Lipids in Biological system: Introduction and classification of lipids. Fatty acids (PUFA, MUFA) triacylglycerol, phospholipids, sphingolipids, glycolipids, and cholesterol. Role of lipids as storage fuel, hormones, vitamins, in signaling and in membranes.

Unit – 5 (8 Hours)

Structure and Organization of Nucleic acids: Introduction, purine and pyrimidine bases, nucleosides, nucleotides, and nucleic acid. Structure and functions of DNA (B form), organization of DNA into chromatin; RNA structure and functions. Biologically important nucleotides (cAMP and ATP).

PRACTICAL (60 Hours)

- 1) Laboratory safety and preparation of solutions (molar, normal and %).
- 2) Concept of pH and working of pH meter
- 3) Preparation of acetate buffer and phosphate buffer.
- 4) Properties and analysis of amino acids (Ninhydrin, and Xanthoproteic)
- 5) Test for carbohydrates (Molisch, Fehling/ Benedict, Seliwanoff's)
- 6) Qualitative analysis of nucleic acids (Orcinol and Diphenyl amine)

ESSENTIAL/ RECOMMENDED READINGS

- 1) Nelson, D.L. and Cox, M.M. (2017). Lehninger: Principles of Biochemistry (7th ed.). W.H. Freeman & Company (New York), ISBN:13: 9781464126116 / ISBN:10-1464126119.
- 2) Plummer D.T. (1998). An Introduction to Practical Biochemistry (3rd ed)., Tata McGraw Hill Education Pvt. Ltd. (New Delhi), ISBN:13: 978-0-07-099487-4 / ISBN:10: 0-07-099487-0.
- 3) Pratt, C.W. and Cornely, K. (2017). Essential Biochemistry (4th ed.) John Wiley & Sons, Inc. ISBN:9781119012375

SUGGESTIVE READING:

- 1) Berg, J.M., Tymoczko J.L. and Stryer L. (2011). 7th Edition. Biochemistry. New York, USA: W. H. Freeman and Co. ISBN-13: 978142927635.
- 2) Campbell, M.K. and Farrel, S.O. (2017). 9th Edition. Biochemistry. Boston, USA: Brooks/Cole Cengage Learning. ISBN-13: 978-1305961135.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-2): TECHNIQUES IN BIOCHEMISTRY**Credit distribution, Eligibility and Pre-requisites of the Course**

| Course title & Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|----------------------------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | Lecture | Tutorial | Practical/ Practice | | |
| Techniques in Biochemistry | 4 | 2 | 0 | 2 | Class XII Science |

GE 2

Learning Objectives

The objective of the course is to introduce different biophysical techniques to students that are used in biological research for separation, purification and identification from mixture of biomolecules. The emphasis is also on experimental skills in the form of practical exercises so that students can apply this knowledge to improve their understanding of the subject for better utilization of these techniques in research and will also help in their placement.

Learning outcomes

- Students will acquire knowledge about the principles and applications of separation and purification techniques like centrifugation and chromatography used in a biochemistry laboratory.
- Students will learn about the principles and applications of electrophoresis and spectroscopic techniques involved in estimation and identification of biomolecules.

- It will also give them an opportunity to get hands-on experience to develop their experimental skills which are required for biological research lab.

SYLLABUS OF GE – 2

Unit - 1 (8 Hours)

Separation techniques: Preparation of sample, different methods of cell lysis, salting out, dialysis. Principle and the factors affecting centrifugation Svedberg coefficient, types of rotors, principle and applications of differential and density gradient centrifugation.

Unit – 2 (8 Hours)

Purification techniques: Classification of chromatographic techniques, principle and applications: Paper, thin layer, molecular sieve, ion exchange, and affinity chromatography.

Unit - 3 (7 Hours)

Electrophoretic techniques: Principle of electrophoresis, various types of electrophoresis: Polyacrylamide gel (native), SDS PAGE and agarose gel, staining procedures for protein and nucleic acids.

Unit - 4 (7 Hours)

Spectroscopic techniques: Introduction to electromagnetic spectrum, Principle and working of UV-visible absorption spectrophotometer, single & double beam spectrophotometer, Beer's & Lambert's law, application of UV-visible spectrophotometer in biology.

Practical

(60 Hours)

- 1) Preparation of cell free extract from E.coli culture.
- 2) Separation and identification of amino acid acids by thin layer chromatography.
- 3) Separation of molecules by gel filtration chromatography.
- 4) Determination of absorption maxima (λ_{max}).
- 5) Calculate molar extinction coefficient of the given sample.
- 6) Demonstration of PAGE and Agarose gel electrophoresis.

ESSENTIAL/RECOMMENDED READINGS

- 1) Wilson, K. & Walker J. (2010). Principles and Techniques of Biochemistry and Molecular Biology, (7th ed.), Cambridge University Press; ISBN 978-0-521-51635-8.
- 2) Boyer, R. F. (2012). Biochemistry Laboratory: Modern Theory and Techniques, (6th ed.), Boston, Mass: Prentice Hall; ISBN-13: 978-0136043027.

- 3) Plummer, D. T. (1998). An Introduction to Practical Biochemistry (3rd ed.), Tata McGraw Hill Education Pvt. Ltd. (New Delhi); ISBN: 13: 978-0-07-099487-4 / ISBN:10: 0-07-099487-0.

SUGGESTIVE READING:

- 1) Cooper, T.G. (2011). The Tools of Biochemistry (2nd ed.), Wiley-Interscience Publication (New Delhi); ISBN: 13:9788126530168.
- 2) Freifelder, D. (1982). Physical Biochemistry: Applications to Biochemistry and Molecular Biology, (2nd ed.), W.H. Freeman and Company (New York); ISBN:0-7167- 1315-2 / ISBN:0-7167-1444-2.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-3): PUBLIC HEALTH BIOLOGY

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-----------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Public Health Biology | 4 | 2 | 0 | 2 | Open to All | NIL |

GE 3

Learning Objectives

The present course attempts to provide an interdisciplinary understanding of public health issues in India with a more detailed understanding of the areas pertaining to biological science and epidemiology. Some overview of the social aspects that impact public health will also be discussed and the statistical analysis of public health data will be taught in the practical. The specific objectives of the course are to provide a basic understanding of the scope of public health issues, particularly related to policies on public health, public health nutrition, infectious biology and sanitation, social and preventive medicine, and the environmental issues that affect public health. The practical exercises aim to provide hands-on training in epidemiology and collection of primary and secondary data relevant to public health issues. It also hopes to

generate a discussion platform that would encourage a healthy inter- and multidisciplinary interaction amongst the students to get a holistic view of public health. A mini research project on any relevant topic related to public health will be taken up after completing the theory and practical components of the course. Being interdisciplinary in its nature and scope, the course will be equally engaging and beneficial for students of all subject streams. After completing the course, the students can also apply for some higher-level courses in different areas of public health as the course helps in building a basic understanding on different aspects related to public health.

Learning outcomes

On successful completion of the course

- Students will get a holistic overview of the interdisciplinary nature of Public Health
- They will understand public health issues in India particularly related to Malnutrition, sanitation issues and related burden of infectious disease, and the role of pollution as a public health concern.
- The students will also get an understanding of the public policies applicable and implemented in India.
- They will also be able to appreciate the social aspects that govern many public health issues and implementation of policies
- The students will get hands-on training in epidemiology, preparation of questionnaire and collection of primary and secondary data relevant to public health issues.
- They will also learn to present the relevant data after subjecting it to statistical analysis.

SYLLABUS OF GE – 3

THEORY

Unit – 1

(04 Hours)

Understanding public health issues: Conceptual understanding of public health, terminology, public health- multidimensional problem with Delhi as an example (air pollution, stress, sanitation, urbanization and socioeconomic inequalities) Policies on public health- factors affecting making and implementation of these policies.

Unit – 2

(10 Hours)

Public Health Nutrition: Characteristics of tertiary and quaternary structures. Structure function relationship in proteins. 3D structures of globular and fibrous proteins – myoglobin, hemoglobin, collagen and keratin. Protein folding - denaturation and renaturation (Ribonuclease A). Role of chaperones. Protein misfolding diseases - Alzheimer's and Cruetzfeldt-Jakob disease.

Unit – 3

(06 Hours)

Infectious biology and sanitation: Defining communicable diseases. Understanding the biology, socioeconomic factors and other environmental conditions that influence the transmission and infection by pathogenic (disease-causing) bacteria, viruses, parasites, and fungi. Precautions, prevention strategies and programs for control; sanitation, Swachh Bharat.

Unit – 4

(10 Hours)

Environmental Health & Community Health: Determinants of Environmental Health: factors that affect environmental health; Occupational environment and health concerns; Understanding effect of air, water and soil Pollution on health.

Understanding the definition of community health, Determinants of community health; Define and manage the health problems of the community, Plan, implement and evaluate various health programs of General Health, Reproductive health, Maternal health, Family Welfare and Disease control / eradication.

Lifestyle disease or non-communicable diseases- consequence of imbalanced nutrition, environmental and psychological stresses; Etiology and management of diseases like Obesity, Diabetes mellitus, Cardiovascular disorders, sleep disorders and psychological eating disorders. Preventive health checkups (PHC)- important parameters/biomarkers; relevance of PHC in health and disease prevention/early diagnosis

PRACTICAL

(60 Hours)

- 1) Assessment of nutritional status using anthropometric indices
- 2) Assessment of Nutritional status by a survey of clinical and non-invasive biochemical parameters.
- 3) To determine the potability of water using, pH, BOD, COD and MPN of the water sample from different sources.
- 4) Collecting secondary data on AQI from different areas and correlate with health indices in that area.
- 5) Understanding epidemiology: Collection, generation, and analysis of public health data. Application of statistical tools to analyze and present public health data.
- 6) Case study of a disease (Nutritional, infectious and lifestyle) along with the public health issues associated with that disease.
- 7) Field visits to nearby health care center to understand health checkups and collect some data on the rate of a particular disease over past few months or years.
- 8) Data collection from public domain with analysis.

ESSENTIAL/ RECOMMENDED READINGS

- 1) Aschengrau A, Seage G.R., (2013) Essentials of Epidemiology in Public Health Jones and Bartlett Publishers, Inc; 3rd edition
- 2) Bamji MS, Rao NP, Reddy V. (2017). Textbook of Human Nutrition. (4th ed). Delhi: Oxford and IBH Publishing Co. (P) Ltd.
- 3) Soil Microbiology by N.S. Subba Rao. 5th edition. Medtech, India. 2017.
- 4) Environmental Microbiology edited by I.L. Pepper, C.P. Gerba, T.J. Gentry. 3rd edition. Academic Press, USA. 2014.

SUGGESTIVE READING:

- 1) Sullivan. L.M. (2017) Essentials of Biostatistics in Public Health. Jones and Bartlett Publishers, Inc; 3rd edition.
- 2) Gibney et al. (2004). Public health nutrition. Hoboken, NJ: Blackwell Publishing
- 3) N. Okafor. (2011) Environmental Microbiology of Aquatic and Waste Systems by Springer, USA.
- 4) Waste Water Microbiology by D.H. Bergey. 2nd Edition. Medtech, India. 2019.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DEPARTMENT OF MICROBIOLOGY

BSc. (H) Microbiology Category-I

DISCIPLINE SPECIFIC CORE COURSE -1 (DSC-1) – Introduction to the Microbial World

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|--|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction to the Microbial World DSC 1 | 4 | 3 | 0 | 1 | Class XII pass with Biology/ Biotechnology/ Biochemistry | Nil |

Learning Objectives

The learning objectives of this course are as follows:

- Introduce students to the world of microorganisms.
- Students will be made familiar with the major milestones that led to the shaping of microbiology as a distinct discipline of science.
- Students will gain insights into the diversity of microorganisms, understand their structural features, and appreciate the role of microorganisms in our day-to-day lives as well as in the sustenance of life on earth.

Learning outcomes

After completing this course, student will be able to understand,

- The developments that led to the emergence of microbiology as a scientific discipline.
- The current systems of classification being used for microorganisms and learn about cell organization in microorganisms.
- Discourse on acellular forms of life such as viruses, viroids and prions.
- The Diversity, distribution, cell structure, reproduction and economic importance of protists.
- The diversity, distribution, structure, life cycles and economic importance of fungi.

- Extensive and impressive impact of microorganisms in our day-to-day life and become aware of the vast scope of microbiology and its allied fields.

SYLLABUS OF DSC - 1

THEORY

Unit – 1 (09 Hours)

The Evolution of Microbiology as a Discipline of Science: The discovery of microorganisms, contributions of Anton van Leeuwenhoek, spontaneous generation vs. biogenesis, the germ theory of disease, the golden era of microbiology and major developments in the different fields of Microbiology in the late 20th century. Key contributions of the following scientists: Louis Pasteur, Robert Koch, Joseph Lister, Edward Jenner, Elie Metchnikoff, Ronald Ross, Dmitri Ivanovsky, Martinus Beijerinck, Stanley Prusiner, Paul Ehrlich, Alexander Fleming, Selman Waksman, Sergei N Winogradsky and Anand Mohan Chakraborty

Unit – 2 (03 Hours)

Classification Systems: Whittaker's five kingdom classification system and Carl Woese's three domain classification system. Overview of acellular (viruses) and cellular micro-organisms (eubacteria, archaea, protista, fungi). Prokaryotic and Eukaryotic cell structure.

Unit –3 (15 Hours)

Brief introduction to viruses: Structure (genetic material, capsid symmetry, envelope), host range, cultivation, bacteriophages (lytic and lysogenic). General characteristics of viroids and prions. Algae: General characteristics including occurrence and thallus organization. Criteria for classification of algae: cell wall composition, pigments, flagellation, food reserves. Cell structure and reproduction of *Chlamydomonas* and *Chlorella*. Economic importance of algae. Protozoa: General characteristics of protozoa with a reference to cell structure, modes of locomotion, modes of nutrition, and modes of reproduction. Morphology and importance of *Entamoeba histolytica*, *Tetrahymena* and *Giardia*. Ecological importance of protozoa.

Unit – 4 (09 Hours)

Fungi: General characteristics: morphology, cell structure, nutritional requirements, cultivation, preservation and reproduction (asexual and sexual cycles). Structure, life cycle and economic importance of *Saccharomyces*, *Rhizopus*, *Aspergillus*, and *Agaricus*.

Unit – 5 (09 Hours)

The scope of microbiology: an overview. Food and dairy industry: fermented foods, single cell protein. Human health and medicine: human microbiome, probiotics, vaccines, phage therapy.

Microbes in environment: bioremediation, bioleaching, waste management, biogas, bioethanol, carbon sequestration. Microbes in agriculture: biocomposting, biofertilizers, biopesticides. Industrially important microbial products: organic acids, amino acids, antibiotics, enzymes, polysaccharides. Space microbiology: Current developments.

PRACTICAL

Unit –1

(14 Hours)

Principles of Good Laboratory Practice (GLP) and Introduction to aseptic techniques:

Principles of Good Microbiological Laboratory Practices (GMLP). Concept of biosafety levels (BSLs). Work practices, safety equipment and protective measures to be used in laboratories of the different categories of biosafety levels BSL-1 to BSL-4. Microorganism risk groups: BSL-1 to BSL-4 microorganisms. Methods of disposal of microbial cultures. Sterilization by moist heat, mechanical (filtration), irradiation (UV), chemical (alcohol). Instruments for sterilization: Principle, working and applications of autoclave and hot air oven

Unit –2

(16 Hours)

Study of eukaryotic microorganisms: To study the morphological features and reproductive structures of the following using permanent slides/photographs: Fungi: *Rhizopus*, *Aspergillus*, *Penicillium*, *Saccharomyces*. Algae: *Chlamydomonas*, *Chlorella*, *Spirogyra*. Protozoa: *Amoeba*, *Paramecium*, *Entamoeba histolytica*, *Giardia*. To prepare temporary mounts of any two fungi and two algae from those mentioned above

ESSENTIAL/RECOMMENDED READINGS

Theory:

- 1) Brock Biology of Microorganisms by M.T. Madigan, J. Aiyer, D. Buckley, W. Sattley and D. Stahl. 16th edition. Pearson, USA. 2021.
- 2) Prescott's Microbiology by J. M. Willey, K. Sandman and D. Wood. 11th edition. McGrawHill Higher Education, USA. 2019.
- 3) Microbiology: An Introduction by G.J. Tortora, B.R. Funke, and C.L. Case. 13th edition. Pearson, USA. 2018.
- 4) Algal Biotechnology: Products and Processes. Edited by Bux F. and Chisti Y. 1st edition. Springer, Switzerland. 2016.
- 5) Principles of Microbiology by R. M. Atlas. 2nd edition. W.M.T. Brown Publishers, USA. 1997.
- 6) Microbiology by M. J. Pelczar, E. C. S. Chan and N. R. Krieg. 5th edition. McGraw Hill, USA. 1993.

Practical:

- 1) Microbiology: A Laboratory Manual by J. Cappuccino and C.T. Welsh. 12th edition. Pearson

Education, USA. 2020.

- 2) Basic Lab Manual of Microbiology, Biochemistry and Molecular Biology by A. Ray and R. Mukherjee. Taurean Publisher, India. 2019.
- 3) Benson's Microbiological applications: Laboratory manual in general microbiology by A.E. Brown and H. Smith H. 15th edition. McGraw-Hill Education, USA. 2022.
- 4) Manual of Microbiology: Tools & Techniques by A.K. Sharma. 1st edition. Ane Books, India. 2007.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2): BASIC**Credit distribution, Eligibility and Prerequisites of the Course**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------------|---------|-----------------------------------|----------|---------------------|--|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| BASIC BACTERIOLOGY DSC 2 | 4 | 3 | 0 | 1 | Class XII pass with Biology/ Biotechnology/ Biochemistry | NIL |

Learning Objectives

The Learning objectives of this course are as follows:

- Students to acquire in-depth knowledge of bacterial cell structure and organization, cultivation methods and growth patterns, and reproduction.
- Student gains insights into the vastness of bacterial diversity and its significance.

Learning Outcomes

After completing this course, student will be able to,

- Understand the morphological features and cellular organization of bacteria and archaea, and distinguish between cell wall and cell membrane compositions of gram positive bacteria, gram negative bacteria, and archaea. Will gain insights into the roles of enzymes and antibiotics affecting cell wall structure as well as the formation of spheroplasts, protoplasts, and L forms.
- Isolate pure bacterial cultures and enumerate bacteria using serial dilution and plating techniques. Will learn about various culture media and methods employed to maintain bacterial cultures and preserve bacteria.
- Comprehend the different phases of bacterial growth, and the consequences of binary fission as a means of reproduction. Will learn about various nutritional and physical factors affecting bacterial growth.
- Prepare various types of media; understand the use of membrane filtration to sterilize heat sensitive media components; have hands-on experience of isolating bacteria and fungi from air.
- Streak bacterial cultures on nutrient medium, prepare bacterial slants and stabs, and enumerate bacteria by different plating methods.

SYLLABUS OF DSC - 2

THEORY

Unit – 1

(15 Hours)

Structure and organization of the bacterial cell wall and appendages: Shapes, sizes and arrangements of bacterial cells. Cell wall and cell membrane organization: Structure of cell wall in Eubacteria and Archaea, difference between cell wall structure and composition of Gram positive versus Gram-negative bacterial, structure of outer membrane, difference between eubacterial and archaeal cell membranes. Bacteria lacking cell walls, action of antibiotics and enzymes on bacterial cell wall, formation of protoplasts, spheroplasts and L forms. Cell envelope layers outside the cell wall: capsule, slime layer, glycocalyx, S-layers. External appendages: flagella, fimbriae and pili.

Unit – 2

(09 Hours)

Cytoplasmic organelles: ribosomes, mesosomes, nucleoid, chromosome and plasmids, intracytoplasmic membranes, inclusions (storage inclusions: PHB, polyphosphate granules, sulfur globules, cyanophycin granules; micro-compartments: Carboxysome; other inclusions: magnetosome, gas vacuole).

Unit – 3

(09 Hours)

Bacteriological techniques: Culture media: Chemical types (synthetic and complex), Functional types (supportive and enriched, selective and differential). Cultivation of aerobes and anaerobes, concept of viable but non culturable bacteria (VBNC). Culturing and Preservation methods: Streaking of bacterial culture, spread- plating, serial dilution plating, counting viable cells. Enrichment culture technique. Preservation of bacteria and maintenance of stock cultures. Microbial culture collection centers (ATCC and MTCC).

Unit – 4

(12 Hours)

Bacterial growth and reproduction: Different phases of bacterial growth in a batch culture, determination of generation time, analysis of growth rate. Factors affecting bacterial growth: Nutritional and physical factors. Endospore: Structure, formation, stages of sporulation and germination of endospore. Methods of asexual reproduction: budding, fission and fragmentation.

PRACTICAL

Unit– 1

(14 Hours)

Introduction to bacterial growth and analysis: Principle, working and applications of instruments used in cultivation and morphological analysis of microorganisms: bacteriological and BOD incubators, light microscope (using simple staining of bacteria). Concept of laminar

flow: biological safety cabinets of levels 1 to 4. Preparation of media and capture of aeroflora: Preparation of Synthetic medium (minimal medium) and Complex media (nutrient agar, potato dextrose agar, MacConkey agar). Capture of aero-microflora on nutrient agar and potato dextrose agar plates.

Unit – 2

(16 Hours)

Isolation, preservation and quantitation of bacteria: Isolation of pure cultures of bacteria by Quadrant streaking method on nutrient agar plates. Preparation of bacterial culture slants and stabs on nutrient agar. Preservation of bacterial cultures by preparation of glycerol stocks.

ESSENTIAL/ RECOMMENDED READINGS

Theory

- 1) Brock Biology of Microorganisms by M.T. Madigan, J. Aiyer, D. Buckley, W. Sattley and D. Stahl. 16th edition. Pearson, USA. 2021.
- 2) Prescott's Microbiology by J. M. Willey, K. Sandman and D. Wood. 11th edition. McGrawHill Higher Education, USA. 2019.
- 3) Microbiology: Principles and Explorations by J.G. Black and L.J. Black. 10th edition. Wiley, USA. 2019.
- 4) Microbiology: An Introduction by G.J. Tortora, B.R. Funke, and C.L. Case. 13th edition. Pearson, USA. 2018.
- 5) Principles of Microbiology by R. M. Atlas. 2nd edition. W.M.T. Brown Publishers, USA. 1997.
- 6) Microbiology by M. J. Pelczar, E. C. S. Chan and N. R. Krieg. 5th edition. McGraw Hill, USA. 1993.

Practical

- 1) Microbiology: A Laboratory Manual by J. Cappuccino and C.T. Welsh. 12th edition. Pearson Education, USA. 2020.
- 2) Basic Lab Manual of Microbiology, Biochemistry and Molecular Biology by A. Ray and R. Mukherjee. Taurean Publisher, India. 2019.
- 3) Benson's Microbiological applications: Laboratory manual in general microbiology by A.E. Brown and H. Smith H. 15th edition. McGraw-Hill Education, USA. 2022.
- 4) Manual of Microbiology: Tools & Techniques by A.K. Sharma. 1st edition. Ane Books, India. 2007.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-3)
BIOCHEMISTRY OF CARBOHYDRATES AND LIPIDS

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|--|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| BIOCHEMISTRY OF CARBOHYDRATES AND LIPIDS DSC 3 | 4 | 3 | 0 | 1 | Class XII pass with Biology/ Biotechnology/ Biochemistry | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- Enable the students to develop a clear understanding of the structures and properties of biomolecules: proteins, lipids, carbohydrates and nucleic acids, and lays the foundation for a basic understanding of cellular processes.
- The students will be given an understanding of the principles of thermodynamics and bioenergetics, and will be introduced to the basic concepts of enzymes and enzyme kinetics.
- This course will empower the students with essential knowledge to support learning in subsequent courses offered in the program.

Learning Outcomes

On successful completion of this course, the students will be able to

- Comprehend the principles of thermodynamics as applied to biological systems and will be able to comment on the rate constants and feasibility of biochemical reactions by calculating free energy changes.
- Understand the structures and properties of various types of carbohydrates and will be able to relate the structures of simple and complex carbohydrates to their wide range of functions. Will gain knowledge of the role of sugars and their derivatives in formation of macromolecules /supramolecular complexes.
- Understand the building block of lipids: fatty acids and their properties. Will acquire a clear understanding of the structures, properties and functions of storage and membrane lipids. Will learn different types of lipid aggregates and their applications.

- Prepare buffers and solutions of different molarity and normality and will be adept in the use of fine weighing balances and pH meter.
- Analyze foodstuff for their microchemical composition, and will be able to detect the presence of carbohydrates and fats in samples by performing qualitative tests. Will become familiar with the use of spectrophotometer.

SYLLABUS OF DSC – 3

THEORY

Unit – 1

(09 Hours)

Bioenergetics and thermodynamics: Laws of thermodynamics. Gibbs free energy: exergonic and endergonic reactions. Enthalpy: exothermic and endothermic reactions. Entropy, standard free energy change and actual free energy change, equilibrium constant and spontaneous reactions. Coupled reactions and additive nature of standard free energy change. Energy rich compounds: ATP, BPGA, Acetyl CoA.

Unit – 2

(15 Hours)

Carbohydrates: Introduction to mono-, di- and polysaccharides. Monosaccharides: aldoses and ketoses. Stereoisomers: enantiomers, epimers, diastereoisomers, mutarotation and anomers. Fischer and Haworth formulae of sugars. Sugar derivative: O-,N-glycosides. Disaccharides: Structures and properties of maltose, lactose, and sucrose reducing and non- reducing sugars. Polysaccharides: storage polysaccharides (starch and glycogen), structural polysaccharides (cellulose, chitin, peptidoglycan, pectin).

Unit – 3

(09 Hours)

Storage Lipids: Introduction to storage and structural lipids. Storage lipids: triacylglycerols, building blocks, fatty acids structure and properties, essential fatty acids, saponification.

Unit – 4

(12 Hours)

Structural Lipids: Membrane lipids: phosphoglycerides (building blocks, structure of phosphatidylethanolamine and phosphatidylcholine). Sphingolipids: building blocks, structure of sphingosine, ceramide, general structure and functions of sphingomyelin, cerebroside and ganglioside. Lipid functions. Lipid aggregates: micelles, monolayers, bilayers and liposomes

PRACTICAL

Unit– 1

(14 Hours)

Preparation of buffers and solutions: Concepts of molarity versus normality. Preparation of simple stock solutions of different molarities: sodium chloride, potassium permanganate, magnesium chloride solutions. Concept of pH. Role of buffers in biochemical reactions. Buffers

of different pH ranges. Commonly used buffers in biochemical assays. Principle, calibration and use of pH meter. Preparation of two commonly used buffers: phosphate buffer, citrate buffer. Preparation of complex buffered stock solutions. Preparation of working solutions.

Unit– 2

(16 Hours)

Qualitative biochemical analyses: The use of pipettes and micropipettes. Cleaning and calibration of micropipettes. Principles and performance of qualitative tests for the detection of reducing and non-reducing sugars: Benedict's Test, Fehling's Test, Molisch Test; and starch: Iodine Test. Detection of lipids using Solubility Test, Osmic acid Test, Acrolein Test, Sudan III Test.

ESSENTIAL/RECOMMENDED READINGS

Theory

- 1) Lehninger Principles of Biochemistry by D.L. Nelson and M.M. Cox. 8th edition. W.H. Freeman and Company, UK. 2021.
- 2) Biochemistry by J.M. Berg, J.L. Tymoczko, G.J. Gatto, and L. Stryer. 9th edition. W.H. Freeman and Company, UK. 2019.
- 3) Biochemistry by T.A. Brown and S.N. Mukhopadhyay. 1st edition. Viva Books, India. 2018.
- 4) Fundamentals of Biochemistry by D. Voet, J.G. Voet and C.W. Pratt. 5th edition. John Wiley and Sons, UK. 2016.

Practical

- 1) Practical Biochemistry by R.C. Gupta and S. Bhargava. 5th edition. CBS Publishers and Distributors, India. 2018.
- 2) An Introduction to Practical Biochemistry by D. Plummer. 3rd edition. McGraw Hill Education, India. 2017.
- 3) Introduction to Practical Biochemistry (ebook) by G. Hegyi, J. Kardos, M. Kovacs, A. Malnasi-Csizmadia, L. Nyitrai, G. Pal, L. Radnai, A. Remenyi and I. Venekei. Eotvos Lorand University. 2013.
- 4) Modern Experimental Biochemistry by Rodney Boyer. 3rd edition. Pearson, India. 2002.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

**Common pool of Generic Electives (GE) Courses
offered by Department of Microbiology**

**GENERIC ELECTIVES (GE-1): INTRODUCTION AND SCOPE OF
MICROBIOLOGY**

Credit distribution, Eligibility and Pre-requisites of the Course

**GENERIC ELECTIVE
(GE-1: INTRODUCTION AND SCOPE OF MICROBIOLOGY)**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|------------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction and scope of microbiology GE 1 | 4 | 2 | 0 | 2 | None | NIL |

Learning Objectives

The learning objectives of this course are as follows:

- Give students an overview of three major themes: History and scope of Microbiology, microbial diversity (prokaryotes, eukaryotes, and viruses), and the role of microbes in human lives.
- Students will gain insights into how microorganisms affect the everyday lives of humans in both beneficial and harmful ways.
- Students will become familiar with the techniques used in isolation and cultivation of microorganisms, and will learn how to identify microorganisms in the laboratory.

Learning outcomes

Upon completion of this course, students will

- Become familiar with the history of Microbiology, and understand how Microbiology developed as a distinct discipline of science during the golden era of microbiology. Will become familiar with some of the later developments of the 21st century.
- Acquire an understanding about the placement of microorganisms in the tree of life. Will

- know about key differences between prokaryotic and eukaryotic organisms. Will also be acquainted with structure of viruses, general characteristics and importance of algae, fungi and protozoa.
- Understand the importance of microbe-human interactions, becoming aware of microorganisms as agents of human diseases. Will become aware of the important role that microorganisms play in food, agriculture, industry, biofuel and in the clean-up of the environment.
 - Become aware of good microbiological laboratory and safety practices, and be acquainted with the working of basic microbiological equipment routinely used in the laboratory. Will also be acquainted with the aseptic techniques used for culturing bacteria and fungi.
 - Gain hands-on experience in isolation of bacteria and fungi from air and will be acquainted with staining techniques used for observing bacteria, algae and fungi. Will learn the use of compound microscope.
 - Get acquainted with different shapes and arrangement of bacteria. Will be able to identify algae, fungi, protozoa using permanent slides/photographs. Will be able to understand the structure of viruses using electron micrographs.

SYLLABUS OF GE - 1

THEORY

Unit – 1 (08 Hours)

History of Microbiology: Some key milestones in the field of microbiology: Contributions of Antonie van Leeuwenhoek. Controversy over spontaneous generation. Louis Pasteur and concept of pasteurization. Robert Koch and germ theory of diseases, and concept of pure culture. Edward Jenner and cowpox immunization. Ivanovsky & Beijerinck and the discovery of viruses. Winogradsky and the development of soil microbiology. Golden era of Microbiology.

Unit – 2 (12 Hours)

Microbial Diversity: Position of microorganisms in the living world. Whittaker's five kingdom classification. Carl Woese's three domain classification. Detailed characteristics of prokaryotic and eukaryotic organisms with examples of *E. coli* (bacterium) and *Saccharomyces* (yeast). Acellular organisms: structure and genome of Tobacco mosaic virus, polio virus and bacteriophage T4. General characteristics, habitat and economic importance of algae, fungi and protozoa.

Unit – 3 (10 Hours)

The impact of microorganisms on humans: Causal organism and transmission of common human diseases: typhoid, tuberculosis, cholera, malaria, gastroenteritis, influenza. Microorganisms and their applications in agriculture: nitrogen fixers and mycorrhiza. Role of

microorganisms in the environment: microbial remediation of pollutants. Applications of microorganisms in food and industry: fermented foods and probiotics, biofuel (biogas), antibiotics and enzymes.

PRACTICAL

Unit – 1

(24 Hours)

History of Microbiology: Microbiological laboratory practices, and equipment: Good Microbiology laboratory practices and general safety measures while working with microbes. Physical and chemical hazards and immediate first aid. Principle, working and applications of instruments: autoclave, hot air oven, biosafety hood, incubator and light and compound microscope. Demonstration and performance of aseptic technique for culturing of bacteria and fungi.

Unit – 2

(16 Hours)

Microbial Diversity: Study of aero microflora by exposing nutrient agar plate at different locations and comparing diversity on the basis of colony morphology. Demonstration of bacterial smear preparation from suitable sample/culture followed by Gram staining and observation under oil immersion objective. Preparation of stained temporary mounts of any one fungus (*Rhizopus/ Penicillium*) and any one alga (*Chlamydomonas/ Spirogyra*).

Unit– 3

(20 Hours)

The impact of microorganisms on humans: Study of shape and arrangement of following bacteria / bacterial structures using permanent slides: bacillus, coccus, spirillum and endospore. Study of vegetative and reproductive structures of following algae using permanent slides: *Chlamydomonas*, *Spirogyra* and *Polysiphonia/Fucus*. Study of vegetative and reproductive structures of following fungi and protozoa using permanent slides: Fungi: *Rhizopus*, *Penicillium* and *Agaricus*. Protozoa: *Amoeba*, *Paramecium*, and *Giardia*. Study of structure of the following viruses using electron micrographs: Tobacco mosaic virus, T4 bacteriophage and poliovirus.

ESSENTIAL/ RECOMMENDED READINGS

- 1) Brock Biology of Microorganisms by M.T. Madigan, J. Aiyer, D. Buckley, W. Sattley and Stahl. 16th edition. Pearson, USA. 2021.
- 2) Microbiology: A Laboratory Manual by J. Cappuccino and C.T. Welsh. 12th edition. Pearson Education, USA. 2020.
- 3) Prescott's Microbiology by J. M. Willey, K. Sandman and D. Wood. 11th edition. McGrawHill Higher Education, USA. 2019.
- 4) Microbiology: An Introduction by G.J. Tortora, B.R. Funke, and C.L. Case. 13th edition.

Pearson, USA. 2018.

- 5) Benson's Microbiological applications: Laboratory manual in general microbiology by A.E. Brown and H. Smith H. 15th edition. McGraw-Hill Education, USA. 2022.
- 6) Principles of Microbiology by R. M. Atlas. 2nd edition. W.M.T. Brown Publishers, USA.1997.
- 7) Microbiology by M. J. Pelczar, E. C. S. Chan and N. R. Krieg. 5th edition. McGraw Hill,USA. 1993.

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GENERIC ELECTIVES (GE-2): MICROBES IN HEALTH AND HYGIENE

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|--|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Microbes in health and hygiene GE 2 | 4 | 2 | 0 | 2 | Class XII pass with Biology/ Biotechnology/ Biochemistry | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- Introduce the students to the role of microorganisms in human health.
- Students will be exposed to the importance of microbe-human interactions when learning about the human microbiome. T
- Make the students aware of common diseases caused by microorganisms and will develop an understanding of probiotics and their importance in human health.
- Introduce bacteriophages and their application in treatment/control of bacterial infections.

Learning outcomes

At the end of this course, the students will

- Be acquainted with the importance of the human microbiome including the benefits as well as possible harmful effects. They will have a fair knowledge of various types of microorganisms surviving on/in the human body.
- Have gained knowledge about the spectrum of diseases caused by bacteria, viruses, protozoa and fungi. They will be familiar with the methods of transmission and control of various diseases.
- Have understood the role of probiotics in human health. They will have learnt about the characteristics of probiotic microorganisms and have a fair idea of prebiotics and synbiotics. They will also have an overview of bacteriophages and their role in therapy.
- Acquire expertise in isolation of microorganisms from skin and staining of microorganisms collected from oral cavity, and will be able to check the efficacy of the sanitizer and antimicrobial action of heavy metals.
- Will acquire understanding of various probiotic products available in the market and the organisms included in these products. They will receive hands-on training for evaluation of various probiotic products and microbial strains.
- Gained understanding of bacteriophage typing and will also have hands on training in the isolation of bacteriophages from sewage samples.

SYLLABUS OF GE – 2

Unit - 1

(08 Hours)

Role of microbiome in human health: Importance of human microbiome in health. Factors affecting the survival and colonization of microorganisms on various organs including skin, throat and upper respiratory tract, gastrointestinal tract and genitourinary tract. Understanding the human microbiome using animal model systems: *C. elegans*, mice, zebrafish. Strengths and weaknesses of using these systems for human microbiome studies. Technologies for assaying the human microbiome: direct observation methods, molecular profiling techniques, sequencing methods, strengths and weaknesses of the technologies

Unit – 2

(12 Hours)

Microorganisms in human diseases: A concise overview of aetiology, symptoms, transmission and control of some common diseases: bacterial (tuberculosis, cholera, typhoid, diphtheria), viral (rabies, hepatitis, zika, COVID , polio, AIDS), protozoan (malaria, kala azar) and fungal diseases (dermatophytoses, candidiasis, aspergillosis).

Unit - 3

(10 Hours)

Microbes for maintaining human health: Brief description and distinction between prebiotics, probiotics and synbiotics. Probiotics for maintaining human health: prerequisite characteristics of probiotic strains, common probiotic bacterial strains, modes of action of probiotics, probiotic

supplementation for disease management. Bacteriophage therapy: concept and challenges. A brief account of bacteriophage therapy for various diseases.

Practical

Unit - 1

(24 Hours)

Study of human microflora: Isolation of microorganisms from skin by swab method using specific media: nutrient agar, mannitol salt agar, potato dextrose agar. Gram staining of bacterial isolates and lactophenol staining for fungal isolates. Gram staining of dental scrapings/plaques. Checking the efficacy of sanitizer on skin. study of the oligodynamic effect of metals on bacterial cultures. **Student group project:** multiple methods for sampling microbial biomass specimens for oral, skin, gut and respiratory microbiomes.

Unit - 2

(24 Hours)

Study of probiotics: Student group project: Conduction of a market survey to identify different probiotic products available in the market. Isolation and basic characterization of bacteria from probiotic products. Bacterial cell surface hydrophobicity (CSH) test to estimate bacterial adherence. Performance of acid and bile resistance test on bacterial strains.

Unit - 3

(12 Hours)

Bacteriophage isolation and typing: Principle, process and limitations of bacteriophage typing. Isolation of bacteriophages from sewage sample using double layer technique. Student group project: Phage therapy in India.

ESSENTIAL/RECOMMENDED READINGS

- 1) Brock Biology of Microorganisms by M.T. Madigan, J. Aiyer, D. Buckley, W. Sattley and a. D. Stahl. 16th edition. Pearson, USA. 2021.
- 2) Prescott's Microbiology by J. M. Willey, K. Sandman and D. Wood. 11th edition. McGrawHill Higher Education, USA. 2019.
- 3) Textbook of Microbiology by R. Ananthanarayan and C.K.J. Paniker. 10th edition. Universities Press, India. 2017.
- 4) Jawetz, Melnick and Adelberg's Medical Microbiology by K.C. Carroll, S.A. Morse, T.A. Mietzner and S. Miller. 27th edition. McGraw Hill Education. 2016.
- 5) Microbiology: An Introduction by G.J. Tortora, B.R. Funke and C.L. Case. 9th edition. Pearson Education, USA. 2007.
- 6) Cappucino, J. and Sherman, N. (2014). Microbiology: A Laboratory Manual. 10th edition. Pearson Education, India.
- 7) Collee, J.G., Fraser, A.G., Marmion, B.P. and Simmons, A. (2007). Mackie and McCartney Practical Medical Microbiology. Elsevier 14th edition 1996.
- 8) Randhawa, V.S., Mehta, G. and Sharma, K.B. (2009). Practicals and Viva in Medical Microbiology. 2nd edition. Elsevier, India.

- 9) Fuller, R. (2012). Probiotics: The Scientific Basis. Springer Netherlands.
- 10) Dhanasekaran, D. and Sankarnarayanan, A (2021). Advances in Probiotics, Microorganisms in Food and Health. Academic Press.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

**GENERIC ELECTIVES (GE-3):
FOOD FERMENTATION AND PRESERVATION TECHNIQUES**

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|--|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Food fermentation and preservation techniques GE3 | 4 | 2 | 0 | 2 | Class XII pass with Biology/ Biotechnology/ Biochemistry | NIL |

Learning Objectives

The learning objectives of this course are as follows:

- Develop clear understanding about the microorganisms important in food and various factors affecting their growth.
- The students will gain in depth knowledge about food fermentation, their benefits and the processes involved in production of fermented foods.
- The concept of probiotic, prebiotic and synbiotics will also be discussed. The course also deals with the principle and the techniques involved in processing and preservation of food substances.
- The students will also be trained and be given hands on training in various microbiological techniques involved in food fermentation and food preservation. The course on completion can open many career options.

Learning outcomes

After the completion of this course, the students will have understanding and knowledge of the following

- Microbes important in food, their morphological, cultural, and physiological characteristics, and factors influencing their growth
- Fermented foods and their health benefits. Also, will be acquainted with the microbes and their processes involved in production of fermented foods.
- Causes of food spoilage and be aware of different preservation techniques used to increase the shelf life of food products.
- Acquired hands on experience in isolating and characterizing microbes from food.
- Become familiar with the principle of food fermentation by production of fermented foods in the laboratory.
- Various microbiological and biochemical testing techniques used for assessing the efficacy of various food preservation techniques.

SYLLABUS OF GE - 3

Unit - 1

(06 Hours)

Microorganisms in Food Microbiology: Introduction to microorganisms important in foods: morphological, cultural and physiological characteristics of moulds (*Aspergillus*, *Rhizopus*), yeast (*Saccharomyces*), and bacteria (*Lactobacillus*, *Acetobacter*), Factors affecting microbial growth in foods- intrinsic (pH, water activity, mechanical barriers and redox potential) and extrinsic (temperature, gaseous atmosphere).

Unit – 2

(12 Hours)

Food Fermentation: History, definition and benefits of fermented foods. Types of food fermentations (acid-, yeast-, solid state-, oriental and indigenous fermented foods). Production and maintenance of microbial cultures involved in food fermentation, starter culture and its problems. Production of dairy (dahi, yoghurt, kefir, cheese) and non-dairy fermented foods (dosa, kanji, sauerkraut, tempeh, soy sauce), beverages (beer, wine) and concept of pre-, pro- and syn- biotics.

Unit – 3

(12 Hours)

Principles of food preservation: Definition and causes of food spoilage. Classification of food by ease of spoilage. General principles of food preservation. Preservation by low temperature: freezing & refrigeration. Preservation by high temperature: pasteurisation and canning. Preservation by moisture control: drying and dehydration. Preservation by radiation: Gamma, microwaves and UV rays. Preservation by added food preservatives: salt, sugar, benzoate, nitrite and nitrate, wood smoke, nisin. Preservation by developed preservatives, modified atmosphere packaging.

PRACTICAL

Unit – 1

(12 Hours)

Isolation and characterisation of microbes important in food: Isolation and microscopic examination of fungi from a spoiled bread. Isolation of lactic acid bacteria from curd using MRS medium and microscopic characterisation by Gram's staining. Effect of different temperatures/salt concentration on microbial growth.

Unit – 2

(24 Hours)

Food fermentation: Preparation of kefir using kefir grains/ fermented cabbage (sauerkraut). Viability test for yeast using methylene blue. Survey on the availability and usage of various probiotic foods from market

Unit – 3

(24 Hours)

Food Preservation: Effect of blanching on food preservation. Incubation test for cans/ tetrapack to determine sterility. Alkaline phosphatase test to check efficiency of pasteurization of milk: principle, performance of the test with various pasteurized milk samples, evaluation of milk quality based on results obtained. Assessment of efficiency of sterilisation of milk: principle and performance of Turbidity Test and evaluation of milk quality based on obtained results

ESSENTIAL/ RECOMMENDED READINGS

- 1) Food processing and preservation by H. Naik and T. Amin. CRC Press. 2022.
- 2) Microbiology: A Laboratory Manual by J. Cappuccino and C.T. Welsh. 12th edition. Pearson Education, USA. 2020.
- 3) Microbiology and Technology of fermented foods by R. Hutkins. 2nd edition. Wiley Blackwell, UK. 2019.
- 4) Food Microbiology by W.C. Frazier, D.C. Westhoff, and N.M. Vanitha. 5th edition. TataMcGraw-Hill Publishing Company Ltd, India. 2017.
- 5) Handbook of fermented functional foods by F. Edward. 2nd Edition. CRC press, UK. 2016.
- 6) FSSAI Manual of methods of analysis of foods. Food safety and standards Authority of India, Ministry of Health and Family Welfare, Government of India, 2015.
- 7) Advances in Fermented Foods and Beverages by W. Holzapfel. 1st edition. Woodhead Publishing, USA. 2014.
- 8) Handbook of food and beverage fermentation technology by Y. Hui, L. Meunier- Goddik, J. Josephsen, W. Nip and P. Stanfield. 1st edition. CRC Press, UK. 2004.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-4): MICROBIAL QUALITY CONTROL AND TESTING

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|---------|-----------------------------------|----------|---------------------|--|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Microbial quality control and testing GE 4 | 4 | 2 | 0 | 2 | Class XII pass with Biology/ Biotechnology/ Biochemistry | NIL |

Learning Objectives

The learning objectives of this course are as follows:

- Underscore the importance of microbiological quality control in various sectors.
- Students will gain in-depth knowledge about criteria and procedures for safety in quality assurance in water, food and pharmaceutical sector. They will become proficient in various microbiological techniques used for quality testing of samples will be discussed.
- Students will gain hands-on training in basic microbiological techniques used for quality testing.

Learning outcomes

After completing this course, students will

- Gain an understanding of microbiological quality through Good Microbiological laboratory Practices (GMLP), biosafety levels, quality control of microbiological culture media, sterilization and antimicrobial susceptibility test.
- Have learnt methods to assess potability of drinking water, and become aware of Hazard analysis critical control point (HACCP) for food safety, as well as microbial limits in food and pharmaceutical products. Will be familiar with various microbiological standards and certifications by accredited certification bodies.
- Gained insights into various microbiological, biochemical, molecular and immunological testing techniques used for assessing quality of drinking water and food products.
- Will acquire ability to analyze the potability of water by performing various microbiological tests.

- Be capable of performing various biochemical and microbiological tests used to evaluate the quality of milk, packaged foods, pharmaceutical formulation and will gain knowledge about using phenol coefficient test for assessing quality of disinfectants.
- Will acquire understanding of designing HACCP plan for any food product manufacture like milk processing and packaging.

SYLLABUS OF GE - 4

Unit -1

(06 Hours)

Safety practices and quality control in microbiology: Principles of Good microbiological laboratory practices (GMLP), Concept of biosafety levels (BSLs), Safety equipment and protective measures used in different categories of biosafety levels laboratories. Examples of microorganisms that are classified as BSL-1 to BSL-4. Quality control of microbiological culture media, sterilization, antimicrobial susceptibility test.

Unit -2

(10 Hours)

Quality control and assurance in water, food and pharmaceutical sector: Water potability: criteria and procedures for quality assurance of drinking water, recommended quality control strains for water testing, recommendations of Environmental Protection Agency (EPA) for drinking water quality. Food safety and microbiology: overview of health hazards related to food, Hazard analysis of critical control point (HACCP) for food safety. Role of Codex Alimentarius Commission (CAC) in safety of food and agriculture products. BIS standards, FSSAI standards, ISO certification. Sterility testing of food and pharmaceutical products: importance and objectives, microbial limits.

Unit -3

(14 Hours)

Microbial quality control tests: Collection and processing samples for testing. Detection of microorganisms and sample testing by culture and microscopic methods: direct microscopic counts (fluorescence-based), standard plate count method, selective media (Salmonella-Shigella agar, mannitol salt agar, EMB agar, McConkey agar), Bioburden testing, Most Probable Number (MPN), membrane filtration test, phenol coefficient test. Detection of microorganisms and sample testing by molecular methods: nucleic acid probes, PCR-based detection. Biosensors. Detection of microorganisms and sample testing by biochemical and immunological methods: Endotoxin testing by Limulus lysate test, pyrogen testing, rapid detection methods by Clot-on-Boiling Test (COB), Resazurin assay

PRACTICAL

Unit – 1

(12 Hours)

Water potability: Testing potability of water samples by standard procedures: Most Probable Number method (MPN) /presumptive test, confirmed test, completed test for faecal contamination: principles of the methods, performance of the tests with various water samples using differential and selective media, evaluation of the water quality based on the results obtained. Testing water potability by using standard kits

Unit – 2

(24 Hours)

Food quality control and assurance: Assessment of the microbiological quality of raw versus pasteurized milk by Methylene Blue Dye Reduction Test (MBRT), evaluation and grading of milk quality based on the results obtained. Clot on boiling (COB) test of milk samples: principle, performance of the test with milk samples, and evaluation of milk quality based on results obtained. Sterility testing of canned food, tetra pack drinks and any pharmaceutical formulation (eye drops/ injection ampules) by either using the membrane filtration test or by standard plate count method. Detection of microorganisms in food samples through any one differential and selective medium. Demonstration of phenol coefficient test to evaluate efficacy of disinfectants using standard kits.

Unit – 3

(24 Hours)

HACCP: Student research study project: Designing of HACCP plan for milk processing and packaging or any other food product: product description, flowchart of production, assessing hazards and risks associated with different steps of production till consumption, identification of critical control points (CCP) and critical limits, suggestive procedures to monitor CCPs and corrective actions, effective record keeping to document the HACCP plan, and procedures for verification

ESSENTIAL/ RECOMMENDED READINGS

- 1) Analytical Food Microbiology: A Laboratory Manual by A.E. Yousef, J.G. Waite-Cusic and J.J. Perry. 2nd edition. Wiley Publishers, UK. 2022.
- 2) Laboratory Manual of Food Microbiology by N. Garg, K.L. Garg and K.G. Mukerji. Dreamtech Press, India. 2021.
- 3) Microbiology: A Laboratory Manual by J. Cappuccino and C.T. Welsh. 12th edition. Pearson Education, USA. 2020.
- 4) Prescott's Microbiology by J. M. Willey, K. Sandman and D. Wood. 11th edition.
- 5) McGrawHill Higher Education, USA. 2019.
- 6) Food Safety & Quality Control by P. Mathur. Orient Black Swan Pvt. Ltd., India. 2018.
- 7) Manuals of methods of analysis of foods and water by Food safety and standards authority of India, Ministry of health and family welfare, Government of India, 2016.
- 8) Food Microbiology by W.C. Frazier, D.C. Westhoff, and N.M. Vanitha. 5th edition. TataMcGraw-Hill Publishing Company Ltd, India. 2013.

- 9) Handbook of Microbiological Quality Control in Pharmaceuticals and Medical Devices by R.M. Baird and S.P. Denver. 1st edition, CRC Press, U.K. 2000.
- 10) Microbiological Analysis of Food and Water: Guidelines for Quality Assurance by N.F. Lightfoot and E.A. Maier. Elsevier Science. 1998.
- 11) Essentials of Food Microbiology by J.H. Garbutt. 2nd edition. Hodder Arnold Publishers. 1997.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-5): MICROBES IN ANIMAL HEALTH

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------------------------|---------|-----------------------------------|----------|---------------------|--|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Microbes in animal health GE 5 | 4 | 2 | 0 | 2 | Class XII pass with Biology/ Biotechnology/ Biochemistry | NIL |

Learning Objectives

The learning objectives of this course are as follows:

- Introduce the students to the importance of microorganisms in animal health.
- Students will learn about the interactions of microbes with various types of livestock and pet animals. Students will be introduced to various bacterial, fungal, viral and protozoan diseases of animals.
- They will be introduced to various types of microorganisms residing in rumen, and learn about various methods for obtaining blood, rumen fluid and milk samples from animals.
- They will be introduced to principles of various diagnostic methods used in lab diagnosis of animal infections. Students will learn about the vaccination schedule followed for cattle and poultry.

Learning outcomes

After the completion of this course, the students will acquire understanding of the following:

- Various types of livestock and pet animals, rumen microflora, and their advantages and disadvantages.
- Spectrum of diseases caused by bacteria and fungi in animals, becoming familiar with the symptoms, transmission mode, treatment, prevention and control of various bacterial and fungal diseases.
- Symptoms, transmission, treatment, prevention and control of various diseases caused by viruses and protozoa.
- Various methods of sampling of blood and rumen fluid. Will have had hands-on training for the detection of mastitis by testing milk samples.
- Principles of serological tests based on agglutination, precipitation, haemagglutination inhibition, ELISA and lateral flow assays for diagnosis of animal diseases/infection.
- Vaccination schedule followed for cattle, buffalo and poultry. They will learn the concept of differentiation between the vaccinated and infected animals.

SYLLABUS OF GE - 5

Unit – 1 (08 Hours)

Introduction to livestock and rumen microflora: A brief introduction of various types of livestock and pet animals: cattle, sheep, goat, dogs, cats and poultry. Different types of microbes in rumen along with their functions: archaeobacteria (methanogens), bacteria, protozoa, fungi (cellulolytic and proteolytic).

Unit – 2 (12 Hours)

Bacterial and fungal diseases of animals: A concise overview of aetiological agent, symptoms, transmission, treatment, prevention and control of the following bacterial and fungal diseases: anthrax, brucellosis, mastitis, Johne's disease, campylobacteriosis, black quarter, haemorrhagic septicemia (HS), aspergillosis and mucormycosis.

Unit - 3 (10 Hours)

Viral and protozoan diseases of animals: An overview of aetiological agent, symptoms, transmission, treatment, prevention and control of following viral diseases: foot and mouth disease (FMD), rinderpest/PPR, blue tongue disease, avian influenza, canine distemper, rabies, babesiosis, theileriosis and trypanosomiasis.

PRACTICAL

Unit – 1 (16 Hours)

Sampling methods for obtaining blood, rumen fluid and milk: Sampling of blood from cattle, sheep, goat, dog, cat, mice and poultry by virtual lab. Sampling of rumen fluid: syringe, rumenotomy by virtual lab/video. Sampling of milk: California mastitis test

Unit – 2**(28 Hours)**

Serological tests for diagnosis of infectious agent: Principle and working method of: Agglutination, precipitation, haemagglutination inhibition assay, ELISA, and Lateral flow assay for antigen detection.

Unit – 3**(16 Hours)**

Vaccination of livestock animals: Concept of differentiation between infected and vaccinated animal (DIVA test) for FMD and brucellosis. **Student group project:** Research study and review of the vaccination schedules for cattle, buffalo and poultry.

ESSENTIAL/ RECOMMENDED READINGS

- 1) Brock Biology of Microorganisms by M.T. Madigan, K.S. Bender, D.H. Buckley, W.M. Sattley and D.A. Stahl. 16th edition. Pearson Education, USA. 2021.
- 2) Microbiology: A Laboratory Manual by J. Cappuccino and C.T. Welsh. 12th edition. Pearson Education, USA. 2020
- 3) Prescott's Microbiology by J. M. Willey, K. Sandman and D. Wood. 11th edition. McGrawHill Higher Education, USA. 2019.
- 4) Microbiology: An Introduction by G.J. Tortora, B.R. Funke, and C.L. Case. 13th edition. Pearson, USA. 2018.
- 5) Textbook of Microbiology by R. Ananthanarayan and C.K.J. Paniker. 10th edition. Universities Press, India. 2017.
- 6) Jawetz, Melnick and Adelberg's Medical Microbiology by K.C. Carroll, S.A. Morse, T.A. Mietzner and S. Miller. 27th edition. McGraw Hill Education. 2016.
- 7) Veterinary Microbiology by D. Scott McVey, Melissa Kennedy and M.M. Chengappa. 3rd edition. Wiley – Blackwell, USA. 2013.
- 8) Handbook of Good Dairy Husbandry Practices. National Dairy Development Board (NDDB).
- 9) Practicals and Viva in Medical Microbiology by V. Randhawa, G. Mehta and K. Sharma. 2nd edition. Elsevier, India. 2009.
- 10) Mackie and McCartney Practical Medical Microbiology by J. Collee, A. Fraser, B. Marmion and A. Simmons. 14th edition. Elsevier publications. 1996

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Department of Electronic Sciences

BSc. (Hons.) Electronic Sciences Category-I

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Programming Fundamentals using Python ELDCS-1 | 4 | 3 | 0 | 1 | Course Admission Eligibility | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

This course introduces the student to the fundamental understanding of the Python programming language. The main objective is to help students learn to use the Python programming language to solve problems of interest to them. It introduces the core programming basics including data types, operators, input/output, control structures, iterative and recursive constructs, compound data types, and program design with functions. The course also discusses the fundamental principles of Object-Oriented Programming (OOP), as well as comprehensive data and information processing technique.

Learning outcomes

The Learning Outcomes of this course are as follows:

- CO1 Read, write and debug python programs to solve computational problems.
- CO2 Select and use a suitable programming construct and data objects like lists, sets, tuples and dictionaries for solving a given problem.
- CO3 Be proficient in the handling of strings and functions
- CO4 Use Python libraries
- CO5 Articulate OOP concepts such as encapsulation, inheritance and polymorphism and use them in applications

SYLLABUS OF DSC-1

UNIT – I Starting with Python (12 Hours)

Introduction to Python: Python Interpreter-IDLE (script and interactive mode), Python shell, using Python as calculator, concept of data types; variables, Identifiers and keywords, Literals, Strings, Operators (Arithmetic operator, Relational operator, Logical operator, Boolean operator, Assignment operators, Membership operators(in and not in), Identity operators, Bit wise operator, Increment or Decrement operator), comments in the program, understanding error messages.

Creation of a Python Program: Input and Output Statements, Control statements -Branching (if-else, if-elif-else), indentation in python, iteration (using for, while), Conditional Statement, exit function, Difference between break, continue and pass, Nested conditionals

UNIT – II Strings and Lists (12 Hours)

Data objects in Python: Mutable and immutable

Strings- Creating and Storing Strings, Accessing Characters in String by Indexing (positive and negative), String Operations: concatenation, replication (*), membership, comparison, Slicing, string built-in functions, String method

Lists- Creating Lists, Accessing list elements, traversing a list , Aliasing a list, comparing list , list Operations:- concatenation, replication(*), membership, slicing, Indexing, nested list, list built-in functions List methods , del statement.

Sets: Creating sets, Sets built-in functions, Set Methods

UNIT – III Tuples and Dictionaries (12 Hours)

Tuples: Creating Tuples, Tuple operations: slicing, concatenation, replication, membership, comparing and deletion, tuple built-in functions

Dictionaries: Dictionary in python (key : value pairs), creating a dictionary, element accessing and traversing a dictionary, appending values, updating values, removing items from dictionary, membership, dictionary built-in functions, dictionary methods , clear statement

Object Oriented Programming: Introduction to Classes, Objects and Methods, Encapsulation, Inheritance, Polymorphism, Abstraction

UNIT – IV Functions and Modules (12 Hours)

Functions: Built in function (math, statistics), User defined functions: Defining Functions, arguments: positional, default, keyword, variable length arguments, scope of variables, parameter passing (string list, dictionary, tuples, sets), return statement, recursion, importing (using import) user defined function (path).

Modules in python: use of keyword from, namespacing, module aliasing, introduction to python packages (matplotlib, pandas, numpy, scikitlearn, nltk, openCV) and libraries and their applications

Practical component (if any) – Programming Fundamentals using Python Lab (30 Hours)

Learning outcomes

- CO1 Develop algorithms and write programs in Python language for arithmetic and logical operations, conditional branching.
- CO2 Write programs in Python language using construct and data objects like strings, lists, sets, tuples, dictionaries, Python libraries and use concept of OOP.
- CO3 Prepare the technical report on the experiments carried.

1. Write a python menu driven program to calculate area of circle, rectangle, square using if-elif-else.
2. Write a python program to print Fibonacci series up to a certain limit (use 'while').
3. Write a python program to print the Pascal triangle.
4. Write a python program to find HCF (GCD) of two numbers.
5. Write a python program to find LCM of two numbers.
6. Write Python programs to illustrate the various functions of the "Math" module, "Statistics" module in Python.
7. Write a Python program to count number of vowels using sets in given string
8. Write a Python program to Remove all duplicates from a given string in Python
9. Write a Python program to count positive and negative numbers in a list
10. Write a Python program to find sum of elements in list
11. Write a python program to read a list of 'n' integers (positive and negative) and create two new lists one having all positive numbers and the other having all negative numbers from the given list. Print all three lists.
12. Write a python program to create a list of tuples from given list having number and its cube in each tuple
13. Create a Python program to create a dictionary which has record of a student information: Admission number, Roll Number, Name and Marks. Display information on the basis of Admission number
14. Write a python program which contains user defined functions as a 'module' to calculate area, perimeter or surface area, volume for various shapes like square, cube, circle, cylinder. The user defined functions should accept the values for calculation as parameters and calculated values should be returned. Import the module and use appropriate functions.
15. Create a menu driven Python program using user defined functions to implement a calculator to perform :
 - (a) Basic arithmetic operations
 - (b) $\log_{10}(x)$, $\sin(x)$, $\cos(x)$

Note: Students shall sincerely work towards completing all the above listed practicals for this course. In any circumstance, the completed number of practicals shall not be less than twelve.

Essential/recommended readings

1. Allen B. Downey, "Think Python: How to Think Like a Computer Scientist", 2nd edition, Updated for Python 3, Shroff/O'Reilly Publishers, 2016 (<http://greenteapress.com/wp/thinkpython/>)
2. Guido van Rossum and Fred L. Drake Jr, —An Introduction to Python – Revised and updated for Python 3.2, Network Theory Ltd., 2011.
3. John V Guttag, —Introduction to Computation and Programming Using Python“, Revised and expanded Edition, MIT Press, 2013
4. Robert Sedgewick, Kevin Wayne, Robert Dondero, —Introduction to Programming in Python: An Inter-disciplinary Approach, Pearson India Education Services Pvt. Ltd., 2016.

- Timothy A. Budd, —Exploring Python^{ll}, Mc-Graw Hill Education (India) Private Ltd., 2015.

Suggestive readings

- Kenneth A. Lambert, —Fundamentals of Python: First Programs^{ll}, CENGAGE Learning, 2012.
- Charles Dierbach, —Introduction to Computer Science using Python: A Computational Problem-Solving Focus, Wiley India Edition, 2013.
- Paul Gries, Jennifer Campbell and Jason Montoyo, —Practical Programming: An Introduction to Computer Science using Python 3^{ll}, Second edition, Pragmatic Programmers, LLC, 2013.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2): Circuit Theory &

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Circuit Theory & Network Analysis ELDSC-2 | 4 | 3 | 0 | 1 | Course Admission Eligibility | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

- To study the basic circuit concepts in a systematic manner suitable for analysis and design.
- To study the steady state analysis of AC Circuits.
- To study and analyse electric circuits using network theorems.
- To study and design passive filters using R, L and C

Learning outcomes

The Learning Outcomes of this course are as follows:

- CO1 Study basic circuit concepts in a systematic manner suitable for analysis and design.
 CO2 Determine AC steady state response.
 CO3 Analyse the electric circuits using network theorems.
 CO4 Determine frequency response of filters

SYLLABUS OF DSC- 2

UNIT – I Introduction to Circuits and DC Analysis (12 Hours)

Basic Circuit Concepts: Voltage and Current Sources, V- I characteristics of ideal voltage and ideal current sources, various types of controlled sources, passive circuit components, V-I characteristics, and ratings of different types of R, L, C elements.

DC Circuit Analysis: Kirchhoff's Current Law (KCL), Kirchhoff's Voltage Law (KVL), Node Analysis, Mesh Analysis, Super node & Super mesh Analysis, Star-Delta Conversion.

UNIT – II AC Analysis (12 Hours)

Steady State Analysis: Sinusoidal Voltage and Current, Definition of Instantaneous, Peak, Peak to Peak, Root Mean Square and Average Values. Phasor, Complex Impedance, Sinusoidal Circuit Analysis for RL, RC and RLC Circuits. Node and Mesh Analysis for AC circuits. Star-Delta Conversion for complex impedances.

Power in AC Circuits: Instantaneous Power, Average Power, Reactive Power, Power Factor.

UNIT – III Network Theorems (12 Hours)

Network Theorems: Principal of Duality, Superposition Theorem, Thevenin's Theorem, Norton's Theorem, Reciprocity Theorem, Millman's Theorem, Maximum Power Transfer Theorem. (Independent Sources)

AC circuit analysis using Network Theorems.

UNIT – IV Filters (9 Hours)

Filters and Resonance: Introduction to Passive Filters-High Pass, Low Pass, Band Pass & Band Stop Filters, Frequency response of RC Circuits-High pass and Low pass filters, Frequency response of Series and Parallel RLC Circuits. Resonance in Series and Parallel RLC Circuits, Quality (Q) Factor and Bandwidth, Band Pass and Band Stop RLC Filters.

Practical component (if any) - Circuit Theory and Network Analysis Lab (Hardware and Circuit Simulation Software) (30 Hours)

Learning outcomes

CO1 Verify the network theorems and operation of typical electrical circuits.

CO2 Choose the appropriate equipment for measuring electrical quantities and verify the same for different circuits.

CO3 Prepare the technical report on the experiments carried.

1. Familiarization with Multimeter: Resistance, Capacitor and Inductor in series, parallel and series-parallel.
2. Familiarization with Oscilloscope: Measurement of Amplitude, Frequency and phase of a sinusoidal signal
3. Verification of Kirchhoff's Current Law.
4. Verification of Kirchhoff's Voltage Law
5. Verification of Norton's theorem.
6. Verification of Thevenin's Theorem.
7. Verification of Superposition Theorem.

8. Verification of the Maximum Power Transfer Theorem.
9. Design of Low Pass RC Filter and study of its Frequency Response.
10. Design of High Pass RC Filter and study of its Frequency Response.
11. Study of Frequency Response of a Series LCR Circuit and determination of its (a) Resonant Frequency (b) Impedance at Resonance (c) Quality Factor Q (d) Band Width.

Note: Students shall sincerely work towards completing all the above listed practicals for this course. In any circumstance, the completed number of practicals shall not be less than nine.

Essential/recommended readings

1. S. A. Nasar, Electric Circuits, Schaum's outline series, Tata McGraw Hill (2004)
2. M. Nahvi and J. Edminister, Electrical Circuits, Schaum's Outline Series, Tata McGraw Hill.(2005)
3. Robert L. Boylestad, Essentials of Circuit Analysis, Pearson Education (2004)

Suggestive readings (if any)

1. Alexander and M. Sadiku, Fundamentals of Electric Circuits , McGraw Hill (2008)

DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-3): Semiconductor Devices

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------------------|---------|-----------------------------------|----------|---------------------|------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Semiconductor Devices ELDSC-3 | 4 | 3 | 0 | 1 | Course Admission Eligibility | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand the Physics of semiconductor devices
- To be able to plot and interpret the current voltage characteristics for basic semiconductor devices
- The student should be able to understand the behaviour, characteristics and applications of power devices such as SCR, UJT, DIAC, TRIAC, IGBT

Learning outcomes

The Learning Outcomes of this course are as follows:

- CO1 Describe the behavior of semiconductor materials
- CO2 Reproduce the I-V characteristics of diode/BJT/MOSFET devices
- CO3 Apply standard device models to explain/calculate critical internal parameters of semiconductor devices
- CO4 Explain the behavior and characteristics of power devices such as SCR/UJT etc.

SYLLABUS OF DSC-3

UNIT – I Introduction to Semiconductors and Carrier Transport (12 Hours)

Basic Concepts of Semiconductors: Energy Bands in Solids, Concept of Effective Mass, Direct and Indirect Bandgap Semiconductors, Density of States (Qualitative understanding), Carrier Concentration at Normal Equilibrium in Intrinsic Semiconductors and its Temperature Dependence, Derivation of Fermi Level for Intrinsic and Extrinsic Semiconductors and its Dependence on Temperature and Doping Concentration

Carrier Transport Phenomena: Drift velocity, Mobility, Resistivity, Hall Effect, Conductivity, Diffusion Process, Einstein Relation, Current Density Equation, Carrier Injection, Generation and Recombination Processes (Qualitative concepts), Continuity Equation.

UNIT – II P-N Junction Devices (12 Hours)

P-N Junction Diode: Space Charge at a Junction, Depletion Layer, Electrostatic Potential Difference at Thermal Equilibrium, Depletion Width and Depletion Capacitance of an Abrupt Junction. Concept of Linearly Graded Junction

Diode Equation and I-V Characteristics (Qualitative), Zener and Avalanche breakdown Mechanism.

Metal Semiconductor Junctions, Ohmic and Rectifying Contacts, Zener diode, Tunnel diode, Varactor Diode, Optoelectronic Devices: LED, Photodiode, Solar cell, LDR, their Circuit Symbols, Characteristics and Applications

UNIT – III Bipolar Junction Transistors (12 Hours)

Bipolar Junction Transistors (BJT): PNP and NPN Transistors, Energy Band Diagram of Transistor in Thermal Equilibrium, Emitter Efficiency, Base Transport Factor, Current Gain, Relation between alpha and beta, Base-Width Modulation, Early Effect, Modes of operation, Input and Output Characteristics of CB, CE and CC Configurations and their Applications.

UNIT – IV FET and Power Devices (9 Hours)

Field Effect Transistors: JFET, Channel Formation, Pinch-Off and Saturation Voltage, Input, Transfer and Output Characteristics.

MOSFET, NMOS, PMOS, Types of MOSFET, Circuit symbols, Working and Characteristic Curves of Depletion mode and Enhancement mode MOSFET (both N channel and P Channel), Complimentary MOS (CMOS) as an Inverter.

Power Devices: Introduction to UJT, SCR, TRIAC, DIAC, IGBT and their Basic Constructional Features (Schematic Diagram), Characteristics and Applications.

Practical component (if any) - Semiconductor Devices Lab (30 Hours)
(Hardware and Circuit Simulation Software)

Learning outcomes

- CO1 Examine the characteristics of Semiconductor Devices
 - CO2 Perform experiments for studying the behaviour of semiconductor devices for circuit design applications
 - CO3 Calculate various device parameters values from their I-V Characteristics
 - CO4 Interpret the experimental data for better understanding of the device behaviour
-
- 1. Study of the I-V Characteristics of Diode – Ordinary and Zener, Solar Cell, Photodiode
 - 2. Study of the I-V Characteristics of the CE, CB and CC configurations of BJT and obtain Input and Output impedances and Gains (Any one configuration to be assigned at the time of Examination)
 - 3. Study of the I-V Characteristics of JFET/MOSFET
 - 4. Study of the I-V Characteristics of the UJT
 - 5. Study of the I-V Characteristics of the SCR
 - 6. Study of the I-V Characteristics of DIAC and TRIAC
 - 7. Study of Hall Effect.

Note: Students shall sincerely work towards completing all the above listed practicals for this course. In any circumstance, the completed number of practicals shall not be less than six.

Essential/recommended readings

- 1. S.M Sze Semiconductor Devices: Physics and Technology, 2nd Edition, Wiley India Edition
- 2. Ben G Streetman and S. Banerjee Solid State Electronic Devices, Pearson Education
- 3. Dennis Le Croisette, Transistors, Pearson Education
- 4. Jacob Millman and Christos Halkias: Electronic Devices and Circuits, Tata McGraw-Hill Edition

Suggestive readings

- 1. Nutan Kala Joshi and Swati Nagpal, Basic Electronics with Simulations and Experiments, Khanna Publishers (2021)
- 2. Jasprit Singh, Semiconductor Devices: Basic Principles, John Wiley and Sons
- 3. Kannan Kano, Semiconductor Devices, Pearson Education

BSc. (H) Instrumentation
Category-I

DISCIPLINE SPECIFIC CORE COURSE -1 (DSC-1) –: Analog Electronics (INDSC1A)

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (If any) |
|------------------------------|---------|-----------------------------------|----------|---------------------|------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Analog Electronics (INDSC1A) | 04 | 03 | - | 01 | Course Admission Eligibility | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

- To impart in-depth knowledge of semiconductor devices & circuits focusing on many aspects of design & analysis
- To design various biasing configurations for transistor circuits
- To provide knowledge of amplifiers and their design
- To introduce the concept of feedback for designing oscillators

Learning outcomes

The Learning Outcomes of this course are as follows:

- Understand the working of the diode circuits
- Analyze analog circuits and their applications using active devices
- Understand the design of feedback circuits and use them in amplifiers and Oscillators
- Explain the operation of various oscillator circuits

SYLLABUS OF DSC-1

UNIT – I

(12 Hours)

Diode and its application: Introduction to semiconductor materials, intrinsic & extrinsic semiconductors. PN junction diode: Depletion region, Junction capacitance, Construction, and Working, Diode equation, Effect of temperature on reverse saturation current, Ideal diode. Diode applications: clipper circuits, clamping circuits, Half wave rectifier, center-tapped, and bridge full-wave rectifiers, calculation of efficiency and ripple factor. DC power supply: Block diagram of regulated power supply, Zener diode as a voltage regulator.

UNIT – II

(12 Hours)

Bipolar Junction Transistor (BJT): NPN and PNP transistors, current components in BJT, Transistor amplifying action, Input and Output characteristics of BJT for CE, CB, CC

configurations (cut-off, active, and saturation regions), CE configuration as a two- port network, h-parameters, h- parameter equivalent circuit.

UNIT – III

(12 Hours)

BJT Biasing: Fixed bias, collector to base bias, emitter bias, and voltage divider bias circuits.

CE amplifier and frequency response: dc and ac load line analysis, Hybrid equivalent of CE, the frequency response of CE amplifier.

Introduction to Power Amplifiers: Class A, Class B, Class AB, and Class C

UNIT – IV

(9 Hours)

Feedback Amplifiers and Oscillators: Concept of feedback, negative and positive feedback, Negative feedback: advantages and disadvantages of negative feedback, voltage (series and shunt), current (series and shunt) feedback amplifiers, derivation of gain, input and output impedances for feedback amplifiers. Oscillators: Barkhausen criteria for sustained oscillations, Study of phase shift oscillator, Colpitt's oscillator, and Crystal oscillator.

Practical component-

(30 Hours)

1. To study I-V characteristics of PN junction and Zener diodes in forward and reverse bias configurations.
2. To study clipping and clamping circuits.
3. To study the Half wave rectifier and full-wave rectifier.
4. To design the power supply with capacitor filter
5. To study input and output I-V characteristics of common base and common emitter transistor configurations.
6. To study Fixed Bias and Voltage divider bias configurations of BJT.
7. To design a Single Stage CE amplifier for a given gain.
8. To study the frequency response of a single stage CE Amplifier
9. To study the Colpitt's Oscillator.
10. To study the Phase Shift Oscillator.
11. To study Class A, Class B and Class AB power amplifier

Essential/recommended readings

1. R. L. Boylestad, L. Nashelsky, K. L. Kishore, Electronic Devices and Circuit Theory, Pearson Education (2006).
2. N Bhargava, D C Kulshreshtha and S C Gupta, Basic Electronics and linear circuits, Tata Mc Graw Hill (2007).
3. J. Millman and C. Halkias, Integrated Electronics, Tata McGraw Hill (2001).
4. David A. Bell, Electronic Devices & Circuits, Oxford University Press, Fifth edition.
5. Mottershed, Electronic Devices, PHI Publication, 1st Edition.
6. D. L. Schilling and C. Belove, Electronic Circuits: Discrete and Integrated, Tata McGraw Hill(2002).

Suggestive readings:

1. J. R. C. Jaegar and T. N. Blalock, Microelectronic Circuit Design, Tata McGraw Hill(2010).
2. Donald A. Neamen, Electronic Circuit Analysis and Design, Tata McGraw Hill(2002).

3. J.Cathey, 2000 Solved Problems in Electronics, Schaum's outline Series, Tata Mc Graw Hill (1991).

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2): Basic Circuit theory (INDSC1B)

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------------|---------|-----------------------------------|----------|---------------------|------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Circuit theory (INDSC1B) | 04 | 03 | - | 01 | Course Admission Eligibility | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

- To develop an understanding of the fundamental laws and elements of electric circuits.
- To learn the energy properties of electric elements and techniques to measure current and voltage.
- To develop the ability to apply circuit analysis to AC and DC circuits.
- To understand signals, waveforms and transient & steady state responses of RLC circuits.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Understand the current-voltage characteristics of basic fundamental elements
- Design and analyze the electronic circuits using various network theorems
- Understand frequency response and behavior of ac circuits
- Understand the concept of two port network and overall response for interconnection of two port networks

SYLLABUS OF DSC- 2

UNIT – I

(12 Hours)

Basic Circuit Concepts: Voltage and Current Sources including their types, Resistors: types and color coding, Capacitor: types and color coding, Inductor: types and color coding, star-delta conversion & delta-star conversion. Sinusoidal voltage and current: Definition of instantaneous, peak to peak, average and rms value.

UNIT – II

(12 Hours)

Concepts of Circuit Analysis: Ohms Law, Kirchhoff's Current Law (KCL), Kirchhoff's Voltage Law (KVL), Node Analysis, Mesh Analysis.

Network Theorem (DC Circuits): Principal of Duality, Superposition Theorem, Thevenin's Theorem, Norton's Theorem, Reciprocity Theorem, Millman's Theorem, Maximum Power Transfer Theorem. Voltage Law (KVL), Node Analysis, Mesh Analysis.

Network Theorem (DC Circuits): Principal of Duality, Superposition Theorem, Thevenin's Theorem, Norton's Theorem, Reciprocity Theorem, Millman's Theorem, Maximum Power Transfer Theorem.

UNIT – III

(12 Hours)

DC Transient Analysis: Time Constant, Response of RC, RL and RLC circuit to dc source(s), Response of source free RC, RL and RLC circuit.

AC Circuit Analysis: Voltage-Current relationship in Resistor, Inductor and Capacitor, Phasor, Complex Impedance. Mesh Analysis, Node Analysis and Network Theorems for AC Circuits. Frequency Response of Series and Parallel RLC Circuits, Resonance, Quality (Q) Factor and Bandwidth. Fundamentals of passive Filters: Low Pass, High Pass, Band Pass and Band Stop.

UNIT – IV

(9 Hours)

Power in AC Circuits: Instantaneous Power, Average Power, Reactive Power, Complex Power and Power Triangle, Power Factor.

Two Port Networks: Introduction to two port networks, Impedance (Z) Parameters, Admittance (Y) Parameters, hybrid (h) parameters and Transmission (ABCD) Parameters.

Practical component-

(30 Hours)

1. Verification of Kirchhoff's Law.
2. Verification of Norton's Theorem.
3. Verification of Thevenin's Theorem.
4. Verification of Reciprocity Theorem.
5. Verification of Superposition Theorem.
6. Verification of the Maximum Power Transfer Theorem.
7. Designing of RC Integrator circuit.
8. Designing of RC differentiator circuit.
9. Designing of a RC Low Pass Filter and study of its Frequency Response.
10. Designing of a RC High Pass Filter and study of its Frequency Response.

Essential/recommended readings

1. S. A. Nasar, Electric Circuits, Schaum's outline series, Tata McGraw Hill (2004).
2. Electrical Circuits, M. Nahvi and J. Edminister, Schaum's Outline Series, Tata McGraw-Hill (2005).
3. Robert L. Boylestad, Essentials of Circuit Analysis, Pearson Education (2004).

Suggestive readings: Nil

1. W. H. Hayt, J. E. Kemmerly, S. M. Durbin, Engineering Circuit Analysis, Tata McGraw Hill (2005).
2. Alexander and M. Sadiku, Fundamentals of Electric Circuits, McGraw Hill (2008).

DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-3): Testing and Measurement (INDSC1C)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------------|---------|-----------------------------------|----------|---------------------|------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Testing and Measurement (INDSC1C) | 04 | 02 | - | 02 | Course Admission Eligibility | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

- To describe the units of measure and the various instruments used in various measurement parameters.
- To teach the various methods in power measurement.
- To make them understand about the error in measurement systems.
- To explain the various components of a testing and calibration system.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Understand the basic concept of measurements and calibration
- Perform error measurement concepts correctly and present final values with the correct units/symbols
- Analyze various standardization techniques in Production Plants
- Familiarize with various testing and calibration procedures in measurement

SYLLABUS OF DSC-3

UNIT – I

(12 Hours)

Introduction to Measurement System, Significance of Measurement, Methods of measurement, Elements of a generalized measurement system.

Performance characteristics of measurement system: Static Characteristics -Accuracy, Sensitivity, Linearity, Precision, Resolution, Threshold, Range, Hysteresis, Dead Band, Backlash, Drift, Impedance Matching and Loading.

Dynamic Characteristics- Types, Fidelity, Speed of Response, Dynamic Error.

UNIT – II

(12 Hours)

Measuring Instruments: Introduction to Voltmeters, Ammeters, Ohmmeters, Digital Multimeters, Clamp Meter, Lux meter, Flux Meter, Tester, Function Generator, Bolometer, B-Dot and D-Dot Sensors.

Errors in measurement systems:

Definition of Errors: Systematic Errors, Instrumental Errors, Environmental Errors, Random Errors, Loading Errors, Limiting Errors. Source of Errors in Measuring Instruments.

UNIT – III

(9 Hours)

Introduction to Testing, Fault, Types of Faults, Methods used for localizing faults, Methods used for ground and short circuit faults, Murray loop test, Varley loop test, location of open circuit faults in cable, types of Probes and Connectors.

UNIT – IV

(12 Hours)

Standardization and Calibration Modelling: Standardization in Production Plants and manufacturing houses, Reliability studies and inspection, Product Standardization techniques, Calibration: Calibration of measuring instruments, Theory and Principles (absolute and secondary or comparison method), Setup, Modelling.

Various Testing and Calibration Systems: Sensor calibration and testing, Analytical methods in calibrating, Automated test and calibration systems.

Practical component -

(30 Hours)

1. Testing of Active and Passive Components.
2. Testing of all basic components.
3. Calculation and verification of Resistance.
4. Calculation and verification of Voltage and Current.
5. Testing of Faulty equipment.
6. Fault diagnosis of Lab. Instruments.
7. Measurement of Temperature.
8. Measurement of Pressure.
9. Measurement of Power.
10. Measurement of Energy using Energy meter.
11. Study of Electrical and Mechanical parameters standards used in testing and calibration.
12. Calibration of Instruments.
13. Testing of Electrical Components.
14. Testing of Various Instruments.
15. Murray Loop test
16. Varley loop test
17. B-Dot sensor, D-Dot sensor
18. Study of Lux meter
19. Study of Flux meter
20. Study of Multimeter

Essential/recommended readings

1. Electrical measurement and measuring Instruments by Golding and Widdis.
2. Electrical and Electronic measurements and Instruments By A.K.Sawhney.

Suggestive readings

1. Electrical measurements and Measuring instruments By Rajendra Prasad.

**Common Pool of Generic Electives (GE) Courses
Offered by Department of Electronic Sciences**

Category-IV

GENERIC ELECTIVES (GE-1): Fundamentals of Electronics

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|----------|-----------------------------------|----------|------------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Fundamentals of Electronics ELGE-1A | 4 | 3 | 0 | 1 | None | None |

Learning Objectives

The Learning Objectives of this course are as follows:

- The paper equips the learners about basic circuit knowledge to analyze electric circuits using network theorems.
- Understand diode and its applications in clipping and clamping circuits, Rectifiers and design regulated power supply using Zener diodes.
- To be able to plot the current voltage characteristics of Diode, Transistors and its different biasing conditions
- Usage of semiconductor devices in designing the circuits.

Learning outcomes

The Learning Outcomes of this course are as follows:

- CO1 Study basic circuit concepts in a systematic manner suitable for analysis and design and further analyze the electric circuit using network theorems.
- CO2 To understand the different types of semiconductor devices and their characteristics
- CO3 Illustrate about working of transistors, transistor-based amplifiers and its biasing.
- CO4 Explain the concepts of feedback and oscillations and construct feedback amplifiers

SYLLABUS OF GE-1

UNIT – I Basic Resistive Circuit (12 Hours)

Ohm's Law, resistors in series and parallel combinations. DC voltage sources: ideal and non-ideal cases; DC current sources: ideal and non-ideal cases; Introduction to Kirchhoff's current law, Kirchhoff's voltage law, voltage divider circuit, current divider circuit; source

transformations– voltage source to current source and current source to voltage source, basic problems. Resistive circuits: Thevenin's theorem, Norton theorem, Superposition theorem, Maximum power transfer theorem.

UNIT – II PN-junction diode and its applications (12 Hours)

PN junction, Unbiased PN junction, Forward and Reversed biased condition, IV-characteristics of PN junction diode, types of diodes – Zener diode, photo diode, LED.

Diode circuits and power supplies. Half and full wave rectifiers, Bridge rectifier (qualitative comparison), Regulated power supply using Zener diode, Basic Clipper and Clamper circuits using diodes.

UNIT – III Bipolar Junction Transistors (BJT) and Biasing (12 Hours)

NPN Transistor and basic transistor action, Definition of α , β and γ and their interrelations, leakage currents, Modes of operation, Input and output characteristics of CB, CE and CC Configurations. Transistor biasing, thermal runaway, stability and stability factor, Fixed bias without and with R_E , collector to base bias, voltage divider bias and emitter bias ($+V_{CC}$ and $-V_{EE}$ bias), circuit diagrams and their working.

UNIT – IV BJT Applications (12 Hours)

BJT amplifier (CE), dc and ac load line analysis, Operating point, Concept of feedback, negative and positive feedback, advantages and disadvantages of negative feedback, voltage (series and shunt), current (series and shunt) feedback amplifiers, gain, input and output impedances. Positive feedback and Barkhausen criteria for oscillations.

Practical component (if any) - Fundamentals of Electronic Lab (30 Hours) (Hardware and Circuit Simulation Software)

Learning outcomes

CO1 Verify the network theorems and operation of typical electrical circuits.

CO2 Study various stages of a zener diode based regulated power supply.

CO3 Understand various biasing concepts, BJT based amplifiers.

1. Study and operation of digital multi-meter, function generator, regulated power supply, CRO, etc.
2. Verification of KVL and KCL.
3. Verification of Superposition theorem.
4. Verification of Thevenin's, Norton's Theorem
5. Verification of Maximum power transfer theorem.
6. To plot the IV-characteristics of a ordinary and Zener diode and LED
7. Study of Half wave and Full Wave Rectifiers
8. Study of Fixed Bias, Voltage divider bias Feedback configuration for transistors.
9. Study of transistor amplifier circuit.

Note: Students shall sincerely work towards completing all the above listed practicals for this course. In any circumstance, the completed number of practicals shall not be less than seven.

Essential/recommended readings

1. R. L. Boylestad & Louis Nashlesky (2007), Electronic Devices & Circuit Theory, Pearson Education.
2. David A. Bell (2008), Electronic Devices and Circuits, Oxford University Press.
3. B L Theraja and AK Theraja, A Textbook Of Electrical Technology - Vol I.

Suggestive readings

1. Donald A. Neamen, Electronic Circuit Analysis and Design, Tata McGraw Hill (2002)

GENERIC ELECTIVES (GE-2): Data Engineering and Analytics

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|----------|-----------------------------------|----------|---------------------|----------------------|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Data Engineering and Analytics ELGE-1B | 4 | 3 | 0 | 1 | None | Basic Knowledge of Python Programming Language |

Learning Objectives

The Learning Objectives of this course are as follows:

The objective of this course is to introduce students to data analysis and impart them skills to solve data analytics problem. Data Engineering is basically designing and building pipelines that transform and transport data into a highly usable format before it reaches the Data Scientists or other end users. These pipelines must take data from many disparate sources and collect them into a single warehouse that represents the data uniformly as a single source of truth.

Learning outcomes

The Learning Outcomes of this course are as follows:

- CO1 Use data analysis tools in the pandas library.
- CO2 Develop understanding of basic data analysis techniques.
- CO3 Collect, explore, clean, munge and manipulate data.
- CO4 Solve real world data analysis problems.
- CO5 Build data science applications using Python based toolkits.

SYLLABUS OF GE-2

UNIT – I Mathematical Foundation for Data Engineering (12 Hours)

Linear Algebra: Vectors, Matrices; Statistics: Describing a Single Set of Data, Correlation, Simpson's Paradox, Correlation and Causation; Probability: Dependence and Independence, Conditional Probability, Bayes's Theorem, Random Variables, Continuous Distributions, The Normal Distribution, The Central Limit Theorem ; Hypothesis and Inference: Statistical Hypothesis Testing, Confidence Intervals, P-hacking, Bayesian Inference

UNIT – II Introduction to Data Engineering and Data Science (12 Hours)

Relationship between Data Engineering and Data Science, Types of Data, Data file formats. Overview of Data Repositories; Data Warehouses, Data Marts, and Data Lakes. Introduction to ETL, ELT, and Data Pipelines. Data Integration Platforms, Traits of Big data, Analysis vs Reporting, Exploratory Data Analysis and Data Science Process. Motivation for using Python for Data Analysis. Introduction to Cloud Computing in Data Science

Essential Python Libraries: NumPy, pandas, matplotlib, SciPy, scikit-learn, stats models

UNIT – III Understanding Pandas and Data Wrangling (12 Hours)

Getting Started with Pandas: Arrays and vectorized computation, Introduction to pandas Data Structures, Essential Functionality, Summarizing and Computing Descriptive Statistics. Data Loading, Cleaning, Preparation and Transformation.

Data Wrangling: Hierarchical Indexing, Combining and Merging Data Sets Reshaping and Pivoting.

UNIT – IV Data Aggregation and Analysis (9 Hours)

Data Aggregation and Group operations: Group by Mechanics, Data aggregation, General split-apply-combine, Pivot tables and cross tabulation

Time Series Data Analysis: Date and Time Data Types and Tools, Time series Basics, date Ranges, Frequencies and Shifting, Time Zone Handling, Periods and Periods Arithmetic, Resampling and Frequency conversion, Moving Window Functions.

Practical component (if any) - Data Engineering and Analytics Lab (Python) (30 Hours)

Learning outcomes

CO1 Implement various data analysis tools in the pandas library.

CO2 Implement various basic data analysis techniques, clean and filter and manipulate data.

CO3 Solve real world data analysis problems.

1. Create a Data Frame and perform Matrix-like Operations on a Data Frame
2. Implement basic array statistical methods (sum, mean, std, var, min, max, argmin, argmax, cumsum and cumprod) and perform sorting operation with sort method.
3. Create a data frame with a following structure using pandas

| EMP ID | EMP NAME | SALARY | START DATE |
|--------|----------|--------|------------|
| 1 | Satish | 50000 | 01-11-2017 |
| 2 | Reeya | 75000 | 12-05-2016 |

| | | | |
|---|-------|--------|------------|
| 3 | Jay | 100000 | 22-09-2015 |
| 4 | Roy | 45000 | 08-01-2017 |
| 5 | Serah | 55000 | 06-02-2018 |

4. Load Pima Indians Diabetes dataset (Source: <https://archive.ics.uci.edu/ml/datasets/diabetes>). Implement the following
 - i. Data Cleaning and Filtering methods (Use NA handling methods, fillna function arguments).
 - ii. Implement descriptive and summary statistics.
 - iii. Plot histogram, bar plot, distplot for features/attributes of the dataset
5. Load Boston Housing Price dataset and perform
 - i. Data cleaning and filtering method on the dataset.
 - ii. Implement descriptive and summary statistics
 - iii. Plot 'distplot' for target variable and 'heatmap' for the correlation in dataset.
6. For above data set, perform grouping the data using index in pivot table, aggregate on specific features with values.
7. For Superstore sales data, perform Time Series Data Analysis.
8. Creating cloud account Amazon/Azure/Google/IBM to store images /files / programs..

Note: Students shall sincerely work towards completing all the above listed practicals for this course. In any circumstance, the completed number of practicals shall not be less than seven.

Essential/recommended readings

1. The Data Engineering Cookbook - Mastering The Plumbing Of Data Science by Andreas Kretz.
2. Practical Statistics for Data Scientists: 50+ Essential Concepts Using R and Python by Peter Bruce, Andrew Bruce, Peter Gedeck, Shroff/O'Reilly. ISBN: 8194435006-978
3. Data Engineering A Complete Guide - 2020 Edition by Gerardus Blokdyk, 5starcooks. ISBN: 1867316718-978
4. The Data Warehouse Toolkit: The Definitive Guide to Dimensional Modeling by Ralph Kimball, Margy Ross, Wiley. ISBN: 978-1118530801

Suggestive readings -

1. Python Data Science Handbook by Jake VanderPlas, Shroff/O'Reilly. ISBN: 978-9352134915
2. Data Science from Scratch: First Principles with Python by Joel Grus, Shroff/O'Reilly. ISBN: 9352138326-978

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-1): Fundamentals of Instrumentation (INGE1A)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department offering the course |
|---|-----------|-----------------------------------|----------|----------------------|-----------------------|--|--------------------------------|
| | | Lecture | Tutorial | Practical / Practice | | | |
| Fundamentals of Instrumentation (INGE1A) | 04 | 03 | - | 01 | Class XII pass | Physics and Mathematics in 10+2 | Instrumentation |

Learning Objectives

The Learning Objectives of this course are as follows:

- To learn about basic concepts of Instrumentation.
- To understand the basic concept of errors and study different types of errors present in measurement systems.
- To study different characteristics of measurement systems.
- To study different types of transducers – resistive, capacitive and inductive
- To study signal conditioning.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Understand the basics of concepts of Instrumentation and measurement systems
- Identify and comprehend various sensors used in the real-life applications and paraphrase their importance
- Classify and explain with examples of transducers, including those for measurement of temperature, strain, motion, and light
- Be conversant in construction and working of signal conditioning circuits

SYLLABUS OF GE-1

UNIT – I

(12 Hours)

Basic concepts of Instrumentation: Generalized instrumentation systems block diagram representation, Error in measurement- Gross Errors, Systematic Errors and Random Errors. Statistical analysis of error in measurement-Arithmetic mean, Deviation, standard deviation

UNIT – II

(9 Hours)

Measurement systems: static characteristics (accuracy, sensitivity, linearity, precision, resolution, threshold, range, hysteresis, dead band, backlash, drift), dynamic characteristics (types, fidelity, speed of response, dynamic error)

UNIT – III

(12 Hours)

Transducers: Classification, Active and Passive. Principle and working of following types: Resistive (Strain Gauge) Capacitive, Inductive (LVDT), Piezoelectric, Light (LDR),

Temperature (RTD, Thermocouple, Thermistor)

UNIT – IV

(12 Hours)

Signal Conditioning: Introduction to Op-Amp, Basic Instrumentation Amplifier, Application of Instrumentation Amplifiers

Practical component- 30 Hours

1. Measurement of strain using strain gauge/load cells.
2. Measuring change in resistance using LDR
3. Measurement of displacement using LVDT.
4. Measurement using capacitive transducer.
5. Measurement of Temperature using Temperature Sensors.
6. Design and study basic circuit of Op-Amp.

Essential/recommended readings

1. Doebelin&Manek, Measurement Systems, McGraw Hill, New York, 1992, 5th edition.
2. Nakra& Choudhary, Instrumentation Measurements and Analysis, Tata McGraw-Hill, 2nd edition.
3. A.K. Sawhney, Electrical & Electronic Measurements & Instrumentation, 19th revised edition.
4. Rangan, Sarma, and Mani, Instrumentation- Devices and Systems, Tata-McGraw Hill, 2nd edition.
5. H.S Kalsi, Electronic Instrumentation, McGraw Hill, 4th edition.
6. DVS Murthy, Measurement & Instrumentation, PHI, 2nd edition.

Suggestive readings:

1. D. Patranabis, Sensors and Transducers, PHI, 2nd edition.
2. A Course in Electrical and Electronic Measurements and Instrumentation, (2005), A.K. Sawhney, DhanpatRai& Co.
3. Mechanical and Industrial Measurements, 3rd Edition, Tenth Edition (1996), R.K. Jain, Khanna Publishers.

GENERIC ELECTIVES (GE-2): Engineering Physics (INGE1B)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department offering the course |
|------------------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|-----------------------------|--------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| Engineering Physics (INGE1B) | 04 | 03 | - | 01 | Class XII pass with Mathematics | Mathematics in 10+2 | Instrumentation |

Learning Objectives

The Learning Objectives of this course are as follows:

- To develop an intuitive understanding of semiconductor physics
- To provide the students a thorough understanding of the fundamentals of optics
- To introduce fundamental aspects of photonics

Learning outcomes

The Learning Outcomes of this course are as follows:

- Gain in-depth knowledge about basic concepts of semiconductor physics
- Understand the physics behind various phenomena in optics
- Understand the photonics

SYLLABUS OF GE-2

UNIT – I

(12 Hours)

Semiconductor physics: Energy bands in semiconductors, Types of semiconductors, Charge carriers, Intrinsic and extrinsic materials. Carrier concentration: Fermi Level, Electron and hole concentration equilibrium, the temperature dependence of carrier concentration, Compensation, and charge neutrality. Conductivity and mobility, Effect of temperature, Doping, and high electric field.

UNIT – II

(12 Hours)

Interference: Interference of light, Fringe formation, interference in thin films, wedge-shaped film, Newton's rings, Michelson interferometer.

Diffraction - Single, Double & N- Slit, Diffraction grating, grating spectra, Rayleigh's criterion, and resolving power of grating.

UNIT – III

(12 Hours)

Polarization: Phenomena of double refraction, Nicol prism, Production and analysis of plane, circular and elliptical polarized light, Fresnel's theory of optical activity, Polarimeters.

Laser: Basic principle, Spontaneous and stimulated emission of radiation, Einstein's Coefficients, Laser applications.

UNIT – IV

(3 Weeks)

Photonics: Light Emitting Diodes, Construction, materials, and operation, Photodetectors: Photomultiplier tube. Phototransistors and Photodiodes (p-i-n, avalanche).

LCD Displays: Types of liquid crystals, Principle of Liquid Crystal Displays, applications, advantages over LED displays.

Fiber optics: Principles and applications

Practical component-

1. To determine the type (n or p) and mobility of semiconductor material using Hall-effect
2. To determine the refractive index of a prism using a spectrometer

3. To determine the dispersive power of prism using spectrometer and mercury source.
4. To determine the wavelength of sodium light by Newton's Ring.
5. To determine the wavelength of sodium light using Michelson's Interferometer.
6. To determine the resolving power of diffraction grating
7. To determine the specific rotation of cane sugar using a polarimeter.
8. To find the wavelength of He-Ne Laser using a transmission diffraction grating.
9. To determine characteristics of LEDs and Photodetector.
10. To measure the numerical aperture of an optical fibre.

Essential/recommended readings

1. B. G. Streetman and S. Banerjee "Solid-state electronics devices", 5th Edition, PHI.
2. Donald A Neaman, "Semiconductor Physics and Devices Basic Principles" 3rd Ed TMH India.
3. Alok Dutta, "Semiconductor Devices and circuits", Oxford University Press.
4. Robert F. Pierret, Semiconductor Device Fundamentals, Pearson Education (2006)
5. Ajoy Ghatak –Optics, Fourth Edition, McGraw-Hill (2008).

Suggestive readings

1. Arthur Beiser -Concepts of Modern Physics, 6th Edition, Mc-Graw Hill.
2. S. O. Kasap, Optoelectronics, and Photonics: Principles and Practices, Pearson Education (2009)
3. Ghatak A.K. and Thyagarajan K., Introduction to fiber optics, Cambridge Univ. Press. (1998)

14. Amendment to Appendix -II-A to the Ordinance V (2-A) of the Ordinances of the University vide EC Resolution 18-1-13 dated 18.08.2022 regarding Syllabi of 1st Semester of Ability Enhancement Courses

Add the following:

**ABILITY ENHANCEMENT COURSE (AECs)
UNDER
UGCF-2022
LISTED UNDER APPENDIX-II-A TO THE ORDINANCE V (2-A) OF THE
ORDINANCES OF THE UNIVERSITY
(With effect from Academic Year 2022-23)**

{Environmental Science: Theory to Practical (Course 1) and any chosen Indian Language (Course 1) from AEC Pool shall be studied in flip mode in Semester 1 and Semester II. Similarly, Environmental Science: Theory to Practical (Course 2) and Course 2 of the Same Language as chosen in First Year shall be studied in flip mode in Semester III and Semester IV}

**FOLLOWING ARE THE SYLLABI OF POOL OF ABILITY ENHANCEMENT
COURSES OFFERED UNDER UGCF-2022 IN FIRST YEAR**

DEPARTMENT OF PUNJABI

ABILITY ENHANCEMENT COURSE -1 - PUNJABI BHASHA DA MUDHLA PADHAR

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------|---------|--------------------------------------|----------|------------------------|-------------------------|--|
| | | Lecture | Tutorial | Practical/ Practice | | |

| | | | | | | |
|---|---|---|---|---|--|-----|
| Punjabi Bhasha da Mudhla Padhar (AEC-1) | 2 | 2 | 0 | 0 | Class 12 th pass in any subject | NIL |
|---|---|---|---|---|--|-----|

Credits: 2

L/T/P= 2/0/0

LEARNING OBJECTIVES:

- This Course is designed for the students who couldn't opt Punjabi as a subject at any level in school.
- This Course will help to enhance the ability of the students in speaking, listening, reading and writing Punjabi Language.
- This course will develop the ability of word formation and vocabulary practice amongst students.
- Students will learn meaning of words, phrases and sentences of Punjabi language.
- This course will develop communication skills and understanding of social interaction amongst students of Multi-lingual societies.

LEARNING OUTCOMES:

- After completing this course, the students will be able to read, write, speak and understand the Punjabi language.
- The students will be able to learn basic Punjabi word and sentence formation and practical use of it.
- Students will improve their speaking ability in Punjabi both in terms of fluency and comprehensibility.
- Students will increase their reading speed and comprehension of Punjabi language. They will be able to read News Papers, Magazines and Literature etc.

Unit-I: ਲਿਪੀ ਬੋਧ

(Lipi Bodh) (4 Weeks)

- ਗੁਰਮੁਖੀ ਲਿਪੀ ਨਾਲ ਮੁਢਲੀ ਜਾਣ-ਪਛਾਣ
Gurmukhi Lipi naal Mudhli Jaan-Pachhaan
- ਪੈਂਤੀ ਅੱਖਰੀ ਅਤੇ ਪੈਰ ਬਿੰਦੀ ਵਾਲੇ ਵਰਨਾਂ ਦਾ ਉਚਾਰਨ ਅਤੇ ਸੁੰਦਰ ਲਿਖਾਈ ਦਾ ਅਭਿਆਸ
Painti Akhri ate Pair-bindi vale varnada Ucharan ate Sunder Likhai da Abhiyaas
- ਲਗਾਂ-ਮਾਤਰਾਵਾਂ ਅਤੇ ਲਗਾਖਰਾਂ ਦੀ ਵਰਤੋਂ
Lagan-Matravan ate Lgakhraan di Varton

Unit-II: ਸ਼ਬਦ ਬੋਧ

(Shabad Bodh) (4 Weeks)

- ਬਿਨਾ ਲਗ ਵਾਲੇ, ਇਕ ਲਗ ਵਾਲੇ, ਦੋ ਲਗ ਅਤੇ ਦੋ ਤੋਂ ਵੱਧ ਲਗ ਵਾਲੇ ਸ਼ਬਦਾਂ ਦਾ ਉਚਾਰਨ ਅਤੇ ਲਿਖਣ ਅਭਿਆਸ
Binan Lag Vale, Ik Lag Vale, Do Lag Vale ate Do ton vadh lag Vale Shabadan da Ucharan ate Likhan Abhiyaas
- ਲਿੰਗ ਅਤੇ ਵਚਨ ਦੀ ਵਰਤੋਂ
Ling ate Vachan di Varton
- ਅਗੇਤਰ ਅਤੇ ਪਿਛੇਤਰ ਦੀ ਵਰਤੋਂ
Agetar ate Pichhetar di Varton

Unit III: ਅਰਥ ਬੋਧ

(Arth Bodh) (4 Weeks)

- ਸਮੇਂ, ਦਿਨਾਂ, ਦੇਸੀ ਮਹੀਨਿਆਂ, ਰੁੱਤਾਂ, ਦਿਸ਼ਾਵਾਂ, ਗਿਣਤੀ, ਜਾਨਵਰਾਂ, ਪੰਛੀਆਂ, ਕੀੜੇ-ਮਕੋੜੇ, ਸਰੀਰ ਦੇ ਅੰਗਾਂ, ਸਬਜ਼ੀਆਂ, ਫਲਾਂ ਨਾਲ ਸੰਬੰਧਤ ਸ਼ਬਦਾਵਲੀ ਦਾ ਉਚਾਰਨ ਅਤੇ ਲਿਖਣ ਅਭਿਆਸ
Samey, Dinan, Desi Mahinian, Ruttan, Dishaavan, Ginti, Janavran, Panchhian, Keerhe-Makaurhe, Sareer de Angaan, Sabziaan, Phalaan naal Sambandhat Shabdaavli da Ucharan ate likhan Abhiyaas
- ਘਰ ਦੇ ਕੰਮ-ਧੰਦੇ, ਰਸੋਈ ਦਾ ਸਮਾਨ, ਪਹਿਰਾਵੇ, ਖਾਣ-ਪੀਣ, ਲੋਕ ਕਿੱਤਿਆਂ, ਖੇਤੀ-ਬਾੜੀ, ਤਿੱਥਾਂ-ਤਿਉਹਾਰਾਂ, ਦਰੱਖਤਾਂ ਨਾਲ ਸੰਬੰਧਤ ਸ਼ਬਦਾਵਲੀ ਦਾ ਉਚਾਰਨ ਅਤੇ ਲਿਖਣ ਅਭਿਆਸ
Ghar de Kamm-Dhande, Rasoi da Samaan, Pehraave, Khaan-Peen, Lok Kittean, Kheti-Barhi, Tithaan-Teoharan, Darakhtaan naal Sambandhat Shabdaavli da Ucharan ate likhan Abhiyaas
- ਸਮਾਨਾਰਥਕ ਸ਼ਬਦ, ਵਿਰੋਧਾਰਥਕ ਸ਼ਬਦ, ਬਹੁਅਰਥਕ ਸ਼ਬਦ ਅਤੇ ਬਹੁਤੇ ਸ਼ਬਦਾਂ ਦੀ ਥਾਂ ਇਕ ਸ਼ਬਦ ਦਾ ਉਚਾਰਨ ਅਤੇ ਲਿਖਣ ਅਭਿਆਸ
Samanarthak Shabad, Virodharthak Shabad, Bahuarthak Shabad ate Bahute Shabdan di thaani Shabad da Ucharan ate likhan Abhiyaas

Unit IV: ਵਾਕ ਬੋਧ

(Vaak Bodh) (3 Weeks)

- ਸਧਾਰਨ ਵਾਕ, ਪ੍ਰਸ਼ਨ ਵਾਚਕ ਵਾਕ ਅਤੇ ਨਾਂਹ ਵਾਚਕ ਵਾਕ ਦੀ ਪਛਾਣ ਅਤੇ ਲਿਖਣ ਦਾ ਅਭਿਆਸ
Sadharan Vaak, Prashan Vaachak Vaak ate Nahn Vaachak Vaak di Pachhaan ate Likhan da Abhiyaas
- ਆਮ ਬੋਲ-ਚਾਲ, ਦਫ਼ਤਰੀ ਕੰਮ-ਕਾਜ, ਖਰੀਦੋ-ਫ਼ਰੋਖਤ ਨਾਲ ਸੰਬੰਧਤ ਸੰਵਾਦ ਦਾ ਵਾਕ ਲਿਖਣ ਅਭਿਆਸ
Aam Bol-chal, Daftri Kamm-kaaj, Kharido-Pharokhat naal Sambandhat Sanvaad da Vaak Likhan Abhiyaas
- ਸ਼ੁੱਧ ਵਾਕ ਲਿਖਣ ਦਾ ਅਭਿਆਸ
Shudh Vaak Likhan da Abhiyaas

ESSENTIAL READINGS

- **Adhunik Punjabi Viakaran ate lekh rachna** (2019), Punjab School Sikkhia Board, Sahibzada Ajeet Singh Nagar.

- **Punjabi Path Pustak-4** (Dooji Bhasha) (2020), Punjab School Sikkhia Board, Sahibzada Ajeet Singh Nagar.
- Teja, Charnjit Singh (Eds.) (2017), **Pehli Kitab**, Sann Santali Publication, Amritsar.

SUGGESTED READINGS:

- Brar, Boota Singh, Nachhattar Singh (2015), **Punjabi Bhasha lipi ate Viakaran**, Arsee Publishers, New Delhi.
- Duggal, Narinder Singh (Dr.) (2000), **Punjabi Viakaran te Rachnavali**, New Book Company, Jalandhar.
- Harkirat Singh (2004), **Saadi Bhasha**, Punjabi University, Patiala.
- Harkirat Singh te Giani Lal Singh (1999), **Punjabi Viakaran**, Punjab State University Text Book Board, Chandigarh.
- Harkirat Singh (1988), **Punjabi Baare**, Punjabi University, Patiala.
- Teja Singh (1947), **Punjabi Kiven Likhiye (Second Edition)**, Hind Publishers Limited, Jalandhar.

INTERNET RESOURCES:

- <http://www.learnpunjabi.org/pr.aspx>

*(Note: Teachers are free to recommend additional related standard source books, if required so.)

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

ABILITY ENHANCEMENT COURSE -2 (AEC-2)

PUNJABI BHASHA DA UCHERA PADHAR

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|--|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Punjabi Bhasha da Uchera Padhar (AEC-2) | 2 | 2 | 0 | 0 | Class 12 th pass in any subject | Studied Punjabi up to 10 th Standard or <i>Working knowledge of Punjabi language</i> |

LEARNING OBJECTIVES:

- This Course is designed for the students who have qualified Punjabi as a subject in the 10th standard or working knowledge of Punjabi Language.
- This Course will help to enhance the ability of the students in Punjabi language at intermediate level.
- The aim and objective of the course is to help the students to get knowledge of Punjabi Grammar.
- The course will expose students to a research enterprise which seeks to discover what a person's linguistic capacity consists of, how it arises in children, how it functions in speaking and listening.
- The objective of course is to make students familiar with word category, word structure and sentence making in Punjabi language.

LEARNING OUTCOMES:

- The study of Language develops logical mind of students and also enrich their linguistic aptitude. Language ability is helpful to the students to understand other language structure.
- Students will develop a fundamental understanding of the word structure of Punjabi language.
- Students will understand and use methods of logical analysis while analysing the Punjabi Language.
- After completing this course students will get exposed to the knowledge of Punjabi Grammar.
- This course will increase proficiency of students in the field of Punjabi language skills at an intermediate level.

Unit-I ਸ਼ਬਦ ਸ਼੍ਰੇਣੀਆਂ

(Shabad Shrenian) (4 Weeks)

- ਨਾਂਵ, ਪੜਨਾਂਵ ਅਤੇ ਵਿਸ਼ੇਸ਼ਣ ਨਾਲ ਜਾਣ-ਪਛਾਣ
Naav, Parhnaav ate Visheshan naal Jaan-Pachhaan
- ਕਿਰਿਆ, ਕਿਰਿਆ-ਵਿਸ਼ੇਸ਼ਣ ਨਾਲ ਜਾਣ-ਪਛਾਣ
Kirya, Kirya-Visheshan naal Jaan-Pachhaan
- ਸੰਬੰਧਕ ਅਤੇ ਯੋਜਕ ਨਾਲ ਜਾਣ-ਪਛਾਣ
Sambandhak ate Yojak naal Jaan-Pachhaan

Unit-II ਸ਼ਬਦ ਰਚਨਾ

(Shabad Rachna) (4 Weeks)

- ਸਧਾਰਨ ਸ਼ਬਦ (ਕੋਸ਼ੀ ਅਤੇ ਵਿਆਕਰਨਕ ਸ਼ਬਦ) ਅਤੇ ਮਿਸ਼ਰਿਤ ਸ਼ਬਦ (ਧਾਤੂ+ਵਧੇਤਰ)
Sadharan Shabad (Koshi ate Viakarnik Shabad) ate Mishrit Shabad (Dhatu +Vadhatar)
- ਸਮਾਸੀ ਸ਼ਬਦ

Samasi Shabad

- ਸੈਗਾਤੀ ਸ਼ਬਦ (ਤਤਸਮ: ਸੰਸਕ੍ਰਿਤ, ਅਰਬੀ-ਫ਼ਾਰਸੀ ਅਤੇ ਅੰਗਰੇਜ਼ੀ, ਤਦਭਵ: ਸੰਸਕ੍ਰਿਤ, ਅਰਬੀ-ਫ਼ਾਰਸੀ ਅਤੇ ਅੰਗਰੇਜ਼ੀ)

Sugaati Shabad (Tatsam: Sanskrit, Arbi-Faarsi ate Angrezi, Tadbhav: Sanskrit, Arbi-Faarsi ate Angrezi)

Unit III ਸ਼ਬਦ ਜੋੜਾਂ ਦੇ ਨਿਯਮ

(Shabad Jorhaan de Niyam) (4 Weeks)

- ਅੰਤਿਮ ਸਥਿਤੀ ਵਿੱਚ (ੳ, ਅ ਅਤੇ ਏ) ਦੀ ਵਰਤੋਂ
Antim Sathiti vich (Ura, Aira ate Iri) di varton
- (ਨ), (ਣ) ਅਤੇ (ਯ), (ਵ) ਦੀ ਵਰਤੋਂ
(Nanna), (Nana) ate (yayya), (Vava) di varton
- (ਹ, ਰ ਅਤੇ ਵ) ਦੀ ਪੈਰ ਚਿੰਨ੍ਹ ਵਜੋਂ ਵਰਤੋਂ
(Haha, Rara ate Vava) di Pair Chingh Vajon Varton

Unit IV ਵਾਕ ਵਟਾਂਦਰਾ

(Vaak Vatnadra) (3 Weeks)

- ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦਾ ਵਾਕ ਪ੍ਰਬੰਧ: ਮੁਢਲੀ ਜਾਣ-ਪਛਾਣ
Punjabi Bhasha da Vaak Parbandh: Mudhli Jaan-Pachhaan
- ਸਧਾਰਨ ਵਾਕ ਤੋਂ ਪ੍ਰਸ਼ਨ ਵਾਚਕ ਅਤੇ ਆਗਿਆਵਾਚਕ ਵਿੱਚ ਵਾਕ ਵਟਾਂਦਰਾ
Sadharan Vaak ton Prashan Vachak ate Aagiavachak vich Vaak Vatandra
- ਸਧਾਰਨ ਵਾਕ ਤੋਂ ਨਾਂਹ ਵਾਚਕ ਅਤੇ ਹਾਂ ਵਾਚਕ ਵਿੱਚ ਵਾਕ ਵਟਾਂਦਰਾ
Sadharan Vaak ton Nahn Vachak ate Haan vachak vich Vaak Vatandra

ESSENTIAL READINGS

- **Adhunik Punjabi Viakaran ate lekh rachna (2019)**, Punjab School Sikkhia Board, Sahibzada Ajeet Singh Nagar.
- Brar, Boota Singh, Nachhattar Singh (2015), **Punjabi Bhasha lipi ate Viakaran**, Arsee Publishers, New Delhi.
- Duggal, Narinder Singh (Dr.) (2000), **Punjabi Viakaran te Rachnavali**, New Book Company, Jalandhar.

SUGGESTED READINGS:

- Brar, Boota Singh (2012), **Punjabi Bhasha Sarot te Saroop**, Waris Shah Foundation, Amritsar.
- Brar, Boota Singh (2018), **Punjabi Viakaran Sidhant ate Vihar** (Fourth Edition), Chetna Parkashan, Ludhiana.
- Duni Chandar (1987), **Punjabi Bhasha te Viyakaran**, Panjab University, Chandigarh.
- Harkirat Singh (2004), **Saadi Bhasha**, Punjabi University Patiala.

- Harkirat Singh, Giani Lal Singh (1999), **Punjabi Viakaran**, Punjab State University Text Book Borad, Chandigarh.
- Harkirat Singh (1988), **Punjabi Baare**, Punjabi University Patiala.
- Teja Singh (1947), **Punjabi Kiven Likhiye (Second Edition)**, Hind Publishers Limited, Jalandhar.

INTERNET RESOURCES:

- <http://www.learnpunjabi.org/pr.aspx>

*(Note: Teachers are free to recommend additional related standard resource books, if required so.)

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

ABILITY ENHANCEMENT COURSE -3 (AEC-3)

PUNJABI BHASHA DA UCHTAM PADHAR

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|--|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Punjabi Bhasha da Uchtam Padhar (AEC-3) | 2 | 2 | 0 | 0 | Class 12 th pass in any subject | Studied Punjabi up to 12 th Standard or Working knowledge of Punjabi language |

Credits: 2

L/T/P= 2/0/0

LEARNING OBJECTIVES:

- This Course is designed for the students who have qualified 10+2 class with Punjabi as a subject or working knowledge of Punjabi Language.
- This course will help to enhance the ability of students in Punjabi writing skill and students will also have enriched in Punjabi language vocabulary.
- Students will understand about correct word formation and different types of Punjabi sentences.
- This course will develop basic ability of translation from Hindi to Punjabi, English to Punjabi and vice versa.
- This course will help students to understand about technical terminology of daily uses in different areas of Punjabi society.
- This course will help students to gain ability of various writing skills that are useful in daily life.

LEARNING OUTCOMES:

- Students will be able to enhance competence of various aspects of Punjabi language.
- After completing this course proficiency of students in Punjabi language will be increased at an advance level.
- Students will be able to understand the complex grammatical structures and specialized vocabulary of Punjabi language.
- Students will be able to understand the linguistic skill of Punjabi language at the advanced level
- After completing this course students will have expertise in translation and writing skills in Punjabi Language.

Unit-I ਸ਼ੁੱਧ ਲਿਖਤ ਅਭਿਆਸ

(Shudh Likhat Abhiyaas) (4 Weeks)

- ਸ਼ਬਦ ਜੋੜਾਂ ਦੇ ਨਿਯਮ: ਸੰਖੇਪ ਜਾਣ-ਪਛਾਣ
Shabad Jorhaan de Niyam: Sankhep Jaan-Pachhaan
- ਸ਼ੁੱਧ ਸ਼ਬਦ ਅਤੇ ਵਾਕ ਲਿਖਣ ਦਾ ਅਭਿਆਸ
Shudh Shabad ate Vaak likhan da Abhiyaas
- ਵਿਸ਼ਰਾਮ ਚਿੰਨ੍ਹਾਂ ਦੀ ਵਰਤੋਂ
Vishraam chinhan di Varton

Unit-II ਅਨੁਵਾਦ ਅਭਿਆਸ

(Anuvad Abhiyaas) (4 Weeks)

- ਅਨੁਵਾਦ ਕਲਾ ਸੰਖੇਪ ਜਾਣ-ਪਛਾਣ
Anuvad Kala Sankhep Jaan-pachhaan
- ਹਿੰਦੀ/ਅੰਗਰੇਜ਼ੀ ਤੋਂ ਪੰਜਾਬੀ ਵਿਚ ਸ਼ਬਦਾਂ ਅਤੇ ਵਾਕਾਂ ਦਾ ਅਨੁਵਾਦ
Hindi/Angrezi ton Punjabi vich Shabadan ate Vaakan da Anuvad
- ਹਿੰਦੀ/ਅੰਗਰੇਜ਼ੀ ਤੋਂ ਪੰਜਾਬੀ ਵਿਚ ਪੈਰੇ ਦਾ ਅਨੁਵਾਦ
Hindi/Angrezi ton Punjabi vich Paire da Anuvad

Unit III ਤਕਨੀਕੀ ਸ਼ਬਦਾਵਲੀ ਅਤੇ ਵਾਕ ਲਿਖਣ ਦਾ ਅਭਿਆਸ

(Takniki Shabadaavli ate Vaak Likhan da Abhiyaas) (4 Weeks)

- ਦਫ਼ਤਰੀ ਸ਼ਬਦਾਵਲੀ
Daftari Shabadaavli
- ਵੱਖ-ਵੱਖ ਵਿਸ਼ਿਆਂ ਨਾਲ ਸੰਬੰਧਤ ਸ਼ਬਦਾਵਲੀ
Vakh-Vakh Visheyan naal Sambandhat Shabadaavli
- ਬੈਂਕ ਸੇਵਾ, ਰੇਲਵੇ ਸੇਵਾ, ਡਾਕ ਵਿਭਾਗ ਸੇਵਾ ਬਾਰੇ ਤਕਨੀਕੀ ਵਾਕ ਲਿਖਣ ਦਾ ਅਭਿਆਸ
Bank Seva, Railway Seva, Dak Vibhag Seva bare Takniki Vaak Likhan da Abhiyaas

Unit IV ਰਚਨਾਤਮਕ ਅਭਿਆਸ

(Rachnatmak Abhiyaas) (3 Weeks)

- ਇਸ਼ਤਿਹਾਰ ਲੇਖਣ ਅਤੇ ਰਿਪੋਰਟ ਲੇਖਣ
Ishtihar Lekhan ate Report Lekhan
- ਚਿੱਠੀ ਅਤੇ ਬਿਨੈ-ਪੱਤਰ ਲੇਖਣ (ਨਿੱਜੀ, ਸਰਕਾਰੀ ਅਤੇ ਵਪਾਰਕ)
Chitthi ate Binae-Pattar Lekhan (Nijji, Sarkaari ate Vapaarak)
- ਪੈਰਾ ਰਚਨਾ ਅਤੇ ਫੀਚਰ ਲੇਖਣ
Paira Rachna ate Feature Lekhan

ESSENTIAL READINGS

- **Adhunik Punjabi Viakaran ate lekh rachna** (2019), Punjab Sakool Sikkhia Borad, Sahibzada Ajeet Singh Nagar.
- **Lazmi Punjabi** (Giarhavin shrenhi lai) (2021-22), Punjab School Sikkhia Borad, Sahibzada Ajeet Singh Nagar.
- Duggal, Narinder Singh (Dr.) (2000), **Punjabi Viakaran te Rachnavali**, New Book Company, Jalandhar.

SUGGESTED READINGS:

- Boota Singh Brar (2014), **Bhasha Vigyan: Sidhant te Vihar**, Lahore Book Shop Ludhiana.
- Brar, Boota Singh (2004), **Punjabi Bhasha: Sarot ate Saroop**, Waris Shah Foundation, Amritsar.
- Brar, Boota Singh (2018), **Punjabi Viyakaran Sidhant ate Vihar (Fourth Edition)**, Chetna Prakashan, Ludhiana.
- Duni Chandar (1987), **Punjabi Bhasha te Viyakaran**, Panjab University, Chandigarh.
- Harkirat Singh (2004), **Saadi Bhasha**, Punjabi University, Patiala.
- Harkirat Singh te Giani Lal Singh (1999), **Punjabi Viakaran**, Punjab State University Text Book Board, Chandigarh.
- Harkirat Singh (1988), **Punjabi Baare (Second Edition)**, Punjabi University, Patiala.
- Teja Singh (1947), **Punjabi Kiven Likhiye (Second Edition)**, Hind Publishers Limited, Jalandhar.

INTERNET RESOURCES:

- <http://www.learnpunjabi.org/pr.aspx>
- <https://sites.google.com/view/ppppjalandhar/11th-gen-punjabi?authuser=0#h.dkh6q9xibqma>

*(Note: Teachers are free to recommend additional related standard resource books, if required so.)

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

ABILITY ENHANCEMENT COURSE (A)
Offered by
DEPARTMENT OF MODERN INDIAN LANGUAGES AND LITERARY STUDIES

ASSAMESE
AEC (A)-I

AEC (A)-I: Translation and Interpretation in Assamese

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|-----------|-----------------------------------|----------|---------------------|---|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Translation and Interpretation in Assamese | 02 | 2 | 0 | 0 | (for students who have studied the language up to Class VIII & above) | NIL |

Learning Objectives : The course aims to prepare bilingual and multilingual students proficient in translation and interpretation, have sufficient knowledge of at least two languages, the source and the target language, and apply them adequately for all practical purposes. Besides, it also aims to build cross-cultural communications and enables the students to use different skills effectively to prepare themselves to take jobs in translation and interpretation.

Learning outcomes: : Students will be able to build various professional, technical, and linguistic skills to take the job of translation and interpretation. Their knowledge in various fields in both the source and the target languages will help them translate in multiple areas and take interpretation jobs for the different target groups; the translator works with the written material/texts; the interpreter will mediate between languages orally.

Allotted classes: 30 hours

Credits: 02

Marks: 50

SYLLABUS :

Unit -I

Five weeks

Translation and Interpretation: Introduction

- Basic requirements: Knowledge of SL and TL, grammar, vocabulary, usages, and sentence structures

- Types: Literary, administrative, legal, technical, and others
- Target groups: Translation - Readers from different fields
Interpretation – Person/group from different profession

Unit -II

Five weeks

- Methods of Translation and Interpretation
- Review of sample translations

Unit -III

Five weeks

- Practical Translation: Assamese to other languages and vice versa
- Interpretation practice: Assamese to other languages and vice versa

Essential/recommended readings:

Bezborah, Nirajana Mahanta. *Anubad: Tattva aru Prayog*, Dibrugarh: Banalata, 2009.
Kotoky, Prafulla. *Tulanamulak Sahitya aru Anubad Bicar*, Guwahati: Jyoti Prakasan, 1989.
Sarma, Madan. *Anuvad Adhyayan: Tatva aru Prayog*. Guwahati: Bandhav Prakasan, 2019.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

ABILITY ENHANCEMENT COURSE (A) BENGALI AEC (A)-I

AEC (A)-I: Translation and Interpretation in Bengali

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|-----------|-----------------------------------|----------|---------------------|---|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Translation and Interpretation in Bengali | 02 | 2 | 0 | 0 | (for students who have studied the language up to Class VIII & above) | NIL |

Learning Objectives : The course aims to prepare bilingual and multilingual students proficient in translation and interpretation, have sufficient knowledge of at least two languages, the source and the target language, and apply them adequately for all practical purposes. Besides, it also aims to build cross-cultural communications and enables the students to use different skills effectively to prepare themselves to take jobs in translation and interpretation.

Learning outcomes: : Students will be able to build various professional, technical, and linguistic skills to take the job of translation and interpretation. Their knowledge in various fields in both the source and the target languages will help them translate in multiple areas and take interpretation jobs for the different target groups; the translator works with the written material/texts; the interpreter will mediate between languages orally.

Allotted classes: 30 hours

Credits: 02 Marks: 50

Unit -I

Eight Weeks

Translation and Interpretation: Introduction

- Basic requirements: Knowledge of SL and TL, grammar, vocabulary, usages, and sentence structures
- Types: Literary and Non-Literary
- Target groups: Translation - Readers from different fields
Interpretation – Person/group from different profession

Unit -II

Four Weeks

- Methods of Translation and Interpretation

Unit -III

Three Weeks

- Practical Translation: Bengali to other languages and vice versa

Essential/recommended readings:

Study material prepared by the Department.

Singha, Uday Narayan. *Anubad Tattwer Bhumika*, Kolkata: Bangabidya Granthamala, 2022

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

ABILITY ENHANCEMENT COURSE (A)

BODO AEC (A)-I

AEC (A)-I: Translation and Interpretation in Bodo

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|---|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Translation and Interpretation in Bodo | 02 | 2 | 0 | 0 | (For students who have studied the language up to Class VIII & above) | NIL |

Learning Objectives : The course aims to prepare bilingual and multilingual students proficient in translation and interpretation, have sufficient knowledge of at least two languages, the source and the target language, and apply them adequately for all practical purposes. Besides, it also aims to build cross-cultural communications and enables the students to use different skills effectively to prepare themselves to take jobs in translation and interpretation.

Learning outcomes : Students will be able to build various professional, technical, and linguistic skills to take the job of translation and interpretation. Their knowledge in various fields in both the source and the target languages will help them translate in multiple areas and take interpretation jobs for the different target groups; the translator works with the written material/texts; the interpreter will mediate between languages orally.

Allotted classes: 30 hours

**Credits: 02, Marks: 50
Three Weeks**

Unit -I

Translation and Interpretation: Introduction

- Basic requirements: Knowledge of SL and TL, grammar, vocabulary, usages, and sentence structures
- Types: Literary, administrative, legal, technical, and others
- Target groups: Translation - Readers from different fields

Interpretation – Person/group from different profession

Unit -II Four Weeks

Four Weeks

- Methods of Translation and Interpretation
- Review of sample translations

Unit -III Eight Weeks

Eight Weeks

- Practical Translation: Bodo to other languages and vice versa
- Interpretation practice: Bodo to other languages and vice versa

Essential/recommended readings:

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

DOGRI
AEC (A)-I

AEC (A)-I: Translation and Interpretation in Dogri

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|-----------|-----------------------------------|----------|---------------------|---|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Translation and Interpretation in Dogri | 02 | 2 | 0 | 0 | (For students who have studied the language up to Class VIII & above) | NIL |

Learning Objectives : The course aims to prepare bilingual and multilingual students proficient in translation and interpretation, have sufficient knowledge of at least two languages, the source and the target language, and apply them adequately for all practical purposes. Besides, it also aims to build cross-cultural communications and enables the students to use different skills effectively to prepare themselves to take jobs in translation and interpretation.

Learning outcomes : Students will be able to build various professional, technical, and linguistic skills to take the job of translation and interpretation. Their knowledge in various fields in both the source and the target languages will help them translate in multiple areas and take interpretation jobs for the different target groups; the translator works with the written material/texts; the interpreter will mediate between languages orally.

Allotted classes: 30 hours

Credits: 02

Marks: 50

Three Weeks

Unit -I

Translation and Interpretation: Introduction

- Basic requirements: Knowledge of SL and TL, grammar, vocabulary, usages, and sentence structures
- Types: Literary, administrative, legal, technical, and others
- Target groups: Translation - Readers from different fields
Interpretation – Person/group from different profession

Unit -II

Four Weeks

- Methods of Translation and Interpretation
- Review of sample translations

Unit -III

Eight Weeks

- Practical Translation: Dogri to other languages and vice versa
- Interpretation practice: Dogri to other languages and vice versa

Essential/recommended readings:

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

**GUJARATI
AEC (A)-I**

AEC (A)-I: Translation and Interpretation in Gujarati

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|-----------|-----------------------------------|----------|---------------------|---|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Translation and Interpretation in Gujarati | 02 | 2 | 0 | 0 | (For students who have studied the language up to Class VIII & above) | NIL |

Course Learning Objectives : The aim of the course is to give an idea to the students about the practical problems of the translation and its interpretation in Gujarati. It is prepared for bilingual and multilingual students proficient in translation and interpretation, have sufficient knowledge of at least two languages, the source and the target language, and apply them adequately for all practical purposes. Besides, it also aims to build cross-cultural communications and enables the students to use different skills effectively to prepare themselves to take jobs in translation and interpretation.

This paper contains of three units, namely, translation and interpretation: an introduction, translation theories, methods and problems of translation and practical and machine translation and interpretation practice. The first unit focuses on translator, features of the translator, basic grammar, vocabulary and etc. Unit two emphasizes on different translation theories, methods and problems of translation. The last unit aims problems in the contemporary on practical translation, role of digital tools in translation and its advantages, problems in contemporary era etc.

Learning outcomes: : Students will be able to build various professional, technical, and linguistic skills to take the job of translation and interpretation. Their knowledge in various fields in both the source and the target languages will help them translate in multiple areas and take interpretation jobs for the different target groups; the translator works with the written material/texts; the interpreter will mediate between languages orally.

Allotted classes: 30 hours

Credits: 02

Marks: 50

Unit -I Translation and Interpretation: An introduction **Six Weeks**

- advantages of the translation :An art, A craft, A profession, An avenue of career
- Basic requirements: Knowledge of the source language and the target language,
- basic grammar, vocabulary, usages and syntax
- Target groups: Translation - Readers from different fields
- Interpretation –for various purposes and people

Unit -II Translation: types, texts and practical Problems **Six Weeks**

- Translation : technicalities, techniques, transliteration
- Translation and interpretation :building a bridge between
- Challenges and choice in translating a text
- A few case studies :

Unit -III Practical and Machine Translation and Interpretation practice

Three Weeks

- Applied Translation: Gujarati to other languages and vice versa
- Interpretation of ideas: Gujarati to other languages and vice versa

Essential/recommended readings:

Christian, Sonal, *Gujarati-English/English-Gujarati Dictionary & Phrasebook* (Hippocrene Dictionary & Phrasebook), 2006

Clair Tisdall, William St., *A Simplified Grammar of the Gujarati Language Together With a Short Reading Book and Vocabulary*, Forgotten Books 25, 2017

Dwyer, y Rachel Dwyer, *Get Started in Gujarati Absolute Beginner Course: The essential introduction to reading, writing, speaking and understanding a new language*.NTC publishing group,2013

Jhaveri, Krishnalal M., *Milestones in Gujarati Literature*, Manohar Publishers & Distributors, 2021

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

**KANNADA
AEC (A)-I**

AEC (A)-I: Translation and Interpretation in Kannada

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|-----------|-----------------------------------|----------|---------------------|---|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Translation and Interpretation in Kannada | 02 | 2 | 0 | 0 | (For students who have studied the language up to Class VIII & above) | NIL |

Learning Objectives : The course aims to prepare bilingual and multilingual students proficient in translation and interpretation, have sufficient knowledge of at least two languages, the source and the target language, and apply them adequately for all practical purposes. Besides, it also aims to build cross-cultural communications and enables the students to use different skills effectively to prepare themselves to take jobs in translation and interpretation.

Learning outcomes : Students will be able to build various professional, technical, and linguistic skills to take the job of translation and interpretation. Their knowledge in various fields in both the source and the target languages will help them translate in multiple areas and take interpretation jobs for the different target groups; the translator works with the written material/texts; the interpreter will mediate between languages orally.

Allotted classes: 30 hours

**Credits: 02
Marks: 50**

Unit -I

Eight Weeks

Translation and Interpretation: Introduction

- Basic requirements: Knowledge of SL and TL, grammar, vocabulary, usages, and sentence structures
- Types: Literary, administrative, legal, technical, and others

- Target groups: Translation - Readers from different fields
Interpretation – Person/group from different profession

Unit -II

Three Weeks

- Methods of Translation and Interpretation
- Review of sample translations

Unit -III

Three Weeks

- Practical Translation: Kannada to other languages and vice versa
- Interpretation practice: Kannada to other languages and vice versa

Essential/recommended readings:

Bhat, Kamalakara. 2022.. Anuvada: Lekhana mattu Udaharanegalu. In *Modern Indian Language - Kannada*, ed. by T. S. Satyanath, Basavaraj Kalgudi and Vikram Visaji, p. 337-75. New Delhi: IGNOU.

Kuntar, Mohan. *Anuvada Sahitya*. Bangalore: Kannada Sahitya Parishattu.

Nagabhushanaswamy, O. L. *Adhunikapurva Kannada Kritigala Inglish Bhashantara*. Gulbarga: Central University of Karnataka.

Usha, M. *Bhashantara Praves hike: Itihasa, Siddhanta mattu Paribhhashegalu*. Hampi: Kannada University.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

**KASHMIRI
AEC (A)-I**

AEC (A)-I: Translation and Interpretation in Kashmiri

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|-----------|-----------------------------------|----------|---------------------|---|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Translation and Interpretation in Kashmiri | 02 | 2 | 0 | 0 | (For students who have studied the language up to Class VIII & above) | NIL |

Learning Objectives : The course aims at building proficiency of all those bilingual and multilingual students in translation and interpretation who have sufficient knowledge of at least two languages- the source and the target language, and further apply them adequately for all practical purposes. Besides, it is also aimed to help the students develop creativity, critical sense and cross-cultural awareness and enable them to use different skills effectively in preparing themselves to take jobs in translation and interpretation.

Learning outcomes: : Students will be able to build various professional, technical, and linguistic skills to take the job of translation and interpretation. Their knowledge in various fields in both the source and the target languages will help them translate in multiple areas and take interpretation jobs for the different target groups; the translator works with the written material/texts; the interpreter will mediate between languages orally.

Allotted classes: 30 hours

Credits: 02

Marks: 50

Unit -I

Eight Weeks

Translation and Interpretation: Introduction

- Basic requirements: Knowledge of SL and TL, grammar, vocabulary, usages, and sentence structures
- Types: Literary and Non-Literary
- Target groups: Translation - Readers from different fields

Interpretation – Person/group from different profession

Unit -II

Four Weeks

- Methods of Translation and Interpretation

Unit -III

Three Weeks

- Practical Translation: Kashmiri to other languages and vice versa

Essential/recommended readings:

Catford,JC, A Linguistic Theory of Translation 1965

Wade, T.R. A Grammar of the Kashmiri Language. Kessinger Publishing(Re-printed)2010

Shauq,Shafi Kashruk Grammar. Ali Mohammad and Sons ,Srinagar 2014

Grierson,G.A.The Standard Manual of the Kashmiri Language(2 Vols) Light and Life Publishers(RE-printed)1973

Koul,O.N.Modern Kashmiri Grammar.Dunwoody Press Springfield 2006

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

**KONKANI
AEC (A)-I**

AEC (A)-I: Translation and Interpretation in Konkani

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|---------|-----------------------------------|----------|---------------------|---|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Translation and Interpretation in Konkani | 02 | 2 | 0 | 0 | (For students who have studied the language up to Class VIII & above) | NIL |

Learning Objectives: The course aims to prepare bilingual and multilingual students proficient in translation and interpretation, have sufficient knowledge of at least two languages, the source and the target language, and apply them adequately for all practical purposes. Besides, it also aims to build cross-cultural communications and enables the students to use different skills effectively to prepare themselves to take jobs in translation and interpretation.

Learning outcomes: Students will be able to build various professional, technical, and linguistic skills to take the job of translation and interpretation. Their knowledge in various fields in both the source and the target languages will help them translate in multiple areas and take interpretation jobs for the different target groups; the translator works with the written material/texts; the interpreter will mediate between languages orally.

Allotted classes: 30 hours

Credits: 02

Marks: 50

Unit -I

Three Weeks

Translation and Interpretation: Introduction

- Basic requirements: Knowledge of SL and TL, grammar, vocabulary, usages, and sentence structures
- Types: Literary, administrative, legal, technical, and others
- Target groups: Translation - Readers from different fields
Interpretation – Person/group from different profession

Unit -II

Four Weeks

- Methods of Translation and Interpretation
- Review of sample translations

Unit -III

Eight Weeks

- Practical Translation: Konkani to other languages and vice versa
- Interpretation practice: Konkani to other languages and vice versa

Essential/recommended readings:

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

MALAYALAM
AEC (A)-I

AEC (A)-I: : Translation and Interpretation in Malayalam

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|-----------|-----------------------------------|----------|---------------------|---|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Translation and Interpretation in Malayalam | 02 | 2 | 0 | 0 | (for students who have studied the language up to Class VIII & above) | NIL |

Learning Objectives: The course aims to prepare bilingual and multilingual students proficient in translation and interpretation, have sufficient knowledge of at least two languages, the source and the target language, and apply them adequately for all practical purposes. Besides, it also aims to build cross-cultural communications and enables the students to use different skills effectively to prepare themselves to take jobs in translation and interpretation.

Learning outcomes: : Students will be able to build various professional, technical, and linguistic skills to take the job of translation and interpretation. Their knowledge in various fields in both the source and the target languages will help them translate in multiple areas and take interpretation jobs for the different target groups; the translator works with the written material/texts; the interpreter will mediate between languages orally.

Allotted classes: 30 hours

Credits: 02

Marks: 50

Three Weeks

Unit -I

Translation and Interpretation: Introduction

- Basic requirements: Knowledge of SL and TL, grammar, vocabulary, usages, and sentence structures
- Types: Literary, administrative, legal, technical, and others

- Target groups: Translation - Readers from different fields
Interpretation – Person/group from different profession

Unit -II

Four Weeks

- Methods of Translation and Interpretation
- Review of sample translations

Unit -III

Eight Weeks

- Practical Translation: Odia to other languages and vice versa
- Interpretation practice: Odia to other languages and vice versa

Essential/recommended readings:

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

**MANIPURI
AEC (A)-I**

AEC (A)-I: Translation and Interpretation in Manipuri

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|-----------|-----------------------------------|----------|---------------------|---|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Translation and Interpretation in Manipuri | 02 | 2 | 0 | 0 | (for students who have studied the language up to Class VIII & above) | NIL |

Learning Objectives : The course aims to prepare bilingual and multilingual students proficient in translation and interpretation, have sufficient knowledge of at least two languages, the source and the target language, and apply them adequately for all practical purposes. Besides, it also aims to build cross-cultural communications and enables the students to use different skills effectively to prepare themselves to take jobs in translation and interpretation.

Learning outcomes : Students will be able to build various professional, technical, and linguistic skills to take the job of translation and interpretation. Their knowledge in various fields in both the source and the target languages will help them translate in multiple areas and take interpretation jobs for the different target groups; the translator works with the written material/texts; the interpreter will mediate between languages orally.

Allotted classes: 30 hours

**Credits: 02
Marks: 50**

Unit -I

Three Weeks

Translation and Interpretation: Introduction

- Basic requirements: Knowledge of SL and TL, grammar, vocabulary, usages, and sentence structures

- Types: Literary, administrative, legal, technical, and others
- Target groups: Translation - Readers from different fields
Interpretation – Person/group from different profession

Unit -II

Four Weeks

- Methods of Translation and Interpretation
- Review of sample translations

Unit -III

Eight Weeks

- Practical Translation: Manipuri to other languages and vice versa
- Interpretation practice: Manipur to other languages and vice versa

Essential/recommended readings:

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

**DEPARTMENT OF MODERN INDIAN LANGUAGES AND LITERARY STUDIES
UNIVERSITY OF DELHI, DELHI – 110007**

**ABILITY ENHANCEMENT COURSE (A)
Under UGCF – 2022 in the line of NEP – 2020**

**Semester: I
MARATHI
AEC (A)-I**

AEC (A)-I: Translation and Interpretation in Marathi

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|---------|-----------------------------------|----------|---------------------|---|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Translation and Interpretation in Marathi | 02 | 2 | 0 | 0 | (for students who have studied the language up to Class VIII & above) | NIL |

Learning Objectives : The course aims to prepare bilingual and multilingual students proficient in translation and interpretation, have sufficient knowledge of at least two languages, the source and the target language, and apply them adequately for all practical purposes. Besides, it also aims to build cross-cultural communications and enables the students to use different skills effectively to prepare themselves to take jobs in translation and interpretation.

Learning outcomes : Students will be able to build various professional, technical, and linguistic skills to take the job of translation and interpretation. Their knowledge in various fields in both the source and the target languages will help them translate in multiple areas and take interpretation jobs for the different target groups; the translator works with the written material/texts; the interpreter will mediate between languages orally.

Allotted classes: 30 hours

**Credits: 02
Marks: 50**

Unit -I **Three Weeks**

Translation and Interpretation: Introduction

- Basic requirements: Knowledge of SL and TL, grammar, vocabulary, usages, and sentence structures
- Types: Literary, administrative, legal, technical, and others
- Target groups: Translation - Readers from different fields
Interpretation – Person/group from different profession

Unit -II **Four Weeks**

- Methods of Translation and Interpretation
- Review of sample translations
-

Unit -III **Eight Weeks**

- Practical Translation: Odia to other languages and vice versa
- Interpretation practice: Odia to other languages and vice versa

Essential/recommended readings:

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

**MAITHILI
AEC (A)-I**

AEC (A)-I: Translation and Interpretation Maithili

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|-----------|-----------------------------------|----------|---------------------|---|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Translation and Interpretation Maithili | 02 | 2 | 0 | 0 | (For students who have studied the language up to Class VIII & above) | NIL |

Learning Objectives : The course aims to prepare bilingual and multilingual students proficient in translation and interpretation, have sufficient knowledge of at least two languages, the source and the target language, and apply them adequately for all practical purposes. Besides, it also aims to build cross-cultural communications and enables the students to use different skills effectively to prepare themselves to take jobs in translation and interpretation.

Learning outcomes : Students will be able to build various professional, technical, and linguistic skills to take the job of translation and interpretation. Their knowledge in various fields in both the source and the target languages will help them translate in multiple areas and take interpretation jobs for the different target groups; the translator works with the written material /texts; the interpreter will mediate between languages orally.

Allotted classes: 30 hours

Credits: 02

Marks: 50

Unit -I

Eight Weeks

Translation and Interpretation: Introduction

- Basic requirements: Knowledge of SL and TL, grammar, vocabulary, usages, and sentence structures
- Types: Literary and Non-Literary i.e. legal, administrative, technical, business and others
- Target groups: Translation - Readers from different fields
Interpretation – Person/group from different profession

Unit –II

Four Weeks

- Methods of Translation and Interpretation
- Review of translated works: A few case studies

Unit –III

Three Weeks

- Practical Translation: Maithili to other languages and vice versa
- Interpreting the nature of translation: Maithili to other languages and vice versa

Essential/recommended readings:

1. Study material compiled by the Department.
2. Goswami, Krishna Kumar. Anuvad Vigyan Ki Bhumika
3. Jha, Pandit Govind. Kumar, Arvind. Dasgupta, Debabrata. Bangala-Maithili Dwibhasik Abhidhan, 2012
4. Jha, Pandit Govind. ed. Kalyani Kosh, A Maithili-English Dictionary, Kalyani Foundation, Kameshwar Singh Bihar Heritage Series, 1999
5. Jha, Ramdeo. Anuvad O Maithili, Smarika, Bokaro: Mithila Sanskritik Parishad, 1995-96
6. Nathan, Gopi. Anuvad Ki Samasyaein
7. Navin, Bhawna. Smriti Rekha (Shefalika Verma), Tr. From Maithili to Hindi, Delhi: Book Rivers, 2021
8. Prasad, Jayanti. Anuvad Siddhant Evam Vyavhar
9. Sahitya Akademi Translated Works (Vinibandh, Kavita, Kahani, Upanyas, Natak, Bal Sahitya, Sahitya Itihas, Vividh)
10. Samir, Shri Narain. Anuvad Ki Prakriya, Taknik Aur Samasya
11. Sen, Gouri. Maithili Galpa Sankalan- Bengali Translation of Selected Post-Independence Maithili Short Stories, Delhi: Sahitya Akademi, Delhi, 2016
12. Singh, Premshankar. Maithili Lokokti Kosh, Mysore: Central Institute of Indian Languages, 2009
13. Singha, Uday Narayan. Translation as Growth: Towards a theory of Language Development, Longman-Pearson, 2010
14. Singha, Uday Narayan. Iisvarchandra Vidyasaagar (Translated from English into Maithili, from Hiranmay Banerji), New Delhi: Sahitya Akademi, Makers of Indian Literature Series, 1983
15. Thakur, Govardhan. Anuvad Vigyan
16. Thakur, Govardhan. Sahitya Mein Anuvad Ki Bhumika
17. Yadava, Yogendra Prasad. Prajna Maithili-Nepali-English Dictionary, Nepal, Kathmandu: Academyn, 2017
18. Verma, Rajiv Kumar., Verma, Jaya. Naaghaans (Shefalika Verma), Translated From Maithili into English, Delhi: Mithilang, 2017; Kindle Publication, 2019
19. Verma, Shefalika. Phanishwar Nath Renu, Translated From Hindi into Maithili, Delhi: Sahitya Akademi, 1995

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

**NEPALI
AEC (A)-I**

AEC (A)-I: Translation and Interpretation in Nepali

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|-----------|-----------------------------------|----------|---------------------|---|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Translation and Interpretation in Nepali | 02 | 2 | 0 | 0 | (For students who have studied the language up to Class VIII & above) | NIL |

Learning Objectives : The course aims to prepare bilingual and multilingual students proficient in translation and interpretation, have sufficient knowledge of at least two languages, the source and the target language, and apply them adequately for all practical purposes. Besides, it also aims to build cross-cultural communications and enables the students to use different skills effectively to prepare themselves to take jobs in translation and interpretation.

Learning outcomes: : Students will be able to build various professional, technical, and linguistic skills to take the job of translation and interpretation. Their knowledge in various fields in both the source and the target languages will help them translate in multiple areas and take interpretation jobs for the different target groups; the translator works with the written material/texts; the interpreter will mediate between languages orally.

Allotted classes: 30 hours

Credits: 02

Marks: 50

Unit -I

Three Weeks

Translation and Interpretation: Introduction

- Basic requirements: Knowledge of SL and TL, grammar, vocabulary, usages, and sentence structures
- Types: Literary, administrative, legal, technical, and others

- Target groups: Translation - Readers from different fields
Interpretation – Person/group from different profession

Unit -II

Four Weeks

- Methods of Translation and Interpretation
- Review of sample translations

Unit -III

Eight Weeks

- Practical Translation: Nepali to other languages and vice versa
- Interpretation practice: Nepali to other languages and vice versa

Essential/recommended readings:

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

ODIA AEC (A)-I

AEC (A)-I: Translation and Interpretation in Odia

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|---|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Translation and Interpretation in Odia | 02 | 2 | 0 | 0 | (for students who have studied the language up to Class VIII & above) | NIL |

Learning Objectives : The course aims to prepare bilingual and multilingual students proficient in translation and interpretation, have sufficient knowledge of at least two languages, the source and the target language, and apply them adequately for all practical purposes. Besides, it also aims to build cross-cultural communications and enables the students to use different skills effectively to prepare themselves to take jobs in translation and interpretation.

Learning outcomes: : Students will be able to build various professional, technical, and linguistic skills to take the job of translation and interpretation. Their knowledge in various fields in both the source and the target languages will help them translate in multiple areas and take interpretation jobs for the different target groups; the translator works with the written material/texts; the interpreter will mediate between languages orally.

Allotted classes: 30 hours

Credits: 02

Marks: 50

Unit -I

Three Weeks

Translation and Interpretation: Introduction

- Basic requirements: Knowledge of SL and TL, grammar, vocabulary, usages, and sentence structures
- Types: Literary, administrative, legal, technical, and others
- Target groups: Translation - Readers from different fields
Interpretation – Person/group from different profession

Unit -II

Four Weeks

- Methods of Translation and Interpretation
- Review of sample translations
-

Unit -III

Eight Weeks

- Practical Translation: Odia to other languages and vice versa
- Interpretation practice: Odia to other languages and vice versa

Essential/recommended readings:

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

**SANTALI
AEC (A)-I**

AEC (A)-I: Translation and Interpretation in Santali

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|-----------|-----------------------------------|----------|---------------------|---|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Translation and Interpretation in Santali | 02 | 2 | 0 | 0 | (for students who have studied the language up to Class VIII & above) | NIL |

Learning Objectives : The course aims to prepare bilingual and multilingual students proficient in translation and interpretation, have sufficient knowledge of at least two languages, the source and the target language, and apply them adequately for all practical purposes. Besides, it also aims to build cross-cultural communications and enables the students to use different skills effectively to prepare themselves to take jobs in translation and interpretation.

Learning outcomes: : Students will be able to build various professional, technical, and linguistic skills to take the job of translation and interpretation. Their knowledge in various fields in both the source and the target languages will help them translate in multiple areas and take interpretation jobs for the different target groups; the translator works with the written material/texts; the interpreter will mediate between languages orally.

Allotted classes: 30 hours

Credits: 02

Marks: 50

Unit -I

Three Weeks

Translation and Interpretation: Introduction

- Basic requirements: Knowledge of SL and TL, grammar, vocabulary, usages, and sentence structures
- Types: Literary, administrative, legal, technical, and others
- Target groups: Translation - Readers from different fields
Interpretation – Person/group from different profession

Unit -II

Four Weeks

- Methods of Translation and Interpretation
- Review of sample translations

Unit -III

Eight Weeks

- Practical Translation: Santali to other languages and vice versa
- Interpretation practice: Santali to other languages and vice versa
-

Essential/recommended readings:

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

SINDHI AEC (A)-I

AEC (A)-I: Translation and Interpretation in Sindhi

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|-----------|-----------------------------------|----------|---------------------|--|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Translation and Interpretation in Sindhi | 02 | 2 | 0 | 0 | (for students who have studied the Sindhi language up to Class VIII & above) | NIL |

Learning Objectives : The course aims to prepare bilingual and multilingual students proficient in translation and interpretation, have sufficient knowledge of at least two languages, the source and the target language, and apply them adequately for all practical purposes. Besides, it also aims to build cross-cultural communications and enables the students to use different skills effectively to prepare themselves to take jobs in translation and interpretation.

Learning outcomes: : Students will be able to build various professional, technical, and linguistic skills to take the job of translation and interpretation. Their knowledge in various fields in both the source and the target languages will help them translate in multiple areas and take interpretation jobs for the different target groups; the translator works with the written material/texts; the interpreter will mediate between languages orally.

Allotted classes: 30 hours

Credits: 02

Marks: 50

Unit -I

Eight Weeks

Translation and Interpretation: Introduction

- Basic requirements: Knowledge of SL and TL, grammar, vocabulary, usages, and sentence structures
- Types: Literary and Non-Literary
- Target groups: Translation - Readers from different fields
Interpretation – Person/group from different profession

Unit -II

Four Weeks

- Methods of Translation and Interpretation

Unit -III

Three Weeks

- Practical Translation: Sindhi to other languages and vice versa

Essential/recommended readings:

Tekchandani Ravi Prakash (Ed.) *Sindhi Anuvad*, Bhartiya Anuvad Parishad, New Delhi
Study material prepared by the SOTST, IGNOU.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

TAMIL
AEC (A)-I

AEC (A)-I: Translation and Interpretation in Tamil

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|-----------|-----------------------------------|----------|---------------------|---|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Translation and Interpretation in Tamil | 02 | 2 | 0 | 0 | (for students who have studied the language up to Class VIII & above) | NIL |

Learning Objectives : The course aims to prepare bilingual and multilingual students proficient in translation and interpretation, have sufficient knowledge of at least two languages, the source and the target language, and apply them adequately for all practical purposes. Besides, it also aims to build cross-cultural communications and enables the students to use different skills effectively to prepare themselves to take jobs in translation and interpretation.

Learning outcomes: : Students will be able to build various professional, technical, and linguistic skills to take the job of translation and interpretation. Their knowledge in various fields in both the source and the target languages will help them translate in multiple areas and take interpretation jobs for the different target groups; the translator works with the written material/texts; the interpreter will mediate between languages orally. The course will equip the students with the theories of translation as techniques of translation well as practical aspects of translation.

Allotted classes: 30 hours

Credits: 02
Marks: 50

Unit -I

Five Weeks

Translation and Interpretation: Introduction:

- History of Tamil Translation & Interpretation, qualities of Translator & Interpreter.
- Purpose, Problems & Usages of Translation & Interpretation.
- Basic requirements: Knowledge of Source Language (SL) and Target Language (TL)
- Target groups: Translation - Readers from different fields

- Interpretation - Person/group from different profession

Unit -II

Five Weeks

Methods, Types and Review:

- Methods of Translation and Interpretation
- Types: Literary, Administrative, Legal, Technical, and Knowledge based etc.
- Review of sample translations

Unit -III

Five Weeks

Practical Translation & Interpretation:

- Practical Translation: Tamil to other languages and vice versa
- Interpretation practice: Tamil to other languages and vice versa

Essential/recommended readings:

Aranamuruval & Amarantha, 2005. *Mozhipeyarppu-k-Kalai Intru*, Chennai: Paavai Publications.

Murugesapandian. N. 2016. *Mozhipeyarppiyal*, Chennai : NCBH

Pattabiraman.K. 2012. *Mozhpeyarppu-k-Kalai*, Chennai : NCBH

Sivakami, 2004. *Mozhipeyarppu-th- Thamizh*, Chennai: IITS.

Sherif Mohamed, 1997. *Mozhipeyarppukkalam Vaayppukkalaum*, Neyveli: Verkal Ilakkiya Iyakkaham.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

**TELUGU
AEC (A)-I**

AEC (A)-I: Translation and Interpretation in Telugu

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|--|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Translation and Interpretation in Telugu | 02 | 2 | 0 | 0 | For students who have studied the language up to Class VIII & above) | NIL |

Learning Objectives :

The course aims the students an idea about the practical problems of translation and its interpretation in Telugu. It is prepared for bilingual and multilingual students proficient in translation and interpretation, who have sufficient knowledge of at least two languages, the source and the target language, and apply them adequately for all practical purposes. Besides, it also aims to build cross-cultural communications and enables the students to use different skills effectively to prepare themselves to take jobs in translation and interpretation.

This paper contains three units, namely, translation and interpretation: an introduction, translation theories, methods and problems of translation and practical and machine translation and interpretation practice. The first unit focuses on the translator, features of the translator, basic grammar, vocabulary, etc. Unit two emphasises different translation theories, methods and problems of translation. The last unit aims for problems in contemporary practical translation, the role of digital tools in translation and its advantages, problems in the contemporary era etc.

Learning outcomes:

Students will be able to build various professional, technical, and linguistic skills to take the job of translation and interpretation. Their knowledge in various fields in both the source and the target languages will help them translate in multiple areas and take interpretation jobs for the different target groups; the translator works with the written material/texts; the interpreter will mediate between languages orally.

SYLLABUS OF AEC (A)-I: (Marks: 50)

Unit -I Translation and Interpretation: An introduction

Five weeks

- Translator, features of the translator, advantages of the translation
- Basic requirements: Knowledge of source language and target language, basic grammar, vocabulary, usages, and sentence structures
- Types: Literary, administrative, legal, technical and others
- Target groups: Translation - Readers from different fields
- Interpretation – Person/group from different profession

Unit -II Translation Theories, Methods and Problems of translation

Five weeks

- History of translation in Telugu
- Different translation theories
- Methods of translation and interpretation
- Problems with translation
- Review of sample translations

Unit -III Practical and Machine Translation and Interpretation practice

Five weeks

- Practical Translation: Telugu to other languages and vice versa
- Use of digital tools in Translation: Telugu to other languages and vice versa
- Interpretation practice: Telugu to other languages and vice versa

Essential/recommended readings

- Akki Reddy, S. Nirmaladevi, P. Nalini, G. *Anuvada Siddhantalu*. Madras: Samatha Publications, 1989.
- Bhargavi Rao, P. (Ed.) *Sahityanuvadam: Samalochanam*. Hyderabad: Andhra Saraswata Parishat, 2007.
- Bhargavi Rao. *Anuvada Sahityamu: Oka Parisheelana*. Hyderabad. Panchajanya Publications, 1996.
- Gurudatta, Pradhana. *Anuvada Kala*. (Tran. Sadanandam), Kuppam: Dravida Vishwavidyalam, 2009.
- Nirmal, Bheemsen. *Anuvada Shastram*. Hyderabad: Telugu Academy, 2000.
- Ramachandra Reddy, Rachamalla. 1987: *AnuvadaSamasyalu*. Visalandhra Publishing House, Hyderabad.
- Ramarao, V.V.B. *Anuvada Darshini*. New Delhi: Vadapalli Ramani, 2005.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

ABILITY ENHANCEMENT COURSE (B)
(for those students who have not studies the language)

ASSAMESE
AEC (B)-I

AEC (B)-I: Basic Assamese

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------|---------|-----------------------------------|----------|---------------------|--|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Assamese | 02 | 2 | 0 | 0 | (for students who have not studied the language) | NIL |

Learning Objectives : Since this course of study is offered to students who don't have prior knowledge of Assamese language hence, to give a basic over view of Assamese language is the main objective of this course. During this course students will be introduced to Assamese sounds and letters and numbering system as well as they will be taught about word formation and framing simple sentences. In this process they will learn how to read, speak, listen and write in that language. Apart from this, this course of study would help the students to learn in multi-lingual background and environment.

Learning outcomes: This course of study will introduce students to a language other than their native language as well as this will increase their multi-lingual abilities. Further this course will lead the learners to study Assamese language in a detailed manner in future which will ultimately help in their professional and technical career.

Allotted classes: 30 hours

Credits: 02

Marks: 50

Unit -I Introduction to sounds and letters

Eight Weeks

- Vowels & Vowel signs
- Consonants & Consonant Clusters

- Syllable
- Numerical digits
- Framing words

Unit -II

Parts of Speech & Framing Sentences

Four Weeks

- Introduction to parts of speech
- Framing basic sentences for communication
- Introduction to Punctuation marks

Unit -III

Vocabulary Three Weeks

- Everyday vocabulary
- Reading & writing

Essential/ recommended readings:

Das Gupta, Bindu Bhusan. *Assamese Self-Taught*. Kolkata: Das Gupta Prakashan. 1956.

Dutta Barua, Lohit. *Learning Assamese Language: A Brief Handbook*. Guwahati: Spandan Prakash. 2021

Dutta Baruah, P.N. *An Intensive Course in Assamese*. Mysore: CIIL. 1996

Assamese-English Dictionary

Deka, Pranav Jyoti. *Jyoti-Dviashik Abhidhan*. Guwahati: Assam Book Dipot. 2011.

<https://dsal.uchicago.edu/dictionaries/candrakanta/>
www.xobdo.org

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

**BENGALI
AEC (B)-I**

AEC (B)-I: Basic Bengali

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|----------------------|-----------|-----------------------------------|----------|---------------------|---|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Bengali | 02 | 2 | 0 | 0 | (for students who have not studied the language) | NIL |

Learning Objectives : The course aims to prepare bilingual and multilingual students proficient in translation and interpretation, have sufficient knowledge of at least two languages, the source and the target language, and apply them adequately for all practical purposes. Besides, it also aims to build cross-cultural communications and enables the students to use different skills effectively to prepare themselves to take jobs in translation and interpretation.

Learning outcomes: Students will be able to build various professional, technical, and linguistic skills to take the job of translation and interpretation. Their knowledge in various fields in both the source and the target languages will help them translate in multiple areas and take interpretation jobs for the different target groups; the translator works with the written material/texts; the interpreter will mediate between languages orally.

Allotted classes: 30 hours

**Credits: 02
Marks: 50**

Unit -I

Eight Weeks

Introduction to sounds along with sound-images (alphabets and numbers)

Unit -II

Four Weeks

Introduction to Noun, Pronoun, Prepositions

Unit -III

Three Weeks

Everyday Vocabulary

Essential/ recommended readings:

Mahapatra, Tushar Kanti. Bengali for Non Bengalis. Kolkata : Shishu Sahitya sang shod. August 1999.

Mahapatra, Tushar Kanti. Bengali for Beginners Kolkata : Shishu Sahitya sang shod. August 1999.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

**BODO
AEC (B)-I**

AEC (B)-I: Basic Bodo

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------|-----------|-----------------------------------|----------|---------------------|---|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Bodo | 02 | 2 | 0 | 0 | (for students who have not studied the language) | NIL |

Learning Objectives : The course aims to prepare bilingual and multilingual students proficient in translation and interpretation, have sufficient knowledge of at least two languages, the source and the target language, and apply them adequately for all practical purposes. Besides, it also aims to build cross-cultural communications and enables the students to use different skills effectively to prepare themselves to take jobs in translation and interpretation.

Learning outcomes: Students will be able to build various professional, technical, and linguistic skills to take the job of translation and interpretation. Their knowledge in various fields in both the source and the target languages will help them translate in multiple areas and take interpretation jobs for the different target groups; the translator works with the written material/texts; the interpreter will mediate between languages orally.

Allotted classes: 30 hours

Credits: 02

Marks: 50

Unit -I

Eight Weeks

Introduction to sounds along with sound-images (alphabets and numbers)

Unit -II

Four Weeks

Introduction to Noun, Pronoun, Prepositions

Unit -III

Three Weeks

Everyday Vocabulary

Essential/ recommended readings:

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

**DOGRI
AEC (B)-I**

AEC (B)-I: Basic Dogri

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------|---------|-----------------------------------|----------|---------------------|--|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Dogri | 02 | 2 | 0 | 0 | (for students who have not studied the language) | NIL |

Learning Objectives : The course aims to prepare bilingual and multilingual students proficient in translation and interpretation, have sufficient knowledge of at least two languages, the source and the target language, and apply them adequately for all practical purposes. Besides, it also aims to build cross-cultural communications and enables the students to use different skills effectively to prepare themselves to take jobs in translation and interpretation.

Learning outcomes: Students will be able to build various professional, technical, and linguistic skills to take the job of translation and interpretation. Their knowledge in various fields in both the source and the target languages will help them translate in multiple areas and take interpretation jobs for the different target groups; the translator works with the written material/texts; the interpreter will mediate between languages orally.

Allotted classes: 30 hours

Credits: 02

Marks: 50

Unit -I

Eight Weeks

Introduction to sounds along with sound-images (alphabets and numbers)

Unit -II

Four Weeks

Introduction to Noun, Pronoun, Prepositions

Unit -III

Three Weeks

Everyday Vocabulary

Essential/ recommended readings:

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

**GUJARATI
AEC (B)-I**

AEC (B)-I: Basic Gujarati

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------|---------|-----------------------------------|----------|---------------------|--|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Gujarati | 02 | 2 | 0 | 0 | (for students who have not studied the language) | NIL |

Course Learning Objectives : The aim of the course is to teach basic language skills in Gujarati and it intends to facilitate students in acquiring foundational skills of reading, writing and speaking in Gujarati along with synonyms to expand vocabulary. This course is divided into three units and it will cover the basic language structures, the activities and functions normally explored by a beginners' syllabus, i.e. the learning Gujarati syllables, making simple sentence construction and

use the same sentences with fellow students, it goes further, covering situations such as working, studying and including materials focused on the Gujarati media.

Course Learning Outcome: The course will enable the students to obtain the basic skills of reading, writing and speaking in Gujarati along with building up a primary vocabulary. After completing the course, they can read and construct simple Gujarati sentences, figure out words having conjunct character, and can learn functional, everyday conversation in different language usage situations. Students interact with classmates by using simple sentences about their daily routine matters on official and informal occasions.

Allotted classes: 30 hours

Credits: 02

Unit -I

Marks: 50
Five Weeks

Introduction to Gujarati Vowel & Consonant sounds & along with the sound-image

Script introduction

Introduction of Numerals (up to 100)

Unit -II

Five Weeks

Introduction to Gujarati Noun & Pronoun, its Subjunctives

Gujarati qualifiers/adjectives

Gujarati prepositions

Conjunctions and its usage

Introduction to Verb & Time/Tense

Conjugation of different verbs

Unit -III

Four Weeks

Making simple sentences in Gujarati (basic syntactical rules)

Making Negative sentences in Gujarati

Making Interrogative sentences in Gujarati

Essential/ recommended readings:

1. Christian, Sonal, *Gujarati-English/English-Gujarati Dictionary & Phrasebook* (Hippocrene Dictionary & Phrasebook), 2006
2. Clair Tisdall, William St., *A Simplified Grammar of the Gujarati Language Together With a Short Reading Book and Vocabulary*, Forgotten Books 25, 2017
3. Dwyer, y Rachel Dwyer, *Get Started in Gujarati Absolute Beginner Course: The essential introduction to reading, writing, speaking and understanding a new language*. NTC publishing group, 2013
4. Jhaveri, Krishnalal M., *Milestones in Gujarati Literature*, Manohar Publishers & Distributors, 2021

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

**KANNADA
AEC (B)-I**

AEC (B)-I: Basic Kannada

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|----------------------|-----------|-----------------------------------|----------|---------------------|--|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Kannada | 02 | 2 | 0 | 0 | (for students who have not studied the language) | NIL |

Learning Objectives : The course aims to prepare bilingual and multilingual students proficient in translation and interpretation, have sufficient knowledge of at least two languages, the source and the target language, and apply them adequately for all practical purposes. Besides, it also aims

to build cross-cultural communications and enables the students to use different skills effectively to prepare themselves to take jobs in translation and interpretation.

Learning outcomes: Students will be able to build various professional, technical, and linguistic skills to take the job of translation and interpretation. Their knowledge in various fields in both the source and the target languages will help them translate in multiple areas and take interpretation jobs for the different target groups; the translator works with the written material/texts; the interpreter will mediate between languages orally.

Allotted classes: 30 hours

Credits: 02

Marks: 50

Unit -I

Eight Weeks

Introduction to sounds along with sound-images (alphabets and numbers)

Unit –II

Four Weeks

Introduction to Noun, Pronoun, Prepositions

Unit –III

Three Weeks

Everyday Vocabulary

Essential/ recommended readings:

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

KASHMIRI
AEC (B)-I

AEC (B)-I Basic Kashmiri

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-----------------------|-----------|-----------------------------------|----------|---------------------|---|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Kashmiri | 02 | 2 | 0 | 0 | (for students who have not studied the language) | NIL |

Title: Basic Kashmiri

Learning Objectives : The course aims at building proficiency of all those bilingual and multilingual students in translation and interpretation who have sufficient knowledge of at least two languages- the source and the target language, and further apply them adequately for all practical purposes. Besides, it is aimed to help the students develop creativity, critical sense and cross-cultural awareness and enable the students to use different skills effectively to prepare themselves to take jobs in translation and interpretation.

Learning outcomes: Students will be able to build various professional, technical, and linguistic skills to take the job of translation and interpretation. Their knowledge in various fields in both the source and the target languages will help them translate in multiple areas and take interpretation jobs for the different target groups; the translator works with the written material/texts; the interpreter will mediate between languages orally.

Allotted classes: 30 hours

Credits: 02

Marks: 50

Unit -I

Eight Weeks

Introduction to sounds along with sound-images (alphabets and numbers)

Unit -II

Four Weeks

Introduction to Noun, Pronoun, Prepositions

Unit -III

Three Weeks

Everyday Vocabulary

Essential/ recommended readings:

Wade, T.R. A Grammar of the Kashmiri Language. Kessinger Publishing(Re-printed)2010

Shauq, Shafi Kashruk Grammar. Ali Mohammad and Sons ,Srinagar 2014

Grierson,G.A.The Standard Manual of the Kashmiri Language(2 Vols) Light and Life Publishers(RE-printed)1973

Koul,O.N.Modern Kashmiri Grammar.Dunwoody Press Springfield 2006

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

**KONKANI
AEC (B)-I**

AEC (B)-I: Basic Konkani

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|----------------------|-----------|-----------------------------------|----------|---------------------|---|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Konkani | 02 | 2 | 0 | 0 | (for students who have not studied the language) | NIL |

Learning Objectives : The course aims to prepare bilingual and multilingual students proficient in translation and interpretation, have sufficient knowledge of at least two languages, the source and the target language, and apply them adequately for all practical purposes. Besides, it also aims to build cross-cultural communications and enables the students to use different skills effectively to prepare themselves to take jobs in translation and interpretation.

Learning outcomes: Students will be able to build various professional, technical, and linguistic skills to take the job of translation and interpretation. Their knowledge in various fields in both the source and the target languages will help them translate in multiple areas and take interpretation jobs for the different target groups; the translator works with the written material/texts; the interpreter will mediate between languages orally.

Allotted classes: 30 hours

**Credits: 02
Marks: 50**

Unit -I

Eight Weeks

Introduction to sounds along with sound-images (alphabets and numbers)

Unit -II

Four Weeks

Introduction to Noun, Pronoun, Prepositions

Unit -III

Three Weeks

Everyday Vocabulary

Essential/ recommended readings:

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

**MALAYALAM
AEC (B)-I**

AEC (B)-I: Basic Malayalam

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------|---------|-----------------------------------|----------|---------------------|--|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Malayalam | 02 | 2 | 0 | 0 | (for students who have not studied the language) | NIL |

Learning Objectives : The course aims to prepare bilingual and multilingual students proficient in translation and interpretation, have sufficient knowledge of at least two languages, the source and the target language, and apply them adequately for all practical purposes. Besides, it also aims to build cross-cultural communications and enables the students to use different skills effectively to prepare themselves to take jobs in translation and interpretation.

Learning outcomes: Students will be able to build various professional, technical, and linguistic skills to take the job of translation and interpretation. Their knowledge in various fields in both the source and the target languages will help them translate in multiple areas and take interpretation

jobs for the different target groups; the translator works with the written material/texts; the interpreter will mediate between languages orally.

Allotted classes: 30 hours

Credits: 02

Marks: 50

Unit -I

Eight Weeks

Introduction to sounds along with sound-images (alphabets and numbers)

Unit -II

Four Weeks

Introduction to Noun, Pronoun, Prepositions

Unit -III

Three Weeks

Everyday Vocabulary

Essential/ recommended readings:

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

**MANIPURI
AEC (B)-I**

AEC (B)-I: Basic Manipuri

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-----------------------|-----------|-----------------------------------|----------|---------------------|---|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Manipuri | 02 | 2 | 0 | 0 | (for students who have not studied the language) | NIL |

Learning Objectives : The course aims to prepare bilingual and multilingual students proficient in translation and interpretation, have sufficient knowledge of at least two languages, the source and the target language, and apply them adequately for all practical purposes. Besides, it also aims to build cross-cultural communications and enables the students to use different skills effectively to prepare themselves to take jobs in translation and interpretation.

Learning outcomes: Students will be able to build various professional, technical, and linguistic skills to take the job of translation and interpretation. Their knowledge in various fields in both the source and the target languages will help them translate in multiple areas and take interpretation jobs for the different target groups; the translator works with the written material/texts; the interpreter will mediate between languages orally.

Allotted classes: 30 hours

Credits: 02

Marks: 50

Unit -I

Eight Weeks

Introduction to sounds along with sound-images (alphabets and numbers)

Unit –II

Four Weeks

Introduction to Noun, Pronoun, Prepositions

Unit -III

Three Weeks

Everyday Vocabulary

Essential/ recommended readings:

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

MARATHI
AEC (B)-I: Basic Marathi

AEC (B)-I: Basic Marathi

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------|---------|-----------------------------------|----------|---------------------|--|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Marathi | 02 | 2 | 0 | 0 | (for students who have not studied the language) | NIL |

Learning Objectives : The course aims to prepare bilingual and multilingual students proficient in translation and interpretation, have sufficient knowledge of at least two languages, the source and the target language, and apply them adequately for all practical purposes. Besides, it also aims to build cross-cultural communications and enables the students to use different skills effectively to prepare themselves to take jobs in translation and interpretation.

Learning outcomes: Students will be able to build various professional, technical, and linguistic skills to take the job of translation and interpretation. Their knowledge in various fields in both the source and the target languages will help them translate in multiple areas and take interpretation

jobs for the different target groups; the translator works with the written material/texts; the interpreter will mediate between languages orally.

Allotted classes: 30 hours

Credits: 02

Marks: 50

Unit -I

Eight Weeks

Introduction to sounds along with sound-images (alphabets and numbers)

Unit -II

Four Weeks

Introduction to Noun, Pronoun, Prepositions

Unit -III

Three Weeks

Everyday Vocabulary

Essential/ recommended readings:

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

**MAITHILI
AEC (B)-I**

AEC (B)-I: Basic Maithili

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department Offering the Course |
|---------------------|---------|-----------------------------------|----------|---------------------|--|-----------------------------|--------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| Basic Maithili | 02 | 2 | 0 | 0 | (for students who have not studied the language) | NIL | MIL&LS |

Learning Objectives : The course aims to prepare bilingual and multilingual students proficient in translation and interpretation, have sufficient knowledge of at least two languages, the source and the target language, and apply them adequately for all practical purposes. Besides, it also aims to build cross-cultural communications and enables the students to use different skills effectively to prepare themselves to take jobs in translation and interpretation.

Learning outcomes: Students will be able to build various professional, technical, and linguistic skills to take the job of translation and interpretation. Their knowledge in various fields in both the source and the target languages will help them translate in multiple areas and take interpretation jobs for the different target groups; the translator works with the written material/texts; the interpreter will mediate between languages orally.

Allotted classes: 30 hours

Credits: 02

Marks: 50

Unit -I

Eight Weeks

Introduction to sounds along with sound-images (alphabets and numbers)

Unit -II

Four Weeks

Introduction to Noun, Pronoun, Prepositions

Unit -III

Three Weeks

Everyday Vocabulary

Essential/ recommended readings:

1. Study material compiled by the Department.
2. Chatterji, Suniti Kumar, Misra Babua. Varna-Ratnakara of Jyotirishvar
Kavishekharacharya, Sahitya Akademi
3. Das, Bhola Lal. Maithili Subodh Vyakaran, Patna: Abhinav Granthagar. Bihar Rajya
Pathya Pustak Samiti
4. Grierson, George Abraham. An Introduction To The Maithili Dialect of The Bihari
Language As Spoken In North Bihar-Part I-Grammar Paperback, 2009
5. Jha, Ashok Kumar, Maithili Bhasha: Sarvekshan and Vishlesan
6. Jha, Bhimnath. Parichayika, Patna: Bhawani Prakashan, 1985
7. Jha, Pandit, Deenbandhu, Mithila Bhasha Kosh
8. Jha, Govind. Maithili Parichayika, Shekhar Prakashan, 2015
9. Jha, Pandit Govind. Maithili Bhasha Ka Vikas, Bihar Hindi Granth Akademi, 2008
10. Jha, Rajeshwer. Mithilaksharak Udbhav O Vikas
11. Jha, Vishwanath. Mithilakshar Abhyas Pustak
12. Mithilakshar Shiksha: Maithili Akademi, Patna

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

**NEPALI
AEC (B)- I**

AEC (B)-I: Basic Nepali

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------|-----------|-----------------------------------|----------|---------------------|---|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Nepali | 02 | 2 | 0 | 0 | (for students who have not studied the language) | NIL |

Learning Objectives : The course aims to prepare bilingual and multilingual students proficient in translation and interpretation, have sufficient knowledge of at least two languages, the source and the target language, and apply them adequately for all practical purposes. Besides, it also aims to build cross-cultural communications and enables the students to use different skills effectively to prepare themselves to take jobs in translation and interpretation.

Learning outcomes: Students will be able to build various professional, technical, and linguistic skills to take the job of translation and interpretation. Their knowledge in various fields in both the source and the target languages will help them translate in multiple areas and take interpretation jobs for the different target groups; the translator works with the written material/texts; the interpreter will mediate between languages orally.

Allotted classes: 30 hours

**Credits: 02
Marks: 50**

Unit -I **Eight Weeks**

Introduction to sounds along with sound-images (alphabets and numbers)

Unit -II **Four Weeks**

Introduction to Noun, Pronoun, Prepositions

Everyday Vocabulary

Essential/ recommended readings:

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

**ODIA
AEC (B)-I**

AEC (B)-I: Basic Odia

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------|---------|-----------------------------------|----------|---------------------|--|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Odia | 02 | 2 | 0 | 0 | (for students who have not studied the language) | NIL |

Learning Objectives : The course aims to prepare bilingual and multilingual students proficient in translation and interpretation, have sufficient knowledge of at least two languages, the source and the target language, and apply them adequately for all practical purposes. Besides, it also aims to build cross-cultural communications and enables the students to use different skills effectively to prepare themselves to take jobs in translation and interpretation.

Learning outcomes: Students will be able to build various professional, technical, and linguistic skills to take the job of translation and interpretation. Their knowledge in various fields in both the source and the target languages will help them translate in multiple areas and take interpretation

jobs for the different target groups; the translator works with the written material/texts; the interpreter will mediate between languages orally.

Allotted classes: 30 hours

Credits: 02

Marks: 50

Unit -I

Eight Weeks

Introduction to sounds along with sound-images (alphabets and numbers)

Unit -II

Four Weeks

Introduction to Noun, Pronoun, Prepositions

Unit -III

Three Weeks

Everyday Vocabulary

Essential/ recommended readings:

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

**SANTALI
AEC (B)-I**

AEC (B)-I: Basic Santali

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|----------------------|-----------|-----------------------------------|----------|---------------------|---|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Santali | 02 | 2 | 0 | 0 | (for students who have not studied the language) | NIL |

Learning Objectives : The course aims to prepare bilingual and multilingual students proficient in translation and interpretation, have sufficient knowledge of at least two languages, the source and the target language, and apply them adequately for all practical purposes. Besides, it also aims to build cross-cultural communications and enables the students to use different skills effectively to prepare themselves to take jobs in translation and interpretation.

Learning outcomes: Students will be able to build various professional, technical, and linguistic skills to take the job of translation and interpretation. Their knowledge in various fields in both the source and the target languages will help them translate in multiple areas and take interpretation jobs for the different target groups; the translator works with the written material/texts; the interpreter will mediate between languages orally.

Allotted classes: 30 hours

**Credits: 02
Marks: 50**

Unit –I

Eight Weeks

Introduction to sounds along with sound-images (alphabets and numbers)

Unit -II

Four Weeks

Introduction to Noun, Pronoun, Prepositions

Unit -III

Three Weeks

Everyday Vocabulary

Essential/ recommended readings:

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

**SINDHI
AEC (B)-I**

AEC (B)-I: Basic Sindhi

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------|---------|-----------------------------------|----------|---------------------|---|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Sindhi | 02 | 2 | 0 | 0 | (for students who have not studied the Sindhi language) | NIL |

Learning Objectives : This course is aimed to teach the basic language communication skills in Sindhi. It will introduce basic skills of the Sindhi language: its alphabets, essential words and simple sentence construction methods. The course intends to facilitate students acquiring primary skills of reading, writing and speaking Sindhi along with building up an elementary vocabulary.

Learning outcomes: The course will enable the students to obtain the basic skills of communication in Sindhi along with a primary vocabulary. After completing the course they

can read and write simple Sindhi sentences, can figure out words having conjunct character, and can have basic everyday conversation.

Allotted classes: 30 hours

Credits: 02

Marks: 50

Unit -I

Eight Weeks

Introduction to sounds along with sound-images (alphabets and numbers)

Unit -II

Four Weeks

Introduction to Noun, Pronoun, Prepositions

Unit -III

Three Weeks

Everyday Vocabulary, idioms & proverbs

Essential/ recommended readings:

Jetley MK, *Sindhi Bhasha Vyakaran Avam Prayog*, Sindhi Academy, Delhi

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

**TAMIL
AEC (B)-I**

AEC (B)-I: Basic Tamil

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------|---------|-----------------------------------|----------|---------------------|--|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Tamil | 02 | 2 | 0 | 0 | (for students who have not studied the language) | NIL |

Learning Objectives : The primary objective of this Course is to facilitate Non-Tamil students to acquire fully well the four skills (speaking, listening, reading & Writing) of the written, spoken & varieties of triglossic Tamil Language for day-to-day conversation and to provide a wider knowledge of Tamil Language, literature and society of Tamil Nadu, India & Abroad.

Allotted classes: 30 hours

Credits: 02

Unit -I

**Marks: 50
Five Weeks**

- Introduction to sounds along with sound –images (Alphabets and Numbers)
- Script introduction
- Introduction of Numerals (up to 100)

Unit -II

Five Weeks

- Introduction to Noun, Pronoun & Prepositions
- Introducing basic simple Tamil sentence formation
e.g.: Noun Phrase- Noun Phrase construction (NP – NP structure)

Essential/ recommended readings:

1. *Arokianathan, S. Spoken Tamil for Foreigners, (Lesson 1-5) A-team Info Media Publishers Pvt. Ltd, Chennai. 2012.*
2. *Tamil Alphabet in Hart, Kausalya. Tamil for Beginners Part I & II, (Lesson 1- 5 & 10) Centre for South and South East Asia, University of California at Berkeley, 1992.*
3. *Hart, Kausalya. Tamil for Beginners Part I & II, (Lesson 1- 5 & 10) Centre for South and South East Asia, University of California at Berkeley, 1992.*
4. *Asher, R.E. Colloquial Tamil, Routledge (Lesson 1), London. 2002.*
5. *Karunakaran, K. & Balakrishnan.R. Elementry Tamil (Introductory Course), Sabanayagam Printers, Chidambaram, 2001.*
6. *Rajaram, S. An Intensive Course in Tamil (Unit. 4), CIIL, Mysore, 1987.*
7. *Arangarajan. Maruthur. Thavarinrrith Thamizh Ezhutha, Ainthinaip Pathippagam, Chennai, 2007*

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

**TELUGU
AEC (B)-I**

AEC (B)-I: Basic Telugu

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------|---------|-----------------------------------|----------|---------------------|--|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Telugu | 02 | 02 | 0 | 0 | For students who have not studied the language | NIL |

Learning Objectives

The course aims to teach basic language skills in Telugu, and it intends to facilitate students in acquiring foundational skills of reading, writing and speaking in Telugu along with synonyms to expand vocabulary. This course is divided into three units, and it will cover the basic language structures, the activities and functions generally explored by a beginners' syllabus, i.e. learning Telugu syllables, making simple sentence construction and using the same sentences with fellow students; it goes further, covering situations such as working, studying and including materials focused on the Telugu media, i.e., cinema, television, the press and advertising. Regarding grammar structures, the exercises are at the primary level only.

Learning outcomes:

The course will enable the students to obtain the basic skills of reading, writing and speaking in Telugu, along with building a primary vocabulary. After completing the course, they can read and construct simple Telugu sentences, figure out words with conjunct characters, and learn functional, everyday conversation in different language usage situations. Students interact with classmates by using simple sentences about their daily routine matters on official and informal occasions.

SYLLABUS OF AEC –(B)-I (Marks-50)

Unit -I

Three Weeks

Introduction to Telugu Vowel & Consonant sounds & along with the sound-image

Script introduction

Introduction of Numerals (up to 100)

Unit -II

Seven Weeks

Introduction to Telugu Noun & Pronoun, its Subjunctives

Telugu qualifiers/adjectives

Telugu prepositions

Conjunctions and their usage

Introduction to Verb & Time/Tense

Conjugation of different verbs

Unit -III

Five Weeks

Making simple sentences in Telugu (basic syntactical rules)

Making Negative sentences in Telugu

Making Interrogative sentences in Telugu

Essential/recommended readings:

Arden, A H. *A progressive grammar of the Telugu language*. 2nd ed. Madras: Society for promoting Christian knowledge, 1905.

Krishnamurti, B. and Gwynn, J. P. L. *A Grammar of Modern Telugu*. USA: Oxford University Press, 1986.

Parandhama Reddy, M. and Venkateswara Shastri, J. *Telugu Velugu- I*. Mysore: Central Institute of Indian Languages, 1997.

Ramanarasimham, Parimi. *An Intensive Course in Telugu*. Mysore: Central Institute of Indian Languages, 1985.

Sanjay, D. *Spoken Telugu for Absolute Beginners*. _____: _____, 2019.

Venkatavadhani, Divakarla. *Telugu in Thirty Days*. Hyderabad. Andhra Pradesh Sahitya academy, 2017.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

ABILITY ENHANCEMENT COURSE
Offered by
DEPARTMENT OF ENVIRONMENTAL SCIENCE

AEC 1: Environmental Science: Theory into Practice – I

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department Offering the Course |
|--|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|--|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| AEC 1: Environmental Science: Theory into Practice – I | 02 | 01 | – | 01 | All UG Courses | All UG Courses | Department of Environmental Studies/Sciences |

Learning Objectives

The Ability Enhancement Course on Environmental Science: Theory into Practice (I & II) at Undergraduate level (AEC- I) aims to train students to cater to the need for ecological citizenship through development of a strong foundation on the critical linkages between ecology-society-economy.

The Learning Objectives of this course are as follows:

- **Disciplinary knowledge**
Enable students to develop a comprehensive understanding of various facets of life forms, ecological processes, and the impacts on them by humans during the Anthropocene era.
- **Critical thinking**
Build capabilities to identify relevant environmental issues, analyse the various underlying causes, evaluate the practices and policies, and develop framework to make informed decisions.
- **Moral and ethical awareness/reasoning**
Develop empathy for all life forms, appreciation for the various ecological linkages within the web of life, awareness and responsibility towards environmental protection and nature preservation.

[State the purpose for creating and teaching the course. Describe what the course aims to do from the teacher's perspective.]

Learning outcomes

The Learning Outcomes of this course are as follows.

After the course the students will be empowered and able to:

- Analyse natural processes and resources that sustain life and govern economy.
- Predict the consequences of human actions on the web of life, global economy, and quality of human life.
- Think critically and develop appropriate strategies (scientific, social, economic, administrative, and legal) for environmental protection, conservation of biodiversity, environmental equity, and sustainable development.
- Demonstrate values and show compassionate attitudes towards complex environmental-economic-social challenges, and participate at national and international levels in solving current environmental problems and preventing the future ones.
- Adopt sustainability as a practice in life, society, and industry.

Teaching Learning process

The teaching–learning methodologies are designed to provide the undergraduate students a comprehensive understanding of the subject in a simplistic manner as well as evoke critical reasoning and analytical thinking among them. Some of the theoretical concepts related to practicals/outreach activities, etc. should be covered during practical sessions. The various approaches to teaching–learning process include classroom lectures, video presentations, and ICT enabled teaching tools. Forenhancing practical understanding, field visits are encouraged to relevant places in Delhi like Biodiversity parks, Protected areas, Wetlands, Sewage treatment plants, etc.

SYLLABUS OF AEC-1: Environmental Science: Theory into Practice – I

UNIT – I

(1 -2 Weeks)

Introduction to Environmental Studies (1 lectures and 1 practical/ outreach activities)

- Multidisciplinary nature of environmental studies; components of environment: atmosphere, hydrosphere, lithosphere, and biosphere
- Scope and importance; Concept of sustainability and sustainable development; Brief history of environmentalism

UNIT – II

(3-7 Weeks)

Ecosystems (5 lectures and 7 practical/ outreach activities)

- Definition and concept of Ecosystem
- Structure of ecosystem (biotic and abiotic components); Functions of Ecosystem: Physical (energy flow), Biological (food chains, food web, ecological succession), and Biogeochemical (nutrient cycling) processes. Concepts of productivity, ecological pyramids and homeostasis

- Types of Ecosystems: Tundra, Forest, Grassland, Desert, Aquatic (ponds, streams, lakes, rivers, oceans, estuaries); importance and threats with relevant examples from India
- Ecosystem services (Provisioning, Regulating, Cultural, and Supporting); Ecosystem preservation and conservation strategies; Basics of Ecosystem restoration

UNIT – III

(8-11 Weeks)

Natural Resources (5 lectures and 6 practical/ outreach activities)

- Land resources: Minerals, soil, agricultural crops, natural forest products, medicinal plants, and forest-based industries and livelihoods; Land cover, land use change, land degradation, soil erosion, and desertification; Causes of deforestation; Impacts of mining and dam building on environment, forests, biodiversity, and tribal communities
- Water resources: Natural and man-made sources; Uses of water; Over exploitation of surface and ground water resources; Floods, droughts, and international & inter- state conflicts over water
- Energy resources: Renewable and non-renewable energy sources; Use of alternate energy sources; Growing energy needs; Energy contents of coal, petroleum, natural gas and bio gas; Agro-residues as a biomass energy source
- Case studies: Contemporary Indian issues related to mining, dams, forests, energy, etc (e.g., National Solar Mission, Cauvery River water conflict, Sardar Sarovar dam, Chipko movement, Appiko movement, Tarun Bharat Sangh, etc)

UNIT – IV

(12-15 Weeks)

Environmental Pollution and Control (4 lectures and 6 practical/ outreach activities)

- Environmental pollution (Air, water, soil, thermal, and noise): causes, effects, and controls; Primary and secondary air pollutants; Air and water quality standards
- Nuclear hazards and human health risks
- Solid waste management: Control measures for various types of urban, industrial waste, Hazardous waste, E-waste, etc; Waste segregation and disposal
- Pollution control measures: Introduction to legal, biological, and physico-chemical methods; Role in sustainability
- Pollution case studies: Ganga Action plan (GAP), Delhi air pollution and public health issues, Plastic waste management rules, Bhopal gas tragedy, etc

(The total number of weeks should add up to 15 only)

Practical component (if any) –

(15 Weeks)

Unit I

Introduction to Environmental Studies (1 practical/ outreach activity)

Practical/Exercises/Experiential activities/Outreach activities

(College may choose as per requirement)

- Analysis of achievement of Sustainable Development Goals of any country.
- Gain insights of sustainability framework for an industrial activity using activity worksheets
- Use of environmental activity worksheets to understand interdependence and interactions between different environmental components.

Unit 2

Ecosystems (7 practical/ outreach activities)

Practical/Exercises/Experiential activities/Outreach activities

(College may choose as per requirement)

- Schematic collection of data for depicting ecological pyramids in the College campus
- Differentiation of natural and managed ecosystems using Google Earth/Google Map
- Field visit to terrestrial and aquatic ecosystems (a) forests, (b) grasslands, (c) wetlands, (d) biodiversity parks, etc.
- Develop a working model of any ecosystem
- Use of worksheets to identify structure and function of different ecosystems.

Unit 3

Natural Resources (6 practical/ outreach activities)

Practical/Exercises/Experiential activities/Outreach activities (College may choose as per requirement)

- Visit to a paper recycling unit/rainwater harvesting plant/solar plant/biogas plant in the College campus
- Develop and understand working model of renewable/non-renewable sources of energy
- Mapping of natural resources of a given study area using Google Earth
- Time-series analysis of natural resource consumption of a given country using publicly available data
- Comparison of energy demand and consumption of a particular state over the years using graphical tools
- Assessing the consumption pattern of a natural resource in the dominant industry at local scale and status of natural resource in areas supplying it

Unit 4

Environmental Pollution (6 practical/ outreach activities)

Practical/Exercises/Experiential activities/Outreach activities

(College may choose as per requirement)

- Determine water quality of a given location using rapid pollution monitoring kits
- Assess air quality index (AQI) of any location using real-time air quality parameters
- Determine magnitude of solid waste generated in a home/college on a monthly basis
- Develop and maintain compost/vermicompost using biodegradable waste in the College
- Identify suitability of given water samples for various purposes using given kits
- Prepare water audit report of the college/house/locality/colony.
- Map solid and liquid discharge of the college/colony and develop a management plan

(show it using schematic diagram, and photographs.

- Repurpose waste for economic and environmental benefits in your college/near by area/colony (submit a small video).
- Analyze river-society-economy nexus based on primary or secondary data (use quantitative data, and show it using photographs on a poster).

Essential/recommended readings

Unit 1

Introduction to Environmental Studies

1. Raven, P.H, Hassenzahl, D.M., Hager, M.C, Gift, N.Y., and Berg, L.R. (2015). *Environment*, 8th Edition. Wiley Publishing, USA. **Chapter 1** (Pages: **1-17**); **Chapter 2** (Pages: **22-23**); **Chapter 3** (Pages: **40, 41**); **Chapter 4** (Pages: **64, 66**).
2. Singh, J.S., Singh, S.P., and Gupta, S.R. (2017). *Ecology, Environmental Science and Conservation*. S. Chand Publishing, New Delhi. **Chapter 1** (Page: **3-28**).

Unit 2

Ecosystems

1. Odum, E.P., Odum, H.T., and Andrews, J. (1971). *Fundamentals of Ecology*. Saunders, Philadelphia, USA. **Chapter 1** (Pages: **1-16**); **Chapter 2** (Pages: **18-76**); **Chapter 10** (Pages: **414-458**).
2. Raven, P.H, Hassenzahl, D.M., Hager, M.C, Gift, N.Y., and Berg, L.R. (2015). *Environment*, 9th Edition. Wiley Publishing, USA. **Chapter 3** (Pages: **38-52**); **Chapter 4** (Pages: **53-62**); **Chapter 5** (Pages: **100-103**); **Chapter 6** (Pages: **106-128**).
3. Singh, J.S., Singh, S.P., and Gupta, S.R. (2017). *Ecology, Environmental Science and Conservation*. S. Chand Publishing, New Delhi. **Chapter 13** (Pages: **307-323**); **Chapter 18** (Pages: **420-442**); **Chapter 28** (Pages: **747-769**).

Unit 3

Natural Resources

1. Gadgil, M. and Guha, R. (1993). *This Fissured Land: An Ecological History of India*. University of California Press, Berkeley, USA. (pp. 1-245).
2. McCully, P. (1996). *Rivers no more: the environmental effects of dams*, In: *Silenced Rivers: The Ecology and Politics of Large Dams*, Zed Books, New York, USA. **Page. 29-64**.
3. Raven, P.H, Hassenzahl, D.M., Hager, M.C, Gift, N.Y. and Berg, L.R. (2015). *Environment*, 9th Edition. Wiley Publishing, USA. **Chapters 10, 11, 12, 13** (Pages: **180-263**); **Chapter 14** (Pages: **272-275**); **Chapter 15** (Pages: **286-289**).
4. Singh, J.S., Singh, S.P. and Gupta, S.R. (2017). *Ecology, Environmental Science and Conservation*. S. Chand Publishing, New Delhi. **Chapter 25** (Pages: **623-663**).

Unit 4

Environmental Pollution

1. Brusseau, M.L., Pepper, I.L. and Gerba, C.P. (2019). *Environmental and Pollution Science*, 3rd Edition. Academic Press, USA. **Chapter 16** (Pages: 243-255); **Chapter 18** (Pages: 280-305); **Chapter 21** (Pages: 352-358); **Chapter 22** (Pages: 365-374); **Chapter 23** (Pages: 378-388); **Chapter 25** (Pages: 416-426).
2. Raven, P.H, Hassenzahl, D.M., Hager, M.C, Gift, N.Y. and Berg, L.R. (2015). *Environment*, 9th Edition. Wiley Publishing, USA. **Chapter 19** (Pages: 359-381); **Chapter 21** (Pages: 401-421); **Chapter 23** (Pages: 440-453).
3. Singh, J.S., Singh, S.P. and Gupta, S.R. (2017). *Ecology, Environmental Science and Conservation*. S. Chand Publishing, New Delhi. **Chapters 19, 20, 12** (Pages: 445-535).

Suggested readings

1. Raven, P.H, Hassenzahl, D.M., Hager, M.C, Gift, N.Y. and Berg, L.R. (2015). *Environment*, 9th Edition. Wiley Publishing, USA.
2. Carson, R. (2002). *Silent Spring*. Houghton Mifflin Harcourt, USA.
3. Brusseau, M.L., Pepper, I.L. and Gerba, C.P. (2019). *Environmental and Pollution Science*, 3rd Edition. Academic Press, USA.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

Assessment methods

1. Written examinations (Semester exams) [(**Year 1**: 01 credit (1 hour); **Year 2**: 01 credit (1 hour))]
2. Project work and reports related to field visits, outreach activities, case study, project formulation, assignments, presentations and practical learning (Internal practical assessment) [(**Year 1**: 01 credit (2 hour); **Year 2**: 01 credit (2 hour))]
Year 1 (Sem-I/Sem-II): 01 Credit Theory+ 01 Credit practical exercises, etc.
= **Total 02 Credits (03 hours)**
Year 2 (Sem-I/Sem-II): 01 Credit Theory+ 01 Credit practical exercises, etc.
= **Total 02 Credits (03 hours)**

ABILITY ENHANCEMENT COURSE
Offered by
DEPARTMENT OF HINDI

AEC 1:हिन्दी भाषा: सम्प्रेषण और संचार (हिन्दी क)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------------------|---------|-----------------------------------|----------|---------------------|--|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| हिन्दी भाषा: सम्प्रेषण और संचार | 02 | 2 | -- | --- | हिंदी - क (उन विद्यार्थियों के लिए जिन्होंने 12 वीं कक्षा तक हिंदी पढ़ी है।) | हिंदी - क (उन विद्यार्थियों के लिए जिन्होंने 12 वीं कक्षा तक हिंदी पढ़ी है।) |

पाठ्यक्रम का उद्देश्य (Learning Objectives)

- सम्प्रेषण के स्वरूप और सिद्धांतों से विद्यार्थियों को परिचित कराना
- सम्प्रेषण के विभिन्न माध्यमों की जानकारी देना
- प्रभावी सम्प्रेषण का गुण विकसित करना
- विद्यार्थी की भाषाई दक्षता और भाषा कौशल को बढ़ावा देना
- संचार माध्यमों के लिए लेखन कौशल का विकास

पाठ्यक्रम अधिगम प्रतिफल (Learning outcomes)

- सम्प्रेषण की अवधारणा और प्रक्रिया से परिचित हो सकेंगे
- सम्प्रेषण की तकनीक और कार्यशैली की बहुआयामी समझ का विकास
- प्रभावी सम्प्रेषण करना सीखेंगे

- पत्र-लेखन, प्रतिवेदन, अनुच्छेद लेखन की व्यावहारिक जानकारी प्राप्त कर सकेंगे
- मीडिया के विविध रूपों के लिए लेखन करना

SYLLABUS OF AEC-1

इकाई 1: सम्प्रेषण: सामान्य परिचय

(1-7 सप्ताह)

- सम्प्रेषण की अवधारणा
- सम्प्रेषण की प्रक्रिया
- सम्प्रेषण के विविध आयाम
- सम्प्रेषण और संचार

इकाई 2 : सम्प्रेषण और संचार के विविध रूप

(8-15 सप्ताह)

- सम्प्रेषण के प्रकार
- सर्वेक्षण आधारित रिपोर्ट तैयार करना संभावित विषय: (कोरोना और मानसिक स्वास्थ्य, जागरूकता संबंधी अभियान, कूड़ा निस्तारण योजना)
- अनुच्छेद लेखन, संवाद लेखन, डायरी लेखन
- ब्लॉग लेखन, सम्पादकीय लेखन

सहायक पुस्तकें :

1. नए जनसंचार माध्यम और हिन्दी: सुधीश पचौरी, अचला शर्मा
2. सूचना और सम्प्रेषण: तकनीकी की समझ: स्मिता मिश्र
3. सम्प्रेषण: चिन्तन और दक्षता: मंजु मुकुल
4. संवाद पथ पत्रिका: केन्द्रीय हिन्दी संस्थान
5. हिन्दी का सामाजिक सन्दर्भ: रवीन्द्रनाथ श्रीवास्तव
6. सम्प्रेषणपरक व्याकरण: सिद्धांत और स्वरूप: सुरेश कुमार

मूल्यांकन पद्धति: (Assessment Method)

- कुल अंक : 50
- लिखित परीक्षा : 38 अंक
- आंतरिक मूल्यांकन: 12 अंक

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

AEC 2:हिंदी औपचारिक लेखन (हिन्दी ख)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department Offering the Course |
|---------------------|---------|-----------------------------------|----------|---------------------|--|--|--------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| हिंदी औपचारिक लेखन | 02 | 2 | -- | --- | हिंदी - ख (उन विद्यार्थियों के लिए जिन्होंने 10 वीं कक्षा तक हिंदी पढ़ी है।) | हिंदी - ख (उन विद्यार्थियों के लिए जिन्होंने 10 वीं कक्षा तक हिंदी पढ़ी है।) | हिन्दी |

पाठ्यक्रम का उद्देश्य (Course Objectives)

- विद्यार्थी की भाषाई दक्षता और लेखन-कौशल को बढ़ावा देना
- कार्यालयी और व्यावसायिक हिंदी की समझ विकसित करना
- हिंदी भाषा दक्षता और तकनीक के अंतः संबंध को रेखांकित करना
- कार्यालयों में व्यावहारिक कार्य के विभिन्न पक्षों से अवगत कराना
- हिन्दी प्रयोग से जुड़े फील्ड वर्क आधारित विश्लेषण और लेखन पर बल

पाठ्यक्रम अधिगम प्रतिफल (Course Learning Outcomes)

- विद्यार्थी कार्यालयी और व्यावसायिक हिंदी की विशेषताओं से परिचित होंगे

- कार्यालयों में होने वाले व्यावहारिक कार्य का ज्ञान
- सूचना के अधिकार के लिए लेखन करना सकेंगे
- मार्केट सर्वेक्षण हेतु प्रश्नावली का निर्माण तथा उसका विश्लेषण करना जानेंगे
- विद्यार्थी टिप्पण, प्रारूपण, प्रतिवेदन, विज्ञप्ति तैयार करना सीख सकेंगे

SYLLABUS OF AEC-2

इकाई- 1: लेखन दक्षता का विकास (1-7 सप्ताह)

- कार्यालयी हिंदी
- व्यावसायिक हिंदी
- टिप्पण और प्रारूपण : सामान्य परिचय
- प्रतिवेदन और विज्ञप्ति का महत्व

इकाई- 2: औपचारिक लेखन के प्रकार (8-15 सप्ताह)

- स्ववृत्त लेखन
- सूचना के अधिकार के लिए लेखन
- कार्यालयी और व्यावसायिक पत्र लेखन
- किसी व्यावसायिक कार्यक्रम के संदर्भ में प्रेस विज्ञप्ति तैयार करना

सहायक पुस्तकें:

1. प्रयोजनमूलक और कार्यालयी हिन्दी: कृष्णकुमार गोस्वामी
2. प्रयोजनमूलक हिन्दी की नई भूमिका: कैलाशचन्द्र पाण्डेय
3. प्रयोजनमूलक हिन्दी: सिद्धांत और प्रयोग: दंगल झाल्टे
4. प्रशासनिक हिन्दी: हरिमोहन, तक्षशिला प्रकाशन
5. राजभाषा हिंदी और उसका विकास: हीरालाल बाछोतिया, किताबघर प्रकाशन

मूल्यांकन पद्धति: (Assessment Method)

- कुल अंक : 50
- लिखित परीक्षा : 38 अंक
- आंतरिक मूल्यांकन: 12 अंक

AEC 3 :सोशल मीडिया और ब्लॉग लेखन (हिन्दी ग)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department Offering the Course |
|---------------------------|---------|-----------------------------------|----------|---------------------|--|--|--------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| सोशल मीडिया और ब्लॉग लेखन | 02 | 2 | -- | --- | हिंदी - ग (उन विद्यार्थियों के लिए जिन्होंने 8 वीं कक्षा तक हिंदी पढ़ी है।) | हिंदी - ग (उन विद्यार्थियों के लिए जिन्होंने 8 वीं कक्षा तक हिंदी पढ़ी है।) | हिन्दी |

पाठ्यक्रम का उद्देश्य (Course Objectives)

- हिंदी सोशल मीडिया के विभिन्न माध्यमों की जानकारी
- सोशल मीडिया की कार्यशैली की समझ
- सोशल मीडिया के महत्व और प्रभाव से मूल्यांकन
- ब्लॉग बनाना और लेखन
- सोशल मीडिया का व्यावहारिक ज्ञान

पाठ्यक्रम अधिगम प्रतिफल (Course Learning Outcomes):

- सोशल मीडिया प्लेटफॉर्म की जानकारी मिलेगी।
- सोशल मीडिया की कार्य-शैली की समझ विकसित होगी।
- ब्लॉग लेखन करने के साथ हिंदी के प्रमुख ब्लॉगों का अध्ययन और विश्लेषण कर सकेंगे।
- सोशल मीडिया के महत्व और उसकी भूमिका को रेखांकित कर सकेंगे।

- विद्यार्थी सोशल मीडिया पर कार्य करना सीख सकेंगे

SYLLABUS OF AEC-3

इकाई 1. सोशल मीडिया और ब्लॉग

- सोशल मीडिया : अर्थ और परिभाषा
- सोशल मीडिया का प्रभाव और महत्व
- सोशल मीडिया के प्रकार (विकीपीडिया, ब्लॉग, सोशल नेटवर्किंग साइट्स, ट्विटर, यूट्यूब, इंस्टाग्राम आदि)
- ब्लॉग लेखन: सामान्य परिचय

इकाई 2: सोशल मीडिया का व्यावहारिक पक्ष

- किसी सामाजिक अभियान के प्रचार के लिए सोशल मीडिया हेतु एक विज्ञापन तैयार करना
- अपना निजी ब्लॉग तैयार करने की प्रक्रिया
- सोशल मीडिया से बनने वाली किसी खबर पर रिपोर्ट तैयार करना
- सोशल मीडिया से सम्बन्धित विविध विषयों पर आलेख तैयार करना

सहायक पुस्तकें :

1. सामाजिक मीडिया और हम: रवीन्द्र प्रभात, नोशन प्रेस
2. सोशल मीडिया: स्वर्ण सुमन, हार्पर कॉलिन्स पब्लिशर इण्डिया
3. भूमंडलीकरण और मीडिया: कुमुद शर्मा
4. मीडिया और हिन्दी: बदलती प्रवृत्तियाँ: रविन्द्र जाधव, वाणी प्रकाशन
5. रेडियो लेखन, मधुकर गंगाधर, बिहार हिंदी ग्रंथ अकादमी, पटना, प्रथम संस्करण- 1974
6. रेडियो वार्ता शिल्प, सिद्धनाथ कुमार, राधाकृष्ण प्रकाशन, नई दिल्ली, प्रथम प्रकाशन- 1992

मूल्यांकन पद्धति: (Assessment Method)

- कुल अंक : 50
- लिखित परीक्षा : 38 अंक
- आंतरिक मूल्यांकन: 12 अंक

ABILITY ENHANCEMENT COURSE
Offered by
DEPARTMENT OF SANSKRIT

AEC 1: Sanskrit A: Advance Neeti Literature in Sanskrit

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|-----------|-----------------------------------|-----------|---------------------|--------------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Sanskrit A: Advance Neeti Literature in Sanskrit | 02 | 02 | 00 | NA | 12th Pass with Sanskrit | Nil |

Learning Objectives

This course aims at making the students acquainted with general outline of Sanskrit literature. This course will help the learners be familiar with the tradition of Prose literature with some focus on individual contributors of Sanskrit prose writing.

Learning outcomes

- The students will learn the advance form of Sanskrit language
- The stories and verses prescribed in the course will help the learners develop an understanding of the moral and ethical values that will be useful in their day-to-day life.
- They will be familiar with the rich history of Sanskrit Literature.
- This course will enhance their skills of chaste Sanskrit pronunciation as well as competence and performance of the language.
- This will help them translate and explain the prescribed Sanskrit texts in their native language.

SYLLABUS OF AEC-1 (Sanskrit A)

Unit: I

Weeks: 08

Course Content/Prescribed Books

Origin and development of Nītikāvya: Kathāsaritsāgara, Pañcatantra, Hitopadeśa, Cāṇakyanīti.

Unit: II**Weeks: 07****Course Content/Prescribed Books**

Pancatantra, First Story, Verses: 1-35
(Translation, Explanation and Grammar)

Essential/recommended readings

- Pancatantra, Subodh Publications, ISBN: 9788170780403, 8170780403, 2017
- Pancatantra, Prashant Acharya, Notion Press Media Pvt Ltd., ISBN: 9798885915229
- Pancatantra,

Suggested readings

1. शर्मा, उमाशंकर ऋषि: संस्कृत साहित्य का इतिहास, चौखम्बा भारती अकादमी, वाराणसी
2. उपाध्याय, बलदेव: संस्कृत साहित्य का इतिहास, शारदा निकेतन, वाराणसी
3. प्रीतिप्रभा, गोयल: संस्कृत साहित्य का इतिहास, राजस्थानी ग्रन्थगार, जोधपुर
4. त्रिपाठी, राधावल्लभ: संस्कृत साहित्य का अभिनव इतिहास, विश्वविद्यालय प्रकाशन, वाराणसी
5. Keith, A.B., History of Classical Sanskrit Literature, MLBD, Delhi, हिन्दी अनुवाद सहित, मंगलदेव शास्त्री, मोतीलाल बनारसीदास, दिल्ली
6. M. Krishnamachariyar Shastri: History of Classical Sanskrit Literature, MLBD, Delhi
7. Gaurinath Shastri: A Concise History of Sanskrit Literature, MLBD, Delhi

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

AEC 1: Sanskrit B: Introductory Upanishad and Geeta
Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|-----------|-----------------------------------|-----------|---------------------|-----------------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Sanskrit B: Introductory Upanishad and Geeta | 02 | 02 | 00 | NA | Class X Pass with Sanskrit | - |

Learning Objectives

This course aims at making

- the students acquainted with general outline of Sanskrit literature.
- the learners be familiar with the tradition of Indian Philosophical literature
- with some focus on individual contributors of Sanskrit prose writing.

Learning outcomes

The students will learn

- the teachings of Upanisads and Gita
- three major knowledge systems of Traditional Indian Philosophy
- the mantras and verses, prescribed in the course, will help the learners to develop an understanding of the moral and ethical values that will be useful in their day-to-day life.
- They will be familiar with the rich history of Sanskrit Literature.
- This course will enhance their skills of chaste Sanskrit pronunciation as well as competence and performance of the language also.
- This will help them translate and explain the prescribed Sanskrit texts in their native language.

SYLLABUS OF AEC-1

Unit: I

Weeks: 08

Course Content/Prescribed Books

General Introduction to Upanisads

Text Introduction to Ishavasyopanishad- Karma, Vidya-Avidya, Satya, Atman

Unit: II

Weeks : 07

Course Content/Prescribed Books

Introduction to Geeta: Background, Purpose,

Gyanyoga

Karmayoga

Bhaktiyoga

Essential/recommended readings

1. भगवद्गीता, शाङ्करभाष्य अनुवाद सहित, अनुवादक श्रीहरिकृष्णदास गोयन्दका, गीता प्रेस, गोरखपुर
2. Valmiki Ramayana – Valmiki.iitk.ac.in
3. गीताभाष्यनवाम्बरा- डॉ० शिवनारायण शास्त्री
4. Ishavasyopnishad- Geeta Press, Gorakhpur, 1992
5. Ishavasyopnishad- Swami Sharvananda, Shri RamKrishna Math, Mylapur, Madras, 1943
6. Ishavasyopnishad, Dr. Shashi Tiwari, Bhartiya Vidya Prakashan, Delhi, 1997

Suggested readings

1. Bhagawadgita with the commentary of Shankaracharya – A.K. Warrior,
2. Bhagawadgita – Dr. S. Radhakrishnan
3. Śrīmadbhagavadgītā, The Scripture of Mankind, text in Devanagari with transliteration in English and notes by Swami Tapasyananda, Sri Ramakrishna Math, 1984

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

AEC 1: Sanskrit C: Introduction to Sanskrit Language

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|---------|-----------------------------------|----------|---------------------|---|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Sanskrit C: Introduction to Sanskrit Language | 02 | 02 | 00 | NA | 12 th Pass students who never studied Sanskrit OR Studied it upto Class VIII only. | Nil |

Learning Objectives

This course aims at making the students acquainted with general outline of Sanskrit Grammar and Composition. This course will enhance their skills of chaste Sanskrit pronunciation as well as competence and performance of the language.

Learning outcomes

- The students will learn the basic Sanskrit language.
- They will learn to create and understand this Language independently.
- This course will enhance the ability to understand classical Sanskrit texts.
- Through the practice of this prescribed syllabus, students will be able to enhance their knowledge of structural patterns of Sanskrit.

SYLLABUS OF AEC-1

Unit: I

Weeks: 08

Basic Sanskrit Sentence Formation (Active Voice) using the following:

कारक एवं विभक्ति: कर्ता, कर्म एवं करण

वचन एवं लिङ्गः

शब्दरूपः राम, बालक, लता, अस्मद्, युष्मद्, तत्, इदम्, किम्, सर्व, हरि, मति, जल, फल,
पुष्प, ज्ञान, भोजन, धन, गुरु

क्रियारूपः निम्नलिखित धातुओं का केवल लट्, लृट् एवं लङ् लकार में रूपः

भू, पठ्, लिख्, खाद्, चल्, गम् (गच्छ्), हस्, वद्, पा (पिब्), अस्, गै (गाय), भ्रम्,
स्था (तिष्ठ्), दृश् (पश्य्), पच्, वर्ष्, दा (यच्छ्)

शब्दकोशः संस्कृत सामान्य शब्दों के लिए शब्दकोश

यत्र, तत्र, कुत्र, श्व, अद्य, कथम्, यथा, तथा, च, अथवा

Unit: II

Weeks: 07

व्यावहारिक वाक्य संरचना

Essential/recommended readings

- पाण्डेय, राधामोहनः संस्कृत सहचर, स्टूडेंट्स फ्रेंड्स पटना, बिहार
- नौटियाल, चक्रधरः बृहद् अनुवाद चन्द्रिका, मोतीलाल बनारसीदास, दिल्ली
- रूपचन्द्रिका, डॉ० ब्रह्मानन्द त्रिपाठी, चौखम्बा सुरभारती प्रकाशन, वाराणसी

Suggested readings

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

ABILITY ENHANCEMENT COURSE
Offered by
DEPARTMENT OF URDU

ABILITY ENHANCEMENT COURSE (AEC) 1: URDU-A

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF
THE COURSE**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|---------------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Urdu-A, Ability Enhancement Course (AEC) | 02 | 2 | - | N. A. | 12 th Pass with URDU | |

Learning Objectives

The Learning Objectives of this course are as follows:

- To give knowledge of contemporary society of India through Urdu Poetry.
- To give a glimpse of modern literature with special reference to Urdu Poetry.

Learning outcomes

The learning outcomes of this course are as follows:

- Understanding of concepts.
- Exercising concepts through writings.
- Demonstrating conceptual and textual understanding in test and exam.

SYLLABUS OF AEC-1

UNIT-I- (8-Hours) Hissa-e-Nasr

1. Ghalib key Khotut (Ghalib)
2. AikKhutba-e-Sadarat (MaulanaAbulKalam Azad)
3. Poos kiRaaf (Parem Chand)

UNIT-II- (8-Hours) Hissa-e-Nazm (Gazaliyat)

1. Mir Taqi Mir

- HastiApniHababkisi hai
- Chal te ho to chamankochaliyesuntey hain kibaharaan hai

2. Mirza Asadullah Khan Ghalib

- Aahkochahiyeekumrasar hone tak
- Nokta chin haigham-e-diluskosunayenabaney

3. Momin Khan Momin

- Agar ghaflat se bazaayajafaki
- Asaruskozranahihota

UNIT-III- (7-Hours) Hissa-e-Nazm (Manzoomat)

1. Banjara Nama (NazeerAkbarabadi)
2. Murgh-e-Aseerkinasihat (Daya Shankar Nasim)
3. Taraqqikirahein (MaulanAltaf Husain Hali)

UNIT-IV- (7-Hours) Qawaa-e-d

- Tashbih, Isteaarah, Sanaat-e-Tazaad, Sanaat-e-Talmeeh, Sanaat-e-Husn-e-Taalil, Sanaat-e-Moraat-un-Nazeer, Sanaat-e-Tajnees, Sanaat-e-Laff-o-Nashr

Practical component (if any) –

(15 Weeks)

Essential/recommended readings

Suggested readings

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

ABILITY ENHANCEMENT COURSE (AEC) 1: URDU-B

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|---------------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Urdu-B, Ability Enhancement Course (AEC) | 02 | 2 | - | N. A. | 10 th Pass with URDU | |

Learning Objectives

The Learning Objectives of this course are as follows:

- This Ability Enhancement course prepared for those students who have studied Urdu upto class 10th.
- This course will provide a perspective about reality of life and world.

Learning outcomes

This Ability Enhancement course prepared for those students who have studied Urdu upto class 10th and also this course will provide a perspective about reality of life and world.

SYLLABUS OF AEC-1

Unit 1

Hissa Nasar:

1. Sware jo Kal Aankh Meri Khuli (Patras Bukhari)
2. Lajwanti (Rajinder Singh Bedi)

Unit 2

3. Naya Kanoon (Saadat Hasan Manto)

Unit 3

Hissa Nazam:

Ghazaliyat

1. Fani Badayuni Ek Muamma hai samjhne ka na samjhane ka
Aqal se Kaam bhi le Isq pe Iman bhi la

2. Hasrat Mohani Apna Shauq Auron Mein Layen Kahan se Hum
Main Hoon Kya Meri Muhabbat Ki Haqiqat Kya hai
3. Majrooh Sultan Puri Jab ho Irfan to Ghum Ara Jaan Banta Gaya
Hum ko Janoo kya sikhlate ho hum the pareshan tum se ziyada

Unit 4

Manzoomat :

1. Haqiqat-e-Husn (Allama Iqbal)
2. Tuta hua Sitara (sardar Jaafri)
3. Chaand Taroon Ka Ban, (Makhdoom Mahi Uddin)

Unit 5

Quaid :

Ghazal aur Inshayee Ki tareef

References

Nisabi Kitab

Teaching Learning Process

Classroom Teaching, Lecture Method

Assessment Methods

Assignment, Internal Test

Keywords

Fani, Hasrat, Majrooh Sultanpuri

Practical component (if any) –

(15 Weeks)

Essential/recommended readings

Suggested readings

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

ABILITY ENHANCEMENT COURSE (AEC) II: URDU-C

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department Offering the Course |
|---|-----------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|--------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| Urdu-C, Ability Enhancement Course (AEC) | 02 | 2 | - | N. A. | Beginners | | - |

Learning Objectives

- To give a simple taste of Urdu poetry and literature.
- To make them Understand the poetry of Urdu Including Ghazals and Nazm.

Learning outcomes

To give a simple taste of Urdu poetry and literature and to make them Understand the poetry of Urdu Including Ghazals and Nazm.

SYLLABUS OF AEC-II

Unit 1

Reading of following text

- i) Sari Duniya Ke Malik by Hali)
- ii) Naani Pujaran By Majaz
- iii) Bhai Bhulakkar by Haqqi
- iv) Darya Kinare Chandni By Akhtar Sheerani
- v) Sitare By Raja Mehdi Ali khan

Unit 2

- vi) Dil-e-Nadan Tujhe Hua Kiya Hai by Mirza Ghalib)
- vii) FAqgerana AAye Sada KAr Chale By Meer Taqi Meer
- viii) Aadmi NAMA By Nazeer
- ix) Wo Jo Hum Mein Tum Mein By Momin
- x) Aye Sharif Insano By Sahir

Unit 3

- XI Hazaron Saal Lambi Raat by Ratan Singh
- XII Ek Poorani KAHani By Qurrat ul Ain
- XIII Kamraniyon KA Raaz Bu Maulana Azad
- XIV Guzra Hua Zamana BY Sir Syed

References

:Prescribed Books

URDU KI NAI KITAB PART-1

(Published by Educational Publishing House, Delhi)

Teaching Learning Process

Classroom Teaching, Lecture Method

Assessment Methods

Assignment, Internal Test

Keywords

Urdu Alphabets, simple urdu words, composition in urdu, Urdu Poetry

Practical component (if any) –

(15 Weeks)

Essential/recommended readings

Suggested readings

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time

15. Amendment to Appendix -II-A to the Ordinance V (2-A) of the Ordinances of the University vide EC Resolution 18-1-5 dated 18.08.2022 regarding Syllabi of 1st Semester of Department of Physical Education and Sports Sciences

Add the following:

Syllabus of Semester-I of the Department of Physical Education and Sports Sciences under Faculty of Interdisciplinary and Applied Sciences based on Undergraduate Curriculum Framework 2022 to be implemented from academic year 2022-2023.

Courses offered by Department of Physical Education and Sports Sciences Category I

(Single Core Discipline)

[BACHELORS OF SCIENCE IN PHYSICAL EDUCATION, HEALTH EDUCATION AND SPORTS (HONS.)]

BSc-PE-DSC-1(4): HISTORY AND FOUNDATIONS OF PHYSICAL EDUCATION

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| HISTORY AND FOUNDATIONS OF PHYSICAL EDUCATION | 4 | 3 | 1 | 0 | Pass in XII | NIL |

Learning Objectives

To provide the knowledge of historical development of Physical Education & Sports and to familiarize the students with foundations of Physical Education & Sports in reference to biological, psychological, sociological and other foundations

Learning outcomes

The Learning Outcomes of this course are as follows:

- Students will acquire the knowledge of history & foundations of Physical Education and understand the purpose & development of physical education & sports.
- The Students will develop the understanding and knowledge regarding meaning, definitions, scope, importance of physical education in society, Aim and Objectives of Physical Education and their relation with education.
- The student will learn Biological, Psychological and Sociological Foundation of Physical Education. The student will learn to assess the body types by Heath & Carter method. The Students will develop the understanding and knowledge of meaning & concepts of movement, qualities of the movements, fundamentals movements, Need and importance of movement in educational programs, Concept and role of wellness movement.
- The Students will gain knowledge of the Modern and Ancient Historical development of Olympic movement and Olympic Games. The Student will learn to prepare reports e.g. on NCTE approved institutions for D.P.Ed, B.P.Ed & M.P.Ed course of study.
- The Students will gain knowledge of Professional preparation in Physical education- YMCA, LNIPE, IGIPESS, SAI, NSNIS, Programme – NSO, NCC, NSS and Sports Career Avenues, National Sports awards and Honors.

SYLLABUS OF DSC-1

UNIT-I (10 hours)

- (i) Meaning, Definitions, Scope, importance of physical education in society.
- (ii) Aim and Objectives of Physical Education and their relation with education.

Unit-II (15 hours)

- (i) Foundations of Physical, Education:-
 - (a) Biological foundation – Introduction, Growth and Development and Body types.
 - (b) Psychological Foundation – Introduction, Learning process and theories.
 - (c) Sociological Foundation – Introduction, Socialization process.

Unit-III (15 hours)

- (i) Meaning & concepts of movement, qualities of the movements, fundamentals movements, Need and importance of movement in educational programs
- (ii) Concept and role of wellness movement.

Unit-IV (20 hours)

- (i) Modern and Ancient Historical perspectives of Physical Education: Greece, Rome and India.
- (ii) Olympic movement and Olympic Games (Ancient and Modern)
- (iii) Professional preparation in Physical education- YMCA, LNIPE, IGIPESS, SAI, NSNIS, Programme – NSO, NCC, NSS.

(iv) Sports Career Avenues, National Sports awards and Honors.

SUGGESTED READINGS:

1. Gupta, Rakesh (2013), Health and Physical Education, Pinnacle India Education Publisher, New Delhi.
2. Kamlesh ML (2013). Physical Education and Exercise Sciences: An Objective Approach. Friends Publication. Delhi.
3. Lumpkin, A. (2007). Introduction to Physical Education, Excises Science and Sports Studies, McGraw Hill. New York, USA.
4. Uppal AK & Gautam GP (2008). Health and Physical Education. Friends Publication. New Delhi.
5. Vanaik A. & Tyagi, Sarita (2018). Encyclopedia of Olympic Movement, Friends Publication. New Delhi
6. Vanaik A. (2005) Sharirik Shiksha ke Maulik Adhar, Friends Publication. New Delhi
7. Wuest DA and Bucher CA (2003). Foundations of Physical Education Exercise Science and Sports. McGraw Hill Companies, Inc., New York, USA
8. Zeigler EF (2007). History and Status of Physical Education and Educational Sports. Sports Education. New Delhi.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BSc-PE-DSC– 2(4): ANATOMY AND PHYSIOLOGY

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| ANATOMY AND PHYSIOLOGY | 4 | 3 | 0 | 1 | Pass in XII | NIL |

Learning Objectives

To provide students with the basic knowledge of anatomical structures & functions of human body.

Learning outcomes

The Learning Outcomes of this course are as following

- Student will acquire the basic knowledge of the anatomy of the human body.
- They will develop understanding about the functions of each system of the body.

- Such core knowledge and skill will help to create a strong foundation to engage human subject of all ages, sex, ability.

SYLLABUS OF DSC- 2

THEORY SYLLABUS

Unit-I

(10 hrs.)

- Definition of Anatomy & Physiology, Cell-microscopic structure & functions of its organelle.
- Tissue-classification & functions.
- Organs, systems of the body, Bone- classification and structure, joints-classification, Structure of synovial joints. Movements at various joints.

Unit-II

(15 hrs.)

- Muscular System -Classification, Structure, functions & properties of Skeletal Muscle, Smooth Muscle & Cardiac Muscle.
- Types of muscular contractions, Name of various muscles acting on various joints.
- Cardio-vascular system Structure of heart, cardiac cycle, blood pressure, cardiac output, composition& function of blood, Athlete's heart.

Unit-III

(10 hrs.)

- Respiratory system-structure and function, second wind, oxygen debt.
- Digestive system-structure & function, balanced diet, metabolism & maintenance of body temperature.

Unit-IV

(10 hrs.)

- Nervous system-structure of brain, spinal cord, Autonomic nervous system, reflex action.
- Endocrine system- role of various endocrine glands, Structure& function of human eye & ear.
- Excretory system-structure & function, including structure & function of skin.
- Reproductive system- structure & function of male & female Reproductive system.

Practicals:-

(30 hrs.)

1. Counting of pulse rate
2. Measurement of blood pressure
3. Study of various bones of human body
4. Study of different body system with the help of models
5. Study of various movements of the joints.

SUGGESTED READINGS:

1. Jain AK (2002). Anatomy & Physiology for Nurses.Arya Publishers, Delhi.
2. Moried EN (2007). Essential of Human Anatomy & Physiology.Ed. 8th Dorling Kindersley, India.
3. Prives M and Others (2004). Human Anatomy Vol.I & II Paragon, Delhi.

4. Seeley & Others (2008). Anatomy & Physiology. McGraw Hill, Boston.
5. Tortora (2003). Principles of Anatomy & Physiology, New York: John Willy & Sons,
6. William CS (2000). Essentials of Human Anatomy & Physiology, Benjamin
7. Wilson and Waugh (1996). Anatomy & Physiology in Health & Illness. Churchill Livingstone

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BSc-PE-DSC-3(4): Optional Game 1 (Choose any one from the list)
BSc-PE-DSC-3(4)-101: ATHLETICS

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| ATHLETICS | 4 | 2 | 0 | 2 | Pass in XII | NIL |

Learning Objectives

Giving knowledge and understanding of a specific sport in which an individual wishes to excel in.

Learning outcomes

The Learning Outcomes of this course are as follows:

Learning Outcome:-The student will attain knowledge, understanding, interpreting and analyzing proficiency in a game of one's choice.

After the Completion of First Month:

The student will be able to gain knowledge with respect to Historical Development, Organizational Structure and Playfield Technology of the respective sport/game.

After the Completion of Second Month:

A student will be able to understand and interpret the rules of game as well as game knowledge in the areas of psychological basis of Warming up and technical aspects of coaching.

After the Completion of Third Month:

A student will be able to learn and acquire various skills of sports, gain knowledge about different tests of fitness and skill evaluation as well as the evaluation of player's performance. The technical practice of sprint races, middle and long distance races, hurdles races, jumping event- long jump, throwing events- shot put, hammer throw.

After the Completion of Fourth Month:

A student will be learning about various fitness components and its forms. Further, the student will be able to practice and improve performance on the basis of knowledge gained in understanding various fitness components. Track marking and marking of different arenas for selected events in unit-III.

THEORY SYLLABUS

Unit-I

(07 lectures)

- Historical Development and Modern Trends (National and International Level)

- Organisational Structure (State, National and International Level)
- Playfield Technology – Marking and Construction of the playfields.

Unit-II (07 lectures)

- Rules and their interpretation of the sport.
- Warming up and psychological basis of Warming up.
- Cooling down and its effect.
- Techniques of Coaching – Pep talk, Pre, during and Post match competition Coaching.

Unit-III (08 lectures)

- Basic skills and techniques of the Sports/Game- – sprint races, middle and long distance races, hurdles races, jumping event- long jump, throwing events- shot put, hammer throw.
- Motor Fitness Components Testing
- Skill/Technique Evaluation
- Evaluation of Player's Performance.

Unit-IV (08 lectures)

- Introduction to Physical and Motor Fitness components related to sport: Strength, Speed, Endurance, Coordinative Abilities and Flexibility.
- Track marking and marking of different arenas for selected events in unit-III.

Practical - 60 hrs.

1. Learning and demonstrating various skills/techniques of sports- sprint races, middle and long distance races, hurdles races, jumping event- long jump, throwing events- shot put.
2. Learning to demonstrate various tests to evaluate motor components as listed in unit IV above.
3. Track marking and marking of different arenas for selected events in unit-III.

SUGGESTED READINGS:

1. Chauhan VS (1999). Khel Jagat Mein Athletics. A.P. Pub, Jalandhar.
2. Bompa O. Tudor and Halff G. Gregory. (2009) "Periodization Theory and Methodology of Training" Human kinetics. NY.
3. Evans DA (1984). Teaching Athletics. Hodder, London.
4. Fox EL (1998). Physiological Basis of Physical Education and Athletics Brown Pub.
5. Gothi E (2004). Teaching & Coaching Athletics. Sport Pub., New Delhi.
6. Gupta R. (2004). Layout & Marking of Track & Field. Friends Publications. India. New Delhi.
7. Handbook-Rules and Regulation. International Athletic Federation (2010).
8. Herb Amato, DA ATC et al (2002). Practical Exam Preparation Guide of Clinical Skills of Athletic Training. Slack Incorporated. 1st ed., USA.
9. Kumar, Pardeep. (2008). Historical Development of Track & Field. Friends Publication. New Delhi

10. Maughan, R. and Gluson, M. (2004). The Biomechanical Basics of Athletic Performance. Oxford University Press, U.K.
11. Prentice, W. and Arnheim, D. (2005). Arnheim's Principles of Athletic Training 12th Ed. McGraw Hill. in place of Knight (1988).
12. Renwick GR (2001). Play Better Athletics. Sports Pub, Delhi.
13. Singh, Hardayal. (1919). Science of Sports Training. DVS Publication, N. Delhi.
14. Vanaik A. (2017). Officiating and Coaching, Friends Publication. New Delhi.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BSc-PE-DSC-3(4): Optional Game 1 (Choose any one from the list)
BSc-PE-DSC-3 (4)-102: BADMINTON

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| BADMINTON | 4 | 2 | 0 | 2 | Pass in XII | NIL |

Learning Objectives

Objective: - The Students will acquire knowledge and understanding of a specific sport in which an individual wishes to excel.

Learning outcomes

The Learning Outcomes of this course are as follows:

Learning Outcome:-The student attains knowledge, understanding, interpreting and analyzing proficiency in a game of one's choice.

After the Completion of First Month:

A student will be able to gain knowledge with respect to Historical Development, Organisational Structure and Playfield Technology of a sport/game.

After the Completion of Second Month:

A student will be able to understand and interpret the rules of game as well as game knowledge in the areas of physiological basis of Warming up and technical aspects of coaching.

After the Completion of Third Month:

A student will be able to learn and acquire various skills of sports/game, gain knowledge about different techniques evaluation as well as the evaluation of player's performance.

After the Completion of Fourth Month:

A student will be learning about various fitness components and its forms. Further, the student will be able to practice and improve performance on the basis of knowledge gained in understanding various fitness components and its testing.

THEORY SYLLABUS**Unit-I (07 hrs.)**

- Historical Development and Modern Trends (National and International Level)
- Organisational Structure (State, National and International Level)
- Playfield Technology – Marking and Construction of the playfields.

Unit-II (07 hrs.)

- Rules and their interpretation.
- Warming up and physiological basis of Warming up and its effect on performance.
- Cooling down and its effect.
- Techniques of Coaching – Pep talk, Pre, during and Post match coaching.

Unit-III (08 hrs.)

- Basic skills and techniques of the Sports/Game.
- Skill/Technique Evaluation
- Evaluation of Player's Performance.

Unit-IV (08 hrs.)

- Introduction to Physical and Motor Fitness components: Strength, Speed, Endurance, Coordinative Abilities and Flexibility.
- Motor Fitness Components Testing of above components.

Practical - (60 hrs.)

Learning and demonstrating various skills/techniques of sports.

Learning to demonstrate various tests to evaluate motor components as listed in unit IV above.

SUGGESTED READINGS:

1. Bloss, M.V. et al (2000). Badminton. McGraw Hill, USA.
2. Bompa O Tudor and Haff G. Gregory. (2009) "Periodization Theory and Methodology of Training" Human kinetics. NY.
3. Brahm's Bernd-Voler. (2010). Badminton Handbook. Mayer & Mayer Sports: UK. Unit-II, III & IV-p-9-14.
4. Daris Pal. (1988). Badminton-The complete practical guide. Dairs & Charles Inc.: USA. Unit-II p-1-28 III- p-29-88, 109-152 & IV-p-97-108
5. Downey J (1990). How to Coach Badminton. Collins Pub.London.
6. Golds, M. (2002). Badminton: Skills of the Game. Growood Press, USA.
7. Grice, T. (2007). Badminton: Steps to Success. 2nd Ed. Human Kinetics, USA.

8. Gupta R. Kumar P. and Tyagi S. (2008). Textbook on Teaching Skill and Prowess (Part-I & II). Friends Publication. New Delhi.
9. Hoeger, W.W. Kand & Hoeger, S.A. (1997). Principles and Labs for physical fitness. (2nd Edi.). Morton Publishing Company. USA. Unit- II- p-127, 178-187, Unit- p-10-194.
10. Singh, Hardayal. (1991). Science of Sport Training. D.V.S Pub. Delhi.
11. Singh, MK. (2007). Comprehensive Badminton. Friends Pub. New Delhi.
12. Vanaik A. (2005). Playfield Manual, Friends Publication. New Delhi.
13. Vanaik A. (2017). Officiating and Coaching, Friends Publication. New Delhi.

BSc-PE-DSC-3(4): Optional Game 1 (Choose any one from the list)
BSc-PE-DSC-3 (4)-103: BASKETBALL

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| BASKETBALL | 4 | 2 | 0 | 2 | Pass in XII | NIL |

Learning Objectives

Objective: - The Students will acquire knowledge and understanding of a specific sport in which an individual wishes to excel.

Learning outcomes

Learning Outcome:-The student attains knowledge, understanding, interpreting and analyzing proficiency in a game of one's choice.

After the Completion of First Month:

A student will be able to gain knowledge with respect to Historical Development, Organisational Structure and Playfield Technology of a sport/game.

After the Completion of Second Month:

A student will be able to understand and interpret the rules of game as well as game knowledge in the areas of physiological basis of Warming up and technical aspects of coaching.

After the Completion of Third Month:

A student will be able to learn and acquire various skills of sports/game, gain knowledge about different techniques evaluation as well as the evaluation of player's performance.

After the Completion of Fourth Month:

A student will be learning about various fitness components and its forms. Further, the student will be able to practice and improve performance on the basis of knowledge gained in understanding various fitness components and its testing.

THEORY SYLLABUS

Unit-I

(07 hrs.)

- Historical Development and Modern Trends (National and International Level)
- Organisational Structure (State, National and International Level)
- Playfield Technology – Marking and Construction of the playfields.

Unit-II

(07 hrs.)

- Rules and their interpretation.
- Warming up and physiological basis of Warming up and its effect on performance.
- Cooling down and its effect.
- Techniques of Coaching – Pep talk, Pre, during and Post match coaching.

Unit-III

(08 hrs.)

- Basic skills and techniques of the Sports/Game.
- Skill/Technique Evaluation
- Evaluation of Player's Performance.

Unit-IV

(08 hrs.)

- Introduction to Physical and Motor Fitness components: Strength, Speed, Endurance, Coordinative Abilities and Flexibility.
- Motor Fitness Components Testing of above components.

Practical -

(60 hrs.)

Learning and demonstrating various skills/techniques of sports.

Learning to demonstrate various tests to evaluate motor components as listed in unit IV above.

SUGGESTED READINGS

1. Bompa O. Tudor and Halff G. Gregory. (2009) "Periodization Theory and Methodology of Training" Human kinetics. NY.
2. Drewett, J. (2007). How to Improve at Basketball. Crabtree Publishing Co., USA.
3. Goldstein, S. (1998). Basketball Fundamentals. 2nd Ed. Golden Aura Publishing, USA.
4. Jain Naveen (2003). Play and Learn Basket Ball. Khel Sahitya Kendra. New Delhi.
5. Nat BB (1997). Conditioning Coaches Association. NBA Power Conditioning. Human Kinetics.
6. Sharma OP (2003). Basket Ball Skills and Rules. Khel Sahitya Kendra, Delhi.
7. Singh, Hardayal. (1919). Science of Sports Training. DVS Publication, N. Delhi.
8. Wilmore & Costill (2004). Physiology of Sports & Exercise. Human Kinetics, US.

BSc-PE-DSC-3(4): Optional Game 1 (Choose any one from the list)**BSc-PE-DSC-3 (4)-104: CRICKET****Credit distribution, Eligibility and Pre-requisites of the Course**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| CRICKET | 4 | 2 | 0 | 2 | Pass in XII | NIL |

Learning Objectives

Objective: - The Students will acquire knowledge and understanding of a specific sport in which an individual wishes to excel.

Learning outcomes

Learning Outcome:-The student attains knowledge, understanding, interpreting and analyzing proficiency in a game of one's choice.

After the Completion of First Month:

A student will be able to gain knowledge with respect to Historical Development, Organisational Structure and Playfield Technology of a sport/game.

After the Completion of Second Month:

A student will be able to understand and interpret the rules of game as well as game knowledge in the areas of physiological basis of Warming up and technical aspects of coaching.

After the Completion of Third Month:

A student will be able to learn and acquire various skills of sports/game, gain knowledge about different techniques evaluation as well as the evaluation of player's performance.

After the Completion of Fourth Month:

A student will be learning about various fitness components and its forms. Further, the student will be able to practice and improve performance on the basis of knowledge gained in understanding various fitness components and its testing.

THEORY SYLLABUS**Unit-I****(7 hrs.)**

- Historical Development and Modern Trends (National and International Level)
- Organisational Structure (State, National and International Level)
- Playfield Technology – Marking and Construction of the playfields.

Unit-II (7 hrs.)

- Rules and their interpretation.
- Warming up and physiological basis of Warming up and its effect on performance.
- Cooling down and its effect.
- Techniques of Coaching – Pep talk, Pre, during and Post match coaching.

Unit-III (8 hrs.)

- Basic skills and techniques of the Sports/Game.
- Skill/Technique Evaluation
- Evaluation of Player's Performance.

Unit-IV (8 hrs.)

- Introduction to Physical and Motor Fitness components: Strength, Speed, Endurance, Coordinative Abilities and Flexibility.
- Motor Fitness Components Testing of above components.

Practical - (60 hrs.)

Learning and demonstrating various skills/techniques of sports.

Learning to demonstrate various tests to evaluate motor components as listed in unit IV above.

SUGGESTED READINGS

1. Amarnath M. (1996). Learn to Play Good Cricket. UBS Publishers. New Delhi.
2. Bompa O. Tudor and Halff G. Gregory. (2009) "Periodization Theory and Methodology of Training" Human kinetics. NY.
3. Boycott, G. (2010). Play Cricket the Right Way. Great Northern Books Limited, U.K.
4. Cricket (2008). Sports Skills: Cricket Fielding (Know the Game). A & C Black Publishers.
5. Gupta, K. (2006). How to Play Cricket. Goodwill Publishing House, New Delhi.
6. Hobbs, J. (2008). The Game of Cricket As it should be played. Jepson Press, USA.
7. Jain R. (2003). Fielding Drills in Cricket. Khel Sahitya Kendra. New Delhi.
8. Rachna (2002). Coaching Successfully: Cricket. Khel Sahitya Kendra. New Delhi.
9. Singh, Hardayal. (1919). Science of Sports Training. DVS Publication, N. Delhi.
10. Sharma P. (2003). Cricket. Shyam Parkashan. Jaipur.
11. Vanaik A. (2017). Officiating and Coaching, Friends Publication. New Delhi

BSc-PE-DSC-3(4): Optional Game 1 (Choose any one from the list)**BSc-PE-DSC-3 (4)-105: FOOTBALL****Credit distribution, Eligibility and Pre-requisites of the Course**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| FOOTBALL | 4 | 2 | 0 | 2 | Pass in XII | NIL |

Learning Objectives

Objective: - The Students will acquire knowledge and understanding of a specific sport in which an individual wishes to excel.

Learning outcomes

Learning Outcome:-The student attains knowledge, understanding, interpreting and analyzing proficiency in a game of one's choice.

After the Completion of First Month:

A student will be able to gain knowledge with respect to Historical Development, Organisational Structure and Playfield Technology of a sport/game.

After the Completion of Second Month:

A student will be able to understand and interpret the rules of game as well as game knowledge in the areas of physiological basis of Warming up and technical aspects of coaching.

After the Completion of Third Month:

A student will be able to learn and acquire various skills of sports/game, gain knowledge about different techniques evaluation as well as the evaluation of player's performance.

After the Completion of Fourth Month:

A student will be learning about various fitness components and its forms. Further, the student will be able to practice and improve performance on the basis of knowledge gained in understanding various fitness components and its testing.

THEORY SYLLABUS**Unit-I****(07 hrs.)**

- Historical Development and Modern Trends (National and International Level)
- Organisational Structure (State, National and International Level)
- Playfield Technology – Marking and Construction of the playfields.

Unit-II (07 hrs.)

- Rules and their interpretation.
- Warming up and physiological basis of Warming up and its effect on performance.
- Cooling down and its effect.
- Techniques of Coaching – Pep talk, Pre, during and Post match coaching.

Unit-III (08 hrs.)

- Basic skills and techniques of the Sports/Game.
- Skill/Technique Evaluation
- Evaluation of Player"s Performance.

Unit-IV (08 hrs.)

- Introduction to Physical and Motor Fitness components: Strength, Speed, Endurance, Coordinative Abilities and Flexibility.
- Motor Fitness Components Testing of above components.

Practical – (60 hrs.)

Learning and demonstrating various skills/techniques of sports.

Learning to demonstrate various tests to evaluate motor components as listed in unit IV above.

SUGGESTED READINGS

1. American Football Coaches Association (2002). The Football Coaching Bible. 1st Ed., Human Kinetics, USA.
2. Bompa O. Tudor and Halff G. Gregory. (2009) "Periodization Theory and Methodology of Training" Human kinetics. NY.
3. Carling, C., Williams, M. and Reilling, T. (2006). Handbook of Soccer Match Analysis: A Systematic Approach to Improving Performance. Routledge Publishers, USA.
4. Long, H. and Czarnecki, J. (2007). Football for Dummies. For Dummies Publisher, USA.
5. N Kumar (2003). Play and Learn Football. K.S.K. New Delhi.
6. Reilly, T. (2006). The Science Training Soccer: A Scientific Approach to Developing Strength, Speed and Endurance. Routledge Publisher, USA.
7. Reilly, T. and J.C.D. Arau (2008). Science and Football V: The Proceedings of the 5th World Congress on Sports Science and Football, Volume5.
8. Singh, Hardayal. (1919). Science of Sports Training. DVS Publication, N. Delhi.
9. Sharma OP (2001). Teaching and Coaching –Football. Khel S.K.Delhi.
10. Vanaik A. (2017). Officiating and Coaching, Friends Publication. New Delhi

BSc-PE-DSC-3(4): Optional Game 1 (Choose any one from the list)
BSc-PE-DSC-3 (4)-106: GYMNASTICS

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GYMNASTICS | 4 | 2 | 0 | 2 | Pass in XII | NIL |

Learning Objectives

Objective:-The Students will acquire knowledge and understanding of a specific sport in which an individual wishes to excel.

Learning outcomes

Learning Outcome:-The student attains knowledge, understanding, interpreting and analyzing proficiency in a game of one's choice.

After the Completion of First Month:

A student will be able to gain knowledge with respect to Historical Development, Organizational Structure and Playfield Technology of Gymnastics.

After the Completion of Second Month:

A student will be able to understand and interpret the rules of game as well as game knowledge in the areas of physiological basis of Warming up and technical aspects of coaching.

After the Completion of Third Month:

A student will be able to learn and acquire various skills of Gymnastics, gain knowledge about different tests of fitness and skill evaluation as well as the evaluation of player's performance.

After the Completion of Fourth Month:

A student will be learning about various fitness components and its forms. Further, the student will be able to practice and improve performance on the basis of knowledge gained in understanding various fitness components.

THEORY SYLLABUS

Unit-I

(07 hrs.)

- Historical Development and Modern Trends (National and International Level)
- Organisational Structure (State, National and International Level)
- Playfield Technology – Marking and Construction of the playfields.

Unit-II**(07 hrs.)**

- Rules and their interpretation of the sport.
- Warming up and psychological basis of Warming up.
- Cooling down and its effect.
- Techniques of Coaching – Pep talk, Pre, during and Post match coaching.

Unit-III**(08 hrs.)**

- Basic skills and techniques of the Artistic Gymnastics, trampoline, parko and rhythmic.
- Motor Fitness Components Testing
- Skill/Technique Evaluation
- Evaluation of Player"s Performance.

Unit-IV**(08 hrs.)**

- Introduction to Physical and Motor Fitness components related to sport: Strength, Speed, Endurance, Coordinative Abilities and Flexibility.

Practical -**(60 Hrs)**

- Learning and demonstrating various skills/techniques of Artistic Gymnastics, trampoline, parko and rhythmic.
- Learning to demonstrate various tests to evaluate motor components as listed in unit IV above.

SUGGESTED READINGS

1. Bompa O. Tudor and Halff G. Gregory. (2009) "Periodization Theory and Methodology of Training" Human kinetics. NY.
2. Brown (2009). How to Improve at Gymnastics. Crabtree Publishing Co., USA.
3. Chakraborty S and Sharma L (1995). Fundamental of Gymnastics. D.V.S. Pub. New Delhi.
4. Chakraborty S (1995). Fundamental of Gymnastics. DVS Pub. New Delhi.
5. Chakraborty S (1998). Women's Gymnastics. Friends Pub.Delhi.
6. Code of Points Trampoline Gymnastics (2005). Federation Int. DE Gymnastics
7. Federation International Gymnastics (2006). Federation Int. DE Gymnastics
8. Harvey FJ (1998). Physical Exercises & Gymnastics. Khel Sahitya. New Delhi.
9. Jain R (2005). Play and Learn Gymnastics. Khel SahitayaKendra
10. Mitchell, D., Davis, B. and Lopez, R. (2002). Teaching Fundamental Gymnastics Skills. Human Kinetics, USA.
11. Price, R.G. (2006). The Ultimate Guide to Weight Training for Gymnastics. 2ndEd. Sportsworkout.com.
12. Schlegel, E. and Dunn, CR. (2001). The Gymnastics Book: The Young Performer"s Guide to Gymnastics. Firefly Books, USA.
13. Smither Graham (1980). Behing the Science of Gymnastics. London.

14. Singh, Hardayal. (1919). Science of Sports Training. DVS Publication, N. Delhi.
15. Stickland, L.R. (2008). Gender Gymnastics. Trans Pacific Press, Japan.
16. Vanaik A. (2017). Officiating and Coaching, Friends Publication. New Delhi

BSc-PE-DSC-3(4): Optional Game 1 (Choose any one from the list)
BSc-PE-DSC-3 (4)-107: HANDBALL

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| HANDBALL | 4 | 2 | 0 | 2 | Pass in XII | NIL |

Learning Objectives

Objective: - The Students will acquire knowledge and understanding of a specific sport in which an individual wishes to excel.

Learning outcomes

Learning Outcome:-The student attains knowledge, understanding, interpreting and analyzing proficiency in a game of one's choice.

After the Completion of First Month:

A student will be able to gain knowledge with respect to Historical Development, Organisational Structure and Playfield Technology of a sport/game.

After the Completion of Second Month:

A student will be able to understand and interpret the rules of game as well as game knowledge in the areas of physiological basis of Warming up and technical aspects of coaching.

After the Completion of Third Month:

A student will be able to learn and acquire various skills of sports/game, gain knowledge about different techniques evaluation as well as the evaluation of player's performance.

After the Completion of Fourth Month:

A student will be learning about various fitness components and its forms. Further, the student will be able to practice and improve performance on the basis of knowledge gained in understanding various fitness components and its testing.

THEORY SYLLABUS

Unit-I

(07 hrs.)

- Historical Development and Modern Trends (National and International Level)
- Organisational Structure (State, National and International Level)
- Playfield Technology – Marking and Construction of the playfields.

Unit-II (07 hrs.)

- Rules and their interpretation.
- Warming up and physiological basis of Warming up and its effect on performance.
- Cooling down and its effect.
- Techniques of Coaching – Pep talk, Pre, during and Post match coaching.

Unit-III (08 hrs.)

- Basic skills and techniques of the Sports/Game.
- Skill/Technique Evaluation
- Evaluation of Player"s Performance.

Unit-IV (08 hrs.)

- Introduction to Physical and Motor Fitness components: Strength, Speed, Endurance, Coordinative Abilities and Flexibility.
- Motor Fitness Components Testing of above components.

Practical - (60 hrs.)

Learning and demonstrating various skills/techniques of sports.

Learning to demonstrate various tests to evaluate motor components as listed in unit IV above.

SUGGESTED READINGS

1. Bompa O. Tudor and Halff G. Gregory. (2009) "Periodization Theory and Methodology of Training" Human kinetics. NY.
2. Jain D (2003). Play & Learn Handball. Khel Sahitya Kendra. New Delhi.
3. Kleinman, I. (2009). Complete Physical Education Plans. 2nd Ed. Human Kinetics, USA.
4. Page, J. (2000). Ball Games. Lerner Sports Publisher, USA.
5. Phillips, B.E. (2009). Fundamental Handball. Kessinger Publishers, USA.
6. Schmottlach N Mcmanama J (1997). Physical Education Handbook. 9th Edition. Allyn & Bacon.London.
7. Schmottlach, N. and McManama (2005). Physical Education Activity Handbook. Benjamin Cummings, USA.
8. Singh, Hardayal. (1919). Science of Sports Training. DVS Publication, N. Delhi.
9. Surhone, L.M. et al (2010). Team Handball. Betascript Publishing,USA
10. Vanaik A. (2005). Playfield Manual, Friends Publication. New Delhi
11. Vanaik A. (2017). Officiating and Coaching, Friends Publication. New Delhi

BSc-PE-DSC-3(4): Optional Game 1 (Choose any one from the list)
BSc-PE-DSC-3 (4)-108: HOCKEY

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| HOCKEY | 4 | 2 | 0 | 2 | Pass in XII | NIL |

Learning Objectives

Objective: - The Students will acquire knowledge and understanding of a specific sport in which an individual wishes to excel.

Learning outcomes

Learning Outcome:-The student attains knowledge, understanding, interpreting and analyzing proficiency in a game of one's choice.

After the Completion of First Month:

A student will be able to gain knowledge with respect to Historical Development, Organisational Structure and Playfield Technology of a sport/game.

After the Completion of Second Month:

A student will be able to understand and interpret the rules of game as well as game knowledge in the areas of physiological basis of Warming up and technical aspects of coaching.

After the Completion of Third Month:

A student will be able to learn and acquire various skills of sports/game, gain knowledge about different techniques evaluation as well as the evaluation of player's performance.

After the Completion of Fourth Month:

A student will be learning about various fitness components and its forms. Further, the student will be able to practice and improve performance on the basis of knowledge gained in understanding various fitness components and its testing.

THEORY SYLLABUS

Unit-I

(07 hrs.)

- Historical Development and Modern Trends (National and International Level)
- Organisational Structure (State, National and International Level)
- Playfield Technology – Marking and Construction of the playfields.

Unit-II (07 hrs.)

- Rules and their interpretation.
- Warming up and physiological basis of Warming up and its effect on performance.
- Cooling down and its effect.
- Techniques of Coaching – Pep talk, Pre, during and Post match coaching.

Unit-III (08 hrs.)

- Basic skills and techniques of the Sports/Game.
- Skill/Technique Evaluation
- Evaluation of Player's Performance.

Unit-IV (08 hrs.)

- Introduction to Physical and Motor Fitness components: Strength, Speed, Endurance, Coordinative Abilities and Flexibility.
- Motor Fitness Components Testing of above components.

Practical - (60 hrs.)

Learning and demonstrating various skills/techniques of sports.

Learning to demonstrate various tests to evaluate motor components as listed in unit IV above.

SUGGESTED READINGS

1. Bompa O. Tudor and Halff G. Gregory. (2009) "Periodization Theory and Methodology of Training" Human kinetics. NY.
2. International Hockey Federation, Rules of the Game of Hockey with Guidance for Players and Umpires. International Hockey Federation.
3. Jain D (2003). Hockey Skills & Rules. khel Sahitya Kendra . New Delhi.
4. Narang P (2003). Play & Learn Hockey. Khel Sahitya Kendra. New Delhi.
5. Pecknold, R. and Foeste, A. (2009). Hockey : Essential Skills. McGraw Hills,USA.
6. Rossiter, S. (2003). Hockey the NHL Way : Goaltending Illustrated Edition. Sterling Publishers,USA.
7. Singh, Hardayal. (1919). Science of Sports Training. DVS Publication, N. Delhi.
8. Walter, R. and Johnson, M. (2009). Hockey Plays and Strategies. Human Kinetics,USA.
9. Weekes, D. (2003). The Biggest Book of Hockey Trivia. Greystone Books,USA.
10. Wukovits, J.F. (2000). History of Hockey 1st Ed. Lucent Books,USA.
11. Vanaik A. (2005). Playfield Manual, Friends Publication. New Delhi
12. Vanaik A. (2017). Officiating and Coaching, Friends Publication. New Delhi

BSc-PE-DSC-3(4): Optional Game 1 (Choose any one from the list)
BSc-PE-DSC-3(4)-109: JUDO

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| JUDO | 4 | 2 | 0 | 2 | Pass in XII | NIL |

Learning Objectives

Objective: - The Students will acquire knowledge and understanding of a specific sport in which an individual wishes to excel.

Learning outcomes

Learning Outcome:-The student will attain knowledge, understanding, interpreting and analyzing proficiency in a game of one's choice.

After the Completion of First Month:

A student will be able to gain knowledge with respect to Historical Development, Organisational Structure and Playfield Technology of a sport/game.

After the Completion of Second Month:

A student will be able to understand and interpret the rules of game as well as game knowledge in the areas of physiological basis of Warming up and technical aspects of coaching.

After the Completion of Third Month:

A student will be able to learn and acquire various skills of sports/game, gain knowledge about different techniques evaluation as well as the evaluation of player's performance.

After the Completion of Fourth Month:

A student will be learning about various fitness components and its forms. Further, the student will be able to practice and improve performance on the basis of knowledge gained in understanding various fitness components and its testing.

THEORY SYLLABUS

Unit-I

(07 hrs)

- Historical Development and Modern Trends (National and International Level)
- Organisational Structure (State, National and International Level)
- Playfield Technology – Marking and Construction of the playfields.

Unit-II

(07 hrs)

- Rules and their interpretation.

- Warming up and physiological basis of Warming up and it's effect on performance.
- Cooling down and its effect.
- Techniques of Coaching – Pep talk, Pre, During and Post match Coaching.

Unit-III

(08 hrs)

- Basic skills and techniques of the Sports/Game.
- Skill/Technique Evaluation
- Evaluation of Player's Performance.

Unit-IV

(08 hrs)

- Introduction to Physical and Motor Fitness components: Strength, Speed, Endurance, Coordinative Abilities and Flexibility.
- Motor Fitness Components Testing of above components.

Practical -

(60 hrs.)

1. Learning and demonstrating various skills/techniques of sports.
2. Learning to demonstrate various tests to evaluate motor components as listed in unit IV above.

SUGGESTED READINGS

1. Bompa O. Tudor and Halff G. Gregory. (2009) "Periodization Theory and Methodology of Training" Human kinetics. NY.
2. Diago, T. (2005). Kodokan Judo Throwing Techniques. Kodansha International Publishers, Japan.
3. Harrison EJ (2002). Coaching Successfully Judo. Sports. Delhi.
4. Jain D (2003). Play and Learn Judo. Khel Sahitaya Kendra. New Delhi.
5. Law, M. (2009). Falling Hard : A Journey into the World of Judo. Trumpeter Publisher, Japan.
6. Putin, V., Shestakov, V. ad Levitsky, A. (2004). Judo : History, Theory and Practice. Blue Snake Books, Moscow.
7. Singh, Hardayal. (1919). Science of Sports Training. DVS Publication, N. Delhi.
8. Takahashi, M. (2005). Mastering Judo. Human Kinetics, USA.

BSc-PE-DSC-3(4): Optional Game 1 (Choose any one from the list)
BSc-PE-DSC-3 (4)-110: KABADDI

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| KABADDI | 4 | 2 | 0 | 2 | Pass in XII | NIL |

Learning Objectives

Objective: - The Students will acquire knowledge and understanding of a specific sport in which an individual wishes to excel.

Learning outcomes

Learning Outcome:-The student will attain knowledge, understanding, interpreting and analyzing proficiency in a game of one's choice.

After the Completion of First Month:

A student will be able to gain knowledge with respect to Historical Development, Organisational Structure and Playfield Technology of a sport/game.

After the Completion of Second Month:

A student will be able to understand and interpret the rules of game as well as game knowledge in the areas of physiological basis of Warming up and technical aspects of coaching.

After the Completion of Third Month:

A student will be able to learn and acquire various skills of sports/game, gain knowledge about different techniques evaluation as well as the evaluation of player's performance.

After the Completion of Fourth Month:

A student will be learning about various fitness components and its forms. Further, the student will be able to practice and improve performance on the basis of knowledge gained in understanding various fitness components and its testing.

THEORY SYLLABUS

Unit-I

(07 hrs.)

- Historical Development and Modern Trends (National and International Level)
- Organisational Structure (State, National and International Level)
- Playfield Technology – Marking and Construction of the playfields.

Unit-II (08 hrs.)

- Rules and their interpretation.
- Warming up and physiological basis of Warming up and its effect on performance.
- Cooling down and its effect.
- Techniques of Coaching – Pep talk, Pre, During and Post match Coaching.

Unit-III (07 hrs.)

- Basic skills and techniques of the Sports/Game.
- Skill/Technique Evaluation
- Evaluation of Player's Performance.

Unit-IV (08 hrs.)

- Introduction to Physical and Motor Fitness components: Strength, Speed, Endurance, Coordinative Abilities and Flexibility.
- Motor Fitness Components Testing of above components.

Practical - (60 hrs.)

Learning and demonstrating various skills/techniques of sports.

Learning to demonstrate various tests to evaluate motor components as listed in unit IV above.

SUGGESTED READINGS

1. Bompa O. Tudor and Halff G. Gregory. (2009) "Periodization Theory and Methodology of Training" Human kinetics. NY.
2. Kumar, Dharmander. (2018). Kabaddi and its Playing Techniques. Writers Choice, New Delhi.
3. Mishra, S.C. (2007). Teach Yourself Kabaddi. Sports Publications, New Delhi.
4. Rao CV (1983). Kabaddi. Native Indian Sports. NSNIS. Patiala Publisher
5. Rao EP (1994). Modern Coaching in Kabaddi. D.V.S. Pub
6. Singh, Hardayal. (1919). Science of Sports Training. DVS Publication, N. Delhi.
7. Syal, M. (2004). Kabaddi Teaching. Prerna Parkashan, New Delhi.
8. Vanaik A. (2017). Officiating and Coaching, Friends Publication. New Delhi.

BSc-PE-DSC-3(4): Optional Game 1 (Choose any one from the list)
BSc-PE-DSC-3 (4)-111: KHO-KHO

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| KHO-KHO | 4 | 2 | 0 | 2 | Pass in XII | NIL |

Learning Objectives

Objective: - The Students will acquire knowledge and understanding of a specific sport in which an individual wishes to excel.

Learning outcomes

Learning Outcome:-The student will attain knowledge, understanding, interpreting and analyzing proficiency in a game of one's choice.

After the Completion of First Month:

A student will be able to gain knowledge with respect to Historical Development, Organisational Structure and Playfield Technology of a sport/game.

After the Completion of Second Month:

A student will be able to understand and interpret the rules of game as well as game knowledge in the areas of physiological basis of Warming up and technical aspects of coaching.

After the Completion of Third Month:

A student will be able to learn and acquire various skills of sports/game, gain knowledge about different techniques evaluation as well as the evaluation of player's performance.

After the Completion of Fourth Month:

A student will be learning about various fitness components and its forms. Further, the student will be able to practice and improve performance on the basis of knowledge gained in understanding various fitness components and its testing.

THEORY SYLLABUS

Unit-I

(07 hrs.)

- Historical Development and Modern Trends (National and International Level)
- Organisational Structure (State, National and International Level)
- Playfield Technology – Marking and Construction of the playfields.

Unit-II

(07 hrs.)

- Rules and their interpretation.
- Warming up and physiological basis of Warming up and its effect on performance.
- Cooling down and its effect.
- Techniques of Coaching – Pep talk, Pre, During and Post match Coaching.

Unit-III (08 hrs.)

- Basic skills and techniques of the Sports/Game.
- Skill/Technique Evaluation
- Evaluation of Player"s Performance.

Unit-IV (08 hrs.)

- Introduction to Physical and Motor Fitness components: Strength, Speed, Endurance, Coordinative Abilities and Flexibility.
- Motor Fitness Components Testing of above components.

Practical - (60 hrs.)

Learning and demonstrating various skills/techniques of sports.

Learning to demonstrate various tests to evaluate motor components as listed in unit IV above.

SUGGESTED READINGS

1. Bompa O. Tudor and Halff G. Gregory. (2009) "Periodization Theory and Methodology of Training" Human kinetics. NY.
2. Chakrabarty G (2002). Kho - Kho Aveloken. Khel Sahitya Kendra.Delhi.
3. Panday L (1982). Kho - Kho Sarvaswa. Metropolitan. New Delhi
4. Singh, Hardayal. (1919). Science of Sports Training. DVS Publication, N. Delhi.
5. Vanaik A. (2005). Playfield Manual, Friends Publication. New Delhi
6. Vanaik A. (2017). Officiating and Coaching, Friends Publication. New Delhi

BSc-PE-DSC-3(4): Optional Game 1 (Choose any one from the list)
BSc-PE-DSC-3 (4)-112: VOLLEYBALL

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| VOLLEYBALL | 4 | 2 | 0 | 2 | Pass in XII | NIL |

Learning Objectives

Objective: - The Students will acquire knowledge and understanding of a specific sport in which an individual wishes to excel.

Learning outcomes

Learning Outcome:-The student will attain knowledge, understanding, interpreting and analyzing proficiency in a game of one's choice.

After the Completion of First Month:

A student will be able to gain knowledge with respect to Historical Development, Organisational Structure and Playfield Technology of a sport/game.

After the Completion of Second Month:

A student will be able to understand and interpret the rules of game as well as game knowledge in the areas of physiological basis of Warming up and technical aspects of coaching.

After the Completion of Third Month:

A student will be able to learn and acquire various skills of sports/game, gain knowledge about different techniques evaluation as well as the evaluation of player's performance.

After the Completion of Fourth Month:

A student will be learning about various fitness components and its forms. Further, the student will be able to practice and improve performance on the basis of knowledge gained in understanding various fitness components and its testing.

THEORY SYLLABUS

Unit-I

(07 hrs)

- Historical Development and Modern Trends (National and International Level)
- Organisational Structure (State, National and International Level)
- Playfield Technology – Marking and Construction of the playfields.

Unit-II (07 hrs)

- Rules and their interpretation.
- Warming up and physiological basis of Warming up and its effect on performance.
- Cooling down and its effect.
- Techniques of Coaching – Pep talk, Pre, During and Post match Coaching.

Unit-III (08 hrs)

- Basic skills and techniques of the Sports/Game.
- Skill/Technique Evaluation
- Evaluation of Player's Performance.

Unit-IV (08 hrs)

- Introduction to Physical and Motor Fitness components: Strength, Speed, Endurance, Coordinative Abilities and Flexibility.
- Motor Fitness Components Testing of above components.

Practical - (60 hrs.)

Learning and demonstrating various skills/techniques of sports.

Learning to demonstrate various tests to evaluate motor components as listed in unit IV above.

SUGGESTED READINGS

1. American Volleyball Coaches Association (2005). Volleyball : Skills & Drills. Human Kinetics,USA.
2. Bompa O. Tudor and Halff G. Gregory. (2009) "Periodization Theory and Methodology of Training" Human kinetics. NY.
3. FIVB (1996). Backcourt Spiking in Modern Volley Ball. FIVB.Chennai.
4. Kenny, B. and Gregory, C. (2006). Volleyball : Steps to Success. Human Kinetics,USA.
5. Saggar SK (1994). Cosco Skills Statics - Volley Ball. Sport Publication. Delhi.
6. Scates AE (1993). Winning Volley Ball. WC Brown.USA.
7. Scates, A. and Linn, M. (2002). Complete Conditioning for Volleyball. Human Kinetics,USA.
8. Shondell, D. and Reynaud, C. (2002). The Volleyball Coaching Bible. Human Kinetics,USA.
9. Singh, Hardayal. (1919). Science of Sports Training. DVS Publication, N. Delhi.
10. The National Alliance for Youth Sports (2009). Coaching Volleyball. For Dummies Publishers,USA.
11. Volleyball, USA (2009). Volleyball : Systems and Strategies. Human Kinetics,USA.
12. Vanaik A. (2017). Officiating and Coaching, Friends Publication. New Delhi

BSc-PE-DSC-3(4): Optional Game 1 (Choose any one from the list)
BSc-PE-DSC-3 (4)-113: YOGA

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| YOGA | 4 | 2 | 0 | 2 | Pass in XII | NIL |

Learning Objectives

Objective:-The Students will acquire knowledge and understanding of a specific sport in which an individual wishes to excel.

Learning outcomes

Learning Outcome:-The student will attain knowledge, understanding, interpreting and analyzing proficiency in a game of one's choice.

After the Completion of First Month:

The Students will develop the understanding and knowledge of Origin of yoga, definition and scope of yoga, limitations and misconceptions, importance of yoga in physical education and other fields, Yoga asana completion at:- State, National, International, SGFI, AIU etc. Philosophical aspects of Yog. Pre-Vedic, Vedic period; Buddhism, Upanishad period, Jainism & tantra, qualifications, qualities and responsibilities of a coach, Duties/responsibilities of technical official, Scoring system and judgment criteria, Protocols for referees, judges and officials.

The student will learn about the prayer.

After the Completion of Second Month:

The Students will develop the understanding and knowledge of Meaning, techniques, precautions & effects of the following:-Asanas : padmasana, vajrasana, sidhasana, paschimottanasa, halasana, sarvangasana, shalabhasana, ardh- matsyendrasana, bhujangasana, tadasana, vrikshasana, matsyasana, gomukhasana, ushtrasana, shavasana, makarasana, vrishchikasana, dhanurasana, purna matsyendrasana, chakrasana, ek pad sikandasana, bakasana, mayurasana, shirshasanaPranayama : anulom-vilom, bhastrika, suryabhedhen pranayama, sheetali, sheetkari, bhramari, ujjayiShatkarma : neti, dhauti, nauli, basti, kunjla, kapal bhati, shankh prakshalanaBandhas : jalandhar, uddyana, mool bandha.

The student will be able to perform Asanas, pranayama, shatkarma, bandha.

After the Completion of Third Month:

The Students will gain knowledge of Disease wise treatment through yoga therapy- Asthma, high & low B.P, diabetes, obesity, heart disease, insomnia, arthritis, backache & female disease.

The student will learn Yoga-nidra/relaxation techniques

After the Completion of Fourth Month:

The Students will gain knowledge of Diet & constitution, components of nutrition, water, natural diet, balanced diet, fasting-its benefits, types & preparation. Importance of vegetarianism in yogic diet.

The student will learn Visit to yoga centers/institutes

THEORY SYLLABUS**UNIT-I****(07 hrs)**

- Origin of yoga, definition and scope of yoga, limitations and misconceptions of Yoga
- Importance of yoga in physical education and other fields
- Yoga asana competition at:- State, National, International, SGFI, AIU etc.

UNIT-II**(07 hrs)**

- Philosophical aspects of yoga-Pre-Vedic, Vedic period; Buddhism, Upanishad period, Jainism & tantra
- Qualifications, qualities and responsibilities of a coach,
- Duties/responsibilities of technical official, Scoring system and judgment criteria,
- Protocols for referees, judges and officials.

UNIT-III**(08 hrs)**

- Meaning, techniques, precautions & effects of the following:-
- Asanas : padmasana, vajrasana, sidhasana, paschimottanasa, halasana, sarvangasana, shalabhasana, ardh- matsyendrasana, bhujangasana, tadasana, vrikshasana, matsyasana, gomukhasana, ushtrasana, shavasana, makarasana, vrishchikasana, dhanurasana, purna matsyendrasana, chakrasana, ek pad sikandasana, bakasana, mayurasana, shirshasana
- Pranayama : anulom-vilom, bhastrika, suryabhedhen pranayama, sheetali, sheetkari, bhramari, ujjayi
- Shatkarma : neti, dhauti, nauli, basti, kunjla, kapal bhati, shankh prakshalana
- Bandhas : jalandhar, uddiyana, mool bandha

UNIT-IV**(08 hrs)**

- Disease wise treatment through yoga therapy- Asthma, high & low B.P, diabetes, obesity, heart disease, insomnia, arthritis, backache & female disease
- Diet & Nutrition, components of nutrition, water, natural diet, balanced diet, fasting-its benefits, types & preparation, importance of vegetarianism in yogic diet.

PRACTICALS**(60 hrs.)**

1. Prayer
2. Asanas, pranayama, shatkarma, bandha (as mentioned in theory)
3. Yoga-nidra/relaxation techniques
4. Visit to yoga centers/institutes

SUGGESTED READINGS

1. Anand Omprakash (2001). Yog Dawra Kaya Kalp, Kanpur. Sewasth Sahitya Perkashan
2. Iyengar, B.K.S. (1995). Light on Yoga : The Bible of Modern Yoga. Schocken Publishers, USA.
3. Kaminoff, L. et al (2007). Yoga Anatomy. Human Kinetics, USA.
4. Kirk, M. (2005). The Hatha Yoga Illustrated. Human Kinetics, USA.
5. Sharma JP and Ganesh S(2007). Yog Kala Ek Prichya. Friends Publication. New Delhi
6. Sharma J. P. (2007). Manav jeevan evam yoga. Friends Publication. New Delhi.
7. Sharma Jai Prakash And Sehgal Madhu(2006). Yog-Shiksha. Friends Publication. Delhi.
8. Sharma Jai Prakash and Rathore Bhupender Singh (2007). Yoga Ke Tatva. Friends Publication. Delhi
9. Mukerji, A.P. (2010). The Doctorine and Practice of Yoga. General Books, LLC, New Delhi.
10. Norton, W.W. (2010). Yoga for Osteoporosis : The Complete Guide. W.W. Norton & Company, USA.
11. Sarin N (2003). Yoga Dawara Rogoon Ka Upchhar. Khel Sahitya Kendra
12. Sri Swami Rama, (2001). Breathing. Rishikesh Sadhana Mandir Trust.
13. Swami Ram (2000). Yoga & Married Life. Rishikesh Sadhana Mandir Trust
14. Swami Swatma Ram: Patanjali Yoga Sutra
15. Swami Veda Bharti (2000). Yoga Polity. Economy and Family. Rishikesh Sadhana Mandir Trust
16. Text Book Hath Yoga Pradipika
17. Text Book Patanjali Yoga Sutra

Category II

BA (Prog.) Physical Education in the Field of Multidisciplinary Studies (Major)

B.A.-PE-DSC-1-(4)-1.1- HISTORY AND FOUNDATIONS OF PHYSICAL EDUCATION

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| HISTORY AND FOUNDATIONS OF PHYSICAL EDUCATION | 4 | 3 | 1 | 0 | Pass in XII | NIL |

Learning Objectives

Objective: To provide the knowledge of historical development of physical education and sports and to familiarize the students with the philosophical, biological, psychological and sociological foundations of physical education.

Learning outcomes

1. The learners will be able to conceptualize about physical education and sports.
2. The learners will develop the factual knowledge of the existing various terminologies and information.
3. The learners will be able to comprehend the historical perspectives and recent developments in the field of physical education and sports.
4. The learners will be able to understand the multi-disciplinary foundations of physical education and sports.

SYLLABUS

Unit-1: Introduction to Physical Education and Sports and General Awareness (15 Hours)

1. Meaning and Definition of Physical Education
2. Aim and Objectives of Physical Education
3. Physical Education as an Art and/or Science
4. Significance of Physical Education in the Modern Society
5. Meaning and Definition of Sports, Types of Sports–Individual, Team, Combative, Recreational etc.

Unit-2: Growth and Development of Physical Education and Sports (15 Hours)

1. History of Physical Education and Sports in the World : Greece, Rome, Sweden, Germany and Denmark
2. Growth and Development of Physical Education in India(Pre and post-Independence)

3. Various Schemes for Promotion of Sports in India

Unit-3: Major Competitions at National and International Level (15 Hours)

1. Major Sports Competitions at International Level: Olympics Games (Summer, Winter and Paralympics), Asian Games, Commonwealth Games, SAF Games, World Cups, World Universities
2. Major Sports Competitions at National Level: National Games, Khelo India University Games (KIUG), Khelo India Youth Games (KIYG), Inter-University (All India & Zonal) Competitions, National Championships
3. Prominent Honours and Awards in Games and Sports in India, Different Cups and Trophies at National and International level in different Sports.
4. Structure and functions of regulatory bodies of various games and sports at International level–International Olympic Committee (IOC), International Sports Federations (ISFs), International Cricket Council (ICC), World Anti-Doping Agency (WADA)

Unit-4: Foundations of Physical Education (15 Hours)

1. Philosophical Foundations of Physical Education: Idealism, Pragmatism, Naturalism, Realism
2. Biological Foundations of Physical Education: Growth and Development, Age and Gender Characteristics, Body Types, Anthropometric differences
3. Psychological Foundations of Physical Education: Learning types, Learning Curves, Laws of Learning, Attitude, Interest, Cognition, Emotions and Sentiments
4. Sociological Foundations of Physical Education: Society and Culture, Social Acceptance and Recognition, Leadership, Social Integration and Cohesiveness

SUGGESTED READINGS

1. Graham, G. (2001), Teaching Children Physical Education: Becoming a Master Teacher. Human Kinetics, Champaign, Illinois, USA.
2. Kamlesh, M.L. & Singh, M. K. (2006), Physical Education (Naveen Publications).
3. Lau, S.K. (1999), Great Indian players, New Delhi, Sports Publications
4. Lumpkin, A. (2007), Introduction to Physical Education, Exercise Science and Sports Studies, McGraw Hill, New York, U.S.A.
5. Shaffer, D.R. (2002), Developmental Psychology: Childhood and Adolescence. Thomson, Sydney, Australia.
6. Sharma K. (2014), Sharirik Shiksha Ka Itihas, Friends Publications (India), New Delhi.
7. Siedentop, D. (2004), Introduction to Physical Education, Fitness and Sport, McGraw Hill Companies Inc., New York, USA.
8. Singh, A. et.al. (2000), Essentials of Physical Education, Kalyani Publishers, Ludhiana, Punjab.
9. Wuest, D.A. & C.A. Bucher (2006), Foundations of Physical Education, Exercise Science, and Sports. McGraw Hill Companies, Inc., New York, USA.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DSC-1-(4)-1.2-STRUCTURE AND FUNCTIONS OF SPORTS BODIES/ORGANISATIONS

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|----------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical / Practice | | |
| STRUCTURE AND FUNCTIONS OF SPORTS BODIES /ORGANIZATIONS | 4 | 3 | 1 | 0 | Pass in XII | NIL |

Learning Objectives

Objective: To familiarize the students with the major sports competitions, professional training institutions in India along with the structure and functions of various sports bodies/ organizations.

Learning Outcomes of the Paper:

1. The learners will know about the existing sports competitions in India and the world.
2. The learners will develop the factual knowledge about the professional preparation in the field of physical education and sports in India.
3. The learners will be acquainted with the organization structure of various sports bodies.
4. The learners will be able to develop an understanding of the functioning of various sports bodies/ organizations at national and international level.

Unit-1: Major Sports Competitions at International and National Level (15 Hours)

1. Olympic Games (Summer, Winter and Paralympics)
2. Asian Games, Commonwealth Games, SAF Games,
3. World Cups, World Universities, World Championships
4. National Games, National Championships
5. Khelo India University Games (KIUG), Inter-University (All India & Zonal) Competitions
6. Major International and National League Tournaments

Unit-2: Institutes for Professional Preparation of Physical Education and Sports in India (15 Hours)

1. Young Men Christian Association (YMCA)
2. Lakshmibai National Institute of Physical Education (LNIPE)
3. Indira Gandhi Institute of Physical Education and Sports Sciences (IGIPES)
4. Hanuman Vyayam Prasarak Madal, Amravati (HVPM)
5. Netaji Subhash National Institute of Sports (NSNIS)

Unit-3: Structure and Functions of International Sports Bodies/ Organizations (15 Hours)

1. International Olympic Committee (IOC)
2. International Paralympic Committee (IPC)
3. Olympic Council of Asia (OCA)
4. Commonwealth Games Federation (CGF)
5. South Asian Federation Games (SAFG)
6. International Sports Federations (ISFs)
7. International University Sports Federation (FISU)
8. World Anti-Doping Agency (WADA)

Unit-4: Structure and Functions of National Sports Bodies/ Organizations (15 Hours)

1. Indian Olympic Association (IOA)
2. Ministry of Youth Affairs and Sports (MYAS)
3. Sports Authority of India (SAI)
4. Association of Indian Universities (AIU)
5. National Sports Federations (NSFs)
6. National Anti-Doping Agency (NADA)

Practical : (30 Hours)

1. Visit to organizations and preparations of atleast two reports.

Suggested Readings :

1. Graham, G. (2001), Teaching Children Physical Education: Becoming a Master Teacher. Human Kinetics, Champaign, Illinois, USA.
2. Kamlesh, M.L. & Singh, M. K. (2006), Physical Education (Naveen Publications).
3. Lau, S.K. (1999), Great Indian players, New Delhi, Sports Publications
4. Lumpkin, A. (2007), Introduction to Physical Education, Exercise Science and Sports Studies, McGraw Hill, New York, U.S.A.
5. Shaffer, D.R. (2002), Developmental Psychology: Childhood and Adolescence. Thomson, Sydney, Australia.
6. Sharma K. (2014), *Sharirik Shiksha Ka Itihas*, Friends Publications (India), New Delhi.
7. Siedentop, D. (2004), Introduction to Physical Education, Fitness and Sport, McGraw Hill Companies Inc., New York, USA.
8. Singh, A. et.al. (2000), Essentials of Physical Education, Kalyani Publishers, Ludhiana, Punjab.
9. Wuest, D.A. & C.A. Bucher (2006), Foundations of Physical Education, Exercise Science, and Sports. McGraw Hill Companies, Inc., New York, USA.
10. Websites of concerned organizations.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category III

BA (Prog.) Physical Education in the Field of Multidisciplinary Studies (Non-Major)

B.A.-PE-DSC-1-1.1- HISTORY AND FOUNDATIONS OF PHYSICAL EDUCATION

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| HISTORY AND FOUNDATIONS OF PHYSICAL EDUCATION | 4 | 3 | 1 | 0 | Pass in XII | NIL |

Learning Objectives

Objective: To provide the knowledge of historical development of physical education and sports and to familiarize the students with the philosophical, biological, psychological and sociological foundations of physical education.

Learning outcomes

Learning Outcomes of the Paper:

1. The learners will be able to conceptualize about physical education and sports.
2. The learners will develop the factual knowledge of the existing various terminologies and information.
3. The learners will be able to comprehend the historical perspectives and recent developments in the field of physical education and sports.
4. The learners will be able to understand the multi-disciplinary foundations of physical education and sports.

Unit-1: Introduction to Physical Education and Sports and General Awareness (15 Hours)

1. Meaning and Definition of Physical Education
2. Aim and Objectives of Physical Education
3. Physical Education as an Art and/or Science
4. Significance of Physical Education in the Modern Society
5. Meaning and Definition of Sports, Types of Sports–Individual, Team, Combative, Recreational etc.

Unit-2: Growth and Development of Physical Education and Sports (15 Hours)

1. History of Physical Education and Sports in the World : Greece, Rome, Sweden, Germany and Denmark
2. Growth and Development of Physical Education in India(Pre and post-Independence)
3. Various Schemes for Promotion of Sports in India

Unit-3: Major Competitions at National and International Level (15 Hours)

1. Major Sports Competitions at International Level: Olympics Games (Summer, Winter and Paralympics), Asian Games, Commonwealth Games, SAF Games, World Cups, World Universities
2. Major Sports Competitions at National Level: National Games, Khelo India University Games (KIUG), Khelo India Youth Games (KIYG), Inter-University (All India & Zonal) Competitions, National Championships
3. Prominent Honours and Awards in Games and Sports in India, Different Cups and Trophies at National and International level in different Sports.
4. Structure and functions of regulatory bodies of various games and sports at International level—International Olympic Committee (IOC), International Sports Federations (ISFs), International Cricket Council (ICC), World Anti-Doping Agency (WADA)

Unit-4: Foundations of Physical Education (15 Hours)

1. Philosophical Foundations of Physical Education: Idealism, Pragmatism, Naturalism, Realism
2. Biological Foundations of Physical Education: Growth and Development, Age and Gender Characteristics, Body Types, Anthropometric differences
3. Psychological Foundations of Physical Education: Learning types, Learning Curves, Laws of Learning, Attitude, Interest, Cognition, Emotions and Sentiments
4. Sociological Foundations of Physical Education: Society and Culture, Social Acceptance and Recognition, Leadership, Social Integration and Cohesiveness

SUGGESTED READINGS

1. Graham, G. (2001), Teaching Children Physical Education: Becoming a Master Teacher. Human Kinetics, Champaign, Illinois, USA.
2. Kamlesh, M.L. & Singh, M. K. (2006), Physical Education (Naveen Publications).
3. Lau, S.K. (1999), Great Indian players, New Delhi, Sports Publications
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5. Shaffer, D.R. (2002), Developmental Psychology: Childhood and Adolescence. Thomson, Sydney, Australia.
6. Sharma K. (2014), Sharirik Shiksha Ka Itihas, Friends Publications (India), New Delhi.
7. Siedentop, D. (2004), Introduction to Physical Education, Fitness and Sport, McGraw Hill Companies Inc., New York, USA.
8. Singh, A. et.al. (2000), Essentials of Physical Education, Kalyani Publishers, Ludhiana, Punjab.
9. Wuest, D.A. & C.A. Bucher (2006), Foundations of Physical Education, Exercise Science, and Sports. McGraw Hill Companies, Inc., New York, USA.

Bachelor of Physical Education in the Field of Multidisciplinary Studies (Hons.)
More than one core discipline

DSC-1-(4)-1.1- HISTORY AND FOUNDATIONS OF PHYSICAL EDUCATION

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| HISTORY AND FOUNDATIONS OF PHYSICAL EDUCATION | 4 | 3 | 1 | 0 | Pass in XII | NIL |

Learning Objectives

Objective: To provide the knowledge of historical development of physical education and sports and to familiarize the students with the philosophical, biological, psychological and sociological foundations of physical education.

Learning outcomes

Learning Outcomes of the Paper:

1. The learners will be able to conceptualize about physical education and sports.
2. The learners will develop the factual knowledge of the existing various terminologies and information.
3. The learners will be able to comprehend the historical perspectives and recent developments in the field of physical education and sports.
4. The learners will be able to understand the multi-disciplinary foundations of physical education and sports.

Unit-1: Introduction to Physical Education and Sports and General Awareness (15 Hours)

1. Meaning and Definition of Physical Education
2. Aim and Objectives of Physical Education
3. Physical Education as an Art and/or Science
4. Significance of Physical Education in the Modern Society
5. Meaning and Definition of Sports, Types of Sports–Individual, Team, Combative, Recreational etc.

Unit-2: Growth and Development of Physical Education and Sports (15 Hours)

1. History of Physical Education and Sports in the World : Greece, Rome, Sweden, Germany and Denmark
2. Growth and Development of Physical Education in India(Pre and post-Independence)
3. Various Schemes for Promotion of Sports in India

Unit-3: Major Competitions at National and International Level (15 Hours)

1. Major Sports Competitions at International Level: Olympics Games (Summer, Winter and Paralympics), Asian Games, Commonwealth Games, SAF Games, World Cups, World Universities
2. Major Sports Competitions at National Level: National Games, Khelo India University Games (KIUG), Khelo India Youth Games (KIYG), Inter-University (All India & Zonal) Competitions, National Championships
3. Prominent Honours and Awards in Games and Sports in India, Different Cups and Trophies at National and International level in different Sports.
4. Structure and functions of regulatory bodies of various games and sports at International level–International Olympic Committee (IOC), International Sports Federations (ISFs), International Cricket Council (ICC), World Anti-Doping Agency (WADA)

Unit-4: Foundations of Physical Education (15 Hours)

1. Philosophical Foundations of Physical Education: Idealism, Pragmatism, Naturalism, Realism
2. Biological Foundations of Physical Education: Growth and Development, Age and Gender Characteristics, Body Types, Anthropometric differences
3. Psychological Foundations of Physical Education: Learning types, Learning Curves, Laws of Learning, Attitude, Interest, Cognition, Emotions and Sentiments
4. Sociological Foundations of Physical Education: Society and Culture, Social Acceptance and Recognition, Leadership, Social Integration and Cohesiveness

SUGGESTED READINGS

1. Graham, G. (2001), Teaching Children Physical Education: Becoming a Master Teacher. Human Kinetics, Champaign, Illinois, USA.
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3. Lau, S.K. (1999), Great Indian players, New Delhi, Sports Publications
4. Lumpkin, A. (2007), Introduction to Physical Education, Exercise Science and Sports Studies, McGraw Hill, New York, U.S.A.
5. Shaffer, D.R. (2002), Developmental Psychology: Childhood and Adolescence. Thomson, Sydney, Australia.
6. Sharma K. (2014), Sharirik Shiksha Ka Itihas, Friends Publications (India), New Delhi.
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8. Singh, A. et.al. (2000), Essentials of Physical Education, Kalyani Publishers, Ludhiana, Punjab.
9. Wuest, D.A. & C.A. Bucher (2006), Foundations of Physical Education, Exercise Science, and Sports. McGraw Hill Companies, Inc., New York, USA.

DSC-1-(4)-1.2-STRUCTURE AND FUNCTIONS OF SPORTS BODIES/ ORGANISATIONS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|----------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical / Practice | | |
| STRUCTURE AND FUNCTIONS OF SPORTS BODIES/ ORGANISATIONS | 4 | 3 | 1 | 0 | Pass in XII | NIL |

Learning Objectives

Objective: To familiarize the students with the major sports competitions, professional training institutions in India along with the structure and functions of various sports bodies/ organizations.

Learning outcomes

Learning Outcomes of the Paper:

1. The learners will know about the existing sports competitions in India and the world.
2. The learners will develop the factual knowledge about the professional preparation in the field of physical education and sports in India.
3. The learners will be acquainted with the organization structure of various sports bodies.
4. The learners will be able to develop an understanding of the functioning of various sports bodies/ organizations at national and international level.

Unit-1: Major Sports Competitions at International and National Level (15 Hours)

1. Olympic Games (Summer, Winter and Paralympics)
2. Asian Games, Commonwealth Games, SAF Games,
3. World Cups, World Universities, World Championships
4. National Games, National Championships
5. Khelo India University Games (KIUG), Inter-University (All India & Zonal) Competitions
6. Major International and National League Tournaments

Unit-2: Institutes for Professional Preparation of Physical Education and Sports in India (15 Hours)

1. Young Men Christian Association (YMCA)
2. Lakshmibai National Institute of Physical Education (LNIPE)
3. Indira Gandhi Institute of Physical Education and Sports Sciences (IGIPES)
4. Hanuman Vyayam Prasarak Madal, Amravati (HVPM)

5. Netaji Subhash National Institute of Sports (NSNIS)

Unit-3: Structure and Functions of International Sports Bodies/ Organizations (15 Hours)

1. International Olympic Committee (IOC)
2. International Paralympic Committee (IPC)
3. Olympic Council of Asia (OCA)
4. Commonwealth Games Federation (CGF)
5. South Asian Federation Games (SAFG)
6. International Sports Federations (ISFs)
7. International University Sports Federation (FISU)
8. World Anti-Doping Agency (WADA)

Unit-4: Structure and Functions of National Sports Bodies/ Organizations (15 Hours)

1. Indian Olympic Association (IOA)
2. Ministry of Youth Affairs and Sports (MYAS)
3. Sports Authority of India (SAI)
4. Association of Indian Universities (AIU)
5. National Sports Federations (NSFs)
6. National Anti-Doping Agency (NADA)

Practical : (30 Hours)

1. Visit to organizations and preparations of atleast two reports.

Suggested Readings :

1. Graham, G. (2001), Teaching Children Physical Education: Becoming a Master Teacher. Human Kinetics, Champaign, Illinois, USA.
2. Kamlesh, M.L. & Singh, M. K. (2006), Physical Education (Naveen Publications).
3. Lau, S.K. (1999), Great Indian players, New Delhi, Sports Publications
4. Lumpkin, A. (2007), Introduction to Physical Education, Exercise Science and Sports Studies, McGraw Hill, New York, U.S.A.
5. Shaffer, D.R. (2002), Developmental Psychology: Childhood and Adolescence. Thomson, Sydney, Australia.
6. Sharma K. (2014), *Sharirik Shiksha Ka Itihas*, Friends Publications (India), New Delhi.
7. Siedentop, D. (2004), Introduction to Physical Education, Fitness and Sport, McGraw Hill Companies Inc., New York, USA.
8. Singh, A. et.al. (2000), Essentials of Physical Education, Kalyani Publishers, Ludhiana, Punjab.
9. Wuest, D.A. & C.A. Bucher (2006), Foundations of Physical Education, Exercise Science, and Sports. McGraw Hill Companies, Inc., New York, USA.
10. Websites of concerned organizations.

Common Pool of Generic Electives (GEs) offered by

Department of Physical Education

GE Paper: FITNESS & WELLNESS SEMESTER-I

GE : FITNESS & WELLNESS

| Course Title & Code | Credits | Credit Distribution of the Course | | | Eligibility Criteria | Pre-Requisite of the Course (if any) |
|---------------------|---------|-----------------------------------|----------|--------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/Practice | | |
| Fitness & Wellness | 04 | 3 | 0 | 1 | XII class pass | NIL |

Learning Objectives:

1. To impart the knowledge and practices about the fitness components and health.
2. The learner will learn and practice about the subject and their health benefits for normal and challenged population.
3. To develop the practical knowledge of learners, with applications and analysis of various laboratory testing, physiological testing, stress management, survey project for fitness and wellness of the local community and nutritional diet analysis.

Learning Outcomes:

1. The learners will be able to analyze and correlate the components of physical fitness, principles of physical fitness and benefits of fitness programmes.
2. The learners will be able to apply the knowledge regarding causes and prevention of obesity; and weight management guidelines to lead a better quality of life.
3. The learner will be able to analyze, correlate and evaluate in regard to fitness profile, development and maintenance of the player including types of motor components, principles of physical fitness, benefits of fitness program, causes and prevention of obesity and weight management.
4. The learner will be able to identify, apply and correlate different aspects of wellness including identifying dimensions of wellness, achieving and maintenance of wellness, identifying stressors and managing stress, relationship of wellness towards positive lifestyle and benefits of wellness.
5. The learner will be able to describe, apply, correlate and measure different aspects of behavior modification in regard to barriers to change, six stages of SMART, technique of change & smart goal setting with healthy lifestyle approach adaptation.
6. The learner will be able to describe, apply, correlate and measure different aspects of daily schedule of achieving quality of life and wellness in regard to daily schedule (based upon one's attitude, gender, age & occupation), basic module (time split for rest, sleep, diet, activity & recreation), principles to achieve quality of life including positive attitude, daily regular exercise, control over food habits & healthy hygienic practices.

THEORY SYLLABUS

- UNIT – I** INTRODUCTION (8 hrs lectures)
- 1.1 Concept and meaning of fitness and wellness
 - 1.2 Components of fitness and their description
 - 1.3 Components of wellness and their description
 - 1.4 Significance of fitness and wellness in present scenario.
 - 1.5 Fitness and wellness for life
- UNIT – II** FITNESS PROFILE, DEVELOPMENT AND MAINTAINENCE OF FOLLOWING (10 hrs lecture)
- 2.1 Types :- physical (cardio respiratory, strength, speed agility, flexibility, power, muscular endurance) health related (cardio-respiratory, flexibility, body composition, muscular strength and endurance) motor skill related (speed, power, agility, coordination, endurance, balance)
 - 2.2 Principals of physical fitness
 - 2.3 Benefits of fitness programme
 - 2.4 Obesity (causes and prevention)
 - 2.5 Weight management (role of diet & exercise in maintenance of ideal weight)
- UNIT – III** WELLNESS (12 hrs lectures)
- 3.1 Identifying dimensions of wellness, achieving and maintenance of wellness
 - Adopting healthy & positive lifestyle.
 - Identifying stressors and managing stress
 - Staying safe & preventing injuries
 - Knowledge of Nutrition & its implication on healthy lifestyle
 - Factors leading to eating disorders
 - Hazards of substance abuse (smoking, alcohol & tobacco)
 - Adoption of spirituality principals & their remedial measures
 - Yogic practices for achieving health and fitness
 - Worthwhile use of leisure time.
 - Sexuality – preventive measures for sexual transmitted diseases.
 - Emphasis on proper rest & sleep.
 - Prevention of cancer, cardio-vascular disorders & other diseases.
 - 3.2 Relationship of wellness towards positive lifestyle
 - 3.3 Benefits of wellness
- UNIT – IV** BEHAVIOR MODIFICATION (7 hrs lectures)
- 4.1 Barriers to change
 - 4.2 Process of change (6 stages) SMART
 - 4.3 Technique of change & smart goal setting.
 - 4.4 Healthy lifestyle approach. (Introduction, prevention, and treatment of inactivity diseases)
- UNIT – V** DAILY SCHEDULE OF ACHIEVING QUALITY OF LIFE & WELLNESS (8 hrs lecture)
- 5.1 Daily schedule based upon one's attitude, gender, age & occupation.
 - 5.2 Basic – module: - Time split for rest, sleep, diet, activity & recreation.
 - 5.3 Principles to achieve quality of life:- positive attitude, daily regular exercise, control over food habits & healthy hygienic practices.

PRACTICAL SYLLABUS

30 hrs

1. FITNESS LABS: Various labs testing related to cardio-vascular endurance, flexibility, muscular strength and body composition.
2. PHYSIOLOGICAL TESTING: - Blood pressure, VO2 max, vital capacity, pulse rate.
3. STRESS MANAGEMENT :- Yogic practices (asanas, pranayam and meditation)
4. SURVEY PROJECT: - Fitness & wellness assessment of local community.
5. NUTRITIONAL DIET ANALYSIS :- Given diet

Suggested Readings:

1. Anderson, B., Stretch Yourself for Health & Fitness, Delhi : UBSPD, 2002.
2. Austin and Noble, Swimming For Fitness, Madras: All India Pub., 1997.
3. Bean, Anita, Food For Fitness, London : A & C Black, 1999.
4. Callno Flood, D.K., Practical Math For Health Fitness, New Delhi, 1996.
5. Cox, Corbin, C.B & Indsey, R., Concepts of Physical Fitness, WC Brown, 1994.
6. Difiore, Judy, Complete Guide to Postnatal Fitness, London : A & C Black, 1998.
7. Giam, C.K & The, K.C., Sport Medicine Exercise and Fitness, Singapore : P.G. Medical Book, 1994.
8. Gosselior, C., The Ultimate Guide to Fitness, London: Vermilion, 1995.
9. Harrison, J.C., Hooked on Fitness, NY: Parker Pub. Com., 1993.
10. Hoeger, W.K. and S.A., Principles and Labs for Physical Fitness, Englewood Morton, 1999.
11. Kirtani, Reema, Physical Fitness, Delhi : KheI Sahitya, 1998.
12. Maud, J.R. and Foster, C., Physiology Assessment of Human Fitness, New Delhi, 1995.
13. McGlynn, G., Dynamics of Fitness, Madison : W.C.B Brown, 1993.
14. Muller, J. P., Health, Exercise and Fitness Delhi : Sports, 2000.
15. Muller, J.P., Health Exercise and Fitness, Delhi: Sports, 2003.
16. Saggar, S.K., Physical Fitness, New Delhi : Rupa Co., 1994.
17. Sharkey, B.J., Physiology of Fitness, Human Kinetics Book, 1990.
18. Thani, Lokesh, Rules of Games and Games and Fitness, Delhi: Sports, 2003.

Department of Physical Education
GE Paper : GYM MANAGEMENT
SEMESTER-I

GE : GYM MANAGEMENT

| Course Title & Code | Credits | Credit Distribution of the Course | | | Eligibility Criteria | Pre-Requisite of the Course (if any) |
|---------------------|---------|-----------------------------------|----------|--------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/Practice | | |
| Gym Management | 04 | 3 | 0 | 1 | XII class pass | NIL |

Learning Objective

1. The learner will acquire knowledge, understanding and practices with applications and skills required for gym management.
2. The learner will develop understanding of the gym essentials including publicity, policy, registration, location and establishment of gym, procurement, placement & maintenance of gym equipment. Learner will be able to apply the understanding of the same for marketing, clientage, enrolments, record keeping, social activities, and public relations.
3. The learner will be able to acquire skills and competencies required for becoming a gym instructor.
4. The learner will acquire practical skills (in laboratory and field setup) in regard to calculating BMI, flexibility test (Sit and reach test, hip bend and toe touch), strength test (Bend knee sit ups, leg raise for minimal strength), cardiovascular endurance test (Harvard step test, cooper 12/9 min. run), self-evaluation (personal health and well-being), asana, aerobic schedule, weight management of the subjects. The learner will be able to compare, correlate and analyze the above learnings in real life situation.

Learning Outcome:-

1. The learner will be able to apply safety procedures to be followed in the gym.
2. The learner will develop the skills required for handling different gym equipment as well as management and utilization of the same.
3. The learner will be able to test, take measurements, analyze and interpret different components with the help of different equipment and tests (flexibility, strength, cardiovascular endurance).
4. The learner will be equipped with personal health and well-being for self-evaluation and of others.
5. The learner will be skilled to handle gym management economics (costing, balance sheet, promotional plans).

THEORY SYLLABUS

UNIT-I

GYM ESSENTIALS

(09 hrs lecture)

- Location and Establishment of gym (Publicity, policy, reception, information, Registration, offer of programmes), Procurement, placement & maintenance of gym Equipments
- Marketing, clientage, Enrolments, record keeping, social activities, Public Relations,
- Individualized/group grooming programme, basic concepts of financial management

UNIT-II

GYM INSTRUCTOR

(09 hrs lecture)

- Gym-instructor – qualification, qualities, pay-roll, Performance – evaluation, grooming and presentation
- Safety procedures to be followed in the gym.

| | |
|-----------------|--|
| UNIT-III | GYM-EQUIPMENTS (09 hrs lecture) <ul style="list-style-type: none"> • Introduction to different exercise equipment <ul style="list-style-type: none"> • Floorings and equipments required for aerobic- Understanding of various forms of aerobics- floor aerobics, step – aerobics, weight <ul style="list-style-type: none"> • Aerobics and aqua aerobics |
| UNIT-IV | EQUIPMENTS FOR FITNESS EVALUATION AND ASSESSMENTS (09 hrs lecture) <ul style="list-style-type: none"> • Measurement of Weight and Height, Calculating BMI (Body Mass Index) • Measurement of Fitness Components – <ul style="list-style-type: none"> • Flexibility (Sit and Reach Test, Hip Bend and Toe Touch) • Strength (Sit-Ups, Leg-Raise for Minimal Strength) • Cardiovascular Endurance (One-mile run, Physical Efficiency test, Harvard step test) • Self- evaluation –Personal Health and Well-being |
| UNIT-V | GYM MANAGEMENT ECONOMICS (09 hrs lecture) <p>Costing, Balance sheet, Promotional plans</p> |

PRACTICAL SYLLABUS - 30 hrs

1. Calculating BMI
2. Flexibility Test (Sit and reach test, hip bend and toe touch)
3. Strength Test (Bend knee sit ups, leg raise for minimal strength)
4. Cardiovascular endurance test (Harvard step test, cooper 12/9 min. run)
5. Self evaluation- (Personal health and well being)
6. Any five asanas
7. Aerobic schedule
8. Weight management

Suggested Readings:

1. Alexandria, Virginia, "The Gym Workout" Published by Time Life Books.
2. Ann Goodsell "Your Personal Trainer, 1994.
3. Carol Kennedy Armbruster. Mary M. Yoke " Methods of Group Exercise Instruction", 2009.
4. Philip Mazzurco "Exerstyle", 1985.
5. Refus, Inc, "The Body in Motion" Published by Time Life Books.
6. Sheela Kumari , Fitness, Aerobics & Gym Operations, New Delhi, Khel Sahitya Kendra, 2009.
7. Sunil Bharihoke, The Gym" , 2002.
8. Time life books, Gym workout, London times life books, 2004
9. Time life books, staying flexible, London, time life books, 2005
10. Time life books, super firm tough workouts, London times life books, 2005
11. Wayne L. Westcott, Thomas R. Bachle, " Strength Training", 2007.

Common Pool of Generic Electives (GEs) offered by

Department of Physical Education

SEMESTER-II

GE paper- PROFESSIONAL PREPARATION AND CAREER AVENUES IN PHYSICAL EDUCATION ANDSPORTS

GE : PROFESSIONAL PREPARATION AND CAREER AVENUES IN PHYSICAL EDUCATION ANDSPORTS

| Course Title & Code | Credits | Credit Distribution of the Course | | | Eligibility Criteria | Pre-Requisite ofthe Course (if any) |
|--|---------|-----------------------------------|----------|--------------------|----------------------|-------------------------------------|
| | | Lecture | Tutorial | Practical/Practice | | |
| Professional Preparation and Career Avenues in Physical Education and Sports | 04 | 3 | 0 | 1 | XII class pass | NIL |

Learning Objectives:

1. To develop an understanding of the professional preparation in physical education.
2. To develop skills to meet professional requirements.
3. To understand the need for professional development.
4. To acquire skill and competencies for professional development.
5. To gain knowledge of curriculum development.
6. To acquire skill to analyze, develop and evaluate curriculum

Learning Outcomes:

1. The learner will be able to demonstrate professional preparation in physical education and compare the same with other countries for exploring best possibilities.
2. The learner will develop skills to meet professional requirements for best applications and analysis.
3. The learner will be able to do comparative analysis of professional preparation program in U.S., Europe and China as well as to compare the same with India.
4. The learner will acquire skill and competencies for professional development to relate courses available in physical education and sports and role of physical education teacher and institutes in professional preparation programmes.
5. The learner will be able to develop curriculum to correlate career avenues after under graduation and post-graduation and research degrees, planning for a career: self-assessment, motivational dynamics, decision making,counseling and guidance, challenges and opportunities in physical education.
6. The learner will acquire skills to analyze, develop and evaluate curriculum to correlate career avenues after under graduation and post-graduation and research degrees, planning for a career: self-assessment, motivational dynamics, decision making,counseling and guidance, challenges and opportunities in physical education.

THEORY SYLLABUS

FUNDAMENTALS OF PROFESSIONAL PREPARATION

UNIT-I

HISTORICAL PERSPECTIVE

(09 hrs lecture)

- Professional Preparation in India
 - Pre Independence perspective
 - Post Independence perspective

- Comparative analysis of professional preparation program in U.S., Europe and China

UNIT-II PROFESSIONAL PREPARATION PROGRAMMES (09 hrs lecture)

- Foundation: need, objectives and characteristic of professional preparation programmes
- Courses available in physical education and sports.
- Role of physical education teacher and institutes in professional preparation programmes

UNIT-III PHYSICAL EDUCATION AND PROFESSIONALISM (09 hrs lecture)

- Concept and meaning of Profession, Professional and Professionalism.
- Physical education as a profession.

UNIT-IV CAREER AVENUES & JOB OPPORTUNITIES IN PHYSICAL EDUCATION & SPORTS (09 hrs lecture)

- Career avenues after under graduation and post graduation and research degrees.
- Planning for a career : self-assessment, motivational dynamics, decision making, counseling and guidance

UNIT-V EXPLORING AND VENTURING INTO NEW AVENUES (09 hrs lecture)

- Challenges and opportunities in physical education
- Inter-relationship among various careers in physical education and sports

PRACTICAL SYLLABUS :

30 hrs

1. Case study on national sports policy/national education policy

Suggested Readings:

1. Adams William C. Foundation of Physical Education Exercise and Sports Sciences, Philadelphia, 1991
2. Gupta Rakesh, Sharma Akhilesh, and Sharma Santosh, Professional Preparation and Curriculum Design in Physical Education & sports Sciences, New Delhi, Friends Publications, 2004
3. Hoover. Kenneth H., The Professional Teacher's Handbook, Boston, Allyn and Bacon, 1972
4. Krik David, Physical Education and Curriculum Study, Kent, Croom Helm, 1988
5. Sandhu Kiran, Professional Preparation and Career Development in Physical Education, New Delhi, Friends Publications, 2004
6. Sandhu Kiran, Trends and Development in Professional Preparation in Physical Education, New Delhi, Friends Publication, 2006
7. Wessel Janet A, and Kelly Luke, Achievement-Based Curriculum Development in Physical Education, Philadelphia, Lea and Febiger, 1986
8. Zeigler E.F, Professional and Scholarly Foundation of Physical Education and Kinesiology, Sports Educational Technologies, 2007

Semester II
GE-Paper: STRESS MANAGEMENT

GE : STRESS MANAGEMENT

| Course Title & Code | Credits | Credit Distribution of the Course | | | Eligibility Criteria | Pre-Requisite of the Course (if any) |
|---------------------|---------|-----------------------------------|----------|--------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/Practice | | |
| Stress Management | 04 | 3 | 1 | 0 | XII class pass | NIL |

Learning Objectives:

1. To acquaint the learner with the knowledge, practices and understanding of anger, stress and its management and other related aspects important to sports persons.
2. The learners will be introduced with the basic concepts of stress and anger, causes and effects of stress and anger, main emotions of stress-fear and anger, daily life stressors, process of stress, anger and psycho physiology of stress.
3. The learner will gain knowledge and concept of self-awareness and stress management, muscular tension reduction, emotional tension reduction, stress free living, stress free examination, stress management through physical activity and stress management through recreation activities.
4. The learner will gain knowledge of anger management- Redford William's 12 steps of anger management, stress management- behavior modification, time management, coping strategy & intervention skills. It also helps to learn relaxation technique- diaphragmatic breathing, meditation, progressive muscle relaxation, Yoga, mental imagery, music therapy, and massage therapy.

Learning Outcomes:

1. The learner will be able to apply the knowledge, learning and understanding to the concept of anger, stress and how to manage it.
2. The learner will be able to correlate the concepts and practices of the stress and anger.
3. The learner will be able to understand and adapt to stress - reframing of habitual stress resistance, types of stress, personal and social stress, occupational stress, peer stress / learners stress, family stress, stress & elderly and Stress & drug abuse. It helps to know about the stress related diseases- sleep disorder, eating disorder, sexual and emotional disorder, other stress related diseases, stress & spirituality.
4. The learner will be able to correlate the concepts and practices for best management of stress.

THEORY SYLLABUS:

Unit-I

(15 hrs Lectures)

Definition of stress and anger, Causes and effects of stress and anger, two main emotions of stress-fear and anger, Daily life stressors, Process of stress and anger- Psycho Physiology of stress.

Unit-II

(15 hrs Lectures)

Adaptation to stress-Reframing of habitual stress resistance, types of stress-personal and social stress Occupational stress, Peer stress / Students stress, Family stress, Stress & elderly and Stress & drug abuse.
Stress related diseases- i) Sleep disorder, ii) Eating disorder, iii) Sexual and emotional disorder, iv) Other stress related diseases, v) Stress & Spirituality.

Unit-III

(15 hrs Lectures)

Self-awareness and stress management, Muscular tension reduction, Emotional tension reduction, Stress free living, Stress free examination, Stress management through physical activity, Stress management through recreation.

Unit-IV

(15 hrs Lectures)

Anger management- Redford William's 12 steps of anger management

Stress management- behavior modification, time management, coping strategy & intervention skills.

Relaxation technique- i) Diaphragmatic breathing, ii) Meditation, iii) Progressive muscle relaxation, iv) Yoga, v) Mental imagery, vi) Music therapy, vii) Massage therapy

SUGGESTED READINGS

1. Adrain F & Herrick E. and Sharp P (1998). Anger Management. Routledge Publishing. Florence. Kentucky. U.S.A.
2. Allen E (2008). Stress Management for Dummies. For Dummies Publishers. U.S.A.
3. Davis M. et al (2008). The Relaxation and Stress Reduction workbook. Harbinger Publications, USA.
4. Greenberg J.S. (2008). Comprehensive stress management. McGraw Hill, USA
5. Hipp E. (2008). Fighting Invisible Tigers: Stress Management for Teens. Free Spirit Publishing, USA.
6. Mac W. (2007). Anger and Stress Management. God's Way. Calvary Press, USA.
7. Petee F (2006). Anger Management. Pentagon. Press. New York. U.S.A.
8. Swate Y B (2009). Anger Management. Sage Publication. New Delhi.
9. NCERT & CBSE publication and reading for stress management.

16. Amendment to Appendix -II-A to the Ordinance V (2-A) of the Ordinances of the University vide EC Resolution 18-1-22 dated 18.08.2022 regarding Syllabi of 1st Semester of BSc. Applied Life Science-Agrochemicals and Pest Management under Swami Shraddhanand College

Add the following:

Syllabus of Semester-I of BSc. Applied Life Science – Agrochemicals and Pest Management based on Undergraduate Curriculum Framework 2022 under Swami Shraddhanand College to be implemented from academic year 2022-2023

**B.Sc. (Hons.)
in
Applied Life Sciences with Agrochemicals and Pest Management**

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|--|
| DISCIPLINE SPECIFIC COURSE (DSC) -1 Course: Microbial World and Plant Diversity |
| Total Credits: 04 Lectures: 30 Hours, Tutorial: 0, Practical: 60 Hours |

Objectives: To make students aware about the diversity of plants and microbes present on the planet and their evolutionary relationships.

Learning Outcomes:

- This course will impart basic knowledge on:
- the diversity of plants and microbes.
- their general characteristics.
- various groups of plants and their evolutionary relationships.
- basic principles and concepts of evolution that contribute to diversity.

Theory:**Unit 1. Origin of life: 2 Hours**

Principles and concepts of evolution and classification (up-to six kingdoms).

Unit 2. Bacteria: 3 Hours

General characteristic features, cell structure, wall-less forms (L-forms and Mycoplasma), asexual reproduction and modes of gene transfer (conjugation, transformation and transduction), a brief introduction to Archaeobacteria.

Unit 3. Viruses: 2 Hours

General characteristic features, replication, RNA virus (structure of TMV), DNA virus (structure of T-phage), Lytic and Lysogenic life cycle (Lambda phage).

Unit 4. Algae: 3 Hours

General characteristic features, Reproduction, Classification of Lee (only up to groups). A brief account of Volvox and Polysiphonia.

Unit 5. Fungi: 4 Hours

General characteristic features, Reproduction, Classification (Webster and Weber, 2007), A brief account of Rhizopus, Penicillium, and Agaricus.

Unit 6. Bryophytes: 4 Hours

General characteristic features and reproduction, adaptation to land habit, broad classification, Evolutionary trends in Bryophytes. Brief account of Marchantia and Funaria.

Unit 7. Pteridophytes: 4 Hours

General characteristic features and reproduction, broad classification, Evolutionary trends in Pteridophytes, affinities with Bryophytes. A brief account of Equisetum and Pteris.

Unit 8. Gymnosperms: 4 Hours

General characteristic features and reproduction, broad classification, evolutionary trends in Gymnosperms, affinities with Pteridophytes. A brief account of Pinus.

Unit 9. Angiosperms: 4 Hours

General characteristic features and reproduction, concept of natural, artificial and phylogenetic system of classification, APG-IV (a brief reference), affinities with Gymnosperms.

Practical: 60 Hours

1. To study structure of TMV and Bacteriophage (electron micrographs/models).
2. To study Gram negative and positive bacteria through Gram's Staining Technique.
3. To study Bacteria through Electron Micrograph, Binary fission, Conjugation, Root nodules through digital resources /specimen.
4. To study morphology of Volvox and Polysiphonia through temporary preparations and slides.
5. To study Rhizopus, Penicillium and Agaricus through temporary preparations, specimens and slides.

Additional Readings:

1. Parihar, N.S. (1991). An Introduction to Embryophyta, Pteridophytes (Vol. II). Central Book Depot.
2. Singh, V., Pandey, P.C., & Jain, D.K. (2001). A Text Book of Botany. Rastogi and Co.
3. Webster, J., & Weber, R. (2007). Introduction to Fungi. Cambridge University Press.

Keywords:

Evolution, Bacteria, Viruses, Bryophytes, Pteridophytes, Gymnosperms, Angiosperms.

Teaching Learning Process:

Learning material will be delivered through a series of lectures with conventional chalk and talk method, supported by power point presentations, charts, flow charts and video education resources. Emphasis would be on an interactive classroom environment so as to encourage students to ask questions and clarify their doubts. Students would also be encouraged to refer to the referenced books in the library to inculcate reading habits for better understanding of the subject.

Assessment Methods:

Performance of the students will be evaluated on the basis of regular class test, presentations and assignments as a part of internal assessment during the course, as per the curriculum. There would be a continuous evaluation of laboratory exercises and the record files. End semester university examination will be held for both theory and practical components. In practical, assessment will be done based on continuous evaluation and performance in the practical examination.

DISCIPLINE SPECIFIC COURSE (DSC) - 02
COURSE : INORGANIC CHEMISTRY

Total Credits: 04
Lectures: 30 Hours, Tutorial: 0, Practical: 60 Hours

Objectives:

The course introduces the students to basics of coordination chemistry and organometallics which are of immense importance to biological systems. Nomenclature, isomerism, bonding in coordination compounds has been dealt with in sufficient detail along with special emphasis on important coordination compounds in the biological system. In organometallic chemistry, the students are introduced to classification of organometallic compounds, the concept of hapticity and the 18-electron rule governing the stability of a wide variety of organometallic species with special emphasis on metal carbonyls.

Learning Outcomes:

- By the end of the course, the students will be able to:
- Understand term like; ligand, chelate, coordination number. Systematic naming of coordination compounds.
- Learn various types of isomerism possible in Octahedral and Tetrahedral coordination compounds.
- Use Valence Bond Theory to predict the structure and magnetic behaviour of metal complexes and understand the terms inner and outer orbital complexes.
- Understand meaning of the terms Δ_o , Δ_t , pairing energy, CFSE, high spin and low spin and how CFSE affects thermodynamic properties like lattice enthalpy and hydration enthalpy.
- Analyse IR data to understand the extent of back bonding in metal carbonyls.

Theory:

Unit 1. Introduction to Coordination compounds: 6 Hours

Brief discussion with examples of types of ligands, denticity and concept of chelate. IUPAC system of nomenclature of coordination compounds (mononuclear and binuclear) involving simple monodentate and bidentate ligands. Structural and stereoisomerism in complexes with coordination number 4 and 6.

Unit 2. Bonding in Coordination compounds: 14 Hours

Valence Bond Theory (VBT): Salient features of theory, concept of inner and outer orbital complexes, Drawbacks of VBT.

Crystal Field Theory: Splitting of d orbitals in octahedral symmetry. Crystal field effects for weak and strong fields, Crystal field stabilization energy (CFSE), concept of pairing energy,

Factors affecting the magnitude of Δ , Spectrochemical series, Splitting of d orbitals in tetrahedral symmetry, Comparison of CFSE for octahedral and tetrahedral fields, tetragonal distortion of octahedral geometry, Jahn-Teller distortion.

Unit 3. Organometallic chemistry: 10 Hours

Definition and classification with appropriate examples based on nature of metal-carbon bond (ionic, sigma, pi and multicentre bonds), Structure and bonding of methyl lithium and Zeise's salt, Structure and bonding of ferrocene, mononuclear and polynuclear carbonyls of 3d metals, 18-electron rule as applied to carbonyls, π -acceptor behaviour of carbon monoxide (MO diagram of CO to be discussed), synergic effect and use of IR data to explain extent of back bonding.

Practical: 60 Hours

1. Estimation of Mg^{2+} by direct complexometric titration using EDTA.
2. Estimation of Zn^{2+} by direct complexometric titration using EDTA.
3. Estimation of Ca^{2+} by direct complexometric titration using EDTA.
4. Estimation of total hardness of a given sample of water by complexometric titration.
5. Determination of the composition of the Fe^{3+} -salicylic acid complex/ Fe^{2+} -1, 10 phenanthroline complex in solution by Job's method.
6. Determination of the composition of the Fe^{3+} -salicylic acid complex/ Fe^{2+} -1,10-phenanthroline complex in solution by mole ratio method.
7. Preparation of the following inorganic compounds:
 - a) Tetraamminecopper (II) sulphate
 - b) Potassium trioxalatoferrate (III) trihydrate
 - c) Chrome alum
 - d) Cuprous chloride
 - e) Manganese (III) phosphate ($\text{MnPO}_4 \cdot \text{H}_2\text{O}$)
 - f) Potash alum
 - g) Acetylacetonate complex of Cu^{2+} and Fe^{3+}

Suggested Readings:

Theory:

1. Huheey, J.E., Keiter, E.A., Keiter, R. L., & Medhi, O.K. (2009). Inorganic Chemistry- Principles of Structure and Reactivity. Pearson Education.
2. Shriver, D. D., Atkins, P., & Langford, C.H. (1994). Inorganic Chemistry (2nd Ed.). Oxford University Press.
3. Atkins, P.W., Overton, T.L., Rourke, J.P., Weller, M.T., & Armstrong, F.A. (2010), Inorganic Chemistry (5th Ed.). W. H. Freeman and Company.
4. Cotton, F.A. Wilkinson, & G. Gaus, P.L. Basic Inorganic Chemistry (3rd Ed.). Wiley India.
5. Douglas, B.E., McDaniel, D.H., & Alexander, J.J. (1994). Concepts and Models of Inorganic Chemistry. John Wiley & Sons.

6. Greenwood, N.N.; Earnshaw, A. (1997). Chemistry of the Elements (2nd Ed.). Elsevier.
7. Sahoo, et al. Inorganic Chemistry. PHI Learning Private Limited.

Practical:

1. Jeffery, G.H., Bassett, J., Mendham, J., & Denney, R.C. (1989). Vogel's Textbook of Quantitative Chemical Analysis. John Wiley and Sons.
2. Marr, G., & Rockett, B.W. (1972). Practical Inorganic Chemistry. Van Nostrand Reinhold.

Keywords:

Crystal field theory, Dq, CFSE, Nomenclature, Valence bond theory, Crystal field theory, Magnetic properties, 18 electron rule, metal carbonyls, hapticity.

Teaching Learning Process:

- Conventional chalk and board teaching.
- Class interactions and discussions.
- Power point presentation on important topics.

Assessment Methods:

- Presentations by Individual Student/ Group of Students.
- Class Tests at Periodic Intervals.
- Written assignment(s).
- End semester University Theory Examination.

DISCIPLINE SPECIFIC COURSE (DSC) - 03

Course: Animal Forms and Structure

Total Credits: 04

Lectures: 30 Hours, Tutorial: 0, Practical: 60 Hours

Objectives:

Zoology is the scientific study of animal life. Animals are the most diverse creatures on this planet. This course gives knowledge about the diversity within different groups, and their interrelationships. The course is designed to understand the general characteristics, classification, basic body plan and levels of organizations in different groups of animals.

Learning Outcomes:

On completion of the course, students will be able to:

- Distinguish between major phyla of animals through characteristic features and diversity.
- Understand the fundamental differences among animal body plans among different phyla.
- Illustrate structure, function and processes related to different groups of animals.
- Observe living animals in the environment and relate observations to theory from the course.

Theory:

Unit 1: 2 Hours

An introduction to the animal kingdom: Non-chordates vs Chordates, Coelom, Body symmetry, Levels of organization.

Unit 2: 1 Hour

Protista: General characters of Protozoa; Locomotory organelles: Pseudopodia, Flagella and Cilia.

Unit 3: 2 Hours

Porifera: General characters of phylum Porifera, Canal system in Porifera (in brief).

Unit 4: 2 Hours

Radiata: General characters of phylum Cnidaria and Ctenophora; Polymorphism.

Unit 5: 2 Hours

Helminthes: General characters of Helminthes (Platyhelminthes and Nematelminthes).

Unit 6: 7 Hours

Coelomates (Non-chordates):

General characters of phylum Annelida; Metamerism.

General characters of phylum Arthropoda; Vision in insects.

General characters of phylum Mollusca; Pearl Formation.

General characters of phylum Echinodermata; Water Vascular system in starfish.

Unit 7: 2 Hours

Protochordates: Salient features of Hemichordates, Urochordates and Cephalochordates.

Unit 8: 12 Hours

Vertebrates: Brief description of vertebrates.

General characters of Agnatha.

General characters of Pisces; Cartilaginous and Bony fishes, Catadromous and Anadromous migration.

General characteristics of Amphibia; Adaptations for terrestrial life.

General characteristics of Reptilia; Biting mechanism of snakes.

General characteristics of Aves; Flight adaptations in birds.

General characteristics of Mammals; Brief description of prototherian, metatherian and eutherian mammals; Dentition.

Practical: 60 Hours

1. Study of specimens:

Non-chordates: Euglena, Noctiluca, Paramecium, Sycon, Physalia, Tubipora, Meandrina, Taenia, Ascaris, Nereis, Heteronereis, Aphrodite, Hirudinaria, Peripatus, Limulus, Cancer, Daphnia, Julus, Scolopendra, Apis, cockroach, termite, butterfly, Chiton, Dentalium, Octopus, Asterias and Antedon.

Chordates: Balanoglossus, Herdmania, Amphioxus, Petromyzon, Sphyrna, Pristis, Hippocampus, Exocoetus, Diodon/ Tetraron, Ichthyophis/ Uraeotyphlus, Bufo, Hyla, Salamandra, Rhacophorus, Draco, Uromastix, Naja, Viper, identification of poisonous and non-poisonous Any three common birds, Funambulus, Loris and Bat.

2. Study through permanent slides:

- (a) Cross section of Sycon and Ascaris (male and female).
- (b) Septal and pharyngeal nephridia of earthworm.
- (c) Placoid, cycloid and ctenoid scales of fishes.

3. Study of organ systems: (Subject to permission from animal ethics committee as per UGC guidelines/ from suitable models).

- (a) Digestive system of cockroach.
- (b) Urinogenital system of rat.

Suggested Readings:

- 1. Barnes, R.D. (1992). Saunders College Pub. USA.
- 2. Ruppert, E. E., Fox, R. S., & Barnes, R. D. (2004). Invertebrate zoology: A functional evolutionary approach (5th ed.). Brooks/Cole Publishing Company.

3. Campbell and Reece (2005). Biology, Pearson Education, (Singapore) Pvt. Ltd.
4. Young, J.Z. (2004). The Life of Vertebrates. III Edition, Oxford University Press.
5. Raven, P.H. and Johnson & G.B. (2004). Biology, VI Edition, Tata McGraw Hill Publications

E- contents:

- <http://vle.du.ac.in>
- Animal Diversity Web (ADW); an online database of animal natural history, distribution, classification, and conservation biology. Web resource <https://animaldiversity.org/>
- Online Zoo; <https://www.activewild.com/online-zoo/>.

Keywords:

Coelomates, Chordates, Non chordates, Vertebrates, Metamerism, Coelom, Migration.

Teaching and Learning Process:

Teaching-Learning process will include delivery of lectures using boards, multimedia presentation, short documentaries on animal diversity, imparting practical based knowledge through specimens, live demonstration of diversity in surroundings.

Assessment methods:

- Continuous assessment during entire semester along with the summative assessment by the semester-end.
- Testing through multiple choice questions at the end of each lecture.
- Assess through the project-based work.

17. Amendment to Appendix -II-A to the Ordinance V (2-A) of the Ordinances of the University vide EC Resolution 18-1-1, 18-1-2 & 18-1-4 dated 18.08.2022 (in continuation of notification 209, 215 and 216 dt 21.09.22, 06.10.22 and 10.10.22) regarding replacement of Major/ Non-Major of few Syllabi of 1st Semester

Add the following:

Following syllabi of BA (Prog.) Major and Non-Major of Semester-I may be replaced with the existing syllabi to be implemented from academic session 2022-2023 under NEP-UGCF-2022:

Category II

(B.A (Prog.) with *BENGALI Discipline* as Major

**DISCIPLINE SPECIFIC CORE COURSE -1 (DSC-1) – : Prak-Uponibesher Bangla Sahitya
(10th to 18th Shatak)**

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|--|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Prak-Uponibesher Bangla Sahitya (10 th to 18 th Shatak) | 4 | 3 | 1 | NIL | Class 12 th pass in any subject | Studied Bengali Up to 10 th standard Or working knowledge of Bengali Language |

Learning Objectives:

To give the students a detail idea about Pre-Colonial Bengali Literature.

Learning outcomes:

The course will enlighten the students about Pre-Colonial Bengali Literature, it's characteristics and features. It will also introduce students about their socio – cultural background of Bengal.

SYLLABUS OF DSC- 2

UNIT – I (3 Weeks)

বৈষ্ণব পদাবলী(বিদ্যাপতি, চণ্ডীদাস, জ্ঞানদাস, গোবিন্দদাস), শাক্ত পদাবলী(রামপ্রসাদ সেন, কমলাকান্ত ভট্টাচার্য)

UNIT – II (6 Weeks)

ময়মনসিংহ গীতিকা, জঙ্গনামা, নাথ সাহিত্য, রায়মঙ্গল ও শীতলা মঙ্গল, পীর সাহিত্য

UNIT - III (3 Weeks)

বাউল ও ফকিরী গান, কবিওয়ালা ও কবিগান

Essential/recommended readings

অমরেন্দ্রনাথ রায় (সম্পা.), ২০০২, শাক্ত পদাবলী চয়ন, কলিকাতা বিশ্ববিদ্যালয়, কলকাতা
অমিত্রসূদন ভট্টাচার্য (সম্পা.) ২০০৪, বড়ু চণ্ডীদাসের শ্রীকৃষ্ণকীর্তন সমগ্র, দে'জ পাবলিশিং, কলকাতা
খগেন্দ্রনাথ মিত্র প্রমুখ, (সম্পা.), ১৯৯০, বৈষ্ণব পদাবলী চয়ন, কলিকাতা বিশ্ববিদ্যালয়, কলিকাতা
বৃন্দাবন দাস, ১৯৯৩, শ্রীচৈতন্যভাগবত, শ্রীচৈতন্যমঠ, মায়াপুর, পশ্চিমবঙ্গ
ব্রজেন্দ্রনাথ বন্দ্যোপাধ্যায় ও সজনীকান্ত দাস(সম্পা) ১৪২১ বঙ্গাব্দ, ভারতচন্দ্র-গ্রন্থাবলী, বঙ্গীয়-সাহিত্য-পরিষৎ, কলকাতা
মুহম্মদ এনামুল হক (সম্পা.), ১৯৯৯, শাহ মুহম্মদ সগীর বিরচিত ইউসুফ-জোলেখা, মাওলা ব্রাদার্স, ঢাকা

Suggestive readings (if any)

আশুতোষ ভট্টাচার্য, ২০০৬, বাংলা মঙ্গলকাব্যের ইতিহাস, এ, মুখার্জী এন্ড কোং, কলকাতা
জহর সেনমজুমদার, ২০০৯, মধ্যযুগের কাব্য : স্বর ও সংকট, বঙ্গীয় সাহিত্য সংসদ, কলকাতা
তারাপদ মুখোপাধ্যায়, ১৯৭১, শ্রীকৃষ্ণকীর্তন, মিত্র ও ঘোষ, কলকাতা

DISCIPLINE SPECIFIC CORE COURSE (DSC-2): Bangla Bhasha, Sahitya O Itihas Parichay

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|--|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Bangla Bhasha, Sahitya O Itihas Parichay | 4 | 3 | 1 | NIL | Class 12 th pass in any subject | Studied Bengali Up to 10 th standard Or working knowledge of Bengali Language |

Learning Objectives:

To give the students a brief idea about Bengali Language, Literature & History.

Learning outcomes:

The course will enlighten the students about rise and development of Bengali Language, History of early Bengal and selected literature of ancient and mediaeval Bengal.

SYLLABUS OF DSC-3

UNIT – I (2 Weeks)

বাংলা ভাষার উদ্ভব ও বিকাশ

UNIT – II (4 Weeks)

বাঙালি জাতি সত্ত্বার ইতিহাস (প্রাচীন যুগ)

শশাঙ্ক, পাল যুগ, সেন যুগ

UNIT – III (6 Weeks)

প্রাচীন ও মধ্যযুগের বাংলা সাহিত্য

চর্যাপদ, শ্রীকৃষ্ণকীর্তন, চণ্ডীমঙ্গল, মনসামঙ্গল, লোরচন্দ্রাণী ও সতী ময়না

Essential/recommended readings

সুকুমার সেন, ২০০১, ভাষার ইতিবৃত্ত, আনন্দ পাবলিশার্স, কলকাতা

নিহাররঞ্জন রায়, বাঙালির ইতিহাসঃ আদি পর্ব, ১৪২২, দে'জ, কলকাতা

অসিতকুমার বন্দ্যোপাধ্যায়, ২০০৪-২০০৫, বাংলা সাহিত্যের সম্পূর্ণ ইতিবৃত্ত, মডার্ন বুক এজেন্সী, কলকাতা

ক্ষেত্র গুপ্ত, ২০০২, বাংলা সাহিত্যের সমগ্র ইতিহাস, গ্রন্থনিলয়, কলকাতা

Suggestive readings

অসিতকুমার বন্দ্যোপাধ্যায়, ২০০৯-২০১০, বাংলা সাহিত্যের ইতিবৃত্ত, পঞ্চম খণ্ড, মডার্ন বুক এজেন্সী, কলকাতা

অসিতকুমার বন্দ্যোপাধ্যায়, ২০০৭, বাংলা সাহিত্যের ইতিবৃত্ত, ষষ্ঠ খণ্ড, মডার্ন বুক এজেন্সী, কলকাতা

অসিতকুমার বন্দ্যোপাধ্যায়, ১৯৯২, বাংলা সাহিত্যের ইতিবৃত্ত, সপ্তম খণ্ড, মডার্ন বুক এজেন্সী, কলকাতা

অসিতকুমার বন্দ্যোপাধ্যায়, ২০০৭, বাংলা সাহিত্যের ইতিবৃত্ত, অষ্টম খণ্ড, মডার্ন বুক এজেন্সী, কলকাতা

Category III

(B.A (Prog.) with BENGALI Discipline as Non-Major

DISCIPLINE SPECIFIC CORE COURSE (DSC-2): Bangla Bhasha, Sahitya O Itihas Parichay

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|--|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Bangla Bhasha, Sahitya O Itihas Parichay | 4 | 3 | 1 | NIL | Class 12 th pass in any subject | Studied Bengali Up to 10 th standard Or working knowledge of Bengali Language |

Learning Objectives:

To give the students a brief idea about Bengali Language, Literature & History.

Learning outcomes:

The course will enlighten the students about rise and development of Bengali Language, History of early Bengal and selected literature of ancient and mediaeval Bengal.

SYLLABUS OF DSC-3

UNIT – I (2 Weeks)

বাংলা ভাষার উদ্ভব ও বিকাশ

UNIT – II (4 Weeks)

বাঙালি জাতি সত্ত্বার ইতিহাস (প্রাচীন যুগ)

শশাঙ্ক, পাল যুগ, সেন যুগ

UNIT – III (6 Weeks)

প্রাচীন ও মধ্যযুগের বাংলা সাহিত্য

চর্যাপদ, শ্রীকৃষ্ণকীর্তন, চণ্ডীমঙ্গল, মনসামঙ্গল, লোরচন্দ্রাণী ও সতী ময়না

Essential/recommended readings

সুকুমার সেন, ২০০১, ভাষার ইতিবৃত্ত, আনন্দ পাবলিশার্স, কলকাতা

নিহাররঞ্জন রায়, বাঙালির ইতিহাসঃ আদি পর্ব, ১৪২২, দে'জ, কলকাতা

অসিতকুমার বন্দ্যোপাধ্যায়, ২০০৪-২০০৫, বাংলা সাহিত্যের সম্পূর্ণ ইতিবৃত্ত, মডার্ন বুক এজেন্সী, কলকাতা

ক্ষেত্র গুপ্ত, ২০০২, বাংলা সাহিত্যের সমগ্র ইতিহাস, গ্রন্থনিলয়, কলকাতা

Suggestive readings

অসিতকুমার বন্দ্যোপাধ্যায়, ২০০৯-২০১০, বাংলা সাহিত্যের ইতিবৃত্ত, পঞ্চম খণ্ড, মডার্ন বুক এজেন্সী, কলকাতা

অসিতকুমার বন্দ্যোপাধ্যায়, ২০০৭, বাংলা সাহিত্যের ইতিবৃত্ত, ষষ্ঠ খণ্ড, মডার্ন বুক এজেন্সী, কলকাতা

অসিতকুমার বন্দ্যোপাধ্যায়, ১৯৯২, বাংলা সাহিত্যের ইতিবৃত্ত, সপ্তম খণ্ড, মডার্ন বুক এজেন্সী, কলকাতা

অসিতকুমার বন্দ্যোপাধ্যায়, ২০০৭, বাংলা সাহিত্যের ইতিবৃত্ত, অষ্টম খণ্ড, মডার্ন বুক এজেন্সী, কলকাতা

Category II

(B.A (Prog.) with Tamil Discipline as Major

DISCIPLINE SPECIFIC CORE COURSE (DSC-1): History of Tamil Language

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------|---------|-----------------------------------|----------|---------------------|-----------------------------|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| History of Tamil Language | 04 | 03 | 01 | - | Class 12 th pass | Studied Tamil up to 10 th standard and above (or) working knowledge of Tamil Language |

Learning Objectives:

This course aims at introducing the history of Tamil language beginning from the origin of the Tamil script available from the cave inscriptions and archeological excavations to the modern developments of 20th century. The earliest available literature of Tamil, the *Sangam* Anthology and *Tolkāppiyam* are taken as the source to discuss the structure of ancient Tamil. The latter texts of grammatical treatises, epics, commentaries etc., stand as the resource for the study of evolution of Tamil during the medieval period. It discusses phonological, morphological, semantic, and syntactic changes taken place in the language.

Learning Outcomes:

This course would enlighten the students the place of Tamil in Dravidian family of languages, various dialects of Tamil and the impact of Sanskrit and other languages in Tamil.

SYLLABUS OF DSC-1

Unit -I (15 Hours)

- Tamil Languages and Script
- Units and Verities of Tamil Language

Unit -II (15 Hours)

- Origin & History of Tamil Language

Unit -III (15 Hours)

- Special features of Tamil Language

Unit -IV (15 Hours)

- Phonological, Morphological, and syntactic changes
- Semantic changes & Dialects of Tamil

Essential/recommended Readings:

1. Varadarajan.M. 2017. *Mozhi Varalaru*, Chennai: Pari Nilayam.
2. Suyambu, P., 2005, *Moḷi Varalārril Tamīl*, Chennai: Visalakshi Nilaiyam.
3. Meenakshisundaram, T.P., (Trans. S. Jeyaprakasam), 1982, *Tamiḷ Moḷi Varalāru*, Madurai: Sarvodaya Ilakkiyappannai.

Suggestive Readings:

1. Sastri, Suriya Narayana, 2003, *Tamiḷmoḷiyin Varalāru*, Chennai: International Institute of Tamil Studies.
2. Saktivel, S., 1991 (2nd Ed.), *Tamiḷmoḷi Varalāru*, Chennai: Manivasagar Nulagam.
3. Rajendran. M., (Ed.), *Tamiḷmoḷi Varalāru*, Chennai: Directorate of Tamil Development.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2): An Introduction of Tamil Language**Credit distribution, Eligibility and Prerequisites of the Course**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|-----------|-----------------------------------|-----------|---------------------|-----------------------------------|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| An Introduction of Tamil Language | 04 | 03 | 01 | - | Class 12th pass | Studied Tamil up to 10th standard and above (or) working knowledge of Tamil Language |

Learning Objectives:

This course aims at introducing the history of Tamil language beginning from the origin of the Tamil script. It discusses the origin and Development of the Tamil Language, Indian & Dravidian Languages.

Learning Outcomes:

This course would enlighten the students the place of Tamil in Dravidian family of languages, various dialects of Tamil and the impact of Sanskrit and other languages in Tamil.

SYLLABUS OF DSC- 3**Unit -I (15 Hours)**

- Introduction to art of Language

Unit -II (15 Hours)

- Introduction to Indian & Dravidian Languages

Unit -III (15 Hours)

- History of Tamil Script

Unit -IV (15 Hours)

- Origin and Development of Tamil Language

Essential/recommended Readings:

1. Varadarajan.M. 2017. *Mozhi Varalaru*, Chennai: Pari Nilayam.
2. Suyambu, P., 2005, *Moḷi Varalārril Tamiḷ*, Chennai: Visalakshi Nilaiyam.
3. Meenakshisundaram, T.P., (Trans. S. Jeyaprakasam), 1982, *Tamiḷ Moḷi Varalāru*, Madurai: Sarvodaya Ilakkiyappannai.

Suggestive Readings (if any):

1. Sastri, Suriya Narayana, 2003, *Tamiḷmoḷiyiṇ Varalāru*, Chennai: International Institute of Tamil Studies.
2. Saktivel, S., 1991 (2nd Ed.), *Tamiḷmoḷi Varalāru*, Chennai: Manivasagar Nulagam.
3. Rajendran. M., (Ed.), *Tamiḷmoḷi Varalāru*, Chennai: Directorate of Tamil Development.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category III

(B.A (Prog.) with Tamil Discipline as Non-Major

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2): An Introduction of Tamil Language

(This course is Common in B.A (Programme) with Tamil as Major Discipline)

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------------|---------|-----------------------------------|----------|---------------------|-----------------------------|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| An Introduction of Tamil Language | 04 | 03 | 01 | - | Class 12 th pass | Studied Tamil up to 10 th standard and above (or) working knowledge of Tamil Language |

Learning Objectives:

This course aims at introducing the history of Tamil language beginning from the origin of the Tamil script. It discusses the origin and Development of the Tamil Language, Indian & Dravidian Languages.

Learning Outcomes:

This course would enlighten the students the place of Tamil in Dravidian family of languages, various dialects of Tamil and the impact of Sanskrit and other languages in Tamil.

SYLLABUS OF DSC- 3

Unit -I (15 Hours)

- Introduction to art of Language

Unit -II (15 Hours)

- Introduction to Indian & Dravidian Languages

Unit -III (15 Hours)

- History of Tamil Script

Unit -IV (15 Hours)

- Origin and Development of Tamil Language

Essential/recommended Readings:

3. Varadarajan.M. 2017. *Mozhi Varalaru*, Chennai: Pari Nilayam.
4. Suyambu, P., 2005, *Moḷi Varalārril Tamil*, Chennai: Visalakshi Nilaiyam.
3. Meenakshisundaram, T.P., (Trans. S. Jeyaprakasam), 1982, *Tamiḷ Moḷi Varalāru*, Madurai: Sarvodaya Ilakkiyappannai.

Suggestive Readings (if any):

4. Sastri, Suriya Narayana, 2003, *Tamiḷmoḷiyiṇ Varalāru*, Chennai: International Institute of Tamil Studies.
5. Saktivel, S., 1991 (2nd Ed.), *Tamiḷmoḷi Varalāru*, Chennai: Manivasagar Nulagam.
6. Rajendran. M., (Ed.), *Tamiḷmoḷi Varalāru*, Chennai: Directorate of Tamil Development.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category II

(B.A (Prog.) with TELUGU Discipline as Major

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

DISCIPLINE SPECIFIC CORE COURSE (DSC-1):

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------------|--|-----------------|----------------------------|--|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| A Progressive grammar of the Telugu Language | 4 | 04 | 03 | 01 | Students who have studied Telugu up to Class X and above | NIL |

Learning Objectives

The primary objective of this paper is to provide essential principles of Telugu grammar with prescriptive rules and exercises to bring the learner as quickly as possible to the point where he/she can understand the imperative features of forms and structure of words (morphology) with their customary arrangement in phrases and sentences; and, to serve as a reference for consolidating the grasp of the language.

Learning outcomes

It is expected that the Students will be able to develop a basic understanding of the imperative features of forms and structure of words with their customary arrangement in Phrases and Sentences.

SYLLABUS OF DSC-1

Unit-I (20 Hours)

- Prakriti and Pratyayamu; Dhatusu and Pratipadikamu.
- Tatsamamu, Tadbhavamamu, Desyamamu, Anyadesyamamu and Gramyamamu.

Unit-II Vibhakti, Viseshyamamu and Viseshanamamu. (20 Hours)

- Vachanamamu, Lingamamu and Avyayamamu.

Unit-III Vakyamamu, Uddesyamamu and Vidheyamamu. (20 Hours)

Essential/recommended readings

Chinnaya Suri, Paravastu., 1958, *Bala Vyakaranamu*, Chennai: Vavilla Ramaswamy Sastrulu & Sons.

Kasyapa, 1993, *Vidyarthi Vyakaranamu*, Vijayawada: Deluxe Publications.

Nagabhushanam, A., 1993, *Bala-Praudha Vyakarana Digdarsini*, Guntur: _____

Simmanna, V., 1998, *Telugu Bhasha Chandrika*, Visakhapatnam: Dalita Sahitya peetham.

Simmanna, V., 2001, *Telugu bhasha Kaumudi*, Visakhapatnam: Dalita Sahitya Peetham.

Simmanna, V., 2006, *Telugu Bhasha Deepika*, Visakhapatnam: Dalita Sahitya Peetham.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE (DSC-2):

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|---|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Study of literary texts: Telugu Short Stories | 04 | 04 | 03 | NIL | Students who have studied Telugu up to Class VIII | NIL |

Course Objective:

Short stories became one of the popular literary genres in Telugu literature. The main aim of the course is to introduce the influence of European thoughts on Telugu literature. This course will also discuss the Telugu literary heritage of storytelling - socio-political issues in Telugu short stories and contemporary trends and approaches in Telugu short story writing.

Course Learning Outcomes:

Students will be able to understand the history of Telugu short stories and their unique features.

Students will get knowledge of important short story writers in Telugu.

Students will be able to analyse the texts critically

SHORT STORIES:

Unit -1 origin and Development of Telugu short story (20 Hours)

Unit -2 Features of Telugu short story (20 Hours)

Unit -3 Select short stories (20 Hours)

- i. *Mee Peremiti* by Gurajada Appa Rao
- ii. *Bharya* by Gudipati Venkata Chalam
- iii. *Galivana* by Palagummi Padma Raju
- iv. *Vendi Kancham* by Munimanikyam Narasimha Rao
- v. *Moksham* by Ravi Sastry
- vi. *Sampenga Puvvu* by Gopichand
- vii. *Uri Chivara Illu* by Devarakonda Balagangadhara Tilak
- viii. *Arti* by Olga
- ix. *Supermom Syndrome* by P. Satyavati
- x. *Kappadalu* by Toleti Jaganmohan rao

Prescribed Texts:

Jampala Chaudari & A.K. Prabhakar., 2010, *Rendu Dashabdalalu Telugu Katha 1990-2009*, Secunderabad: Katha Sahiti.

Pandu Rangarao, Vakati, & Vedagiri Rambabu, 2001, *Bangaru Kathalu*, New Delhi: Sahitya Akademi.

Reference: ?

Dakshinamurti, Poranki., 1977, *Kathanika Swarupa Swabhavalu*, Hyderabad:_____.

Venkata Subbaiah, Vallampati., 1995, *Katha Shilpam*, Hyderabad: Visalandhra Publishing House.

Teaching Learning Process: Lectures-50 Hrs. Discussions-5Hrs.
Assignments/Presentations-5Hrs.

Assessment Methods: Monthly Test, Internal Exam., Semester Exam.

Key Words: Telugu, Short story, Fiction

Category III

(B.A (Prog.) with TELUGU Discipline as Minor

(This course is Common in B.A (Programme) with TELUGU as Major Discipline)

DISCIPLINE SPECIFIC CORE COURSE– 2 (DSC-2): STUDY OF LITERARY TEXTS: TELUGU SHORT STORIES

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|---|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Study of literary texts: Telugu Short Stories | 04 | 04 | 03 | NIL | Students who have studied Telugu up to Class VIII | NIL |

Course Objective:

Short stories became one of the popular literary genres in Telugu literature. The main aim of the course is to introduce the influence of European thoughts on Telugu literature. This course will also discuss the Telugu literary heritage of storytelling - socio-political issues in Telugu short stories and contemporary trends and approaches in Telugu short story writing.

Course Learning Outcomes:

Students will be able to understand the history of Telugu short stories and their unique features.

Students will get knowledge of important short story writers in Telugu.

Students will be able to analyse the texts critically

SHORT STORIES:

Unit -1 origin and Development of Telugu short story (20 Hours)

Unit -2 Features of Telugu short story (20 Hours)

Unit -3 Select short stories (20 Hours)

- Mee Peremiti* by Gurajada Appa Rao
- Bharya* by Gudipati Venkata Chalam
- Galivana* by Palagummi Padma Raju
- Vendi Kancham* by Munimanikyam Narasimha Rao

- v. *Moksham* by Ravi Sastry
- vi. *Sampenga Puvvu* by Gopichand
- vii. *Uri Chivara Illu* by Devarakonda Balagangadhara Tilak
- viii. *Arti* by Olga
- ix. *Supermom Syndrome* by P. Satyavati
- x. *Kappadalu* by Toleti Jaganmohan rao

Prescribed Texts:

Jampala Chaudari & A.K. Prabhakar., 2010, *Rendu Dashabdalalu Telugu Katha 1990-2009*, Secunderabad: Katha Sahiti.

Pandu Rangarao, Vakati, & Vedagiri Rambabu, 2001, *Bangaru Kathalu*, New Delhi: Sahitya Akademi.

Reference:

Dakshinamurti, Poranki., 1977, *Kathanika Swarupa Swabhavalu*, Hyderabad: ____.

Venkata Subbaiah, Vallampati., 1995, *Katha Shilpam*, Hyderabad: Visalandhra Publishing House.

Teaching Learning Process: Lectures-50 Hrs. Discussions-5Hrs.
Assignments/Presentations-5Hrs.

Assessment Methods: Monthly Test, Internal Exam., Semester Exam.

Key Words: Telugu, Short story, Fiction

Category II

BA (Prog.) with URDU as Major

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| DISCIPLINE SPECIFIC CORE COURSE (DSC-1): URDU-A, STUDY OF MODERN PROSE AND POETRY-I | | | | | | |
|---|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
| | | Lecture | Tutorial | Practical/ Practice | | |
| Urdu-A, Study of Modern Prose and Poetry-I | 4 | 3 | 1 | N.A. | 10 th Pass | - |

Learning Objectives

The Learning Objectives of this course are as follows:

- To give knowledge of contemporary society of India through Urdu Poetry and Fiction.
- To give knowledge of literature such as Afsana, Mazmoon, Nazmein and Ghazalein.
- To give a glimpse of modern literature with special reference to Urdu Prose and Poetry.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Understanding of concepts.
- Exercising concepts through writings.
- Demonstrating conceptual and textual understanding in test and exam.

SYLLABUS OF DSC-1

NASR:

UNIT – I (1-2 Weeks)

1. Guzra Hua Zamana – Sir Syed (Matn ki Tadrees)
2. Murda Badast Zinda – Mirza Farhatullah Beg (Matn ki Tadrees)

UNIT – II (3-5 Weeks)

3. Namak Ka Darogha – Prem Chand (Matn ki Tadrees)
4. Sawere Jo kal Ankh Meri Khuli – Patras Bukhari (Matn ki Tadrees)

NAZM:

UNIT – III (6-8 Weeks)

5. (i) Ik Khalish Hoti hai Mahsoos Rage Jaan Ke Qareeb – Hasrat (Matn ki Tadrees)
(ii) Wasl Ki Banti Hain In Baton Ki Tadbiren Kahin – Hasrat (Matn ki Tadrees)
6. (i) Kabhi Shakho Sabzao Barg Par – Jigar (Matn ki Tadrees)
(ii) Dil Gaya Raunaqe Hayaat Gai – Jigar (Matn ki Tadrees)

UNIT – IV (9-11 Weeks)

7. (i) Kabhi Ae Haqiqate Muntazar – Iqbal (Matn ki Tadrees)
 (ii) Sitaron Se Aage Jahan Aur Bhi Hain – Iqbal (Matn ki Tadrees)
 8. Badli Ka Chand – Josh (Matn ki Tadrees)

UNIT – V (12-14 Weeks)

9. Do Ishq – Faiz (Matn ki Tadrees)
 10. Aawara – Majaz (Matn ki Tadrees)

Note: Hissa Nasr Aur Nazm Mein Shamil Tamam Takhliqkaar Ke Fanni Mahasin Se Bhi Rushanas Karaya Jae.

Essential/recommended readings

1. Jadeed Urdu Nasr Wa Nazm-I

Suggestive readings

1. Urdu Shairi Ka Fanni Irteqa – Dr. Farman Fatehpuri
 2. Meer Amman Se Abdul Haq Tak – Sayyed Abdullah

DISCIPLINE SPECIFIC CORE COURSE (DSC-2): STUDY OF MODERN POETRY -I**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------------|----------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Study of Modern Poetry-I | 4 | 3 | 1 | N.A. | 10th Pass | - |

Learning Objectives

The Learning Objectives of this course are as follows:

- To give knowledge of contemporary society of India through Urdu Poetry.
- To give a glimpse of modern literature with special reference to Urdu Poetry.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Understanding of concepts.
- Exercising concepts through writings.
- Demonstrating conceptual and textual understanding in test and exam.

SYLLABUS OF DSC-2**NAZMEIN:****UNIT – I (1-4 Weeks)**

1. Nazeer Akbarabadi – Muflisi, Banjaranama (Matn ki Tadrees)
 2. Iqbal – Tasweere Dard, Jibreel Wa Iblees (Matn ki Tadrees)

UNIT – II (5-8 Weeks)

3. Josh – Kisaan, Mahajan Aur Muflis (Matn ki Tadrees)
4. Faiz – Tanhai, Nisar Main Teri Galiyon Pe (Matn ki Tadrees)

GHAZALEIN:

UNIT – III (9-11 Weeks)

5. Shad Azimabadi
Kuchh Kahe Jata Tha Apne Hi Afsane Mein (Matn ki Tadrees)
Ab Bhi Ik Umr Pe Jeene Ka Na Andaz Aaya (Matn ki Tadrees)
6. Hasrat Mohani
Bhulata Lakh Hun Lekin Barabar Yaad Aate Hain (Matn ki Tadrees)
Nigahe Naaz Jise Aashnae Raaz Kare (Matn ki Tadrees)

UNIT – IV (12-14 Weeks)

7. Jigar Muradabadi
Dil Gaya Raunaqe Hayaat Gai (Matn ki Tadrees)
Kabhi Shakh-o-Sabza-o-Barg Par, Kabhi Ghuncha-o-Gul-o-Khar Par (Matn ki Tadrees)
8. Asghar Gondvi
Aalaame Rozgar Ko Aasaan Bana Diya (Matn ki Tadrees)
Koi Mahmil Nashin Kyun shad Ya Nashad Hota Hai (Matn ki Tadrees)

Essential/recommended readings

1. Intikhab-e-Manzumat Hissa Awwal-o-Dom – Uttar Pradesh Urdu Akademi, Lucknow

Suggestive readings

1. Urdu Shairi Ka Fanni Irtiqā – Dr. Farman Fatehpuri
2. Jadeed Urdu Nazm: Nazarita Wa Amal – Aqeel Ahmad Siddiqi
3. Nai Nazm Ka Safar – Khalilurrahman Azmi
4. Urdu Shairi Mein Azad Nazm Aur Nazme Muarra – Haneef Kaifi
5. Nazmon Ke Tajziye – Qazi Afzal Husain
6. Jadeed Urdu Nazm Hali Se Meeraji Tak –Kausar Mazhari
7. Jadeed Urdu Ghazal – Rasheed Ahmad Siddiqi
8. Urdu Ghazal – Kamil Qureshi
9. Ghazal Ki Sargushisht – Akhtar Ansari
10. Urdu Ghazal Ka Naya Manzarnama – Shameem Hanfi

Category III

BA (Prog.) with URDU as Non-Major

DISCIPLINE SPECIFIC CORE COURSE (DSC-1): URDU-A, STUDY OF MODERN PROSE AND POETRY-I

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Urdu-A, Study of Modern Prose and Poetry-I | 4 | 3 | 1 | N.A. | 10 th Pass | - |

Learning Objectives

The Learning Objectives of this course are as follows:

- To give knowledge of contemporary society of India through Urdu Poetry and Fiction.
- To give knowledge of literature such as Afsana, Mazmoon, Nazmein and Ghazalein.
- To give a glimpse of modern literature with special reference to Urdu Prose and Poetry.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Understanding of concepts.
- Exercising concepts through writings.
- Demonstrating conceptual and textual understanding in test and exam.

SYLLABUS OF DSC-1

NASR:

UNIT – I (1-2 Weeks)

1. Guzra Hua Zamana – Sir Syed (Matn ki Tadrees)
2. Murda Badast Zinda – Mirza Farhatullah Beg (Matn ki Tadrees)

UNIT – II (3-5 Weeks)

3. Namak Ka Darogha – Prem Chand (Matn ki Tadrees)
4. Sawere Jo kal Ankh Meri Khuli – Patras Bukhari (Matn ki Tadrees)

NAZM:

UNIT – III (6-8 Weeks)

5. (i) Ik Khalish Hoti hai Mahsoos Rage Jaan Ke Qareeb – Hasrat (Matn ki Tadrees)
- (ii) Wasl Ki Banti Hain In Baton Ki Tadbiren Kahin – Hasrat

- (Matn ki Tadrees)
6. (i) Kabhi Shakho Sabzao Barg Par – Jigar (Matn ki Tadrees)
(ii) Dil Gaya Raunaqe Hayaat Gai – Jigar (Matn ki Tadrees)

UNIT – IV (9-11 Weeks)

7. (i) Kabhi Ae Haqiqate Muntazar – Iqbal (Matn ki Tadrees)
(ii) Sitaron Se Aage Jahan Aur Bhi Hain – Iqbal (Matn ki Tadrees)
8. Badli Ka Chand – Josh (Matn ki Tadrees)

UNIT – V (12-14 Weeks)

9. Do Ishq – Faiz (Matn ki Tadrees)
10. Aawara – Majaz (Matn ki Tadrees)

Note: Hissa Nasr Aur Nazm Mein Shamil Tamam Takhliqkaaroon Ke Fanni Mahasin Se Bhi Rushanas Karaya Jae.

Practical component (if any) - NIL

Essential/recommended readings

2. Jadeed Urdu Nasr Wa Nazm-I

Suggestive readings

1. Urdu Shairi Ka Fanni Irteqa – Dr. Farman Fatehpuri
2. Meer Amman Se Abdul Haq Tak – Sayyed Abdullah

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BA (PROG) with ARABIC as Major
Category-II

DISCIPLINE SPECIFIC CORE COURSE – 1
INTRODUCTORY ARABIC-1

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introductory Arabic-1 | 4 | 3 | 1 | - | Class XII Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

1. To make them learn Arabic script and its sound systems
2. To enable them to read and write basic Arabic.

Learning outcomes

The Learning Outcomes of this course are as follows:

After completing this course the learner will be able to:

1. Develop skills of reading and writing.
2. Read simple Arabic text correctly.

SYLLABUS OF DSC-1 (CATOGORY-II)

Unit 1 (20 hours)

Arabic Text-1

Lessons: 1 to 8

Prescribed Book:

القراءة الواضحة (الجزء الأول)
مولانا وحيد الزمان قاسمي كيرانوي

Unit 2 (20 hours)

Arabic Text-2

Lessons: 9 to 16

Prescribed Book:

القراءة الواضحة (الجزء الأول)

مولانا وحيد الزمان قاسمي كيرانوي

Unit 3 (20 hours)

Comprehension & Applied Grammar

Lessons: 1 to 16

Prescribed Book:

القراءة الواضحة (الجزء الأول)

مولانا وحيد الزمان قاسمي كيرانوي

Practical component (if any) - NIL

Essential/recommended readings

1. Prof. W. A. Nadwi: A Practical Approach to the Arabic Language Vol.-1, New Delhi.
2. Reading material prepared by the Department of Arabic, ZHDC, D.U.

Suggestive readings

4. Prof. S. A. Rahman: Teach Yourself Arabic, New Delhi.
5. Prof. R.I. Faynan: Essential Arabic, New Delhi.
6. Dr. Amir Jamal: Arabic Learn the Easy Way, New Delhi.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2
ARABIC: TEXT GRAMMAR & TRANSLATION -I

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Arabic: Text, Grammar & Translation-I | 4 | 3 | 1 | - | Class XII Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

1. To make the learners familiar with the Arabic language skills.
2. To make them familiar with basic grammar rules required at the first stage of learning Arabic
3. To enhance their vocabulary through the given text and understand the different structures of sentences.

Learning outcomes

The Learning Outcomes of this course are as follows:

After completing this course the learner will be able to:

1. Recognize, read and write Arabic alphabet.
2. Read short and simple sentences in Arabic.
3. Translate simple sentences from English into Arabic & Vice Versa.

SYLLABUS OF DSC-2 (CATEGORY-II)

Unit 1 (20 hours)

Arabic Text

Lessons: 1 to 12
(Semester-One)

Prescribed Book:

My Arabic Reader
Elementary Level
Dr. Wali Akhtar Nadwi

Unit 2 (20 hours)

Grammar:

- Arabic Alphabet
- Shapes of Arabic Letters
- Vowel Signs

- Other Signs
- Sun Letters & Moon Letters
- Masculine & Feminine
- Demonstrative Pronouns
- Detached Pronouns
- Definite & Indefinite
- Nominal Sentence
- Preposition
- Past Tense
- Future Tense
- Attached Pronouns
- Al-Idafa (Mudaaf & Mudaaf Ilaih)
- Quality & the Noun Qualified

Unit 3 (20 hours)

Translation:

Translation English-Arabic-English based upon the Vocabulary of Daily Use.

Practical component (if any) - NIL

Essential/recommended readings

1. Prof. W. A. Nadwi: A Practical Approach to the Arabic Language Vol.-1, New Delhi.
2. عبد الستار خان: عربی کا معلم، دہلی

Suggestive readings

1. Prof. S.A. Rahman: Teach Yourself Arabic, New Delhi.
2. Prof. R.I. Faynan: Essential Arabic, New Delhi.
3. Dr. Amir Jamal: Arabic Learn the Easy Way, New Delhi.
4. V. Abdur Rahim: Madinah Arabic Reader-1, New Delhi

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

ARABIC: TEXT GRAMMAR & TRANSLATION -I

| Course title and code | Credits | credit distribution | | | Eligibility criteria | Pre-requisite |
|--------------------------------------|---------|---------------------|----------|-----------|----------------------|---------------|
| | | Lecture | Tutorial | Practical | | |
| Arabic: Text Grammar & Translation-I | 04 | 03 | 01 | 00 | 12th pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

1. To make the learners familiar with the Arabic language skills.
2. To make them familiar with basic grammar rules required at the first stage of learning
3. To enhance their vocabulary through the given text and understand the different structures of sentences.

Learning outcomes

The Learning Outcomes of this course are as follows:

After completing this course the learner will be able to:

1. Recognize, read and write Arabic alphabet.
2. Read short and simple sentences in Arabic.
3. Translate simple sentences from English into Arabic & Vice Versa.

SYLLABUS OF DSC-2 (CATEGORY-II)*Unit 1 (20 hours)***Arabic Text**

Lessons: 1 to 12

(Semester-One)

Prescribed Book:

My Arabic Reader

Elementary Level

Dr. Wali Akhtar Nadwi

*Unit 2 (20 hours)***Grammar:**

- Arabic Alphabet
- Shapes of Arabic Letters
- Vowel Signs

- Other Signs
- Sun Letters & Moon Letters
- Masculine & Feminine
- Demonstrative Pronouns
- Detached Pronouns
- Definite & Indefinite
- Nominal Sentence
- Preposition
- Past Tense
- Future Tense
- Attached Pronouns
- Al-Idafa (Mudaaf & Mudaaf Ilaih)
- Quality & the Noun Qualified

Unit 3 (20 hours)

Translation:

Translation English-Arabic-English based upon the Vocabulary of Daily Use.

Practical component (if any) - NIL

Essential/recommended readings

1. Prof. W. A. Nadwi: A Practical Approach to the Arabic Language Vol.-1, New Delhi.
2. عبد الستار خان: عربی کا معلم، دہلی

Suggestive readings

1. Prof. S.A. Rahman: Teach Yourself Arabic, New Delhi.
2. Prof. R.I. Faynan: Essential Arabic, New Delhi.
3. Dr. Amir Jamal: Arabic Learn the Easy Way, New Delhi.
4. V. Abdur Rahim: Madinah Arabic Reader-1, New Delhi

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BA (Prog) with Philosophy as Major
Category II

DISCIPLINE SPECIFIC CORE COURSE (DSC-1): Philosophical Issues

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------------|----------|-----------------------------------|----------|---------------------|-------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DSC 1 Philosophical Issues | 4 | 3 | 1 | 0 | Passed Class XII | Nil |

Learning Objectives

- The primary objective of this course is to introduce the main philosophical issues to students
- It will encourage the students to think critically about some of the most important questions that philosophers ask
- It will also teach students how analytical and rigorous answers are possible to hard questions

Learning Outcomes

- By studying this course, a student should be able to demonstrate a clear understanding of the background the philosophical issues.
- They will acquire a good understanding of the key concepts of Indian schools as well as Western philosophy.
- They will have a sound understanding of epistemological, metaphysical, and ethical issues and shall be able to go for further studies in the subject.

Unit I Introduction

12 Hours

- What is Philosophy?
- What is a Philosophical Issue?
- Origins of Indian Philosophy

Moore, B. N., & Bruder, K. (2001). *Philosophy: The power of ideas* (5th ed.). New York: McGraw-Hill, pp. 1-5, 13-15

Warder, A K (2018). *A course in Indian Philosophy*, Motilal Banarsidass, Pg. 4-19

Unit II Metaphysical Issues

16 Hours

- What is metaphysics?
- Idea of Reality, Being, and Becoming

Laurence, Stephen and Cynthia Macdonald (eds.), 1998, *Contemporary Readings in the Foundations of Metaphysics*, Oxford: Blackwell.pp 1-21

Unit III. Epistemological Issues

12 Hours

- What is Knowledge?
- Prama, Prameya and Pramana

Lehrer, K. (1990). *Theory of knowledge*. Boulder, CO: Westview Press.pg 2-4

Puligandla, R. (2008). *Fundamentals of Indian Philosophy*, D K Printworld, pp. 184-191

Unit IV. Ethical Issues

20 Hours

- Morality and Ethics
- Buddhist Ethics

Rachels, J., & Rachels, S. (2012). "What is Morality?" In *The Elements of Moral Philosophy* 7e. McGraw Hill. pp 1 to 13

Keown, Damien (2018). "Buddhist Ethics", in Billimoria, Purushottama (ed.) (2018). *Routledge History of Indian Philosophy*. Routledge, pp. 496-505

Essential/recommended readings

Gupta, R.K., (1995), *Social Action and Non-violence*, ICPR, New Delhi.

Hiriyana, M. (1951), *Outlines of Indian Philosophy*, Allen & Unwin, London.

Kar, Bijayananda (1985), *Indian Philosophy*, Ajanta Publications, Delhi.

Keown, D. (1992), *The Nature of Buddhist Ethics*, Macmillan, London.

Lama, Dalai (1999), Ethics for the New Millennium, Riverhead Books, New York.
 O'Connor, D.J., (1964), Critical History of Western Philosophy, Free Press of Glencoe, London.
 Raju, P.T., (1971), The Philosophical Traditions of India, George Allen & Unwin Ltd., London.

Suggestive Readings

Rao, V. Ramakrishna (1987), Selected Doctrines from Indian Philosophy, Mittal Publications, Delhi.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2): Logic

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|----------|-----------------------------------|----------|---------------------|-------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Logic DSC 2 | 4 | 3 | 1 | 0 | Passed Class XII | Nil |

Learning Objective

- This course primarily helps in developing one's skill in correct reasoning or argumentation.
- It trains the student to construct good and sound arguments rejecting the vague and unsound ones at any point of time and situation.

Learning Outcomes

- Helps in sharpening the reasoning and argumentation skills of a learner and simultaneously helps in identifying the flaws.
- Enhances analytical skills so that one can resolve difficult issues and finally arrives at a reasonable solution.

Unit I Basic Logical Concepts

8 Hours

1. Proposition and Sentence
2. Deductive argument
3. Truth, Validity, and Soundness

Copi, Irving M., Carl Cohen, and Kenneth McMahon. *Introduction to Logic*. 14th ed. Delhi: Pearson, 2016. Ch 1-2.

Unit II Traditional Logic (A)

20 Hours

1. Terms and Distribution of terms
2. Categorical Propositions
3. Traditional Square of Opposition and Existential Import
4. Translating Ordinary Language Sentences into Standard form

Traditional Logic (B)

1. Immediate Inferences- Conversion, Obversion, and Contraposition
2. Categorical Syllogism: Figure and Mood
3. Syllogistic Rules and Fallacies
4. Venn Diagram

1. Copi, Irving M., Carl Cohen, and Kenneth McMahon. *Introduction to Logic*. 14th ed. Delhi: Pearson, 2016. Ch 5-7.

Unit III Symbolization Hours

20

1. Types of Truth functions: Negation, Conjunction, Disjunction (Alternation), Conditional (Implication), and Bi-Conditional (Equivalence)
2. Statements, Statement forms, and Logical status
3. Decision procedures: Truth table Method and Reductio ad Absurdum

1. Copi, Irving M., Carl Cohen, and Kenneth McMahon. *Introduction to Logic*. 14th ed. Delhi: Pearson, 2016. Ch 8.

Unit IV Indian Logic

12 Hours

1. Debate
2. Logic
3. Steps of Inference in Indian Logic

Warder, A K (2018). *A course in Indian Philosophy*, Motilal Banarsidass, Pg. 128-137 (“Debate and Logic”)

Essential/Recommended Readings

1. Copi, Irving M. *Introduction to logic*. 6th Ed. New York London: Macmillan Collier Macmillan, 1982. Ch5-7.
2. Ganeri, Jonardon (2001). *Indian Logic a Reader*. Psychology Press.

Suggestive Readings

- Jain, Krishna. *A Textbook of Logic*. New Delhi: D.K. Printworld, 2018.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BA (Prog) with Philosophy as Non-Major
Category II

DISCIPLINE SPECIFIC CORE COURSE (DSC-1): Philosophical Issues

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------------|----------|-----------------------------------|----------|---------------------|-------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DSC 1 Philosophical Issues | 4 | 3 | 1 | 0 | Passed Class XII | Nil |

Learning Objectives

- The primary objective of this course is to introduce the main philosophical issues to students
- It will encourage the students to think critically about some of the most important questions that philosophers ask
- It will also teach students how analytical and rigorous answers are possible to hard questions

Learning Outcomes

- By studying this course, a student should be able to demonstrate a clear understanding of the background the philosophical issues.
- They will acquire a good understanding of the key concepts of Indian schools as well as Western philosophy.
- They will have a sound understanding of epistemological, metaphysical, and ethical issues and shall be able to go for further studies in the subject.

Unit I Introduction

12 Hours

- What is Philosophy?
 - What is a Philosophical Issue?
 - Origins of Indian Philosophy
-

Moore, B. N., & Bruder, K. (2001). *Philosophy: The power of ideas* (5th ed.). New York: McGraw-Hill, pp. 1-5, 13-15

Warder, A K (2018). *A course in Indian Philosophy*, Motilal Banarsidass, Pg. 4-19

Unit II Metaphysical Issues

16 Hours

- What is metaphysics?
- Idea of Reality, Being, and Becoming

Laurence, Stephen and Cynthia Macdonald (eds.), 1998, *Contemporary Readings in the Foundations of Metaphysics*, Oxford: Blackwell.pp 1-21

Unit III. Epistemological Issues

12 Hours

- What is Knowledge?
- Prama, Prameya and Pramana

Lehrer, K. (1990). *Theory of knowledge*. Boulder, CO: Westview Press.pg 2-4

Puligandla, R. (2008). *Fundamentals of Indian Philosophy*, D K Printworld, pp. 184-191

Unit IV. Ethical Issues

20 Hours

- Morality and Ethics
- Buddhist Ethics

Rachels, J., & Rachels, S. (2012). "What is Morality?" In *The Elements of Moral Philosophy* 7e. McGraw Hill. pp 1 to 13

Keown, Damien (2018). "Buddhist Ethics", in Billimoria, Purushottama (ed.) (2018). *Routledge History of Indian Philosophy*. Routledge, pp. 496-505

Essential/recommended readings

Gupta, R.K., (1995), *Social Action and Non-violence*, ICPR, New Delhi.

Hiriyana, M. (1951), *Outlines of Indian Philosophy*, Allen & Unwin, London.

Kar, Bijayananda (1985), *Indian Philosophy*, Ajanta Publications, Delhi.

Keown, D. (1992), *The Nature of Buddhist Ethics*, Macmillan, London.

Lama, Dalai (1999), Ethics for the New Millennium, Riverhead Books, New York.
O'Connor, D.J., (1964), Critical History of Western Philosophy, Free Press of Glencoe, London.
Raju, P.T., (1971), The Philosophical Traditions of India, George Allen & Unwin Ltd., London.

Suggestive Readings

Rao, V. Ramakrishna (1987), Selected Doctrines from Indian Philosophy, Mittal Publications, Delhi.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category II

B.A /BSc. (Program) with Statistics as Major

DISCIPLINE SPECIFIC CORE COURSE – I: DESCRIPTIVE STATISTICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------|---------|-----------------------------------|----------|---------------------|-------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Descriptive Statistics | 4 | 3 | 0 | 1 | Class X pass with Mathematics | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

- To motivate students towards intrinsic interest in statistical thinking.
- To analyze and interpret data.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Understand the basic concepts of Statistics.
- Able to employ different types of data.
- Employ the graphical methods of displaying data.
- Use measures of locations.

SYLLABUS OF DSC - 1

Theory

Unit – 1

(12 Hours)

Data Representation

Introduction: Definition, importance, scope and limitations of Statistics. Population and Sample Concept of statistical population with illustrations, concept of sample with illustrations. Raw data, Attributes and variables, discrete and continuous variables, classification and construction of frequency distribution. Graphical Representation: Histogram, Frequency polygon, Frequency curve, Ogive curves and their uses. Examples and Problems.

Unit – 2

(18 Hours)

Measures of central tendency

Concept of central tendency, Criteria for good measures of central tendency.

Arithmetic mean: Definition, computation for ungrouped and grouped data, combined mean, weighted mean,

merits and demerits. Median: Definition, computation for ungrouped and grouped data, graphical method, merits and demerits. Mode: Definition, computation for ungrouped and grouped data, graphical method, merits and demerits. Quartiles: Definition, computation for ungrouped and grouped data graphical method. Numerical problems.

Unit – 3

(15 Hours)

Measures of Dispersion

Concept of dispersion and measures of dispersion, absolute and relative measures of dispersion. Range and Quartile Deviation: definition for ungrouped and grouped data, and their coefficients, merits and demerits. Mean Deviation: Definition for ungrouped and grouped data. Standard deviation and Variance: definition for ungrouped and grouped data, combined variance and standard deviation for two groups, coefficient of variation, , merits and demerits. Numerical problems.

Practical: 30 Hours

List of Practicals:

1. Problems based on graphical representation of data: Histograms, Frequency polygon, Ogive curve for equal class intervals.
2. Problems based on graphical representation of data: Histograms, Frequency polygon, Ogive curve for unequal class intervals.
3. Problems based on measures of central tendency using raw data, grouped data.
4. Problems based on change of origin and scale.
5. Problems based on measures of dispersion using raw data, grouped data.
6. Problems based on measures of dispersion for change of origin and scale.
7. Problems based on combined mean.
8. Problems based on combined variance.
9. Problems based on coefficient of variation.
10. Problems based on standard deviation of two groups

Essential Readings

- Goon, A.M., Gupta, M.K. and Dasgupta, B. (2002). Fundamentals of Statistics, Vol. I, 8thEd. The World Press, Kolkata.
- Miller, I. and Miller, M. (2006). John E. Freund's Mathematical Statistics with

Applications, 7th Ed., Pearson Education, Asia.

- Mood, A.M., Graybill, F.A. and Boes, D.C. (2007). Introduction to the Theory of Statistics, 3rd Ed., (Reprint), Tata McGraw-Hill Pub. Co. Ltd.

Suggestive Reading

- Gupta, S.P. (2022) Statistical Methods 46th ed, S. Chand and Sons
- Gupta, S. C. and Kapoor V. K.. Fundamentals of Mathematical Statistics, 12th ed S. Chand and Sons

DISCIPLINE SPECIFIC CORE COURSE – II: TIME SERIES ANALYSIS AND INDEX NUMBERS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|-------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Time Series Analysis and Index Numbers | 4 | 3 | 0 | 1 | Class X pass with Mathematics | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

- Introduce the concept of time series, its components, and their estimation.
- Introduce the application of time series.
- Introduce the concept, formulation, and application of index numbers.

Learning outcomes

After completion of this course, the students will be able to:

- Understand the concepts of time series and index numbers.
- Formulate, solve, and analyze the use of time series and index numbers for real-world problems.

SYLLABUS

Theory

Unit – 1

(12 Hours)

Components of Time Series

Introduction to Time Series, Components of time series, Decomposition of time series- Additive and multiplicative model with their merits and demerits, Illustrations of time series, Measurement of trend by method of free-hand

curve, method of semi-averages and method of least squares (linear, quadratic and exponential).

Unit – 2

15 Hours

Trend and Seasonality

Fitting of modified exponential, Moving average method, Measurement of seasonal variations by method of simple averages, ratio to trend method, and ratio to moving average method.

Unit – 3

18 Hours

Index Numbers

Introduction to Index numbers, Problems in the construction of index numbers, Construction of price and quantity index numbers: simple aggregate, weighted aggregate (Laspeyres, Paasche's, and Fisher's Formula), simple and weighted average of price relatives, Criteria for a good index number, Time reversal and factor reversal test, Consumer price index number, its construction and uses, Uses and limitations of index numbers.

Practical : 30 Hours

List of Practicals:

1. Fitting of linear trend
2. Fitting of quadratic trend
3. Fitting of an exponential curve
4. Fitting of modified exponential curve.
5. Fitting of trend by moving average method (for n even and odd)
6. Measurement of seasonal indices by
 - a. Method of simple averages
 - b. Ratio-to-trend method
 - c. Ratio-to-moving-average method
7. Construction of price and quantity index numbers by simple aggregate method.
8. Construction of price and quantity index numbers by Laspeyres, and Fisher's Formula.
9. Construction of price and quantity index numbers by simple and weighted average of price relatives.
10. Construction of consumer price index number by
 - a. Family budget method
 - b. Aggregate expenditure method
11. Time Reversal Test and Factor Reversal Test

Essential Readings

- Croxton, Fredrick E, Cowden, Dudley J. and Klein, S. (1973): Applied

General Statistics, 3rd edition, Prentice Hall of India Pvt. Ltd.

- Gun, A.M., Gupta, M.K. and Dasgupta, B. (2008). Fundamentals of Statistics, Vol. II, 9th Ed., World Press, Kolkata.
- Gupta, S.C. and Kapoor, V.K. (2014). Applied Statistics, 11th Ed., Sultan Chand.

Suggestive Reading

- Allen R.G.D. (1975): Index Numbers in Theory and Practice, Macmillan
- Mukhopadhyay, P. (1999). Applied Statistics, New Central Book Agency, Calcutta.

Category III

B.A./ BSc. (Program) with Statistics as Non-Major/Minor

DISCIPLINE SPECIFIC CORE COURSE – I: DESCRIPTIVE STATISTICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------|---------|-----------------------------------|----------|---------------------|-------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Descriptive Statistics | 4 | 3 | 0 | 1 | Class X pass with Mathematics | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

- To motivate students towards intrinsic interest in statistical thinking.
- To analyze and interpret data.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Understand the basic concepts of Statistics.
- Able to employ different types of data.
- Employ the graphical methods of displaying data.
- Use measures of locations.

SYLLABUS OF DSC - 1

Theory

Unit – 1

(12 Hours)

Data Representation

Introduction: Definition, importance, scope and limitations of Statistics. Population and Sample Concept of statistical population with illustrations, concept of sample with illustrations. Raw data, Attributes and variables, discrete and continuous variables, classification and construction of frequency distribution. Graphical Representation: Histogram, Frequency polygon, Frequency curve, Ogive curves and their uses. Examples and Problems.

Measures of central tendency

Concept of central tendency, Criteria for good measures of central tendency. Arithmetic mean: Definition, computation for ungrouped and grouped data, combined mean, weighted mean, merits and demerits. Median: Definition, computation for ungrouped and grouped data, graphical method, merits and demerits. Mode: Definition, computation for ungrouped and grouped data, graphical method, merits and demerits. Quartiles: Definition, computation for ungrouped and grouped data graphical method. Numerical problems.

Unit – 3**(15 Hours)****Measures of Dispersion**

Concept of dispersion and measures of dispersion, absolute and relative measures of dispersion. Range and Quartile Deviation: definition for ungrouped and grouped data, and their coefficients, merits and demerits. Mean Deviation: Definition for ungrouped and grouped data, minimal property (statement only). Standard deviation and Variance: definition for ungrouped and grouped data, coefficient of variation, combined variance and standard deviation for two groups, merits and demerits. Numerical problems.

Practical : 30 Hours**List of Practicals:**

1. Problems based on graphical representation of data: Histograms, Frequency polygon, Ogive curve for equal class intervals.
2. Problems based on graphical representation of data: Histograms, Frequency polygon, Ogive curve for unequal class intervals.
3. Problems based on measures of central tendency using raw data, grouped data.
4. Problems based on change of origin and scale.
5. Problems based on measures of dispersion using raw data, grouped data.
6. Problems based on measures of dispersion for change of origin and scale.
7. Problems based on combined mean.
8. Problems based on combined variance.
9. Problems based on coefficient of variation.
10. Problems based on standard deviation of two groups

Essential Readings

- Goon, A.M., Gupta, M.K. and Dasgupta, B. (2002). Fundamentals of Statistics, Vol. I, 8th Ed. The World Press, Kolkata.
- Miller, I. and Miller, M. (2006). John E. Freund's Mathematical Statistics with Applications, 7th Ed., Pearson Education, Asia.
- Mood, A.M., Graybill, F.A. and Boes, D.C. (2007). Introduction to the Theory of Statistics, 3rd Ed., (Reprint), Tata McGraw-Hill Pub. Co. Ltd.

Suggestive Reading

- Gupta, S.P. (2022) Statistical Methods 46th ed, S. Chand and Sons
- Gupta, S. C. and Kapoor V. K.. Fundamentals of Mathematical Statistics, 12th ed S. Chand and Sons

BA (Prog.) with Economics as Major
Category-II

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|----------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introductory Microeconomics ECON001 | 4 | 3 | 1 | 0 | Class XII pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To expose students to the basic principles of microeconomic theory
- To emphasis on the fundamental economic trade-offs and allocation problems due to scarcity of resources
- To use graphical methods to illustrate how microeconomic concepts can be applied to analyze real-life situations

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying the course, the students will understand economic trade-offs and opportunities.
- By studying the course, the students will understand the fundamentals of market mechanisms and government interventions.

SYLLABUS OF DSC-1

UNIT – I: Introduction to economic trade-offs (12 Hours)

Resources and opportunities, Gains from trade, Individual and society

UNIT – II: How market works (16 Hours)

Supply and demand, Price and resource allocation, Elasticity, Market, trade and welfare

UNIT – III: Role of government (16 Hours)

Taxation, Public good, Inequality and poverty

UNIT – IV: Individual decision and interactions (16 Hours)

Decision versus strategic interaction, How to think about strategic interactions, Real life

examples

Practical component (if any) - NIL

Essential/recommended readings:

- Mankiw, N. G. (2018). *Principles of Microeconomics* 8th ed.
- Frank, R. H., & Cartwright, E. (2010). *Microeconomics and behavior*. New York: McGraw-Hill.
- Dixit, A. K., & Skeath, S. (2015). *Games of strategy*: Fourth international student edition. WW Norton & Company.
- Acemoglu, D., Laibson, D., & List, J. (2017). *Microeconomics*. Pearson.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2): BASIC MATHEMATICS FOR ECONOMIC ANALYSIS

CREDIT DISTRIBUTION, ELIGIBILITY AND PREREQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Mathematics for Economic Analysis ECON021 | 4 | 3 | 1 | 0 | Class XII pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- The objective of the course is train basic algebras that enables the study of economic theory at the undergraduate level, specifically the courses on microeconomics, macroeconomics, statistics and econometrics set out in this syllabus. In this course, particular economic models are not the ends, but the means for illustrating the method of applying mathematical techniques to economic theory in general. It contains understanding of basic functions, relations, real number systems, set operations, linear algebras and matrix operations used in economics.

Learning outcomes

The Learning Outcomes of this course are as follows:

- The course equips the students with exposition of economic problems with formal pre- situations algebraically and offers solution techniques to find equilibrium analysis. These tools are necessary for anyone seeking employment as an analyst in the corporate and policy framing world.

SYLLABUS OF DSC- 2

UNIT – I: Economic

Models (20 Hours)

Ingredients of mathematical models - variables, constants, parameters, equations, and identities; Real number system; Sets and functions; relations and their proper- ties; types of functions; functions of more than one variables; Limit, sequences and series: convergence, algebraic properties and applications; continuous functions: characterisation, properties with respect to various operations and applications; differentiable functions: characterisation, properties with respect to various operations and applications; second and higher order derivatives: properties and applications.

UNIT – II: Equilibrium Analysis in Economics (20 Hours)

Meaning of equilibrium; partial market equilibrium - linear and non-linear models; General market equilibrium

UNIT – III: Linear Models and Matrix Algebras and their Applications in Economics (20 Hours)

Matrix operations, Determinants and Cramer's Rule and their applications

Practical component (if any) - NIL

Essential/recommended readings

- Chiang, A and Wainwright, K. (2005). Fundamental methods of mathematical economics. Boston, Mass. McGraw-Hill/Irwin.
- Sydsaeter, K., Hammond, P. (2002). *Mathematics for economic analysis*. Pearson Educational.
- Hoy, M., Livernois, J., McKenna, C., Rees, R., Stengos, T. (2001). *Mathematics for Economics*, Prentice-Hall India.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BA (Prog.) with Economics as Non-Major
Category-II

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|----------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introductory Microeconomics ECON001 | 4 | 3 | 1 | 0 | Class XII pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To expose students to the basic principles of microeconomic theory
- To emphasis on the fundamental economic trade-offs and allocation problems due to scarcity of resources
- To use graphical methods to illustrate how microeconomic concepts can be applied to analyze real-life situations

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying the course, the students will understand economic trade-offs and opportunities.
- By studying the course, the students will understand the fundamentals of market mechanisms and government interventions.

SYLLABUS OF DSC-1

UNIT – I: Introduction to economic trade-offs (12 Hours)

Resources and opportunities, Gains from trade, Individual and society

UNIT – II: How market works (16 Hours)

Supply and demand, Price and resource allocation, Elasticity, Market, trade and welfare

UNIT – III: Role of government (16 Hours)

Taxation, Public good, Inequality and poverty

UNIT – IV: Individual decision and interactions (16 Hours)

Decision versus strategic interaction, How to think about strategic interactions, Real life

examples

Practical component (if any) - NIL

Essential/recommended readings:

- Mankiw, N. G. (2018). *Principles of Microeconomics* 8th ed.
- Frank, R. H., & Cartwright, E. (2010). *Microeconomics and behavior*. New York: McGraw-Hill.
- Dixit, A. K., & Skeath, S. (2015). *Games of strategy*: Fourth international student edition. WW Norton & Company.
- Acemoglu, D., Laibson, D., & List, J. (2017). *Microeconomics*. Pearson.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

18. Amendment to Appendix -II-A to the Ordinance V (2-A) of the Ordinances of the University vide EC Resolution 52-38 dated 08.12.2022 regarding range of Generic Electives (GEs) offered to certain category of students of BA/B.Com Programme under UGCF-2022

Add the Following :

The range of Generic Electives (GEs) offered to certain category of students of

B.A./B.Com. Programme under UGCF 2022 have been revised keeping in view multidisciplinary and interest of students as under:

- (i) Students of B.A. program with two languages as the core disciplines be offered the open pool of Generic Electives (and not restrict them to choose only the GE-Languages)
- (ii) Students of B.A. program with one language as the core disciplines be offered to study only one GE-language (which will be two courses of the same language that may be studied as GE-1 and GE-3 **or** GE-2 and GE-4). The other GEs shall be the open pool of GEs.
- (iii) B.A./B.Com. Programme students who have never studied any Modern Indian Language (MIL) up to 8th Class shall be offered the open pool of GEs.

19. Amendment to Appendix -II-A to the Ordinance V (2-A) of the Ordinances of the University vide EC Resolution 38-1-15 dated 8.12.2022 regarding Ability Enhancement Course (AECs) for Foreign Students in 1st Semester

Add the following:

Ability Enhancement Course (AECs)
Under UGCF-2022

Listed under Appendix-IIA to the Ordinance V (2-A) of the Ordinances of the
University

(With effect from academic year 2022-23)

**FOLLOWING IS THE SYLLABUS OF ABILITY ENHANCEMENT COURSE (AEC)
OFFERED UNDER UGCF-2022 IN FIRST SEMESTER FOR FOREIGN STUDENTS**

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| AEC-Hindi | 2 | 2 | — | — | | |

Learning Objectives

1. विद्यार्थी की भाषाई दक्षता और भाषा-कौशल को बढ़ावा देना
2. व्यावहारिक कार्य को प्रोत्साहन देना

Learning outcomes

1. भाषा के शुद्ध उच्चारण, रचनात्मक लेखन, औपचारिक लेखन से अवगत कराना
2. अभिव्यक्ति कौशल का विकास

सेमेस्टर 1:

इकाई 1: लिपि ज्ञान

- वर्ण माला : स्वर, व्यंजन

- संयुक्त व्यंजन
- अनुस्वार एवं अनुनासिक
- विराम चिह्न
- संज्ञा-सर्वनाम

इकाई 2: हिंदी की आधारभूत शब्दावली (हिंदी एवं अंग्रेजी)

- फल-सब्जियाँ
- रंग-पर्व उत्सव
- सप्ताह के दिन
- ऋतुएं
- पर्यटन स्थल
- रिश्ते-नाते
- शरीर के अंग
- खाने-पीने की चीजें
- प्रमुख वस्तुएं

संदर्भ ग्रंथ :

1. देवनागरी लिपि एवं हिंदी वर्तनी का मानकीकरण, केंद्रीय हिंदी निदेशालय, शिक्षा विभाग, मानव संसाधन विकास मंत्रालय, भारत सरकार, नई दिल्ली
2. Basic Hindi Course for Foreigners, Central Hindi Institute, Agra, U.P Basic Hindi Vocabulary, Ministry of Education, Govt. of India.
3. English-Hindi Conversational Guide & Hindi-English Conversational Guide, Central Hindi Directorate, New Delhi
4. Fairbanks, G & Mishra, S.G. Spoken and written Hindi Cornell University Press, NewYork
5. Fairbanks, G & Pandit, P.B.: A Spoken approach, Deccan College, Pune
6. McGregor, R.S. Exercises in spoken Hindi, Oxford University Press, Oxford, England.
7. Verma, Vimlesh Kanti: Learner's Hindi-English Dictionary, Dreamland Publication, New Delhi
8. हिंदी व्याकरण: कामताप्रसाद गुरु, नागरी प्रचारिणी सभा, काशी
9. हिंदी : शब्द, अर्थ, प्रयोग: हरदेव बाहरी, अभिव्यक्ति प्रकाशन, दिल्ली
10. हिंदी का समसामयिक व्याकरण: यमुना काचरू, मैकमिलन, नई दिल्ली

20. Amendment to Ordinance V (2) & VII. [EC. Res. 78-7 dated 25.03.2022] regarding course curriculum prepared on competency based UG curriculum for MBBS course - 2nd Professional (New Scheme).

**Curriculum document for
MBBS CBME Phase II Batch for Microbiology**

(Maulana Azad Medical College, University College of Medical Sciences & Lady Hardinge Medical College New Delhi)

1. VISION

To provide state of the art, reliable diagnostic services and quality medical education that integrates recent advances and research to foster the development of a highly knowledgeable, skilled and competent undergraduate and postgraduate student in the subject of clinical microbiology.

MISSION

- To develop state of art facility, in terms of quality infrastructure and trained manpower so as to enable the students of medical microbiology to appreciate the aetiology, pathogenesis and laboratory diagnosis of infectious diseases.
- To deliver timely and quality diagnostic services to patients.
- To create an environment for need based quality research among faculty and Students.

2. OVERALL LEARNING OBJECTIVES FOR UNDERGRADUATE MEDICAL EDUCATION

The objectives are developed to foster the development of an 'Indian Medical Graduate' possessing requisite knowledge, skills and values with regard to infectious diseases as outlined in Competency Based Medical Education curriculum of National Medical Commission.

The undergraduate learner should be able to demonstrate:

1. An understanding of role of microbial agents in health and disease.
2. An understanding of the immunological mechanisms in health and disease.
3. Ability to correlate the natural history, mechanisms and clinical manifestations of infectious diseases as they relate to the properties of microbial agents.
4. Knowledge of the principles and application of infection control measures.
5. An understanding of the basis of choice of laboratory diagnostic tests and their interpretation, antimicrobial therapy, control and prevention of infectious diseases.

3. **COMPETENCIES:** Table 1 and Annexure I

4. **COURSE** (Topics, theory practical, laboratory clinical): As per CBME curriculum laid down by NMC for Indian medical Graduate: Table 1

5. **TEACHING LEARNING METHODS:** Table 1

The curriculum is based on NMC Document UG curriculum Part-I (available at <https://www.nmc.org.in/wp-content/uploads/2020/01/UG-Curriculum-Vol-I.pdf>). The Teaching learning methods, assessment tools, horizontal and vertical integration will be based on the document form NMC.

Subtopics to be taught in Microbiology for fulfillment of competencies

| Topics | Topics |
|--|--|
| Gen Microbiology | Immunology |
| Introduction, history, biosafety, universal precautions | Introduction |
| Bacteria in health and disease | Structure & Functions of Immune System |
| Bacterial Morphology & Physiology | Antigen & antibody |
| Bacterial Genetics | Antigen-Antibody Reaction |
| Isolation & Identification of Bacteria including Culture Media & Culture Methods | Complement System |
| Antimicrobial Resistance | Humoral and cellular Immune Response |

| | |
|--|---|
| Bacterial Pathogenicity | Hypersensitivity |
| Sterilization & Disinfection | Autoimmunity |
| Gen properties Virus and lab diagnosis | Transplantation & Immunodeficiency |
| Gen properties of fungi | Tumour Immunology, Immunohematology, Immunoprophylaxis |
| Gen properties of parasites | GIT & Hepatobiliary |
| CVS & Blood | Diarrhoea & dysentery, Cholera, |
| Rheumatic fever & Infective endocarditis | Enteric fever |
| Infections causing anaemia | Food poisoning |
| Kala Azar & Toxoplasma | Intestinal Protozoal, nematodes & Trematodes infections |
| Malaria & Filariasis | Helicobacter/APD |
| Brucella, Borrelia, Listeria, S minor | Viral GI infections including hepatitis |
| Viral Haemorrhagic fevers | Respiratory Infections |
| HIV | Bacterial URTI |
| Musculoskeletal system skin and soft tissues infections | Viral pneumonia |
| Anaerobic infections | Bacterial LRTI |
| Bone & Joint Infections | Genitourinary & STD infections |
| Skin & soft tissue infections | UTI, E Coli, Proteus, Klebsiella |
| CNS infections | STD: Syphilis & gonorrhoea |
| Bacterial meningitis | Gonorrhoea |
| Viral Meningitis | |
| Encephalitis | |
| Zoonotic diseases and miscellaneous | |
| Zoonotic infections | Emerging and re-emerging infections |
| Oncogenic virus | Opportunistic infections |
| Infection control, PPE, BMW & HAI | Environmental microbiology |

Table 1: Specific learning objective and topic as per CBME

| Session | SLOs |
|--|--|
| General Microbiology & Immunology | |
| MI1.1 Describe the different causative agents of Infectious diseases, the methods used in their detection, and discuss the role of microbes in health and disease | |
| MI1.1a Introduction – Microbiology & History, Biosafety & standard precautions | <ol style="list-style-type: none"> 1. Describe the scope of clinical Microbiology 2. Describe the different branches of Microbiology with suitable examples 3. Describe Whittaker classification 4. Enumerate important milestones of Medical Microbiology 5. Describe contribution of Louis Pasteur & Robert Koch in |

| | |
|--|--|
| | <p>details</p> <ol style="list-style-type: none"> Describe the development of Chemotherapy and contributions of Ehrlich and Fleming Describe standard precautions, Biosafety Describe various components, & their use of standard precautions. |
| MI 1.1b Introduction of Bacteria in health and disease | <ol style="list-style-type: none"> Describe Normal flora and its benefits Differentiate between pathogen, commensals, and saprophyte. Describe opportunistic pathogen Describe the pathogen Define: Health, Disease, infectious agents, commensalism, parasite, pathogen and opportunistic pathogen. Explain the pathogenesis of bacterial infection. Discuss the various microbial factors contributing to disease. Enumerate the Global burden of common infectious diseases Describe common infectious diseases in India |
| MI 1.1c Bacterial Morphology | <ol style="list-style-type: none"> Describe salient feature of eukaryotic and prokaryotic cell Describe morphology cell structure, different shapes and arrangement of bacterial cells Describe the structure and function of Cell organelles |
| MI 1.1d Physiology & Metabolism | <ol style="list-style-type: none"> Describe Physiology and metabolism of bacteria. Describe the growth curve of bacteria Describe anaerobiosis |
| MI 1.1e General principle of identification of Bacteria | <ol style="list-style-type: none"> Microscopy and culture of bacteria Enumerate common culture media and biochemical reactions and its use Describe the use of automation in identification of bacteria Enumerate molecular techniques for identification |
| MI1.1f Bacterial genetics | <ol style="list-style-type: none"> Discuss Replication, mechanism of gene transfer, mutation and gene rearrangement in bacteria. Describe Principals of genetic engineering. |
| MI1.1g General Properties and Classification of Viruses (Including Bacteriophages) | <ol style="list-style-type: none"> Describe the general features of virus Describe the structure and symmetry of viruses Describe viral replication Classify viruses Describe bacteriophages, its replication cycles and use |
| MI1.1h Laboratory Diagnosis of Viral infection | <ol style="list-style-type: none"> Enumerate the technique used in viral lab diagnosis Describe the use of Microscopy and inclusion bodies Describe tissue culture and detection of viral growth in it Describe serological methods for Lab Diagnosis Describe the molecular methods for laboratory diagnosis of viral diseases |

| | |
|--|---|
| MI1.1i General Properties and Classification of Fungi | <ol style="list-style-type: none"> 1. Describe the general features of Fungi 2. Classify fungi on morphological and taxonomical bases 3. Enumerate different mycoses with suitable example 4. Describe lab diagnosis of fungal infections |
| MI1.1j General Properties and Classification of Parasites | <ol style="list-style-type: none"> 1. Classify parasites giving suitable examples 2. Enumerate common parasitic pathogen 3. Classify protozoa and helminths giving suitable examples 4. Describe various modes of transmission of different parasites. 5. Enumerate different methods used for laboratory diagnosis of parasitic diseases |
| MI 1.3 Describe the epidemiological basis of common infectious diseases | |
| MI 1.3 Describe the epidemiological basis of common infectious diseases | <ol style="list-style-type: none"> 1. Describe host parasite relationship 2. Discuss the various sources and reservoirs of infections. 3. Describe different routes of transmission with suitable examples 4. Enumerate common strategies to prevent infectious disease. 5. Describe the various epidemiological patterns of infectious disease. |
| MI 1.4 Classify and describe the different methods of sterilization and disinfection. Discuss the application of the different methods in the laboratory, in clinical and surgical practice | |
| MI 1.4 Sterilization & Disinfection | <ol style="list-style-type: none"> 1. Define: Sterilization, disinfection, asepsis, antiseptics, and decontamination. 2. List different methods of sterilisation and disinfection 3. Describe various methods of sterilization (principle, method, use). 4. Classify disinfectants and describe various methods of disinfection. 5. Explain various monitoring methods applied for individual methods of sterilisation procedures and disinfectants . 6. Enumerate new methods of sterilization |
| MI 1.5 Choose the most appropriate method of sterilization and disinfection to be used in specific situations in the laboratory, in clinical and surgical practice | |
| MI 1.5 Sterilization & Disinfection | <ol style="list-style-type: none"> 1. Differentiate between sterilization and disinfection. 2. Describe Spaulding Classification of medical devices. 3. Describe the practical use of disinfectants according to clinical condition. 4. Recommend various methods of sterilization / disinfection for medical devices. 5. Describe the process and functioning of CSSD. |
| MI1.6 Describe the mechanisms of drug resistance, and the methods of antimicrobial susceptibility testing and monitoring of antimicrobial therapy | |

| | |
|--|--|
| MI 1.6 Antimicrobial agents, mechanisms of antimicrobial resistance and antimicrobial susceptibility testing | <ol style="list-style-type: none"> 1. Classify antimicrobial agents and their mechanism of resistance. 2. Define and classify antimicrobial resistance. 3. List and describe mechanism of action of antimicrobial agents. 4. Describe acquired and intrinsic resistance. 5. Describe various methods of antimicrobial susceptibility testing. 6. Describe disc diffusion methods, E test and MIC methods in detail. 7. Define: Bacteriostatic, bactericidal, pharmacodynamics, pharmacokinetics, MIC, MBC, agar dilution. 8. Describe relevance of AST. 9. Describe antibiotic stewardship program, its utility and principles. |
| MI1.7 Describe the immunological mechanisms in health | |
| MI1.7a Introduction to immunity | <ol style="list-style-type: none"> 1. Define and classify immunity 2. Define and contrast innate and acquired immunity 3. Describe mechanisms of innate immunity 4. Define and describe the salient features of active, passive and acquired immunity 5. Define local immunity, herd immunity and adoptive immunity |
| MI 1.7b Structure and function of immune system | <ol style="list-style-type: none"> 1. Describe the structure and function of Central and peripheral lymphoid organs. 2. Describe the development of T and B lymphocytes 3. Describe the types of T and B lymphocytes 4. Compare and Contrast T cells and B cells 5. Describe morphology and function of macrophage 6. Describe the structure and functions of human MHC gene complex 7. Outline the other cells of Immune System 8. Describe class, properties and functions of important cytokines |
| MI 1.7c Antigens | <ol style="list-style-type: none"> 1. Define antigen and antigenicity 2. Define and classify epitope & haptens 3. Describe alloantigens, isoantigen, heteroantigen, autoantigen and heterophile antigen. 4. Define immunogenicity and describe the factors affecting it. 5. Describe various determinants of antigenicity 6. Define adjuvant with examples 7. Describe mechanisms of adjuvant 8. Describe T cell dependent/independent antigens and superantigens |
| MI1.7d Antibody | <ol style="list-style-type: none"> 1. Define antibody 2. Describe the structure and function of antibody |

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| | <ol style="list-style-type: none"> Classify immunoglobulins Describe the structure and functions of IgG, IgM, IgA, IgE and IgD Describe antigenic determinants of immunoglobulins Describe abnormal Immunoglobulins Define the monoclonal antibody Describe the hybridoma technique for production of monoclonal antibody Enumerate various applications of monoclonal antibody |
| MI 1.7e Antigen Antibody reactions | <ol style="list-style-type: none"> Describe general properties of antigen antibody reactions. Describe lattice hypothesis Classify antigen antibody reactions. Describe the principle, method, types and uses of precipitation, agglutination and neutralization reaction. Describe the principle, method, types and uses of complement fixation test, ELISA, immunofluorescence assay, CLIA. Radioimmuno assay, western blot and rapid tests. |
| MI 1.7f Complement | <ol style="list-style-type: none"> Define complement and enumerate complement activation pathways. Describe the classical and alternate pathway of complement Compare and contrast Classical and Alternative complement pathways Describe the biological effects of complement Enumerate common complement deficiency and associated diseases |
| MI 1.8 Describe the mechanisms of immunity and response of the host immune system to infections | |
| Immune response | <ol style="list-style-type: none"> Define cell mediated and humoral immune response Describe the process of antigen presentation Describe the cell mediated immune response Describe humoral immune response Describe the activation and differentiation of B cells Describe, compare and contrast the events of primary and secondary immune response |
| MI1.9 Discuss the immunological basis of vaccines and describe the Universal Immunisation schedule | |
| MI 1.9 Immunoprophylaxis | <ol style="list-style-type: none"> Define immunoprophylaxis Describe the types and explain the scientific basis of vaccines [live attenuated, killed, toxoid, subunit Enumerate commonly used vaccines Describe Universal immunisation program and National Immunisation Schedule Describe the 'Cold Chain System" and the steps involved in vaccine development |

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| | 6. Describe the newer approaches for vaccine development |
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MI1.10 Describe the immunological mechanisms in immunological disorder (hypersensitivity, autoimmune disorders and immunodeficiency states) and discuss the laboratory methods used in detection.

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| MI 1.10a Hypersensitivity | <ol style="list-style-type: none"> 1. Define hypersensitivity. 2. Classify hypersensitivity and describe their features. 3. Describe the mechanism and clinical presentation of Type I,II,III & IV hypersensitivity |
| MI 1.10b Autoimmune | <ol style="list-style-type: none"> 1. Define Autoimmunity 2. Describe mechanisms of immune (central and peripheral) tolerance 3. Describe mechanisms of autoimmunity 4. Describe the pathogenesis of common autoimmune diseases 5. Describe laboratory tests of autoimmune diseases 6. Describe the role of Immunofluorescent test in diagnosis of autoimmune diseases. 7. Describe newer approaches for treatment of autoimmune diseases |
| MI1.10c Immunodeficiency | <ol style="list-style-type: none"> 1. Define and enumerate Immunodeficiency 2. Classify immunodeficiency diseases 3. Describe common immunodeficiency diseases |

MI 1.11 Describe the immunological mechanisms of transplantation and tumor immunity

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| Transplant & tumour immunity | <ol style="list-style-type: none"> 1. Describe the role of Histocompatibility antigens in transplant immunology 2. Describe the types of graft rejection 3. Describe mechanism and factors affecting graft rejection 4. Describe graft versus host reaction 5. Describe approaches for prevention of graft rejection 6. Describe Tumor antigens (TSTA and TATA) 7. Describe mechanism of immune response against tumour cells 8. Describe immune surveillance theory 9. Explain the role of vaccine, monoclonal antibodies and cytokines in cancer immunotherapy. |
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CVS and Blood

MI2.1 Describe the etiologic agents in rheumatic fever and their diagnosis

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| MI2.1 Rheumatic fever | 1. Define Rheumatic fever and name it's causative agent 2. Classify Streptococcus species 3. Describe the morphology, pathogenesis, toxins, virulence factors, antigenic structures, clinical features, epidemiology of streptococcus pyogenes 4. Describe the infections caused by S pyogenes and list the suppurative and non-suppurative sequelae of Streptococcus pyogenes 5. Describe the pathogenesis, clinical features and complications of Rheumatic fever 6. Describe the laboratory diagnosis of rheumatic fever and of other infection caused by beta haemolytic Streptococci. |
| MI2.2 Describe the classification etio-pathogenesis, clinical features and discuss the diagnostic modalities of Infective endocarditis | |
| MI 2.2 Infective endocarditis (S. viridans, CONS, HACEK Enterococcus) | 1. Classify IE and enumerate the causative organisms 2. Describe the morphology, pathogenesis, virulence factors, antigenic structures, clinical features, epidemiology of S. viridans, CONS, HACEK organisms, Enterococcus 3. Describe the pathogenesis and clinical features of infective endocarditis. 4. Describe the Laboratory diagnosis of IE. 5. Briefly discuss the antimicrobial treatment of IE |
| MI2.4 List the common microbial agents causing anemia. Describe the morphology, mode of infection and discuss the pathogenesis, clinical course, diagnosis and prevention and treatment of the common microbial agents causing Anemia | |
| MI 2.4 Infections causing anemia: [Trematodes (Schistosoma), Nematodes (Ancylostoma, N. americanus, Trichuris trichuria) , Cestodes (D latum)]. | 1. Enumerate the microbial agents causing Anaemia 2. Describe morphology, modes of transmission, pathogenicity, life cycle of parasites causing anaemia ([Trematodes (Schistosoma), Nematodes (Ancylostoma, N. americanus, Trichuris trichuria) , Cestodes (D latum)]) 3. Discuss clinical course of Anaemia caused by each microbial agent 4. Describe laboratory diagnosis of each microbial agent causing Anaemia. 5. Describe treatment, prevention and control of each microbial agent |
| MI2.5 Describe the etio-pathogenesis and discuss the clinical evolution and the laboratory diagnosis of kalaazar, malaria, filariasis and other common parasites prevalent in India | |

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| MI2.5a Kala Azar (Leishmania)& sleeping sickness (Trypanosoma) | <ol style="list-style-type: none"> 1. Classify the common Leishmania species causing human disease and the clinical syndromes caused by them 2. Describe the morphology, modes of transmission, pathogenicity, life cycle of Leishmania donovani and Trypanosoma 3. Discuss the clinical presentation, complications and laboratory diagnosis of kala azar and trypanosomiasis. 4. Describe PKDL 5. Describe treatment, prevention and control of kala azar and trypanosomiasis. 6. Classify the Trypanosomes infecting man and the diseases caused by them |
| MI2.5b Toxoplasmosis | <ol style="list-style-type: none"> 1. Describe the morphology, modes of transmission, pathogenicity, life cycle of Toxoplasma gondii. 2. Describe the clinical presentation, complications and laboratory diagnosis of Toxoplasmosis. 3. Discuss the treatment, prevention and control of Toxoplasmosis. |
| MI 2.5c Malaria and Babesia. | <ol style="list-style-type: none"> 1. Enumerate the causative Plasmodium species of human malaria 2. Describe the morphology, modes of transmission, pathogenicity, life cycle of Plasmodium species. 3. Describe the clinical presentation, complications immunity and laboratory diagnosis of malaria. 4. Discuss the treatment, prevention and control of malaria. 5. Describe the morphology, modes of transmission, pathogenicity, life cycle of Babesia. 6. Describe the clinical presentation and laboratory diagnosis of Babesiosis |
| MI 2.5d Filariasis | <ol style="list-style-type: none"> 1. Enumerate the filarial nematodes causing lymphatic filariasis 2. Describe the morphology, modes of transmission, pathogenicity, life cycle of loaloa, oncocercavolulus, Wuchereriabancrofti and Brugiamalayi. 3. Describe the clinical presentation, complications immunity and laboratory diagnosis of filariasis. 4. Discuss the treatment, prevention and control of filariasis. 5. Differentiate between the microfilaria of loaloa, oncocercavolulus, Wuchereriabancrofti and Brugiamalayi. |
| MI2.5e Miscellaneous Infections of blood:Brucella. | <ol style="list-style-type: none"> 1. Describe the epidemiology of Brucella 2. Describe the classification, morphology, and virulence factors of Brucella 3. Describe the epidemiology pathogenesis, mode of transmission, clinical features and laboratory diagnosis of Brucellosis 4. Describe the complications, treatment, prevention and control of Brucellosis. |

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| MI2.5e Miscellaneous Infections of blood: Borrelia, Listeria, Spirillum minor, Parvovirus & EBV. | <ol style="list-style-type: none"> 1. Describe the epidemiology, morphology, virulence factors and pathogenicity of Borrelia, Listeria, Parvovirus and Epstein Barr Virus and spirillum minor. 2. Describe the pathogenesis, clinical features and diagnostic modalities of infections caused by these agents. 3. Describe the complications, treatment, prevention and control of listeriosis, rat bite fever, relapsing fever and Lyme disease. |
| MI2.5f Viral haemorrhagic fevers: Arboviruses, Filovirus, rebovirus | <ol style="list-style-type: none"> 1. Enumerate and classify the viruses causing haemorrhagic fevers. 2. Describe the morphology, mode of transmission pathogenesis and virulence factors of viral agents causing VHF. 3. Describe the clinical features, complications and laboratory diagnosis of VHF. 4. Describe treatment prevention and control of VHF. |
| MI2.7 Describe the epidemiology, the etio- pathogenesis, evolution complications, opportunistic infections, diagnosis, prevention and the principles of management of HIV | |
| MI 2.7 HIV | <ol style="list-style-type: none"> 1. Describe morphology, antigenic structure, pathogenesis, serotypes, replication of HIV. 2. Describe clinical features including WHO clinical staging of HIV/AIDS for adults 3. Describe global and Indian epidemiology of AIDS. 4. Enumerate opportunistic infections occurs in HIV infected people 5. Describe laboratory diagnosis of HIV/AIDS 6. Describe NACO strategy for HIV diagnosis 7. Describe treatment strategies in brief. 8. Describe PEP as per NACP guidelines. 9. List HIV vaccine strategies |

GIT Infections

MI3.1 Enumerate the microbial agents causing diarrhea and dysentery. Describe the epidemiology, morphology, pathogenesis, clinical features and diagnostic modalities of these agents

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| MI3.1a Gastro intestinal tract infections: general, Diarrhoea, Dysentery, Introduction to Enterobacteriaceae, E coli, Shigella, Campylobacter, other Enterobacteriaceae members. | <ol style="list-style-type: none"> 1. Define diarrhoea and dysentery. 2. Describe the epidemiology of diarrhoea and dysentery 3. Enumerate the microbial agents causing diarrhoea and dysentery 4. Describe the pathogenesis, clinical features and complications of diarrhea & dysentery. 5. Differentiate the clinical features of diarrhoea and dysentery. 6. Describe laboratory diagnosis of diarrhoea and dysentery. 7. Describe the epidemiology, morphology, cultural characteristics, virulence markers, identification strategies of diarrheagenic E. coli, Shigella & other Enterobacteriaceae causing diarrhoea and dysentery. |
| MI3.1b Cholera: Vibrio, Plesiomonas and Aeromonas | <ol style="list-style-type: none"> 1. Define cholera. 2. Describe the epidemiology of cholera 3. Describe the pathogenesis, clinical features and complications of cholera. 4. Describe various methods of clinical and laboratory diagnosis of cholera. 5. Describe the epidemiology, morphology, cultural characteristics, virulence markers, identification strategies of Vibrio cholera, Aeromonas, Plesiomonas 6. Describe the treatment, prevention and control of cholera. |
| MI3.1c Parasitic Gastro intestinal tract infections: Entamoeba and Giardia | <ol style="list-style-type: none"> 1. Describe the epidemiology, morphology, life cycle, pathogenesis, clinical features and diagnosis of Entamoeba histolytica, Balantidium coli and Giardia 2. Describe the epidemiology, morphology, life cycle, pathogenesis, clinical features and diagnosis of coccidian parasites. 3. Describe the treatment, prevention and control of infections caused by Entamoeba histolytica, Balantidium coli, Giardia and coccidian parasites |
| MI3.1d Viral GI infections | <ol style="list-style-type: none"> 1. Describe the epidemiology, morphology, pathogenesis, clinical features and diagnostic modalities of viral gastroenteritis. 2. Describe the epidemiology, morphology, pathogenesis, immunity, clinical features, |

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| | diagnosis, prevention and control of gastroenteritis caused by rotavirus, adenovirus, Norwalk agent and norovirus |
| MI 3.1e Parasitic GI Infections-I & II: Intestinal nematodes (Ascaris, Enterobius Trichinella Strongyloidiasis) Trematodes (Liver fluke etc.) | <ol style="list-style-type: none"> 1. Describe the epidemiology, morphology, life cycle and pathogenesis, of cestodes (Taenia saginata, T. solium, H. nana, Echinococcusgranuloses) 2. Describe the epidemiology, morphology, life cycle, pathogenesis, clinical features and diagnosis of trematodes (Fasciola hepatica & F. buski) 3. Describe the epidemiology, morphology, life cycle, pathogenesis, clinical features and diagnosis of intestinal nematodes. 4. Describe the laboratory diagnosis, treatment, control and prevention of diseases caused by these organisms. |
| MI 3.3 Describe the enteric fever pathogens and discuss the evolution of the clinical course and the laboratory diagnosis of the diseases caused by them | |
| MI 3.3 GI Infections: Enteric fever | <ol style="list-style-type: none"> 1. List the various pathogens causing enteric fever. 2. Describe the pathogenesis of Typhoid & paratyphoid fever. 3. Describe the morphology, virulence factors, cultural characteristics and identification strategies for Salmonella Typhi, S. Paratyphi A and B. 4. Describe the laboratory diagnosis of typhoid and paratyphoid fever. 5. Describe clinical course, epidemiology, treatment and complications of enteric fever. 6. Describe multidrug resistant Salmonella 7. Discuss treatment, prevention and control of enteric fever. |
| MI3.5 Enumerate the causative agents of food poisoning and discuss the pathogenesis, clinical course and laboratory diagnosis | |
| MI 3.5 Food Poisoning {Staphylococcus aureus Bacillus cereus Clostridium perfringens Bacillus cereus Vibrio cholerae Vibrio parahaemolyticus Enterotoxigenic Escherichia coli | <ol style="list-style-type: none"> 1. Define and classify various types of Food Poisoning. 2. Enumerate and classify the causative agents of food poisoning and commonly incriminated food items 3. Describe the pathogenesis, clinical course with relation to the etiological agent. 4. Describe the laboratory diagnostic of food |

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| Enterohemorrhagic Escherichia coli Non typhoidal Salmonella Shigella spp.} | poisoning. |
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MI3.6 Describe the etio-pathogenesis of Acid peptic disease (APD) and the clinical course. Discuss the diagnosis and management of the causative agent of APD

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| MI 3.6 APD: Helicobacter pylori | <ol style="list-style-type: none"> 1. Describe Acid peptic disease. 2. Describe clinical course of APD. 3. Describe the pathogenesis of APD due to H. pylori 4. Describe the morphology, cultural characteristics, and identification strategies of Helicobacter pylori. 5. Describe diagnosis, treatment, control and prevention of acid peptic disease. |
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MI3.7 Describe the epidemiology, the etio-pathogenesis and discuss the viral markers in the evolution of Viral hepatitis. Discuss the modalities in the diagnosis and prevention of viral hepatitis

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| MI 3.8a Viral Hepatitis | <ol style="list-style-type: none"> 1. Define and describe viral hepatitis 2. Enumerate and describe the viruses causing hepatitis 3. Describe the epidemiology, pathogenesis and clinical features of hepatitis A, B, C, D, E and G viruses. 4. Discuss the viral markers in the evolution of acute and chronic Viral hepatitis. 5. Describe the modalities in the diagnosis, treatment and prophylaxis of hepatitis A, B, C, D, E and G viruses. |
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MI3.8 Choose the appropriate laboratory test in the diagnosis of viral hepatitis with emphasis on viral markers

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| MI 3.8b Viral Hepatitis | <ol style="list-style-type: none"> 1. Enumerate and describe the viral markers diagnostic of viral hepatitis 2. Describe the evolution, rise and fall of various markers. 3. Discuss the viral markers in the evolution of Viral hepatitis (A, B, C, D, E and G). 4. Describe the utility of each marker with respect to clinical stage of hepatitis. |
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Skin and soft tissue infections

MI 4.1 Enumerate the microbial agents causing anaerobic infections. Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of anaerobic infections

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| MI 4.1a Anaerobes and anaerobic infections including anaerobic culture methods | <ol style="list-style-type: none"> 1. Define anaerobes 2. Describe features of anaerobic infections 3. Enumerate and classify pathogenic anaerobic bacteria 4. Describe the pathogenesis, clinical course, laboratory diagnosis and complications of common anaerobic infection. 5. Describe different methods of anaerobiosis |
| MI4.1b Tetanus and gas gangrene | <ol style="list-style-type: none"> 1. Define gas gangrene 2. Enumerate the causative agents of gas gangrene 3. Describe the morphology, virulence factors, cultural characteristics of Clostridium perfringens. 4. Describe the pathogenesis, clinical course and laboratory diagnosis of gas gangrene. 5. Describe the treatment, prevention and control of gas gangrene. 6. Define tetanus and name the causative agent 7. Describe the Morphology, virulence factors, cultural characteristics of Clostridium tetani 8. Describe the pathogenesis, clinical course and laboratory diagnosis of tetanus 9. Describe the treatment, prevention and control of tetanus |
| MI4.1c Botulinum and Miscellaneous anaerobes} | <ol style="list-style-type: none"> 1. Define botulism and its types 2. Describe the morphology, virulence markers, cultural characteristics of Clostridium botulinum. 3. Describe the epidemiology, pathogenesis, clinical manifestations, complications & laboratory diagnosis of botulism 4. Describe role of anaerobic organisms as normal gut flora 5. Describe antibiotic associated colitis and its aetiology 6. Describe the pathogenesis, clinical features and management of antibiotic associated colitis 7. Enumerate non sporing anaerobes 8. Enumerate the diseases caused by common non sporing anaerobes 9. Describe the pathogenesis and clinical features of various infections caused by non sporing anaerobes. 10. Discuss laboratory diagnosis for infections caused by nonsporing anaerobes |
| MI4.2 Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of bone & joint infections | |
| MI4.2 Joint and bone infections: Osteomyelitis & arthritis (Staph aureus, CONS) Parvovirus | <ol style="list-style-type: none"> 1. Enumerate common bacterial and viral agents causing osteomyelitis, septic arthritis, diabetic foot infections 2. Describe the pathogenesis, clinical features and laboratory diagnosis of osteomyelitis and arthritis. |

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| | <ol style="list-style-type: none"> 3. Differentiate between gonococcal and non gonococcal arthritis 4. Define osteomyelitis 5. Enumerate causative agents of osteomyelitis 6. Describe the pathogenesis, clinical features, laboratory diagnosis and management of Osteomyelitis. |
| MI4.3 Describe the etio-pathogenesis of infections of skin and soft tissue and discuss the clinical course and the laboratory diagnosis | |
| MI 4.3 a Skin and soft tissue infections: Classification, etiology and general considerations, Parasitic Skin manifestations (Ectoparasites, Larva migrans, PKDL) | <ol style="list-style-type: none"> 1. Enumerate the organisms of normal skin flora 2. Discuss the role of normal flora of skin 3. Define and classify SSTIs 4. Describe the varied clinical presentations with etiological agents of SSTIs 5. Describe the etiopathogenesis, clinical presentation and management of superficial and deep skin infections 6. Describe lab diagnosis of various types of SSTI 7. Enumerate the parasites involved in skin and soft tissue infections. 8. Describe etiology, types, clinical presentation and management of larva migrans. 9. Describe etiology, clinical presentation and management of PKDL |
| MI 4.3b: Leprosy and NTM | <ol style="list-style-type: none"> 1. Define and classify leprosy 2. Describe morphology and cultural characters of M.leprae 3. Describe the pathogenesis and clinical presentations in leprosy 4. Describe the role of immunity in leprosy 5. Describe lepra reactions 6. Describe lab diagnosis, treatment and control of leprosy 7. Describe and classify Non tuberculus Mycobacteria (NTM). 8. Describe the etiopathogenesis, clinical presentation and management of infections caused by NTM |
| MI 4.3 c: Viral exanthemas | <ol style="list-style-type: none"> 1. Enumerate the causes of viral exanthematous infections 2. Describe the etiopathogenesis of viral exanthematous infections 3. Describe the morphology, virulence factors, epidemiology and immunity of Measles virus, Chicken pox virus, small pox virus and Rubella virus. 4. Describe the clinical features, complication and diagnosis of measles, small pox, chicken pox and Rubella. |

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| | 5. Describe the treatment, prevention and control for viral exanthematous infections. |
| MI 4.3d Superficial fungal infections | <ol style="list-style-type: none"> 1. Enumerate various surface infections of the skin and its appendages caused by fungal agents, along with their etiology 2. Describe the microscopic and cultural characteristics of fungal agents (Candida, Pityriasis versicolor, Tinea nigra, Piedra, onychomycosis, dermatophytes etc.) causing infections of skin 3. Enumerate various clinical types of dermatophytosis with their causative agents 4. Describe the morphological and cultural characters of dermatophytes. 5. Describe the laboratory diagnosis of superficial fungal infections 6. Describe the management of superficial fungal infections |
| MI 4.3e Subcutaneous mycosis, mycetoma | <ol style="list-style-type: none"> 1. Define mycetoma 2. Enumerate the microbial agents (Bacteria & Fungi) causing mycetoma and subcutaneous mycosis 3. Describe the pathogenesis, clinical presentation laboratory diagnosis and treatment of subcutaneous mycosis and mycetoma. |

| CNS Infections | |
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| MI5.1 Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of meningitis | |
| MI 5.1a Infections of CNS: Introduction & Pyogenic meningitis | <ol style="list-style-type: none"> 1. Enumerate various infective syndromes of CNS 2. Define and classify Meningitis . 3. Differentiate between Acute & Chronic meningitis 4. Enumerate the bacterial, viral and parasitic causes of acute/pyogenic meningitis according to age. 5. Describe the morphology, antigenic structure and virulence factors of various etiological agents of pyogenic meningitis. (Neisseria meningitidis, Streptococcus pneumoniae, Haemophilus influenzae). |

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| MI5.1 b Aseptic meningitis | <ol style="list-style-type: none"> 1. Enumerate the bacterial, viral, fungal and parasitic etiological agents of aseptic meningitis. 2. Describe the morphology, antigenic structure and virulence factors of various etiological agents of aseptic meningitis. (Leptospira, Free living amoebae, Enteroviruses (poliovirus, echovirus, Coxsackie), Cryptococcus neoformans). 3. Describe the pathogenesis, clinical presentation, diagnosis, treatment, control and prevention of aseptic meningitis (Leptospira, Free living amoebae, Enteroviruses (poliovirus, echovirus, Coxsackie), Cryptococcus neoformans) 4. Differentiate the clinical findings of pyogenic meningitis and aseptic meningitis. |
| MI 5.2 Describe the etiopathogenesis, clinical course and discuss the laboratory diagnosis of encephalitis | |
| MI 5.2a Encephalitis | <ol style="list-style-type: none"> 1. Enumerate common etiological agents causing encephalitis with special reference to India. 2. Describe the morphology, virulence factors, antigenic structure and pathogenesis of causative agents of encephalitis. (Rabies, Tick borne encephalitis viruses, HSV-2 & Nipah) 3. Describe the epidemiology, clinical features, diagnosis, treatment, control and prevention of Rabies. 4. Describe the epidemiology, clinical features, diagnosis, treatment, control and prevention of tick borne encephalitis. 5. Describe the epidemiology, clinical features, diagnosis, treatment, control and prevention of parasitic encephalitis |
| MI 5.2b Miscellaneous infections of CNS | <ol style="list-style-type: none"> 1. Define prions and slow virus infections 2. Describe the morphology, virulence factors, antigenic structure and pathogenesis of slow viruses and prions 3. Describe the epidemiology, clinical features, diagnosis, treatment, control and prevention of prion disease. |

Respiratory Tract Infections

MI6.1 Describe the etio-pathogenesis, laboratory diagnosis and prevention of Infections of upper and lower respiratory tract

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| MI 6.1a Respiratory tract infections: Introduction | <ol style="list-style-type: none"> 1. Describe the normal defence mechanism of respiratory tract 2. Enumerate various clinical types of respiratory infections with examples. 3. Describe the mode of transmission of upper and lower respiratory tract infections 4. Enumerate the causative agent of various type of respiratory infections. 5. Outline the laboratory diagnosis of patient with respiratory infection. |
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| MI 6.1b Viral URTI including common cold & croup | <ol style="list-style-type: none"> 1. Enumerate the causative viral agents of common cold, pharyngitis, croup, sinusitis, otitis media. 2. Describe classification, morphology, antigenic structure, virulence factor of causative agent (Adeno, Rhino, Mumps, Echo, Par echo, Coxsackie A, RSV, Corona, Influenza & Parainfluenza viruses). 3. Discuss the pathogenesis, epidemiology and immunity of causative agent. 4. Discuss the laboratory diagnosis, treatment and control of common cold, croup, mumps and pharyngitis. |
| MI 6.1c Tuberculosis | <ol style="list-style-type: none"> 1. Define and classify tuberculosis 2. Classify mycobacteria causing tuberculosis 3. Describe morphology, pathogenesis, virulence factors and cultural characteristics of Mycobacterium tuberculosis. 4. Describe the epidemiology, clinical manifestations, complications and laboratory diagnosis of pulmonary tuberculosis. 5. Discuss the treatment, control and prevention of tuberculosis. 6. Describe the strategies and case management as per RNTCP |
| MI6.1d Bacterial URTI-I | <ol style="list-style-type: none"> 1. Enumerate the causative bacterial agents of pharyngitis, diphtheria, whooping cough (croup), sinusitis, otitis media. 2. Describe the clinical features, pathogenesis and immunity of diphtheria and whooping cough. 3. Describe the morphology, virulence factors and cultural characteristics of bacterial agents causing pharyngitis. 4. Describe clinical features, pathogenesis, complications and laboratory diagnosis of pharyngitis, diphtheria and whooping cough. 5. Describe the treatment, prevention and control measures for diphtheria, whooping cough and pharyngitis. |
| MI6.1e Bacterial URTI-II | |
| MI 6.1f Bacterial pneumonia other than Mycobacteria -I | <ol style="list-style-type: none"> 1. Define the clinical types of Pneumonia [CAP, HAP/VAP & AP] 2. Enumerate the causative bacterial agents of pneumonia (other than Mycobacteria) 3. Describe the morphology, antigenic structure, virulence markers, cultural characteristics of various bacterial agent (S. pneumoniae, Staph. aureus, H. influenzae, Mycoplasma, Chlamydia, Klebsiella, Pseudomonas, Acinetobacter, Legionella). 4. Describe the clinical features, pathogenesis, clinical features, complications and lab diagnosis of bacterial pneumonia. 5. Describe the treatment, prevention and control measures for pneumonia. 6. Describe the clinical features, pathogenesis, clinical course of Atypical pneumonia & legionella pneumonia. 7. Discuss the laboratory diagnosis, treatment, prevention and control of atypical pneumonia. |
| MI 6.1g Bacterial pneumonia other than Mycobacteria -II | |

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| MI 6.1h Fungal pneumonia | <ol style="list-style-type: none"> 1. Enumerate the various fungal agents of pneumonia 2. Describe the morphology, epidemiology, virulence and cultural characteristics of agent (Candida, Cryptococcus, Dimorphic fungi {Histoplasma, coccidioides, paracoccidioides C.immitis, P.brazilliansis} Aspergilus, P.Jeroveci, Penicillium, {Oral thrush, ABPA }) 3. Discuss the predisposing factors and pathogenesis of fungal pneumonia. 4. Describe the clinical features, complications, laboratory diagnosis, treatment, control and preventive methods of fungal pneumonia. |
| MI 6.1i Viral LRTI-I | <ol style="list-style-type: none"> 1. Enumerate the causative viral agents of pneumonia, ARDS, ILI, SARI. 2. Describe epidemiology, classification, morphology, virulence factors, antigenic structure, immunity of the agent (paramyxovirus, orthomyxovirus, Corona, MERS COV, SARS, SARS-CoV2). 3. Describe the pathogenesis and immunity of viral pneumonia. 4. Define and Classify influenza viruses. 5. Discuss its pathogenesis [antigenic structure and variations] 6. Describe epidemiology including antigenic shift and drift of influenza virus. 7. Describe the clinical features, complications, laboratory diagnosis, treatment, control and preventive methods of viral pneumonia. |
| MI 6.1j Miscellaneous disorders of lung (Bronchitis, Bronchiectasis , Lung abscess, empyema, pleural effusion | <ol style="list-style-type: none"> 1. Enumerate the causative agents of Bronchitis, Bronchiectasis, Lung abscess, empyema, pleural effusion 2. Enumerate the parasitic agents causing lung infection 3. Describe the pathogenesis & clinical manifestations of Bronchitis, Bronchiectasis, Lung abscess, empyema, pleural effusion 4. Discuss the treatment, prevention & control of Bronchitis, Bronchiectasis, Lung abscess, empyema, pleural effusion 5. Describe the pulmonary manifestations of various parasites causing lung disorder (E.histolytica, E.granulosus) 6. Describe the epidemiology, morphology, life cycle, of P.westermani 7. Describe the pathogenesis, clinical features, complications, treatment and control of paragonimiasis 8. Discuss the laboratory diagnosis of varied lung infections. |

Genitourinary system and urinary tract infections

MI 7.1 Describe the etio-pathogenesis and discuss the laboratory diagnosis of infections of genitourinary system

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| MI 7.1 Genitourinary system infections | <ol style="list-style-type: none"> 1. Enumerate the microorganisms found as part of normal flora of Genitourinary system. 2. Discuss the role of normal flora in health of genitourinary tract. 3. Define and Classify Genitourinary Tract infections, Reproductive Tract infections and Sexually Transmitted Infections 4. Describe the etio-pathogenesis of Genitourinary Tract infections, Reproductive Tract infections and Sexually Transmitted Infections 5. List the clinical syndromes associated with the RTIs 6. Name the etiological agents of the various clinical syndromes 7. Classify Urinary Tract Infections 8. Describe etiopathogenesis of Urinary Tract infections 9. Describe the laboratory diagnosis of Genitourinary infections |
| MI 7.2 Describe the etio-pathogenesis and discuss the laboratory diagnosis of sexually transmitted infections. Recommend preventive measures | |
| MI 7.2 a Painless Genital ulcers: Syphilis | <ol style="list-style-type: none"> 1. Name the causative agent of Syphilis 2. Classify Treponemes 3. Describe the pathogenesis and clinical manifestations of various stages of Syphilis 4. Describe the morphology, virulence factors and cultural characteristics of Treponema pallidum 5. Describe the laboratory diagnosis of syphilis including congenital syphilis 6. Describe treatment, control and prevention of syphilis |
| MI 7.2b STD-II Genital ulcers and warts | <ol style="list-style-type: none"> 1. Enumerate the causative agents of genital warts, painful genital ulcer. 2. Classify Herpesviruses 3. Describe the pathogenesis, clinical features and laboratory diagnosis of genital herpes, chancroid, Donovanosis. 4. Describe the epidemiology, morphology & cultural characteristics of Haemophilus ducreyi, HSV, Klebsiella granulomatis 5. Discuss Anogenital Warts and Human Papilloma Virus associated lesions. |

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| MI 7.2c Vaginal/Urethral Discharge -I Urethritis gonococcal and NGU (Gonorrhoea, Chlamydia, Trichomonas, Bacterial vaginosis, ureaplasma, Candida | <ol style="list-style-type: none"> 1. Enumerate the organisms causing vaginal/urethral discharge 2. Describe the morphology, cultural characteristics, methods for identification and antimicrobial susceptibility testing of <i>Neisseria gonorrhoeae</i> 3. Describe the pathogenesis, clinical features, laboratory diagnosis and treatment of gonorrhea 4. Define Non-gonococcal urethritis and cervicitis 5. List the causative agents of NGU, LGV 6. Classify family Chlamydiaceae 7. Describe the morphology, cultivation, typing and life cycle of <i>Chlamydia trachomatis</i> 8. Discuss the pathogenesis, complications and clinical features of genital <i>Chlamydia trachomatis</i> infections 9. Discuss the laboratory diagnosis of genital <i>C. trachomatis</i> infections |
| MI 7.2d Vaginal/ Urethra Discharge -II (Gonorrhoea, Chlamydia, Trichomonas, Bacterial vaginosis, Candida | <ol style="list-style-type: none"> 1. Describe the morphology, cultural characteristics, methods for identification of <i>Mycoplasma</i> and ureaplasma. 2. Describe the morphology, pathogenesis, life cycle and laboratory diagnosis of <i>Trichomonas vaginalis</i>. 3. Discuss the laboratory diagnosis of NGU and non-gonococcal endocervicitis 4. Enumerate the organisms associated with Bacterial Vaginosis 5. Describe the morphology, pathogenesis, life cycle and laboratory diagnosis of organisms involved in bacterial vaginosis. |
| MI 7.2e Miscellaneous STI | <ol style="list-style-type: none"> 1. Enumerate the non-sexually transmitted microbial causes of infections of genitourinary system 2. Describe the pathogenesis of these infections. (PID, Genital warts (HPV), Molluscum contagiosum, pubic lice, scabies) 3. Describe the clinical features of these infections 4. Discuss the laboratory diagnosis of these infections |
| MI7.2f Lab diagnosis and syndromic management of STI | <ol style="list-style-type: none"> 1. Describe Syndromic management of STDs and Reproductive Tract Infections 2. Describe treatment, prevention and control of STDs |
| MI 7.3 Describe the etio-pathogenesis, clinical features, the appropriate method for specimen collection, and discuss the laboratory diagnosis of Urinary tract infections | |

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| MI 7.3 UTI | <ol style="list-style-type: none"> 1. Enumerate the etiological agents causing Urinary Tract Infections 2. Describe the predisposing factors, pathogenesis and clinical features of UTI 3. Describe the laboratory diagnosis of UTI. , 4. Define significant bacteriuria and interpret patients test reports 5. Describe the methods used to differentiate between upper and lower UTI 6. Describe the morphology, cultural characteristics, methods for identification and antimicrobial susceptibility testing of Proteus, Morganella and Providencia |
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| Zoonotic and Miscellaneous Infections | |
| MI8.1 Enumerate the microbial agents and their vectors causing Zoonotic diseases. Describe the morphology, mode of transmission, pathogenesis and discuss the clinical course, laboratory diagnosis and prevention | |
| MI8.1a Zoonotic disease: Introduction, epidemiology and prevention. MI 8.1b Entomology and vectors in disease MI 8.1c Rickettsia, Bartonella, Coxiella MI 8.1d Miscellaneous Zoonosis: Yersinia, Bacillus anthracis, Pasteurella, Franscicella | <ol style="list-style-type: none"> 1. Define: Zoonoses 2. Enumerate the microbial agents and their vectors causing Zoonotic diseases. 3. Describe the morphology, mode of transmission, pathogenesis, clinical course, laboratory diagnosis and prevention of Zoonotic diseases: 4. Describe the morphology, cultural characteristics, methods for identification of Bacillus anthracis, Brucella species, Yersinia pestis, Leptospira, Ricketssia species, Rhabdovirus. 5. Describe the pathogenesis, clinical features, laboratory diagnosis and treatment of Anthrax, Brucellosis, Plague, Leptospirosis, Rickettsia, Rabies, |
| MI8.2 Describe the etio-pathogenesis of opportunistic infections (OI) and discuss the factors contributing to the occurrence of OI, and the laboratory diagnosis | |
| MI 8.2a Opportunistic infections: General Bacterial, Parasitic and Virus | <ol style="list-style-type: none"> 1. Define Opportunistic infections 2. Classify and enumerate opportunistic infections. 3. Describe the etiopathogenesis of Opportunistic infections and discuss the factors contributing to opportunistic infections. 4. Describe diagnosis of opportunistic infections |
| MI 8.2b Opportunistic infections: Mycosis | <ol style="list-style-type: none"> 1. Enumerate fungi causing OI 2. Describe laboratory diagnosis of opportunistic infections |
| MI8.3 Describe the role of oncogenic viruses in the evolution of virus associated malignancy | |

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| Oncogenic virus | <ol style="list-style-type: none"> 1. Describe oncogenesis 2. Describe the properties of cells transformed by viruses. 3. Enumerate oncogenic DNA and RNA viruses 3. Define and describe Oncogenes/ Proto-oncogenes 4. Describe the mechanism of viral oncogenesis. |
| MI8.4 Describe the etiologic agents of emerging Infectious diseases. Discuss the clinical course and diagnosis | |
| Emerging and reemerging Infections | <ol style="list-style-type: none"> 1. Define: Emerging infectious agents. 2. Enumerate emerging infectious agents in world and in India. 3. Describe the factors that contribute to emerging and reemerging infections. 4. Discuss epidemiology of emerging infections with special reference to Indian context. 5. Discuss their clinical course and diagnosis. |
| MI8.5 Define Healthcare Associated Infections (HAI) and enumerate the types. Discuss the factors that contribute to the development of HAI and the methods for prevention | |
| HAI | <ol style="list-style-type: none"> 1. Define Healthcare Associated Infections (HAI) 2. Enumerate and describe common types of HAI 3. Enumerate microbial agents responsible for various types of HAI 4. Discuss the factors that contribute to the development of HAI, including sources, mode of transmission and epidemiology of infectious agents 5. Discuss the methods of prevention of HAI |
| MI 8.6 Describe the basics of Infection control | |
| MI 8.6 Infection control | <ol style="list-style-type: none"> 1. Define and describe the concept of Hospital/ Healthcare Infection Control 2. Enumerate and describe the concepts and methods of Infection control. 3. Define Standard precautions, transmission based precautions, and contact precautions. 4. Describe the components of Standard precautions, transmission based precautions, and contact precautions. 5. Describe Respiratory etiquettes, sharps safety, safe injection practices, sterilization, disinfection, good housekeeping, PPE donning/doffing, hand hygiene, post-exposure prophylaxis, etc.) 6. Describe the constitution and functions of Hospital Infection Control Committee. 7. Define and classify Biomedical waste. 8. Discuss management of Biomedical Waste as per latest Biomedical Waste Management Rules. |

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| MI 8.8 Describe the methods used and significance of assessing the microbial contamination of food, water and air | |
| MI 8.8 Milk, food and air Microbiology | <ol style="list-style-type: none"> 1. Enumerate the bacteria that can be found in food, water and air. 2. Describe the methods used and significance of assessing the microbial contamination of water air, food, and milk. |
| MI 8.13 Choose the appropriate laboratory test in the diagnosis of the infectious disease | |
| MI 8.13a PUO | <ol style="list-style-type: none"> 1. Define PUO 2. Enumerate the causative agents of PUO 3. Enumerate the samples and describe sample collection techniques and transport 4. Describe blood collection technique 5. Describe the sample processing, identification and confirmation |
| MI 8.13b Congenital infections | <ol style="list-style-type: none"> 1. Enumerate various congenital infections. 2. Enumerate various test to screen for congenital infections 3. Describe the pathogenesis, complications and screening for congenital infections. |
| MI 8.13c URTI | <ol style="list-style-type: none"> 1. Enumerate various clinical types of upper respiratory infections with examples. 2. Describe the mode of transmission of upper and lower respiratory tract infections 3. Enumerate the causative agent of various type of respiratory infections. 4. Enumerate the samples and describe sample collection techniques and transport 5. Describe the sample processing, identification and confirmation |
| MI 8.13d LRTI | <ol style="list-style-type: none"> 1. Enumerate various clinical types of lower respiratory infections with examples. 2. Describe the mode of transmission of upper and lower respiratory tract infections 3. Enumerate the causative agent of various type of respiratory infections. 4. Enumerate the samples and describe sample collection techniques and transport 5. Describe the sample processing, identification and confirmation |
| MI 8.13e Wound infection | <ol style="list-style-type: none"> 1. Enumerate various clinical types of wound infections. 2. Enumerate the causative agent of various type of wound infections. 3. Enumerate the samples and describe sample collection techniques and transport 4. Describe the sample processing, identification and |

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| | confirmation |
| MI 8.13f Meningitis | <ol style="list-style-type: none"> 1. Enumerate various clinical types of meningitis. 2. Enumerate the causative agent of various type of meningitis. 3. Enumerate the samples and describe sample collection techniques and transport 4. Describe the sample processing, identification and confirmation |
| MI 8.13g Eye/ENT infections | <ol style="list-style-type: none"> 1. Enumerate various clinical types of eye and ENT infections. 2. Enumerate the causative agent of various type of Eye and ENT infections. 3. Enumerate the samples and describe sample collection techniques and transport 4. Describe the sample processing, identification and confirmation |
| MI8.15 Choose and Interpret the results of the laboratory tests used in diagnosis of the infectious disease | |
| MI 8.15 Lab diagnosis of PUO, URTI, LRTI, Meningitis, wound infections, Eye, ENT infections | <ol style="list-style-type: none"> 1. Enumerate various clinical types of infections with examples. 2. Describe the mode of transmission of infections 3. Enumerate the causative agent of various type of infections. 4. Enumerate the samples and describe sample collection techniques and transport 5. Describe the sample processing, identification and confirmation |
| MI 8.16 Describe the National Health Programs in the prevention of common infectious disease | |
| MI 8.16 | <ol style="list-style-type: none"> 1. Enumerate various National programs for prevention of infectious diseases. 2. Enumerate the components and strategies of control program. 3. Describe the implementation of National Program at various levels. 4. Describe the evaluation of National Program. |

6. Assessment

Student will maintain a log book as given in Annexure II. Practical record book will also be maintained by students to record practical findings for day to day work and assessments. Both theory and practical to be assessed.

(a) Formative

- **First Term**

Assessments (2): General Microbiology, Immunology & CVS

End term Exam- January last week to February 1st week.

- **Second Term**

Assessment (3): Respiratory, GIT & Hepatobiliary

End Term Exam: April last week to May 1st week.

- **Third Term**

Assessment (2): SDL & Zoonotic, CVS, GUT, Miscellaneous

Sent Up Examination: August last week to September 1st week.

Section 3: Schedule of Internal assessment (IA) in Microbiology

| IA | 1 st IA (Jan-Feb) | 2 nd IA (April-May) | Sent up examination | Final Examination |
|--|---------------------------------|-----------------------------------|----------------------------|----------------------------|
| Theory | 50 | 50 | Paper 1-100 Paper 2-100 | Paper 1-100 Paper 2-100 |
| Practical (including 10 marks log book & practical file) | 50 | 50 | 100 | 100 |
| Total | 100 | 100 | 300 | 300 |

b) Internal Assessment

Maintained in card format for all teachers. Feedback given after end of each assessment. Internal assessment is divided in two components. Day to day assessments based on performance in tutorials, seminars, Practical class and skill session will be given weightage of 20%, while term exam assessments, end competency assessments will be included in term assessments given weightage of 80 %. IA sheet will be maintained for each student mentioning the suggested and taken remedial measures.

| | | | | |
|---------------|-----------|-----------|-----------|----------------|
| Theory | T1 | T2 | T3 | Total % |
|---------------|-----------|-----------|-----------|----------------|

| | | | | |
|--|--|--|--|--|
| Interest in subject (5) | | | | |
| Active participation (5) | | | | |
| Scientific attitude (5) | | | | |
| Any other academic input (SDL, Quiz, Poster, Paper presentation, social service) (5) | | | | |
| Exams assessment (80) | | | | |
| Total Theory | | | | |
| Practical | | | | |
| Interest in subject (5) | | | | |
| Attitude (5) | | | | |
| Bench Work culture (5) | | | | |
| Behaviour (5) | | | | |
| Term exams Assessment (60) | | | | |
| Log Book (10) | | | | |
| Practical record Book (10) | | | | |
| Total Practical (100) | | | | |
| Total IA (Theory + Practical) | | | | |
| Remarks/ | | | | |
| Remedial measures suggested | | | | |
| Signature Student | | | | |
| Signature Teacher In charge | | | | |
| Signature Batch In charge | | | | |
| Signature HOD | | | | |

IA Sheet for monitoring of student's performance

Roll No.

Name:

Contact no:

Attendance (%)

Marks (%)

Signature

Total
Marks

100 (%)

S. no.

Date

Theory

Practical

Theory

Practical

1st Term

1.

| | | | | | | | |
|---|--|--|--|--|--|--|--|
| 2. | | | | | | | |
| End term | | | | | | | |
| 2 nd Term | | | | | | | |
| 3. | | | | | | | |
| 4. | | | | | | | |
| 5 | | | | | | | |
| End term | | | | | | | |
| Total | | | | | | | |
| 3 rd term | | | | | | | |
| 6. SDL | | | | | | | |
| Sent up | | | | | | | |
| Exam | | | | | | | |
| Log Book | | | | | | | |
| Remarks/ Remedial measures suggested | | | | | | | |

Table 2: Theory distribution layout

Paper Layout

| Types of questions | Marks per question | No. of questions in each paper | Total |
|--------------------|--------------------|--------------------------------|-------|
| MCQ | 1 | 20 | 20 |
| Short answer | 3 | 10 | 30 |
| Short Note | 5 | 6 | 30 |
| Long Question | 10 | 2 | 20 |
| Total | | | 100 |

Table 3: Theory paper distribution

| PAPER I | Gen Microbiology | Immunology | CVS & Blood | GIT & Hepatobiliary | Total no. of questions |
|-------------------|------------------|------------|-------------|---------------------|------------------------|
| Total Marks (100) | 25 | 30 | 22 | 23 | 38 |

| PAPER II | Musculoskeletal system skin and soft tissues infections | Central Nervous System infections | Respiratory Infections | Genitourinary & Sexually transmitted infections | Zoonotic diseases and miscellaneous | Total no. of questions |
|-------------------|--|--|-------------------------------|--|--|-------------------------------|
| Total Marks (100) | 20 | 20 | 20 | 20 | 20 | 38 |

Table 4: Term wise assessment pattern for Practical

| | Spots | Gram stain & hanging drop with clinical problem | PS for mp/mf with clinical problem | Log book/ Practical file | Viva related to practical exercises | Total |
|----------------------|-------|---|------------------------------------|--------------------------|-------------------------------------|-------|
| 1 st Term | 10 | 10 | 10 | 10 | 10 | 50 |
| 2 nd Term | Spots | ZN stain | Stool examination for ova/cyst | Log book/Practical file | Viva related to practical exercises | Total |
| | 10 | 10 | 10 | 10 | 10 | 50 |

Table 5: Complete distribution of Practical examination for final summative exam

| Pattern | Exercise | Marks |
|--|--|--|
| Microscopic skills* | Gram staining, hanging drop & clinical problem | 10 (3+2+2+3) {Identify+Focus+Report+Record observation} |
| | ZN staining with clinical problem | 10 (3+2+2+3) {Identify+Focus+Report+Record observation} |
| | Stool Examination with clinical vignette | 10 (2 findings) (3+2X2) {Identify+Record observations} |
| Clinical problem | Clinical Problem solving for sample, container and precautions | 10 |
| Spots or OSPE with Clinical Problem | Clinical vignette with Peripheral blood smear for MP/MF | 5(3+2) |
| Skill based exercise | Exercise with infection control, PPE & hand hygiene | 05 |
| AETCOM Exercise | Clinical Problem with AETCOM competency | 05 |
| Spot/OSPE | Culture Medium, biochemical /AST | 3(2+1) {Identify +Question} |
| Spot/OSPE | Instrument, sterilization, disinfection, Biomedical waste | 3(2+1) {Identify +Question} |
| Spot/OSPE | Fungal | 3(2+1) {Identify +Question} |
| Spot/OSPE | Serology/Immunology | 3(2+1) {Identify +Question} |
| Spot/OSPE | Virus, Parasite | 3(2+1) {Identify +Question} |
| Viva based on practical exercises | | 30 |

| | |
|-------|-----|
| Total | 100 |
|-------|-----|

Note: The students will submit practical file and log book during the Examination.

*Numerical scoring: The steps of the staining procedure and interpretation are scored as follows

| Steps Done | Marks allotted |
|---|----------------|
| Performing the stain following all the steps (1 mark each) | 3 |
| -Primary stain | |
| -Decolourisation | |
| -Secondary stain | |
| Focusing the stained slide with appropriate adjustments of the Microscope | 2 |
| Identifying the structures under the Microscope/Observation and inference | 3 |
| Diagram and writing the report | 2 |
| Total | 10 |

7) ASSESSMENT OF INDIVIDUAL COMPETENCIES: (To be done similarly for each competency)

- 1) Competency identified: MI 1.2 (a)
- 2) Name of the activity: Perform and identify the different causative agents of Infectious diseases by Gram Stain
- 3) Components of the activity:
 - a) Practical session to demonstrate the procedure for stain.
 - b) Performing the procedure by the student and focussing the slide.
 - c) Recording the observation and the inference with a neat labelled diagram
 - d) Feedback given on the session.
- 4) Criteria for successful completion: The student has to perform the activity 5 times and score more than 5/10 in each attempt

| Attempt Number | Date of performing the activity | Marks scored out of 10 | Rating Below Expectations(B); Meets Expectations(M); Exceeds Expectations(E) | Signature of faculty | Signature of student |
|----------------|---------------------------------|------------------------|---|----------------------|----------------------|
| 1 | | | | | |
| 2 | | | | | |

| | | | | | |
|---|--|--|--|--|--|
| 3 | | | | | |
| 4 | | | | | |
| 5 | | | | | |

Documentation of activity (diagram and observation and inference) – to be written in the Record book.

Recommended action when unsuccessful : Repeat after discussion

Note:

Keeping the basic structure of internal assessment intact, minor adjustments in unit I and II can be done based on the course covered.

For detailed assessment instructions refer to Assessment Blueprint document for CBME batch 2021

Internal assessment will be calculated for theory (40) marks and practical (20) marks Student will require to get 50 % combined in theory & practical (not less than 40 % in each) for eligibility to appear for university exam.

21. Amendment to Ordinance V (2) & VII. [EC. Res. 78-7 dated 25.03.2022] regarding course curriculum prepared on competency based UG curriculum for MBBS course -2nd Professional (New Scheme).

Pathology

VISION

The broad goal of pathology curriculum is to make undergraduates aware of pathological basis of disease, have comprehensive scientific knowledge of the gross and microscopic features of various organs affected in different pathological lesions and their correlation with clinical presentation.

Learning objectives (overall)

At the end of curriculum, student should be able to

a) **KNOWLEDGE**

1. Explain pathological basis of disease.
2. Identify gross and microscopic features of common pathological lesions
3. Know the etiopathogenesis of common clinical conditions
4. Know genetic basis of diseases with knowledge of genetic tools for diagnosis of diseases

b) **SKILL**

At the end of course, student should be able to

1. Make good peripheral smear AND describe the peripheral blood picture
2. Analyze lab reports and its correlation with clinical diagnosis
3. Describe the correct technique to perform blood grouping & cross matching,
4. Identify the etiology of meningitis based on given CSF parameters
5. Interpret liver function and viral hepatitis serology panel and able to differentiate various types of jaundice

c) ATTITUDE AND COMMUNICATIONS

At the end of course, student should be able to

1. Show due respect in handling of specimens, slides and microscope
2. work efficiently in a team
3. Communicate efficiently with teachers and peer groups
4. Develop professional attributes in terms of discipline, punctuality, accountability and respect to teachers

Competencies

Detailed competencies are shown in annexure 1

Learning objective for each competency are added in annexure 2

| S.No. | Topic | Competency | Theory/practical/ laboratory/ clinical |
|-------|----------------------------|---|--|
| 1) | Introduction to Pathology | PA 1.1: Describe the role of a pathologist in diagnosis and management of disease: PA1.2: Enumerate common definitions and terms used in Pathology PA 1.3: Describe the history and evolution of Pathology | Theory/practical |
| 2) | Cell Injury and Adaptation | PA2.1: Demonstrate knowledge of the causes, mechanisms, types and effects of cell injury and their clinical significance PA2.2: Describe the etiology of cell injury. Distinguish between reversible-irreversible injury: mechanisms; morphology of cell injury PA2.3: Intracellular accumulation of fats, proteins, carbohydrates, pigments PA2.4: Describe and discuss Cell death- types, mechanisms, necrosis, apoptosis (basic as contrasted with necrosis), autolysis PA2.5: Describe and discuss pathologic calcifications, gangrene PA2.6: Describe and discuss cellular adaptations: atrophy, hypertrophy, hyperplasia, metaplasia, dysplasia PA2.7: Describe and discuss the mechanisms of cellular aging and Apoptosis PA2.8: Identify and describe various forms of cell injuries, their manifestations and consequences in gross and microscopic specimens | Theory/ practical/ laboratory/ clinical |

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| 3) | Amyloidosis | <p>PA3.1: Describe the pathogenesis and pathology of amyloidosis</p> <p>PA3.2: Identify and describe amyloidosis in a pathology specimen</p> | Theory/practical/ laboratory/clinical |
| 4) | Inflammation | <p>PA4.1: Define and describe the general features of acute and chronic inflammation including stimuli, vascular and cellular events</p> <p>PA4.2: Enumerate and describe the mediators of acute inflammation</p> <p>PA4.3: Define and describe chronic inflammation including causes, types non- specific and granulomatous; and examples of each</p> <p>PA4.4: Identify and describe acute and chronic inflammation in gross and microscopic specimens</p> | Theory/practical/ laboratory/clinical |
| 5) | Healing and repair | <p>PA5.1: Define and describe the process of repair and regeneration including wound healing and its types</p> | Theory/practical/ laboratory/ clinical |
| 6) | Hemodynamic disorders | <p>PA6.1: Define and describe edema, its types, pathogenesis and clinical correlation</p> <p>PA6.2: Define and describe hyperemia, congestion, hemorrhage</p> <p>PA6.3: Define and describe shock, its pathogenesis and its stages</p> <p>PA6.4: Define and describe normal haemostasis and the etiopathogenesis and consequences of thrombosis</p> <p>PA6.5: Define and describe embolism and its causes and common types</p> <p>PA6.6: Define and describe Ischaemia /infarction its types, etiology, morphologic changes and clinical effects</p> <p>PA6.7: Identify and describe the gross</p> | Theory/practical/ laboratory/ clinical |

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| | | and microscopic features of infarction in a pathologic specimen | |
| 7) | Neoplastic disorders | <p>PA7.1: Define and classify neoplasia. Describe the characteristics of neoplasia including gross, microscopy, biologic, behaviour and spread. Differentiate between benign from malignant neoplasm</p> <p>PA7.2: Describe the molecular basis of cancer</p> <p>PA7.3: Enumerate carcinogens and describe the process of Carcinogenesis</p> <p>PA7.4: Describe the effects of tumor on the host including paraneoplastic syndrome</p> <p>PA7.5: Describe immunology and the immune response to cancer</p> | Theory/practical/ laboratory/ clinical |
| 8) | Basic diagnostic cytology | <p>PA8.1: Describe the diagnostic role of cytology and its application in clinical care</p> <p>PA8.2: Describe the basis of exfoliative cytology including the technique & stains used</p> <p>PA8.3: Observe a diagnostic cytology and its staining and interpret the specimen DOAP</p> | Theory/practical/ laboratory/ clinical |
| 9) | Immunopathology and AIDS | <p>PA9.1: Describe the principles and mechanisms involved in immunity</p> <p>PA9.2: Describe the mechanism of hypersensitivity reactions</p> <p>PA9.3: DESCRIBE HLA SYSTEM and immune systems involved in transplant and mechanism of transplant rejection</p> <p>PA9.4: Define autoimmunity. Enumerate autoimmune disorders</p> | Theory/practical/ laboratory/ clinical |

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| | | <p>PA9.5: Define and describe the pathogenesis of systemic Lupus Erythematosus</p> <p>PA9.6: Define and describe the pathogenesis and pathology of HIV and AIDS</p> <p>PA9.7: Define and describe the pathogenesis of other common autoimmune diseases</p> | |
| 10) | Infections and Infestations | <p>PA10.1: Define and describe the pathogenesis and pathology of malaria</p> <p>PA10.2: Define and describe the pathogenesis and pathology of Cysticercosis</p> <p>PA10.3: Define and describe the pathogenesis and pathology of leprosy</p> <p>PA10.4: Define and describe the pathogenesis and pathology of common bacterial, viral, protozoal and helminthic diseases</p> | Theory/practical/ laboratory/ clinical |
| 11). | Genetic and paediatric diseases | <p>PA11.1: Describe the pathogenesis and features of common cytogenetic abnormalities and mutations in childhood</p> <p>PA11.2: Describe the pathogenesis and pathology of tumor and tumourlike conditions in infancy and childhood</p> <p>PA11.3: Describe the pathogenesis of common storage disorders in infancy and childhood</p> | Theory/practical/ laboratory/ clinical |
| 12) | Environmental and nutritional diseases | <p>PA12.1: Enumerate and describe the pathogenesis of disorders caused by air pollution, tobacco and alcohol</p> <p>PA12.2: Describe the pathogenesis of disorders caused by protein calorie malnutrition and starvation</p> <p>PA12.3: Describe the pathogenesis of obesity and its consequences</p> | Theory/practical/ laboratory/ clinical |

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| 13) | Introduction to haematology | <p>PA13.1:Describe hematopoiesis and extramedullary hematopoiesis</p> <p>PA13.2:Describe the role of anticoagulants in hematology</p> <p>PA13.3:Define and classify anemia</p> <p>PA13.4:Enumerate and describe the investigation of anemia</p> <p>PA13.5:Perform, Identify and describe the peripheral blood picture in Anemia</p> | Theory/practical/ laboratory/ clinical |
| 14) | Microcytic anemia | <p>PA14.1:Describe iron metabolism</p> <p>PA14.2:Describe the etiology, investigations and differential diagnosis of microcytic hypochromic anemia</p> <p>PA14.3:Identify and describe the peripheral smear in microcytic anemia</p> | Theory/practical/ laboratory/ clinical |
| 15) | Macrocytic anemia | <p>PA15.1:Describe the metabolism of Vitamin B12 and the etiology and pathogenesis of B12 deficiency</p> <p>PA15.2:Describe laboratory investigations of macrocytic anemia</p> <p>PA15.3:Identify and describe the peripheral blood picture of macrocytic Anemia</p> <p>PA15.4:Enumerate the differences and describe the distinguishing features of megaloblastic and non-megaloblastic macrocytic anemia</p> | Theory/practical/ laboratory/ clinical |
| 16) | Hemolytic anemia | <p>PA16.1: Define and classify hemolytic anemia</p> <p>PA16.2: Describe the pathogenesis and clinical features and hematologic indices of hemolytic anemia</p> <p>PA16.3: Describe the pathogenesis, features, hematologic indices and peripheral blood picture of sickle cell anemia and thalassemia</p> <p>PA16.4: Describe the etiology pathogenesis, hematologic indices and peripheral blood picture of Acquired hemolytic anemia</p> <p>PA16.5: Describe the peripheral blood picture in different hemolytic anemia</p> <p>PA16.6: Prepare a peripheral blood smear and identify hemolytic anaemia</p> | Theory/practical/ laboratory/ clinical |

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| | | from it PA16.7: Describe the correct technique to perform a cross match | |
| 17) | Aplastic anemia | PA17.1: Enumerate the etiology, pathogenesis and findings in aplastic anemia PA17.2: Enumerate the indications and describe the findings in bone marrow aspiration and biopsy | Theory/practical/ laboratory/clinical |
| 18) | Leucocytic disorders | PA18.1: Enumerate and describe the causes of leucocytosis leucopenia lymphocytosis and leukemoid reactions. PA18.2: Describe the etiology, genetics, pathogenesis classification, features, hematologic features of acute and chronic leukemia | Theory/practical/ laboratory/clinical |
| 19) | Lymph node and spleen | PA19.1: Enumerate the causes and describe the differentiating features of lymphadenopathy PA19.2: Describe the pathogenesis and pathology of tuberculous lymphadenitis PA19.3: Identify and describe the features of tuberculous lymphadenitis in a gross and microscopic specimen PA19.4: Describe and discuss the pathogenesis, pathology and the differentiating features of Hodgkin's and non-Hodgkin's lymphoma PA19.5: Identify and describe the features of Hodgkin's lymphoma in a gross and microscopic specimen PA19.6: Enumerate and differentiate the causes of splenomegaly PA19.7: Identify and describe the gross specimen of an enlarged spleen | Theory/practical/ laboratory/ clinical |

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|-----|-------------------------------|--|--|
| 20) | Plasma cell disorders | PA20.1: Describe the features of plasma cell myeloma | Theory/practical/ laboratory/clinical |
| 21) | Hemorrhagic disorders | <p>PA21.1: Describe normal hemostasis</p> <p>PA21.2: Classify and describe the etiology, pathogenesis and pathology of vascular and platelet disorders including ITP and haemophilia</p> <p>PA21.3: Differentiate platelet from clotting disorders based on the clinical and hematologic features</p> <p>PA21.4: Define and describe disseminated intravascular coagulation, its laboratory findings and diagnosis of disseminated intravascular coagulation</p> <p>PA21.5: Define and describe disseminated intravascular coagulation AND VIT K DEFICIENCY</p> | Theory/practical/ laboratory/clinical |
| 22) | Blood banking and transfusion | <p>PA22.1: Classify and describe blood group systems (ABO and RH)</p> <p>PA22.2: Enumerate the indications, describe the principles, enumerate and demonstrate the steps of compatibility testing</p> <p>PA22.4: Enumerate blood components and describe their clinical uses</p> <p>PA22.5: Enumerate and describe infections transmitted by blood Transfusion</p> <p>PA22.6: Describe transfusion reactions and enumerate the steps in the investigation of a transfusion reaction</p> <p>PA22.7: Enumerate the indications and describe the principles and procedure of autologous transfusion</p> | Theory/practical/ laboratory/clinical |

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| 23) | Clinical Pathology | <p>PA23.1:Describe abnormal urinary findings in disease states and identify and describe common urinary abnormalities in a clinical specimen</p> <p>PA23.2:Describe abnormal findings in body fluids in various disease States</p> <p>PA23.3:Describe and interpret the abnormalities in a panel containing semen analysis, thyroid function tests, renal function tests or liver function tests</p> | Theory/practical/ laboratory/clinical |
| 24) | Gastrointestinal tract | <p>PA24.1:Describe the etiology, pathogenesis, pathology and clinical features of oral cancers</p> <p>PA24.2:Describe the etiology, pathogenesis, pathology, microbiology, clinical and microscopic features of peptic ulcer disease</p> <p>PA24.3:Describe and identify the microscopic features of peptic ulcer</p> <p>PA24.4:Describe etiology and pathogenesis and pathologic features of carcinoma of the stomach</p> <p>PA24.5:Describe etiology and pathogenesis and pathologic features of Tuberculosis of the intestine</p> <p>PA24.6:Describe etiology and pathogenesis and pathologic and distinguishing features of Inflammatory bowel disease</p> <p>PA24.7:Describe the etiology, pathogenesis, pathology and distinguishing features of carcinoma of the colon</p> | Theory/practical/ laboratory/clinical |

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| 25) | Hepatobiliary system | <p>PA25.1:Describe bilirubin metabolism, enumerate the etiology and pathogenesis of jaundice, distinguish between direct and indirect hyperbilirubinemia</p> <p>PA25.2:Describe the pathophysiology and pathologic changes seen in hepatic failure and their clinical manifestations, complications and consequences.</p> <p>PA25.3:Describe the etiology and pathogenesis of viral and toxic hepatitis: distinguish the causes of hepatitis based on the clinical and laboratory features. Describe the pathology, complications and consequences of hepatitis</p> <p>PA 25.4: Describe the pathophysiology, pathology and progression of alcoholic liver disease including cirrhosis</p> <p>25.5:Describe the etiology, pathogenesis and complications of portal hypertension SDL</p> <p>PA25.6 : Interpret liver function and viral hepatitis serology panel. Distinguish obstructive from non- obstructive jaundice based on clinical features and liver function tests</p> | Theory/practical/ laboratory/clinical |
| 26) | Respiratory system | <p>26.1:Define and describe the etiology, types, pathogenesis, stages, morphology and complications of pneumonia</p> <p>26.2:Describe the etiology, gross and microscopic appearance and complications of lung abscess</p> <p>PA26.3:Describe the etiology, types, pathogenesis, stages, morphology and complications and evaluation of Obstructive airway disease (OAD) and bronchiectasis</p> <p>PA26.4;Define and describe the etiology, types, pathogenesis, stages, morphology microscopic appearance and</p> | Theory/practical/ laboratory/clinical |

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| | | <p>complications of tuberculosis</p> <p>PA26.5: Define and describe the etiology, types, exposure, environmental influence, pathogenesis, stages, morphology, microscopic appearance and complications of Occupational lung disease</p> <p>PA26.6: Define and describe the etiology, types, exposure, genetics environmental influence, pathogenesis, stages, morphology, microscopic appearance, metastases and complications of tumors of the lung and pleura</p> <p>PA26.7: Define and describe the etiology, types, exposure, genetics environmental influence, pathogenesis, morphology, microscopic appearance and complications of mesothelioma</p> | |
| 27) | Cardiovascular system | <p>PA27.1: Distinguish arteriosclerosis from atherosclerosis. Describe the pathogenesis and pathology of various causes and types of arteriosclerosis</p> <p>PA27.2: Describe the etiology, dynamics, pathology types and complications of aneurysms including aortic aneurysms</p> <p>PA27.3: Describe the etiology, types, stages pathophysiology, pathology and complications of heart failure</p> <p>PA27.4: Describe the etiology, pathophysiology, pathology, gross and microscopic features, criteria and complications of rheumatic fever</p> <p>PA27.5: Describe the epidemiology, risk factors, etiology, pathophysiology, pathology, presentations, gross and microscopic features, diagnostic tests and complications of ischemic heart disease</p> <p>PA27.6: Describe the etiology,</p> | Theory/practical/ laboratory/clinical |

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| | | <p>pathophysiology, pathology, gross and microscopic features, diagnosis and complications of infective endocarditis</p> <p>PA27.7:Describe the etiology, pathophysiology, pathology, gross and microscopic features, diagnosis and complications of pericarditis and pericardial effusion</p> <p>PA27.8:Interpret abnormalities in cardiac function testing in acute coronary syndromes</p> <p>PA27.9:Classify and describe the etiology, types, pathophysiology, pathology, gross and microscopic features, diagnosis and complications of cardiomyopathies</p> <p>PA27.10:Describe the etiology, pathophysiology, pathology features and complications of syphilis on the cardiovascular system</p> | |
| 28) | Urinary Tract | <p>PA28.1:Describe the normal histology of the kidney</p> <p>PA28.2:Define, classify and distinguish the clinical syndromes and describe the etiology, pathogenesis, pathology, morphology, clinical and laboratory and urinary findings, complications of renal failure</p> <p>PA28.3:Define and describe the etiology, precipitating factors, pathogenesis, pathology, laboratory urinary findings, progression and complications of acute renal failure</p> <p>PA28.4:Define and describe the etiology, precipitating factors, pathogenesis, pathology, laboratory urinary findings progression and complications of chronic renal failure</p> <p>PA28.5: Define and classify glomerular</p> | Theory/practical/ laboratory/clinical |

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| | | <p>diseases. Enumerate and describe the etiology, pathogenesis, mechanisms of glomerular injury, pathology, distinguishing features and clinical manifestations of glomerulonephritis</p> <p>PA28.6: Define and describe the etiology, pathogenesis, pathology, laboratory, urinary findings, progression and complications of IgA nephropathy</p> <p>PA28.7: Enumerate and describe the findings in glomerular manifestations of systemic disease</p> <p>PA28.8: Enumerate and classify diseases affecting the tubular Interstitium</p> <p>PA28.9: Define and describe the etiology, pathogenesis, pathology, laboratory, urinary findings, progression and complications of acute tubular necrosis</p> <p>PA28.10: describe the etiology, pathophysiology, lab findings and distinguishing features progression and complications of acute and chronic pyelonephritis and reflux nephropathy</p> <p>PA28.11: Define classify and describe the etiology, pathogenesis pathology, laboratory, urinary findings, distinguishing features progression and complications of vascular disease of the kidney</p> <p>PA28.12: Define classify and describe the genetics, inheritance, etiology, pathogenesis, pathology, laboratory, urinary findings, distinguishing features, progression and complications of cystic disease of the kidney</p> <p>PA28.13: Define classify and describe the etiology, pathogenesis, pathology, laboratory, urinary findings, distinguishing features progression and complications of renal stone disease and obstructive</p> | |
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| | | <p>uropathy</p> <p>PA28.14: Classify and describe the etiology, genetics, pathogenesis, pathology, presenting features, progression and spread of renal tumors</p> <p>PA28.15: Classify and describe the etiology, genetics, pathogenesis, pathology, presenting features, progression and spread of renal tumors</p> <p>PA28.16: Describe the etiology, genetics, pathogenesis, pathology, presenting features and progression of urothelial tumors</p> | |
| 29) | Male Genital Tract | <p>PA29.1: Classify testicular tumors and describe the pathogenesis, pathology, presenting and distinguishing features, diagnostic tests, progression and spread of testicular tumors</p> <p>PA29.2: Describe the pathogenesis, pathology, presenting and distinguishing features, pathogenesis and spread of carcinoma of the penis</p> <p>PA29.3: Describe the pathogenesis, pathology, hormonal dependency presenting and distinguishing features, urologic findings & diagnostic tests of benign prostatic hyperplasia</p> <p>PA29.4: Describe the pathogenesis, pathology, hormonal dependency presenting and distinguishing features, diagnostic tests, progression and spread of carcinoma of the prostate</p> <p>PA29.5: Describe the etiology, pathogenesis, pathology and progression of prostatitis GROSS</p> | Theory/practical/ laboratory/clinical |

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| 30) | Female Genital Tract | <p>PA30.1: Describe screening, diagnosis and progression of carcinoma of the cervix</p> <p>PA30.2: Describe the pathogenesis, etiology, pathology, diagnosis and progression and spread of carcinoma of the endometrium</p> <p>PA30.3: Describe the pathogenesis, etiology, pathology, diagnosis and progression and spread of carcinoma of the leiomyomas and leiomyosarcomas</p> <p>PA30.4: Classify and describe the etiology, pathogenesis, pathology, morphology, clinical course, spread and complications of ovarian tumors</p> <p>PA30.5: Describe the etiology, pathogenesis, pathology, morphology, clinical course, spread and complications of gestational trophoblastic neoplasms</p> <p>PA30.6: Describe the etiology and morphologic features of cervicitis (Non core)</p> <p>PA30.7: Describe the etiology, hormonal dependence, features and morphology of endometriosis</p> <p>PA30.8: Describe the etiology and morphologic features of adenomyosis</p> <p>PA30.9: Describe the etiology, hormonal dependence and morphology of endometrial hyperplasia</p> | Theory/practical/ laboratory/clinical |
| 31) | Breast | <p>PA31.1: classify and describe the types, etiology, pathogenesis, of benign breast disease</p> <p>PA31.2: classify and describe the epidemiology, pathogenesis, classification, morphology, prognostic factors, hormonal dependency, staging and spread of carcinoma of the breast</p> | Theory/practical/ laboratory/clinical |

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| | | <p>PA31.3: Describe and identify the morphologic and microscopic features of carcinoma of the breast (P)</p> <p>PA31.4: Enumerate and describe the etiology, hormonal dependency and pathogenesis of gynecomastia (NON CORE)</p> | |
| 32) | Endocrine system | <p>PA32.1: Enumerate, classify and describe the etiology, pathogenesis, pathology and iodine dependency of thyroid swellings</p> <p>PA32.2: Describe the etiology, cause, iodine dependency, pathogenesis, manifestations, laboratory and imaging features and course of thyrotoxicosis</p> <p>PA32.3: Describe the etiology, pathogenesis, manifestations, laboratory and imaging features and course of thyrotoxicosis/ hypothyroidism AND THYROID TUMORS</p> <p>PA32.4: Classify and describe the epidemiology, etiology, pathogenesis, pathology, clinical laboratory features, complications and progression of diabetes mellitus</p> <p>PA32.5: Describe the etiology, genetics, pathogenesis, manifestations, laboratory and morphologic features of hyperparathyroidism</p> <p>PA32.6: Describe the etiology, laboratory, morphologic features, complications and metastases of pancreatic cancer</p> <p>PA32.7: Describe the etiology, pathogenesis, manifestations, laboratory, morphologic features, complications of adrenal insufficiency</p> <p>PA32.8: Describe the etiology, pathogenesis, manifestations, laboratory,</p> | Theory/practical/ laboratory/clinical |

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| | | <p>morphologic features, complications of Cushing's syndrome</p> <p>PA32.9: Describe the etiology, pathogenesis, manifestations, laboratory and morphologic features of adrenal neoplasms</p> | |
| 33) | Bone and soft tissue | <p>PA33.1: Classify and describe the etiology, pathogenesis, manifestations, radiologic and complications of osteomyelitis</p> <p>PA 33.2: Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications and metastases of bone tumors</p> <p>PA 33.3: Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications and metastases of soft tissue tumors</p> <p>PA 33.4: Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications of Paget's disease of the bone</p> <p>PA 33.5: Classify and describe the etiology, immunology, pathogenesis, manifestations, radiologic and laboratory features, diagnostic criteria and complications of rheumatoid arthritis</p> | Theory/practical/ laboratory/clinical |
| 34) | Skin | <p>PA34.1: Describe the risk factors pathogenesis, pathology and natural history of squamous cell carcinoma of the skin</p> <p>PA34.2: Describe the risk factors pathogenesis, pathology and natural history of basal cell carcinoma of the skin</p> <p>PA34.3: Describe the distinguishing</p> | Theory/practical/ laboratory/clinical |

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| | | <p>features between a nevus and melanoma. Describe the etiology, pathogenesis, risk factors morphology clinical features and metastases of melanoma</p> <p>PA34.4: Identify, distinguish and describe common tumors of the skin</p> | |
| 35) | Central Nervous System | <p>PA 35.1 Describe the etiology, types and pathogenesis, differentiating factors, CSF findings in meningitis</p> <p>PA35.2: Classify and describe the etiology, genetics, pathogenesis, pathology, presentation sequelae and complications of CNS tumors</p> <p>PA35.3: Identify the etiology of meningitis based on given CSF parameters (P)</p> | Theory/practical/ laboratory/clinical |
| 36) | Eye | <p>PA36.1: Describe the etiology, genetics, pathogenesis, pathology, presentation, sequelae and complications of retinoblastoma</p> | Theory/practical/ laboratory/clinical |

Holidays and exams :

| Term | Exam | Vacations/preparatory leaves |
|------------------|--|------------------------------|
| 1 | 05/1-10/1 | 17/12-31/12 |
| 2 | 20/4-26/4 theory 7 days practical till 08/5 | 16/6-30/6 |
| 3 | 9/8-15/8 theory 16/8-23/8 practicals | |
| University exams | 5/9 onwards | |

Teaching learning methods

1. Didactic lectures
2. Small group teaching
3. Self directed learning by arranging seminars and symposium
4. Problem card based learning
5. Practical –
 - Performing hematological exercises –TLC, DLC, Peripheral smear making and staining
 - Performing urine examination and interpreting various lesions
 - Analyse lab reports and its correlation with clinical diagnosis
 - Perform the correct technique of blood grouping and cross matching
6. Identifying gross pathology of various organs
7. Study of histopathology slides of various diseases
8. AETCOM

A handwritten signature in blue ink, with a checkmark above it, located to the left of the list items 6, 7, and 8.

Paper I: General principles of Pathology, Clinical Pathology and Hematology

| Sl.No. | Topic | Approximate weight-age |
|--------|---------------------------------------|------------------------|
| 1 | Cell injury and adaptation | 10 |
| 2 | Inflammation and repair | 10 |
| 3 | Hemostasis/ Circulatory disturbances | 8 |
| 4 | Immunopathology | 6 |
| 5 | Infectious pathology | 8 |
| 6 | Genetic and Environmental diseases | 4 |
| 7 | Neoplasia | 10 |
| 8 | Childhood diseases | 4 |
| 9 | RBC Disorders | 10 |
| 10 | WBC disorders | 10 |
| 11 | Lymphoreticular system | 4 |
| 12 | Diseases of Coagulation & Bleeding | 8 |
| 13 | Blood Banking | 4 |
| 14 | Clinical pathology incl cytopathology | 4 |
| | | 100 |

Guidelines for assessment: 20% MCQ

80% SAQ

30% of Questions should be on etiopathogenesis

30% on morphology preferably with clinical correlation

40% Problem based / lab diagnosis/reasoning

Variations in the scheme as per the consensus of examiners and moderator

Part I

1. Structured essay Question 8 marks
2. Differentiate between 4 questions x 4 = 16 marks

Part II

3. Structured essay Question 8 marks
4. Short notes; 4 questions x 5 = 20 marks

Part III

5. Structured essay Question 8 marks
6. Short notes 4 questions x 5 = 20 marks

Paper II Systemic Pathology

| S.no | Topic | Approximate weight age |
|------|--|------------------------|
| 1 | Cardiovascular | 10 |
| 2 | Respiratory | 10 |
| 3 | Gastrointestinal Tract | 15 |
| 4 | Hepatic and Biliary Tract, exocrine pancreas | 15 |
| 5 | Endocrine system | 8 |
| 6 | Urinary tract | 10 |
| 7 | Male genital tract | 6 |
| 8 | Female genital tract | 8 |
| 9 | Breast | 6 |
| 10 | CNS | 4 |
| 11 | Skin and soft tissue | 4 |
| 12 | Bone & Joints | 4 |
| | | 100 |

Guidelines for assessment: 20% MCQ 80% SAQ
 30% of Questions should be on etiopathogenesis
 30% on morphology preferably with clinical correlation
 40% Problem based/lab diagnosis/reasoning
 Variation in the scheme as per the consensus of examiners/ moderator

Part I

- | | |
|-----------------------------|----------------------------|
| 1 Structured essay Question | 8 marks |
| 2. Differentiate between | 4 questions x 4 = 16 marks |

Part II

- | | |
|------------------------------|----------------------------|
| 3. Structured essay Question | 8 marks |
| 4. Short notes ; | 4 questions x 5 = 20 marks |

Part III

- | | |
|------------------------------|----------------------------|
| 5. Structured essay Question | 8 marks |
| 6. Short notes | 4 questions x 5 = 20 marks |

Eligibility for appearing in examination and pass criteria as per NMC guidelines

PATHOLOGY PRACTICAL EXAMINATION

Pattern & Marks Distribution

MAX MARKS : 100

Observation and reasoning

| S. No. | Activity | Marks |
|--------|---|-----------|
| 1 | Examine Three histopathology slides, identify the parent tissue, write microscopic features, give diagnosis and make a labelled diagram | 3x5= 15 |
| 2 | Examine the stained peripheral smear provided, do DLC, give the report and three causes of the findings | 1 x 5 = 5 |

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|---|---|-----------|
| 3 | Study the case history provided. Examine the given peripheral smear/ bone marrow smear, write your observations and give your diagnosis. | 1 x 5 = 5 |
| 4 | Test for Hemoglobin by Sahli's hemoglobinometer or TLC by Neubauer's chamber. Write observation, inference. Performance of this test will be observed by 1 examiner | 1 x 5 = 5 |
| 5 | With the given blood sample, prepare and stain the peripheral smear and focus the smear. Performance of this test will be observed by 1 examiner for smear making and staining. | 5+ 5 = 10 |
| 6 | Urine Chemical Test: (Test for Protein/sugar/ketone bodies): perform urine chemical test by conventional method. Student has to write the result, inference and give answer to additional questions asked. Performance of this test will be observed by 1 examiner | 15 |
| 7 | OSPE: <ul style="list-style-type: none"> • Three gross – specimens • Two Instrument identification & related Questions • One observation and interpretation of test: Blood group identification by Slide method • One urine sediment/ PAP stain • One parasite • Two clinical case histories and lab findings for diagnosis | 10 |
| 8 | Viva voce : Analytical skill-Case based discussion / Interpretation to assess clinical application; based on case histories discussion on approach to diagnosis, reasoning based on test findings/ specimens /images | 30 |

| | | |
|---|---------------------------------|------------|
| | /instruments / charts/ lab data | |
| 9 | AETCOM | 5 |
| | Total | 100 |

Internal assessment (IA)

Chapter end assessment, approx 10 : 10x10 =

100 (Total 50 for Theory & 50 for OSPE/ Spotting -
to be added in term examinations theory & practical respectively)

Should include short essay questions, objective questions, ospe , practicals and practical logbook

| Exam | Theory | | Practical | |
|------------------------------------|--------------------|----------------------------|--------------------|-----------------------------|
| | Academic knowledge | Other* academic activities | Academic knowledge | Other** academic activities |
| Chapter end assessment (10x10=100) | 40 | 10 | 40 | 10 |
| Term I | 40 | 10 | 40 | 10 |
| Term II | 80 | 20 | 80 | 20 |
| Term III | 200 | | 100 | |
| Total | 400 | | 300 | |

Term I Theory: 50= (40+10 MCQ)

Practical : 50

Term II Theory: 100= (80 + 20 MCQ)

Practicals : 100

Term III : same format as university exam

As per CBME recommendations, upto 20% marks of IA should be from log book assessment.

It has been recommended that 80% of both theory and practical IA should be from Academic knowledge and rest 20% from other academic activities

*Other academic activities for Theory include: Interest in subject, Active participation, Scientific attitude, other academic activity participation (e.g. quiz, poster making, etc) and Logbook.

**Other academic activities for Practical include: Assignment completion (Practical notebook etc), Attitude, Ethical work habits, Communication and Logbook.

IA taken during the whole tenure will be added

Internal assessment: all above (Theory 400; Practicals : 300) added and IA calculated for Theory (40) and Practical (20)

Eligibility as per NMC guidelines: Learners must secure at least 50% marks of the total marks (Combined theory and Practical marks; not less than 40% marks in theory and practical separately) assigned for internal assessment.

Eligibility for appearing in examination and pass criteria as per NMC guidelines

22. Amendment to Ordinance V (2) & VII. [EC. Res. 78-7 dated 25.03.2022] regarding course curriculum prepared on competency based UG curriculum for MBBS course -2nd Professional (New Scheme).

**Revised Pharmacology Curriculum (CBME)
2020 Onwards**

CURRICULUM OF PHARMACOLOGY FOR MEDICAL STUDENTS

Preamble

Pharmacology is the science of medicines. The knowledge of the molecular basis of drug action, its therapeutic applications, the adverse effects caused by the medications, their prevention and treatment and the effects of administering two or more drugs to a patient will be learnt in the context of its clinical application and not just as facts. The use of medicines for treating patients with the required medications, at the right dose, in the right way, for the right duration and at an appropriate cost, with consideration for all

social, environmental and economic factors that may impact the therapy. The emphasis will be on clinical relevance of pharmacology knowledge.

1. VISION / GOAL

The broad goal of teaching pharmacology to under graduate students is to inculcate rational and scientific basis of therapeutics. To provide knowledge of pharmacology based on evidence and to foster the development of a highly knowledgeable, skilled and competent Indian Medical Graduates imbued with the concept of rational Pharmaco-therapeutics. Simultaneously focus is to impart requisite skills, attitudes, values and responsiveness, so that the students are able to function appropriately and effectively as doctors at the community level while being globally relevant.

2. LEARNING OBJECTIVES (overall)

- i. To equip the Indian Medical Graduate (IMG) with the knowledge of scientific basis of therapeutics and the skills of rational prescribing.
- ii. The student should acquire knowledge of the principles and application of Pharmacotherapy.
- iii. The student should be able to demonstrate appropriate use of medicines in disease with consideration to its efficacy, safety, suitability and cost for the individual and mass therapy.
- iv. The student should have an understanding of general considerations of antimicrobial resistance and antibiotic stewardship program

Access knowledge about medicines through reliable resources to enable the students to fulfill their roles of an Indian Medical Graduate as a clinician, leader, communicator, lifelong learner and professional

3. COMPETENCIES

The student during the training program should acquire the following competencies:

(a) Knowledge /Cognitive Domain

At the end of the course the learner shall be able to:

1. Understand the general principles of drug action and handling of drugs by the body in all the individuals including children, elderly, lactating and pregnant women and those having a renal and/or hepatic disease and genetic variations.

2. Prescribe drugs rationally by:
 - a. Understanding the importance of both the non pharmacological (non-drug) and pharmacological (drug) treatment
 - b. Selection of drugs based on suitability, tolerability, efficacy and cost.
3. Apply pharmacokinetic principles in clinical practice pertaining to the drugs used in commonly encountered conditions, National Health Programmes and emergency medical conditions.
4. Foresee, prevent and manage adverse drug events and drug/food/traditional medicine interactions.
5. Use antimicrobials judiciously for therapy and prophylaxis, understanding the rapid development of Antimicrobial resistance (AMR).
6. Understand and implement the concepts of essential medicines, pharmacoeconomics and evidence-based medicine for improving the community health care.
7. Describe the clinical presentation and management of common poisoning including bites and stings.
8. Understand the basic concepts of new drug development with emphasis on design and conduct of clinical trials and interpretation of their results.

(b) Skills/ Psychomotor Domain

At the end of the course the learner shall be able to perform and interpret following Skills

1. Write a correct, complete and legible prescription for common ailments including those in the National health Programmes and emergency medical conditions. And should be able to modify the prescription in case of drug interactions.
2. Calculate the drug dosage using appropriate formulae for an individual patient.
3. Administer the required dose of different drug formulations using appropriate devices and techniques (e.g injections, inhalers, transdermal patches etc.).
4. Advice and interpret the therapeutic monitoring reports of important drugs.
5. Identify, analyze and report adverse drug reactions to appropriate authorities.
6. Retrieve drug information from appropriate sources including the electronic resources.

7. Analyse critically drug promotional literature in terms of pharmacological actions of the ingredients, rational/irrational nature of the preparation, economics of the use and claims by the pharmaceutical companies.

(c) Communication affective attitude Domain

1. Effectively explain to patients, the effects and side effects of drugs, including the need for medication adherence.
2. Communicate effectively with pharmacological reasoning with health care team on rational use of drugs and improving spontaneous reporting of adverse events.
3. Motivate patients with chronic diseases to adhere to the line of management as outlined by the health care provider.
4. Demonstrate respect in interactions with peers, and other healthcare professionals.
5. Demonstrate ethical behavior and integrity in one's work.
6. Demonstrate ability to generate awareness about the use of generic drugs in patients.
7. Understand the legal and ethical aspects of prescribing drugs.
8. Acquire skills for self-directed learning to keep up with developments in the field and to continuously build to improve on skills, expertise and perpetual professional development.

4. COURSE

Course content for detailed competencies given below in Appendix 1

| PH | Competency |
|------|--|
| 1.1 | Define and describe the principles of pharmacology and pharmacotherapeutics |
| 1.2 | Describe the basis of Evidence based medicine and Therapeutic drug monitoring |
| 1.3 | Enumerate and identify drug formulations and drug delivery systems |
| 1.4 | Describe absorption, distribution, metabolism & excretion of drug |
| 1.5 | Describe general principles of mechanism of drug action |
| 1.6 | Describe principles of Pharmacovigilance & ADR reporting systems |
| 1.7 | Define, identify and describe the management of adverse drug reactions (ADR) |
| 1.8 | Identify and describe the management of drug interactions |
| 1.9 | Describe nomenclature of drugs i.e. generic, branded drug |
| 1.10 | Describe parts of a correct, complete and legible generic prescription. Identify errors in prescription and correct appropriately |
| 1.11 | Describe various routes of drug administration, eg. oral, SC, IV, IM, SL |
| 1.12 | Calculate the dosage of drugs using appropriate formulae for an individual patient, including children, elderly and patient with renal |

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| | dysfunction |
| 1.13 | Describe mechanism of action, types, doses, side effects, indications and contraindications of adrenergic and anti-adrenergic drugs |
| 1.14 | Describe mechanism of action, types, doses, side effects, indications and contraindications of cholinergic and anticholinergic drugs |
| 1.15 | Describe mechanism/s of action, types, doses, side effects, indications and contraindications of skeletal muscle relaxants |
| 1.16 | Describe mechanism/s of action, types, doses, side effects, indications and contraindications of the drugs which act by modulating autacoids, including: anti-histaminic, 5-HT modulating drugs, NSAIDs, drugs for gout, anti-rheumatic drugs, drugs for migraine |
| 1.17 | Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of local anesthetics |
| 1.18 | Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of general anesthetics, and preanesthetic medications |
| 1.19 | Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of the drugs which act on CNS, (including anxiolytics, sedatives & hypnotics, anti-psychotic, antidepressant drugs, anti-manics, opioid agonists and antagonists, drugs used for neurodegenerative disorders, anti-epileptics drugs) |
| 1.20 | Describe the effects of acute and chronic ethanol intake |
| 1.21 | Describe the symptoms and management of methanol and ethanol poisonings |
| 1.22 | Describe drugs of abuse (dependence, addiction, stimulants, depressants, psychedelics, drugs used for criminal offences) |
| 1.23 | Describe the process and mechanism of drug deaddiction |
| 1.24 | Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of the drugs affecting renal systems including diuretics, antidiuretics- vasopressin and analogues |
| 1.25 | Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of the drugs acting on blood, like anticoagulants, antiplatelets, fibrinolytics, plasma expanders |
| 1.26 | Describe mechanisms of action, types, doses, side effects, indications and contraindications of the drugs modulating the renin-angiotensin and aldosterone system |
| 1.27 | Describe the mechanisms of action, types, doses, side effects, indications and contraindications of antihypertensive drugs and drugs used in shock |
| 1.28 | Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in ischemic heart disease (stable, unstable angina and myocardial infarction), peripheral vascular disease |

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| 1.29 | Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in congestive heart failure |
| 1.30 | Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the antiarrhythmics |
| 1.31 | Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in the management of dyslipidemias |
| 1.32 | Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of drugs used in bronchial asthma and COPD |
| 1.33 | Describe the mechanism of action, types, doses, side effects, indications and contraindications of the drugs used in cough (antitussives, expectorants/ mucolytics) |
| 1.34 | Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of the drugs used as below: 1. Acid-peptic disease and GERD 2. Antiemetics and prokinetics 3. Antidiarrhoeals 4. Laxatives 5. Inflammatory Bowel Disease 6. Irritable Bowel Disorders, biliary and pancreatic diseases |
| 1.35 | Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of drugs used in hematological disorders like: 1. Drugs used in anemias 2. Colony Stimulating factors |
| 1.36 | Describe the mechanism of action, types, doses, side effects, indications and contraindications of drugs used in endocrine disorders (diabetes mellitus, thyroid disorders and osteoporosis) |
| 1.37 | Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used as sex hormones, their analogues and anterior Pituitary hormones |
| 1.38 | Describe the mechanism of action, types, doses, side effects, indications and contraindications of corticosteroids |
| 1.39 | Describe mechanism of action, types, doses, side effects, indications and contraindications the drugs used for contraception |
| 1.40 | Describe mechanism of action, types, doses, side effects, indications and contraindications of 1. Drugs used in the treatment of infertility, and 2. Drugs used in erectile dysfunction |
| 1.41 | Describe the mechanisms of action, types, doses, side effects, indications and contraindications of uterine relaxants and stimulants |

| | |
|------|--|
| 1.42 | Describe general principles of chemotherapy |
| 1.43 | Describe and discuss the causes, extent and burden of Antimicrobial Resistance (AMR). Rational use of antimicrobials including antibiotic stewardship program |
| 1.44 | Describe the first line antitubercular drugs, their mechanisms of action, side effects and doses. |
| 1.45 | Describe the drugs used in MDR and XDR Tuberculosis |
| 1.46 | Describe the mechanisms of action, types, doses, side effects, indications and contraindications of antileprotic drugs |
| 1.47 | Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in malaria, KALA-AZAR, amebiasis and intestinal helminthiasis |
| 1.48 | Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used in UTI/ STD and viral diseases including HIV |
| 1.49 | Describe mechanism of action, classes, side effects, indications and contraindications of anticancer drugs |
| 1.50 | Describe mechanisms of action, types, doses, side effects, indications and contraindications of immunomodulators and management of organ transplant rejection |
| 1.51 | Describe occupational and environmental pesticides, food adulterants, pollutants and insect repellents |
| 1.52 | Describe management of common poisoning, insecticides, common sting and bites |
| 1.53 | Describe heavy metal poisoning and chelating agents |
| 1.54 | Describe vaccines and their uses |
| 1.55 | Describe and discuss the following National Health Programmes including Immunisation, Tuberculosis, Leprosy, Malaria, HIV, Filariasis, Kala Azar, Diarrhoeal diseases, Anaemia & nutritional disorders, Blindness, Non-communicable diseases, cancer and Iodine deficiency |
| 1.56 | Describe basic aspects of Geriatric and Pediatric pharmacology |
| 1.57 | Describe drugs used in skin disorders |
| 1.58 | Describe drugs used in Ocular disorders |
| 1.59 | Describe and discuss the following: Essential medicines, Fixed dose combinations, Over the counter drugs, Herbal medicines |
| 1.60 | Describe and discuss Pharmacogenomics and Pharmacoeconomics |
| 1.61 | Describe and discuss dietary supplements and nutraceuticals |
| 1.62 | Describe and discuss antiseptics and disinfectant |
| 1.63 | Describe Drug Regulations, acts and other legal aspect |
| 1.64 | Describe overview of drug development, Phases of clinical trials and Good Clinical Practice |
| | CLINICAL PHARMACY |

| | |
|----------------------------------|--|
| 2.1 | Demonstrate understanding of the use of various dosage forms (oral/local/parenteral; solid/liquid) |
| 2.2 | Prepare oral rehydration solution from ORS packet and explain its use |
| 2.3 | Demonstrate the appropriate setting up of an intravenous drip in a simulated environment |
| 2.4 | Demonstrate the correct method of calculation of drug dosage in patients including those used in special situations |
| CLINICAL PHARMACOLOGY | |
| 3.1 | Write a rational, correct and legible generic prescription for a given condition and communicate the same to the patient |
| 3.2 | Perform and interpret a critical appraisal (audit) of a given prescription |
| 3.3 | Perform a critical evaluation of the drug promotional literature |
| 3.4 | To recognise and report an adverse drug reaction |
| 3.5 | To prepare and explain a list of P-drugs for a given case/condition |
| 3.6 | Demonstrate how to optimize interaction with pharmaceutical representative to get authentic information on drug |
| 3.7 | Prepare a list of essential medicines for a healthcare facility |
| 3.8 | Communicate effectively with a patient on the proper use of prescribed medication |
| EXPERIMENTAL PHARMACOLOGY | |
| 4.1 | Administer drugs through various routes in a simulated environment using mannequins |
| 4.2 | Demonstrate the effects of drugs on blood pressure (vasopressor and vaso-depressors with appropriate blockers) using computer aided learning |
| COMMUNICATION | |
| 5.1 | Communicate with the patient with empathy and ethics on all aspects of drug use |
| 5.2 | Communicate with the patient regarding optimal use of a) drug therapy, b) devices and c) storage of medicines |
| 5.3 | Motivate patients with chronic diseases to adhere to the prescribed management by the health care provider |
| 5.4 | Explain to the patient the relationship between cost of treatment and patient compliance |
| 5.5 | Demonstrate an understanding of the caution in prescribing drugs likely to produce dependence and recommend the line of management |
| 5.6 | Demonstrate ability to educate public & patients about various aspects of drug use including antimicrobials as prescription drugs, drug dependence and OTC drugs |
| 5.7 | Demonstrate an understanding of the legal and ethical aspects of prescribing drugs |

RECOMMENDED HOURS of Pharmacology Teaching

| | |
|------------------------|-------------|
| Total | - 230 hours |
| Lectures | - 80 hours |
| Practicals | - 138 hours |
| Self Directed Learning | - 12 hours |

5. TEACHING LEARNING METHODS

Teaching Learning methods used would include both for large group teaching and small group teaching. Approximately one third of time will be for didactic lectures.

Large group -Any instructional large group method including traditional lecture and interactive lecture.

Small Group – Any instructional method involving small groups of students in an appropriate learning context. These topics included are those where more intensive and interactive learning sessions are required.

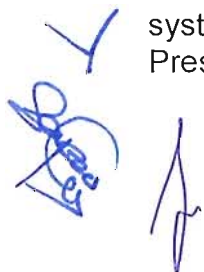
Will be as follows

-Demonstration-Observation-Assistance-Performance (DOAP) - Sessions: A practical session that allows the student to observe a demonstration, assist the performer, perform in a simulated environment, perform under supervision or perform independently.

Demonstration of different routes of drug administration i.e. Intravenous, Intramuscular, subcutaneous, Inhalation, Drug formulation exercises (Clinical Pharmacy).

- Problem based learning for Small Group Discussions - Drug nomenclature, Home remedies and house hold measures, Fixed dose drug combinations, Prescription writing, Rational Use of Medicines, Drug Advertisement, Drug dose calculation, Drug interaction, Drug food interactions and interaction of drugs of modern & traditional medicines, Antimicrobial Stewardship Program & Rational Use of antimicrobials, Essential Medicine concept, P Medicine exercises for treatment of common disease conditions, Monitoring drug therapy, Ethics in Human Volunteer Experiment, Adverse Drug Reaction (ADR) form filling exercise.

-Computer Assisted Learning - Experiments showing effects of drugs on physiological systems. For example Effect of drugs on Rabbit Eye, Effect of drugs on Dog Blood Pressure, Effect of drugs on Frog Rectus abdominis muscle.



-Student Presentations - Evolution of Medicine and Pharmacology, Sources of Medicines, Drug formulations, Pharmacological basis of House hold remedies, Indian Systems of Medicines , Systemic Pharmacology etc.

-Preparation of Charts and Models - Evolution of Medicine and Pharmacology, House hold remedies, Drug dosage forms.

-Clinical Exposure - Clinical case discussions on common disease conditions, ADR monitoring and reporting.

-Self Directed Learning - A process in which individuals take the initiative, with or without the help of others in diagnosing their learning needs, formulating learning goals, identifying human and material sources for learning, choosing and implementing appropriate learning methods.

Preparation for seminars, projects, student presentations on areas of interest and relevant to learning of Pharmacology.

6. ASSESSMENT

a) Formative Assessment: Formative assessment shall be done periodically throughout the course.

b) Internal Assessment:

i) No less than three internal assessment exams shall be conducted during the course.

ii) **Certifiable competencies:** Achievement of certifiable competencies would also be recorded in logbooks. The student must have completed the required certifiable competencies and completed the log book to be eligible for appearing at the final university examination. (Appendix 2: List of Certifiable competencies)

iii) **Log Book:** Log book is to be maintained to record all activities like Drug formulations, Computer Assisted Learning exercises, Experimental Pharmacology, Clinical Pharmacology and other academic activities. It has to be submitted to the department regularly and would be assessed regularly (Appendix 3).

Internal assessment will be calculated for Theory (40) marks & Practical (20) marks.

50% combined in theory and practical (not less than 40% in each) for eligibility for appearing for University Examinations.

c) Summative theory practical and Viva voice pattern with distribution of marks :
At the end of the course a final examination will be conducted by the University.

University (Professional) examination: There will be a Theory and Practical + Viva examination .

i) THEORY PAPERS

There shall be two theory papers.

Each paper shall be of 03 hours duration and of 100 marks.

THEORY PAPER - PHARMACOLOGY

Theory (200 marks) (Paper I – 100, Paper II – 100)

PAPER – I (100 Marks)

Topics: General Pharmacology, Drugs acting on Autonomic nervous system, Drugs acting on Central nervous system, Drugs acting on Peripheral nervous system, Drugs acting on Cardio vascular system, Drugs acting on Kidney, Drugs acting on Respiratory system.

PAPER – II (100 Marks)

Topics: Chemotherapy of infective, parasitic disorders and malignancy, Drugs acting on Reproductive system, Drugs related to Endocrinal system, Drugs acting on Gastrointestinal system, skin and mucous membrane, Autacoids, Drugs affecting Blood and blood formation, Vitamins, Antiseptics and disinfectant, Diagnostic agents, Chelating agents, Vaccines and sera, Environmental pollutants.

THEORY QUESTION PAPER FORMAT

Each paper will have three Parts. Part I of 20 marks, & Part II of 40 marks each. Each part will have two questions

Each paper 100 marks

Part I

20 marks

Objective type questions

- Q1. Multiple type questions of inferential, reasoning type (5 x 2 marks=10)
Q2. State True or False / Fill in the blanks, Match the following (5 x 2 marks =10)
Mechanism of action/Therapeutic uses/ adverse effects of drugs,
Drug of choice type of questions

Part II

40 marks

- Q 3. Explain why (rationale of) giving suitable examples (5 x 4 marks= 20 marks)
Q 4. a)Long structured question based on a Case scenario (10 marks)
b)Short notes (2 x 5 =10 marks)

Part III

40 marks



- Q5. Discuss the therapeutic status of a medicine (4 x 5 marks = 20 marks)
 Q6. Discuss giving the therapeutic goals the drug treatment of a medical condition (2 x 10 marks= 20 marks)
-

ii) PRACTICALS & VIVA

Total marks -100 marks

Practical -70 marks

Viva-voce 30 marks

Practical (70 marks)

- | | |
|------------------------------------|----------|
| 1. Clinical Pharmacy | 20 marks |
| 2. Clinical Pharmacology | 30 marks |
| 3. Attitude, Ethics ,Communication | 10 marks |
| 4. Experimental Pharmacology | 10 marks |

7. RECOMMENDED READING

(A) TEXT

1. Essentials of Medical Pharmacology by K.D. Tripathi latest ed. Jaypee brothers, Medical Publishers, India.
2. Sharma and Sharma's Principles of Pharmacology latest ed. by H. L. Sharma and K. K. Sharma Publishers: Paras Medical Publishers, New Delhi
3. Basic & Clinical Pharmacology Bertram G. Katzung, Susan B. Masters, Anthony J. Trevor, latest ed. McGraw-Hill Companies.

(B) REFERENCE BOOKS

1. Lippincott's Illustrated Reviews : Pharmacology : by Mary J Mycek, Richard A Harvey, Pamela C Champe latest ed Lippincott Williams & Wilkins.
2. Goodman & Gilman's the Pharmacological Basis of Therapeutics by Joel Griffith Hardman, Alfred Goodman Gilman, Lee Limbird, Theodore W. Rall latest ed, McGraw-Hill Professional.

(C) AETCOM module

1. Johnson AR, Siegler M, Winslade WJ. Clinical Ethics: A Practical Approach to Ethical Decisions in Clinical Medicine. New York: Mc Graw Hill Inc, 2015 (latest edition).
2. Timms O. Biomedical Ethics. Elsevier India, 2019 (latest edition)

8. ELECTIVES

May be offered to students in the subject. A student has a choice of four weeks of elective posting after 3rd MBBS part I Professional examination. The departments can offer options for a student to do the same in Pharmacology.

REFERENCES

1. Syllabus Of Pharmacology For Undergraduate Medical Students. <https://www.fmsh.ac.in/curriculum/Curriculum%20for%20UG%20Pharmacology.pdf>
2. Assessment Module for Undergraduate Medical Education 2019. [https://www.nmc.org.in/wp-content/uploads/2020/01/Module Competence based 02.09.2019.pdf](https://www.nmc.org.in/wp-content/uploads/2020/01/Module%20Competence%20based%2002.09.2019.pdf)
3. Competency Based Undergraduate Curriculum For The Indian Medical Graduate 2018. <https://www.nmc.org.in/wp-content/uploads/2020/01/UG-Curriculum-Vol-II.pdf>

Appendix 1

(I) Concepts of General and Clinical Pharmacology

1. Introduction: definition, historical perspective, branches and scope of the subject of pharmacology and its relation with other medical disciplines.
2. Nature and sources of Drugs, Drug nomenclature and dosage forms.
3. Routes of drugs' administration; advantages and disadvantages of different routes.
4. Pharmacokinetic considerations: drug absorption, distribution, bio transformations and excretion.
5. Pharmacokinetic concepts of bioavailability, apparent volume of distribution (aVd), half life ($t_{1/2}$), and clearance (CL) that are used to decide the doses and rational dosing during the drug treatment.
6. Pharmacodynamics; site and mechanism of drug action, drug receptors and receptor regulation, concepts of agonists, antagonists, partial agonist and inverse agonist drugs
7. Quantitative aspect of drug action: analysis of dose response curve and therapeutic index (safety index).
8. Factors affecting drug action and doses, how to prolong or shorten the drug action and effects.
9. Drug interactions and concept of pharmacogenomics/-genetics in drug action, effects and ADRs.
10. Adverse drug reactions (ADRs) and role of pharmacovigilance activity in ADR monitoring.
11. Concept of evidence-based medicine, essential medicines, pharmacoeconomics, Pdrugs and rational prescribing.
12. Development of new drugs : pre-clinical and clinical phases of drug evaluation.
13. Scope and relevance of Clinical Pharmacology.
14. Essential medicine, rationality of fixed dose combinations.
15. Drug regulation acts and other legal aspects.

(b) Systemic Pharmacology – Drug oriented teaching

(Here a core information about drugs is to be given that should include pharmacological actions, mechanism of action, indications, contraindications, side effects, drug interactions, precautions etc.)

(II) Drugs Affecting Autonomic Nervous System (ANS)

- 16. Introduction to Pharmacology of ANS
- 17. Cholinergic drugs: cholinceptor agonist and cholinesterase inhibiting drugs
- 18. Anticholinergic drugs: cholinceptor blocking agents
- 19. Adrenergic drugs: adrenoceptor agonist and sympathomimetic drugs
- 20 Anti-adrenergic drugs: adrenoceptor antagonists and sympatholytic agents

(III) Drugs Affecting Peripheral Nervous System (PNS)

- 21. Local anaesthetics
- 22. Skeletal muscle relaxants

(IV) Drugs Affecting Cardiovascular System (CVS)

- 23. Drugs affecting vascular tone and volume of circulation, renin angiotensin system and other mechanisms affecting this system
- 24. Antihypertensive drugs
- 25. Anti-anginal drugs, management of Myocardial Infarction
- 26. Drugs for heart failure
- 27. Anti-arrythmic agents
- 28. Anti-dyslipidemic agents, drugs used in peripheral vascular disease
- 29. Nitric oxide donors and inhibitors and basic concepts of treatment of shock

(V) Drugs Affecting Autacoids, Inflammation and Gout

- 30. Histamine, serotonin & their antagonists, treatment of migraine
- 31. Prostaglandins, Leukotrienes, Platelet activating factor
- 32. Non Steroidal Anti inflammatory Drugs
- 34. Drug treatment of gout, rheumatoid arthritis & other autoimmune diseases

(VI) Drugs Affecting Kidney Function

- 35. Diuretics
- 36. Antidiuretics

(VII) Drugs Affecting Respiratory System

- 37. Antitussives, expectorants, mucolytics
- 38. Drug treatment of bronchial asthma, Chronic Obstructive Pulmonary disease

(VIII) Drugs Affecting Gastro-intestinal System

- 39. Drugs for gastric acidity, peptic ulcer & Gastro esophageal reflux disease

- 40. Antiemetic and prokinetic agents
- 41. Drugs for constipation and Inflammatory Bowel Disease
- 42. Antidiarrhoeal agents

(IX) Drugs Acting on Blood

- 43. Agents used to treat anemias and haematopoietic growth factors
- 44. Coagulants and anticoagulants
- 45. Antiplatelet drugs
- 46. Fibrinolytic, antifibrinolytic, plasma expanders

(X) Drugs Affecting Central Nervous system

- 47. Introduction and basic concepts of drugs affecting CNS activity: Neurotransmitters and their pathways and important sites of Central Nervous System effect of drugs
- 48. Sedative hypnotic drugs
- 49. General anaesthetics with preanaesthetic medications
- 50. Antiepileptic drugs
- 51. Antipsychotic drugs
- 52. Antianxiety drugs
- 53. Antidepressant and antimaniac drugs
- 54. Opioid analgesic and antagonists
- 55. Antiparkinsonian drugs and drugs for other neurodegenerative and movement disorders
- 56. Pharmacology of ethyl alcohol and other alcohols
- 57. Pharmacology of CNS stimulants, psychomimetic drugs, drug dependence and substance abuse

(XI) Drugs Affecting Endocrine System and its Diseases

- 58. Pharmacology of pituitary and hypothalamic hormones
- 59. Thyroid hormones and antithyroid drugs
- 60. Estrogen, progesterone and inhibitors
- 61. Oral contraceptives & Hormone replacement therapy
- 62. Androgen
- 63. Drugs for diabetes mellitus: Insulin and oral antidiabetic agents
- 65. Corticosteroids
- 66. Parathyroid hormones and drugs affecting calcium balance
- 67. Drugs acting on uterus
- 68. Drug treatment for infertility and erectile dysfunctions

(XII) Pharmacology of Chemotherapeutic Agents

- 69. Introduction and basic principles of chemotherapy of infection, infestation and neoplastic diseases and concepts of resistance to chemotherapeutic agents
- 70. Sulfonamides
- 71. Quinolones

72. Beta lactam antibiotics
73. Aminoglycosides
74. Macrolides and ketolides
75. Tetracycline and chloramphenicol
76. Oxazolidinones, streptogramin and other antibiotics
77. Antimycobacterial drugs, antitubercular drugs; treatment of MDR and XDR tuberculosis
78. Antileprosy drugs
79. Antifungal drugs
80. Antimalarial drugs
81. Antiamoebic and other antiprotozoal drugs
82. Drugs used in filariasis and kalaazar
83. Anthelmintic agents
84. Antiviral, anti-AIDS drugs
85. Chemotherapy of Urinary tract infection & Sexually transmitted diseases
86. Basic principles of cancer chemotherapy
- (XIII) Immunopharmacology**
87. Vaccines, immunomodulators and treatment of transplant rejection disorders
- (XIV) Miscellaneous Topics**
88. Drugs acting on skin and mucous membrane
89. Vitamins, nutraceuticals and probiotics
90. Pharmacology of Diagnostic agents
91. Paediatric pharmacology
92. Geriatric pharmacology
93. Pharmacology of chelating agents
94. Indian Systems of Medicines

Appendix 2. Certifiable Competencies

| | Certifiable competencies | Number required to certify |
|-----|--|-----------------------------------|
| 3.1 | Write a rational, correct and legible generic prescription for a given condition and communicate the same to the patient | 5 |
| 3.2 | Perform and interpret a critical appraisal (audit) of a given prescription | 3 |
| 3.3 | Perform a critical evaluation of the drug promotional literature | 3 |
| 3.5 | To prepare and explain a list of P-drugs for a given case/condition | 3 |

Appendix 3

M.B.B.S. STUDENT'S LOG BOOK (PHARMACOLOGY)

GENERAL INSTRUCTIONS

1. This logbook is a record of the academic/co-curricular activities in Pharmacology of the designated student.
2. The student is responsible for getting the entries in the logbook verified by the faculty in-charge in the next class.
3. Entries in the Logbook will reflect the activities undertaken in the department of Pharmacology during your course.
4. The student has to get this logbook verified by the mentor and the Head of the department before submitting the application of the University examination.

The log book must have

- 1) Details of Students
 - Name
 - Roll Number
- 2) Details of attendance
- 3) Details of all skill based exercises done
- 4) Details of Certifiable skills
- 5) Details of group discussions/ presentations
- 6) Details of any project work done
- 7) Any other Cocurricular activity related to the subject

A format for **Certifiable skill**

Skill: PH 3.1 Write a rational, correct and legible generic prescription for a given condition and communicate the same to the patient

Domain: Skills

Level of competency: Perform

Core: Yes

The student has to perform this activity- Present **five** prescription for common diseases for certification.

| Exercise name | Date | Completed | | Rating | | |
|---------------|------|-----------|----|--------------------|-------------------|---------------------|
| | | Yes | No | Below expectations | Meet expectations | Exceed expectations |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

LOG BOOK CERTIFICATE

This is to certify that the candidate Ms _____ Reg No. _____, admitted in the year _____ in the _____ Medical college, New Delhi, has satisfactorily completed / has not completed all assignments / requirements mentioned in this logbook for Second year MBBS course in the subject of Pharmacology during the period from _____ to _____. She/ is/is not eligible to appear for the summative (University) assessment as on the date given below.

Signature of Faculty Name and Designation

Countersigned by Head of the Department

23. Amendment to Ordinance VI (Clause M. Evaluation and Assessment (19) vide E.C Res. No. 78-9/- dated 25.03.2022]

| Existing | | | | | Amended | | | | |
|--|---------------------|---------------------|------------------|--|---|---------------------|---------------------|------------------|--|
| Recommendation | Examiner 1 | Examiner 2 | Examiner 3 | Action suggested | Recommendation | Examiner 1 | Examiner 2 | Examiner 3 | Action suggested |
| Event 1 | Accept | Accept | Accept | Viva-Voce | Event 1 | Accept | Accept | Accept | Viva-Voce |
| Event 2 | Accept | Accept | Minor Correction | Revise thesis in Consultation with Supervisor followed by Viva-voce | Event 2 | Accept | Accept | Minor Correction | Revise thesis in consultation with supervisor followed by Viva-Voce |
| Event 3 | Accept/Resubmission | Accept/Resubmission | Resubmission | Resubmission within one year after incorporating suggestion. Thesis to be sent to all examiners again. | Event 3 | Accept/Resubmission | Resubmission | Resubmission | Resubmission within one year after incorporating suggestion. Thesis to be sent to all examiners again. |
| Event 4 | Accept | Accept | Reject | Thesis to be sent to fourth examiner whose recommendation shall be final and binding | Event 4 | Accept | Accept | Resubmission | Thesis to be sent to fourth examiner whose recommendation shall be final. If 4 th examiner recommends for revision, thesis will be sent to same examiner after revision. Resubmission within one year after incorporating suggestion. |
| Event 5 | Accept/Resubmission | Reject | Reject | Reject and cancel registration | Event 5 | Accept | Accept | Reject | Thesis to be sent to fourth examiner. If 4 th examiner rejected the thesis, registration of the student shall be closed/ cancelled. |
| For any cases that need special consideration, a special Committee consisting of the Vice-Chancellor/ Pro-Vice-Chancellor, Chairperson of Research Council, Dean of Examination, Chairman of the concerned Board of Research Studies, Head of the concerned department, the Supervisor/s of the candidate, and three Professors of the University of Delhi nominated by the Vice-Chancellor may be referred to for a decision in the matter. | | | | | Event 6 | Accept/Resubmission | Reject/Resubmission | Reject | Reject and cancel registration |
| | | | | | For any cases that need special consideration, a special committee consisting of the Vice-Chancellor, Dean of Examination, Dean (Academic), Controller of Examination (If any) may be referred to for a decision in the matter. | | | | |

24. Amendment to Ordinance VI [E.C Res. No. 18-3/ dated 18.08.2022] regarding modification in the composition of Board of Research Studies (BRS), Faculty of Technology in the existing Ordinance VI.

| Existing | Amended |
|---|--|
| a) Dean of the Faculty – Chairperson | a) No Change |
| b) One Professor (nominee of the Vice-Chancellor) | b) No Change |
| c) All Head of the Department | c) All Heads of the Department/ All Directors of the Schools |
| d) One Professor from each Department | d) One Professor from each Department/ One Professor from each School of the IoE or its participating Departments to be nominated by the Vice-Chancellor |
| e) One Associate Professor from each Department | e) One Associate Professor from each Department/ One Associate Professor from each School of the IoE or its participating Departments to be nominated by the Vice-Chancellor |
| f) One Assistant Professor from each Department | f) One Assistant Professor from each Department/ One Assistant Professor from each School of the IoE or its participating Departments to be nominated by the Vice-Chancellor |
| g) Dean, Post-Graduate Studies | g) No Change |

25. Amendment to Ordinance XX-P (Delhi School of Translational Affairs) [E.C Res. No. 18-4/ dated 18.08.2022] regarding change in clause 2.1.3 (v) –functions of the Governing Body.

| Existing | Amended |
|--|---|
| Clause 2.1.3 - Functions of the Governing Body | Clause 2.1.3- Functions of the Governing Body |

| | |
|--|---|
| (v) Approve academic proposals, programmes, outreach activities and research projects; | (v) Approve academic proposals, programmes, outreach activities and research projects; Affiliating the degree programmes of Schools under the Faculty of Technology offering various Degree/ Diploma/ Certificate Courses. The affiliation shall be restricted to the academic programmers only, while the administrative and financial structure of the Schools under the IoE and its Governing Council shall remain unchanged. |
|--|---|

26 Amendment to Ordinance XX-R (Delhi School of Public Policy and Governance) [E.C Res. No. 18-4/ dated 18.08.2022] regarding change in clause 2.1.3 (iv) –functions of the Governing Body.

| Existing | Amended |
|---|--|
| Clause 2.1.3 Functions of the Governing Body (iv) Approve academic proposals, programmes, outreach activities and research projects; | Clause 2.1.3 Functions of the Governing Body (iv) Approve academic proposals, programmes, outreach activities and research projects; Affiliating the degree programmes of Schools under the Faculty of Technology offering various Degree/ Diploma/ Certificate Courses. The affiliation shall be restricted to the academic programmers only, while the administrative and financial structure of the Schools under the IoE and its Governing Council shall remain unchanged. |

27. Amendment to Ordinance XX-S (Delhi School of Public Health) [E.C Res. No. 18-4/ dated 18.08.2022] regarding change in clause 2.1.3 (iv) –functions of the Governing Body.

| Existing | Amended |
|---|--|
| Clause 2.1.3 Functions of the Governing Body (iv) Approve academic proposals, programmes, outreach activities and research projects; | Clause 2.1.3 Functions of the Governing Body (iv) Approve academic proposals, programmes, outreach activities and research projects; Affiliating the degree programmes of Schools under the Faculty of Technology offering various Degree/ Diploma/ Certificate Courses. The affiliation shall be restricted to the academic programmers only, while the administrative and financial structure of the Schools under the IoE and its Governing Council shall remain unchanged. |

- 28. Amendment to Ordinance XX-T (Delhi School of Climate Change and Sustainability)** [E.C Res. No. 18-4/ dated 18.08.2022] regarding change in clause 2.1.3 (iv) –functions of the Governing Body.

| Existing | Amended |
|--|---|
| <p>Clause 2.1.3 Functions of the Governing Body</p> <p>(iv) Approve academic proposals, programmes, outreach activities and research projects;</p> | <p>Clause 2.1.3 Functions of the Governing Body</p> <p>(iv) Approve academic proposals, programmes, outreach activities and research projects;</p> <p>Affiliating the degree programmes of Schools under the Faculty of Technology offering various Degree/ Diploma/ Certificate Courses. The affiliation shall be restricted to the academic programmers only, while the administrative and financial structure of the Schools under the IoE and its Governing Council shall remain unchanged.</p> |

- 29. Amendment to Ordinance XX-U (Delhi School of Skill Enhancement & Entrepreneurship Development)** [E.C Res. No. 18-4/ dated 18.08.2022] regarding change in clause 2.1.3 (iv) –functions of the Governing Body.

| Existing | Amended |
|--|---|
| <p>Clause 2.1.3 Functions of the Governing Body</p> <p>(iv) Approve academic proposals, programmes, outreach activities and research projects;</p> | <p>Clause 2.1.3 Functions of the Governing Body</p> <p>(iv) Approve academic proposals, programmes, outreach activities and research projects;</p> <p>Affiliating the degree programmes of Schools under the Faculty of Technology offering various Degree/ Diploma/ Certificate Courses. The affiliation shall be restricted to the academic programmers only, while the administrative and financial structure of the Schools under the IoE and its Governing Council shall remain unchanged.</p> |

- 30. Amendment to Ordinance XX-W (Delhi School of Analytics)** [E.C Res. No. 18-4/ dated 18.08.2022] regarding change in clause 1.1.3 (iii) –functions of the Governing Body.

| Existing | Amended |
|---|---|
| <p>Clause 1.1.3 Functions of the Governing Body</p> <p>(iii) Approve academic proposals, programmes, outreach activities and research projects;</p> | <p>Clause 1.1.3 Functions of the Governing Body</p> <p>(iii) Approve academic proposals, programmes, outreach activities and research projects;</p> <p>Affiliating the degree programmes of Schools under the Faculty of Technology offering various Degree/ Diploma/</p> |

| | |
|--|--|
| | Certificate Courses. The affiliation shall be restricted to the academic programmers only, while the administrative and financial structure of the Schools under the IoE and its Governing Council shall remain unchanged. |
|--|--|

31. Amendment to Ordinance VI [E.C Res. No. 18-5/ dated 18.08.2022] regarding addition of composition of Department Research Committee (DRC), School of Institute of Eminence in the existing Ordinance VI.

- a) Director of the School - Chairperson
- b) Nominee of the Vice-Chancellor
- c) Four Professors from the School of IoE or its participating Departments to be nominated by the Vice Chancellor
- d) Two Associate Professors from the School of the IoE or its participating Departments to be nominated by the Vice-Chancellor.
- e) Two Assistant Professors from the School of IoE or its participating Departments to be nominated by the Vice-Chancellor.

32. Amendment to Ordinance VIII-E [E.C Res. No. 18-10/ dated 18.08.2022] regarding implementation of continuous assessment (internal Assessment) in the programmes being offered by the Campus of Open Learning through Open and Distance Learning mode.

| Existing | Amended |
|---|--|
| Ordinance VIII-E : Internal Assessment Ord.VIII-E (1) (i) | Ordinance VIII-E : Internal Assessment Ord.VIII-E (1) (i) |
| The scheme for Internal Assessment shall be followed in the regular stream only, with exclusions as per the Appendix, and shall be applicable to the students admitted from the academic session 2003-2004 onwards (i.e. to begin with for the first year students) in both undergraduate and post-graduate degree courses. This scheme of Internal Assessment shall not be applicable to the School of Correspondence Courses and Continuing Education, Non-Collegiate Women's Education Board and Non-Formal Education Cell (formerly External Candidates Cell). The specific Ordinances pertaining to schemes of examinations of various | The scheme for Internal Assessment shall be followed in the regular stream only, with exclusions as per the Appendix, and shall be applicable to the students admitted from the academic session 2003-2004 onwards (i.e. to begin with for the first year students) in both undergraduate and post-graduate degree courses. This scheme of Internal Assessment shall also be applicable to the courses offered by the Campus of Open Learning through Open and Distance Learning mode from the academic session 2022-23 (i.e. to begin with for the first year students) and Non-Collegiate Women's Education Board. The specific Ordinances pertaining to schemes of examinations of various courses shall stand |

| | |
|--|--|
| courses shall stand amended, mutatis mutandis, to the extent of internal assessment as laid down in this Ordinance, subject to exclusions referred to above. | amended, mutatis mutandis, to the extent of internal assessment as laid down in this Ordinance, subject to exclusions referred to above. |
|--|--|

33. Amendment to Ordinance XXVII- Scholarships, Fellowships, Medals and Prizes [E.C Res. No. 18-8/ dated 18.08.2022] regarding institution of Scholarship "Jagdev Memorial Scholarship" for L.L.B. Course

Add the following Scholarship to the existing Ordinance XXVIII at S. No.134

134. JAGDEV MEMORIAL SCHOLARSHIP

1. There shall be three scholarships to be known as "Jagdev Memorial Scholarship" of the value of about Rs. 14000/- p.a to be awarded every year to one student each from Campus Law Center, Law Center-I and Law Center-II, out of the annual income accrued from the endowment of Rs. 15,00,000/- (Rupees Fifteen Lakhs) donated by Mrs. Renu Krishan Jagdev w/o Sh. Jagdev, Flat No. 13, Sweet Home Society, Rohini, Delhi-110085.
2. 50% of the accrued interest income will be added up to Endowment Fund each year and 50% of the income shall be distributed as three scholarships of equal value after deducting 10% administrative cost. Accordingly, the value of each scholarships works out as Rs. 14, 000/- per year.
3. The Scholarship will be on the merit cum-need basis.
4. The awardee will be the topper of EWS category in LLB I, III and V semester result of CLC, LC-I and LC-II.
5. The Scholarship amount of Rs. 4000 will be released to the awardee at the declaration of result of I and III Semester and the rest of the amount around Rs. 6000 will be remitted at the declaration of V semester.
6. The Scholarship amount will be remitted by the University directly into the account of the awardee through RTGS etc.
7. The certificate of scholarship will be given to the awardee in the annual convocation in the presence of the Donor.
8. The Scholarship shall be awarded by the University on the recommendation of a Department Selection Committee (Scholarship) consisting of the following:
 - (i) The Dean, Faculty of Law
 - (ii) Two Senior Teachers of the Faculty – one professor and one associate professor.
9. No student shall be eligible for the award of this scholarship if:
 - (i) She/ he already holds a scholarship awarded by this University or any other University or the Central Government or any State Government or Private Body etc.
 - (ii) She/ he has been convicted in any offence of moral turpitude.
 - (iii) She/ he does not bear good moral character
10. The unutilized amount in any year shall be added to the corpus of the Endowment fund.

34. Amendment to Ordinance XXVII- Scholarships, Fellowships, Medals and Prizes [E.C Res. No. 18-7/ dated 18.08.2022] regarding "Sneh Rana Scholarship and P.S Rana Scholarship".

| Existing | Amended |
|--|--|
| <p>Sneh Rana Scholarship and P.S Rana Scholarship 132.</p> <p>1. There shall be three scholarships for the female students of M.A./M.Sc. Mathematics (one for previous & two for final year students) in Delhi University in the name of "Sneh Rana Scholarship" and three scholarships for the male students of M.A./M.Sc. Mathematics (one for previous & two for final year students) in the name of "P.S. Rana Scholarship" on the basis of merit cum financial needs of the value of ₹14000/- p.a. each out of the annual income accrued from the endowment fund of ₹26,00,000/- (Twenty Six Lacs) donated by Mr. P.S. Rana, BA – 6 A, Ashok Vihar – I, Delhi – 110052.</p> <p>2. The Scholarships shall be awarded to six students (two for previous and four for final year) pursuing M.A./M.Sc. (Mathematics).</p> <p>3 to 9 : No change</p> | <p>Sneh Rana Scholarship and P.S.Rana Scholarship 132.</p> <p>1. There shall be four scholarships for the female students of M.A./M.Sc. Mathematics (two for previous & two for final year students) in Delhi University in the name of "Sneh Rana Scholarship" and four scholarships for the male students of M.A./M.Sc. Mathematics (two for previous & two for final year students) in the name of "P.S. Rana Scholarship" in the Department of Mathematics on the basis of merit cum financial needs of the value of ₹15000/- p.a. each out of the annual income accrued from the endowment fund of ₹36,00,000/- (Twenty Six Lacs) donated by Mr. P.S. Rana, BA – 6 A, Ashok Vihar – I, Delhi – 110052.</p> <p>2. The Scholarships shall be awarded to eight students (four for previous and four for final year) pursuing M.A./M.Sc. (Mathematics).</p> <p>3 to 9 : No Change</p> |

35. Amendment to Appendix -II-A to the Ordinance V [2-A] of the Ordinances of the University vide EC Resolution 38-1-14 dated 08.12.2022 regarding Syllabi of 1st & 2nd Semester of 5 Year Integrated Programme in Journalism under Delhi School of Journalism

Add the following:

Syllabi of Semester-I and Semester-II of Five Year Integrated Programme in Journalism based on Undergraduate Curriculum Framework -2022 under Delhi School of Journalism to be implemented from the Academic Year 2022-23.

**CATEGORY I
(Semester-I)**

DISCIPLINE SPECIFIC CORE COURSE – DSC A1: MEDIA & COMMUNICATION

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Credits Code | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------------|-----------------------------------|----------|------------------------|-------------------------|--|
| | Lecture | Tutorial | Practical/ Practice | | |
| Media & 4 Communication | 3 | 0 | 1 | Class XII Pass | NIL |

Learning Objectives

The course introduces the students to communication theories and models, and use of different types of media.

Learning Outcomes

Students will understand the elements and processes of communication and thereby improving their own communication skills. This will help them to explore myriad career options in communication and journalism.

SYLLABUS OF DSC A1 – Media & Communication

Unit 1 – Basics of Communication (12 Hours)

1. Communication: Definition, Elements, Principles, Processes

2. Types of Communication: Verbal and Non- Verbal; Formal and Informal; Mediated and Non- Mediated
3. Forms of Communication: Intrapersonal, Interpersonal, Group, Public and Mass Communication
4. Communication Models: Aristotle, Shannon and Weaver, Berlo, Wilbur Schramm, Harold and Lasswell; and Non-Linear – Osgood and Schramm, Westley and McLean, Interactive and Transactional Models

Unit 2 – Understanding Media (12 Hours)

1. Types of Media – Folk, Print, Broadcast, Film, and New Media
2. Functions of media – Inform, Educate, Entertain etc.
3. Alternative and Community media - Community Radio, Participatory Video and Community Newspapers
4. Critical Media Literacy – Douglas Kellner
5. Role of Media in Democracy – Media as the Watchdog and the Fourth Estate/Pillar of Democracy
6. Communication and Media in the Internet Age: Changing Trends – Speed, Volume, Interactivity, Virtuality and Virality.

Unit 3 – Mass Communication Theories and Models (12 Hours)

1. Normative Theories of the Press
2. Communication Models - Western Models, Transmission, Ritual, Publicity, Reception
3. Indian models of communication
4. Media and Public Sphere – Jurgen Habermas

Unit 4 - Mass Communication and Effects Paradigm (09 Hours)

1. Direct Effects – Hypodermic Needle/ Magic Bullet Theory, Propaganda, and Mass Society Theory.
2. Limited Effects – Individual Difference, Cognitive Dissonance and Two Step Flow of Communication - Personal Influence Theory
3. Cultural Effects: Agenda Setting Theory, Spiral of Silence and Cultivation Analysis
4. Critique of the Effects Paradigm and Emergence of Alternative Paradigms – Uses and Gratification Theory

Practical – 30 Hours

Suggested Readings

1. Denis McQuail, McQuail's Mass Communication Theory (Sixth Edition), New Delhi: Sage Publishers, 2010.
2. Gupta, Bharat, Dramatic Concepts, Greek & Indian: A Study of the Poetics and the Nāṭyaśāstra, New Delhi: D.K.Printworld, 1994.
3. Howley. K. Understanding Community Media, London: SAGE Publications, 2012.
4. Fiske, John. Introduction to Communication Studies. New York: Routledge, 1982.
5. Kellner, D., & Share, J., Critical media literacy, democracy, and the reconstruction of education. In D. Macedo & S.R. Steinberg (Eds.), Media literacy: A Reader. New York: Peter Lang Publishing, 2007. (Page nos. 3-23).
6. Kevin Williams, Understanding Media Theory. New York: Bloomsbury Academic, 2003. (Page nos.168-188)
7. Keval J. Kumar, Mass Communication in India, New Delhi: JIACO, 1994.

8. Melvin L. DeFleur, Margaret H. DeFleur, Mass Communication Theories: Explaining Origins, Processes, and Effects. New York: Routledge, 2016.
9. Michael Ruffner and Michael Burgoon, Interpersonal Communication, New York: Holt, Rinehart and Winston, 1981. (Page nos. 21-34; 59-72)
10. Stanley J. Baran and Dennis K. Davis, Introduction to Mass Communication Theory (Fifth Edition). New Delhi: CENGAGE Learning, 2012.
11. Uma Narula, Handbook of Communication: Models, Perspectives and Strategies, New Delhi: Atlantic Publications, 2006.

DISCIPLINE SPECIFIC CORE COURSE – DSC B1: REPORTING & EDITING

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------------|----------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Reporting & Editing | 4 | 3 | 0 | 1 | Class XII Pass | NIL |

Learning Objectives

The course will enable the students to understand various aspects of print journalism, and organizational structure of print media enterprises and how to write for the media.

Learning Outcomes

The course will enhance the reporting and editing skills of the students and they will become proficient in news gathering techniques.

SYLLABUS OF DSC B1 – Reporting & Editing

Unit 1 – Understanding News (12 Hours)

1. Ingredients of news
2. News: meaning, definition, nature
3. News as a process: from the event to the reader (how news is carried from event to reader)
Hard news vs. Soft news, basic components of a news story
4. Attribution, objectivity, embargo, verification, balance and fairness, brevity, dateline, credit line, byline.

Unit 2 – Understanding the structure and construction of news (12 Hours)

1. Organizing a news story, 5W's and 1H, Inverted pyramid
2. Criteria for news worthiness, principles of news selection
3. Use of archives, sources of news, use of internet
4. Language and principles of writing: Basic differences between the print, electronic and online journalism.

Unit 3 – Covering news (12 Hours)

1. Role and responsibilities of a Reporter
2. General assignment reporting/ working on a beat
3. Covering of beats- crime, courts, health, human rights, legislature, education, sports reporting
4. Covering the beats and writing reports/interviewing personalities. Exercises on copy-editing. Discussions on current affairs

Unit 4 – Newsroom (09 Hours)

1. Organizational setup of a newspaper, Editorial department
2. Introduction to editing: Functions, headlines, role of sub-editor, news editor, Editor
3. Contemporary debates and issues related to media.

Practical – 30 Hours

Suggested Projects

1. News preparation and Production: Social, economic, individual, democracy, science and society
2. Presentation on the differences between print, broadcast and online journalism
3. Presentation on the relationship between media and democracy
4. Presentation on the genesis of Journalism and Yellow Journalism
5. Covering an event and presenting how it travels across different media forms
6. Presentation on the current debates and issues related to media
7. Presentation of a news story identifying 5Ws and 1 H.

Suggested Readings

1. Baskette and Scissors, The Art of Editing, Boston: Allyn and Bacon Publication, 2004.
2. Chaturvedi, S.N., Dynamics of Journalism and Art of Editing, New Delhi: Cyber Tech Publications, 2007.
3. Daniel, MacDougall, and Curtis, Principles of Editorial Writing, Dubuque, Iowa: W.C. Brown Co. Publishers, 1973.
4. Fedler, Fred and Bender, and R. John, Reporting for the Media, London: Oxford University Press, 2016.
5. Hodgson, Modern Newspaper Practice: A Primer on the press, Oxford: Focal Press, 1996.
6. Itule, Bruce and Abderson, and Douglas, News Writing and Reporting for Today's Media, New York: McGraw Hill Publication, 2006.
7. Keeble, and Richard, The Newspaper's Handbook, London, UK: Routledge Publication, 2001.
8. McQuail, and Denis, Mass Communicating Theory, New Delhi: Sage Publication, 2010.
9. Mencher, and Melvin, News Reporting and Writing, New York: Mc Graw Hill Publication, 2003.

DISCIPLINE SPECIFIC CORE COURSE – DSC C1 : HISTORY OF MEDIA

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| History of Media | 4 | 3 | 0 | 1 | Class XII Pass | NIL |

Learning Objectives

The course intends to familiarize the students with milestone events in media history.

Learning Outcomes

The course will help the students to understand the historical roots of the contemporary media phenomenon and its post-modern features.

SYLLABUS OF DSC DSC C1 – History of Media

Unit 1 - Media and Modernity (09 Hours)

1. Before the Print Revolution – A brief sketch – Cave Paintings, Rock Art, Written Culture, Folk, Drama and Oral Traditions, Acta Diurna, Roman Newsletters
2. Print Revolution
3. Evolution of Press in United States, Great Britain and France
4. Concept of Penny Press, Tabloids, and Yellow Journalism
5. E-papers and online newspapers

Unit 2 - Press in India (12 Hours)

1. Colonial Period, National Freedom Movement
2. Gandhi and Ambedkar as Journalists and Communicators
3. Nation building and media
4. Emergency and Post Emergency Era
5. Coming of new media technologies, Post liberalization- changing market and audience
6. Tradition of Language Media in India (Hindi/Urdu, Bangla, Malayalam, Tamil, Marathi etc.) – a brief sketch

Unit 3 - Sound Media (12 Hours)

1. Telegraphy and Telephony and Emergence of Radio
2. Early history of Radio in India
3. History of AIR: Evolution of AIR Programming
4. Penetration of radio in rural India-Case studies
5. Patterns of State Control; the Demand for Autonomy
6. FM: Radio Privatization and Community Radio

Unit 4 - Visual Media (12 Hours)

1. The early years of Photography and Cinema
2. TV – Origin and Technological Evolution; BBC and CNN
3. The coming of Television in India and the State's Development Agenda
4. Commercialization of Programming
5. The Coming of Transnational Television
6. Formation of Prasar Bharati – Joshi, Sam Pitroda, Chanda Committees

Practical – 30 Hours

Suggested Readings

1. Barnouw, Eric, and Krishnaswamy, Indian Film, (2nd Edition), New York: Oxford University Press, 1980.
2. Biswajit, Das, B Bel, B Das, J Brower, and Vibhodh Parthasarathi. Mediating Modernity: Colonial Discourse and radio Broadcasting in India, II Communication Processes Vol. 1: media and Mediation, New Delhi: Sage, 2005.
3. Briggs, A. and Burke, P., Social History of Media: From Gutenberg to Internet. Cambridge: Polity Press, 2010.
4. Butcher, Melissa, Transnational: Cultural Identity and Change. New Delhi: Sage, 2003.
5. Raghavan, G.N.S., Early Years of PTI: PTI Story: Origin and Growth of Indian Press, Bombay: Press Trust of India, 1987.
6. Hunt, Sarah Beth, Hindi Dalit Literature and the politics of Representation, New Delhi: Routledge, 2014.
7. Jeffrey, Robin, India's News Paper Revolution: Capitalism, Politics and the Indian language Press, New Delhi: Oxford, 2003.
8. Manuel, Peter and P.C. Chatterjee, Cassette Culture: Broadcasting in India, Chicago: University of Chicago Press, 1993.
9. McDonald, Elen, The Modernizing of communication: Vernacular publishing in Nineteenth Century Maharashtra, Asian Survey, 8-7. 1968.
10. Neurath, P., Radio Farm Forum as a Tool of change in Indian Villages," Economic Development of Cultural Change, Vol.10, No.3.
11. Page, David, and William Crawley. Satellites over South Asia, New Delhi: Sage, 2001.
12. Parthasarathi, Vibhodh, B Bel, B Das, and Brower, J., Constructing a new Media Market: Merchandising the talking machine in communication processes, Media and Mediation. Vol. 1. New Delhi: Sage, 2005.
13. Rangaswami, Parthasarthy, Journalism in India from the Earliest to the Present Day, New Delhi: Sterling Publishers, 1989.
14. Robinson, Francis, Technology and Religious Change: Islam and the impact of print, Modern Asian Studied, Vol. 27, No 1. 1993.
15. Vilanilam, V. John, The Socio Cultural Dynamics of Indian Television: From SITE to Insight to Privatization, Television in Contemporary Asia, David French and Michael Richards (eds). London: Sage, 2000.

**CATEGORY I
(Semester II)**

DISCIPLINE SPECIFIC CORE COURSE – DSC A2: MEDIA AND SOCIETY

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Media, Society and Culture | 4 | 3 | 0 | 1 | Class XII Pass | NIL |

Learning Objectives

The course explores the impact of media in society, the patterns of media representations, constructions and stereotypes, and media as a social institution.

Learning Outcomes

The course will impart a sociological understanding of media representations to the students, which may help them to balance the news process and the information needs of the public.

SYLLABUS OF DSC A2 – Media and Society

Unit 1 – Introduction to Society and Media (12 Hours)

1. Basic concepts
2. Relationship between media and society
3. Media in socio-cultural and economic context

Text

1. Media, Culture and Society: An Introduction, Chapter- Introduction by Paul Hodkinson, 2010, Sage Publications
2. Introduction to Sociology (ninth edition) Chapter-3 Part Two-Anthony Giddens by Mitchell Duneier
3. Pandey, Vinita, 2016, Indian society and culture, Rawat Publications
4. Deshpande, Satish, 2004, Contemporary India: a sociological view, Penguin, chap 1 – Squinting at society.

Unit 2 – Media and Power (12 Hours)

1. Communication and social order
2. Socio-political power
3. Democracy and Internet

Text

1. Communications, power and social order by James Curran, chapter 2

2. New media and Power in James Curran's Media and Power by Routledge 2002, chapter 8 Young people, the internet and civic participation - Ted Talk

Unit 3 – Media Content and Representation (09 Hours)

1. What is representation?
2. Construction
3. Stereotypes

Text

1. Epic Contents: Television and Religious Identity in India (134-151) Chapter 6 by Purnima
2. Mankekar in Media Worlds: Anthropology on New Terrain, 2002
3. Media Representation and the Global Imagination: A Framework, Chapter 1 by Orgad Shani, Cambridge, Polity, 2012
4. Slippery Subjects-Gender, meaning, and the Bollywood audience-
eprints.lse.ac.uk

Unit 4 – Mapping the Field and Rethinking Audience (12 Hours)

Practical – 30 Hours

Text

1. Selected chapters from Will Brooker, Jeremyn Deborah, 2003, Audience Studies Reader, Routledge.
2. Simon Cottle (ed), 2000, Ethnic Minorities and the Media, Introduction- Media Research and Ethnic Minorities: Mapping the field, Open University Press
3. Sonia Livingstone, 2008, Relationships between Media and Audiences: prospects for audience reception studies, LSE Research online (<http://eprints.lse.ac.uk/1005/>)
4. Students will produce a 2000-word paper analyzing the media representation through any soap, film, news coverage on a particular issue of their choice. This would be combined with their exposure to some interactions with functionaries in the media who would acquaint them with challenges of negotiating between the needs of news making and presenting social issues or events.

Suggested Readings

1. Benshoff, Harry M. America on Film: Representing Race, Class, Gender and Sexuality at the movies. Wiley Blackwell, 2009.
2. Berger and Asa Arthur. Media and Society: A Critical Perspective. Rowman & Littlefield, 2012.
3. Daramola. I. Mass Media and society, Writing for the Media Society. Lagos: Rothan Press, 2005, 2003.

4. Dines, Gail, and Jean Humez. Gender Race, and class in Media: A critical Reader. 4th ed. New Delhi.
5. Edward Said. Covering Islam: How the Media and the Experts Determine How We See the Rest of the World. New York: Vintage, 1997.
6. Gorman, Lyn, and McLean David. Media and Society into the 21st century: A Historical. London: Sage, 2005.
7. Marshall, McLuhan. Roads and Paper Routes in Understanding Media: Extensions of "Man ". New York: McGraw-Hill Book Co., 1964.
8. McQuail, D. McQuail's Mass Communication Theory. 5th Ed. London: Sage, 2005.
9. Roger, Silverstone. The Sociology of Mediation and communication in Craig Calhoun Chris. Edited by Rojek and Bryan S Turner. London: Sage, 2005.

DISCIPLINE SPECIFIC CORE COURSE –DSC B2: ICT & DIGITAL MEDIA

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| ICT and Digital Media | 4 | 2 | 1 | 1 | Class XII Pass | NIL |

Learning Objectives

The course intends to improve students' knowledge and skills in Information and Media Technology – including both hardware and software.

Learning Outcomes

Through this course, students will become capable of creatively using various ICT devices and digital platforms.

SYLLABUS OF DSC B2 – ICT and Digital Media

Unit 1 – ICT: Basic Concepts (12 Hours)

1. Hardware and Software Components of Computer Systems – A Brief Sketch; Different File Formats and Media Codecs
2. Computer Networks, Network Topology (Internet, Intranet and World Wide Web)
3. Telecommunications – 3G and 4G,
4. Digitization and Convergence of Technologies; Media Convergence

5. Social Construction of Technology

Unit 2 – Digital and Social Media (12 Hours)

1. Concepts: New Media: Definition and Features (Lev Manovich); Cyber Media; Digital Media; Web and Mobile Web; User and the Screen; Economy of New Media
2. Search Engines (Google etc); Internet Search; and its tools
3. Basics of Web Publishing / Blogs and the ‘Blogosphere’; Tools & Applications; WordPress etc.
4. Social Networking and Media Platforms - Facebook, Twitter, YouTube, Instagram, WhatsApp, Social Bookmarking, Skype
5. Social Media and the Post-Modern Public Sphere

Unit 3 – ICT and New Media Applications (12 Hours)

1. Practical Skills: MS Word, MS Power Point, MS Excel (Basics of using them) etc.
2. ICT as an Economic Arena: Digital Marketing, E-Commerce and E-Banking
3. Community Informatics & E-Governance - Cyber Mohalla and Akshaya Projects
4. Basic Concepts: Virtual Reality – 2D/3D Modelling and Simulation; Gaming; Artificial Intelligence; Metaverse
5. Cyber Space Activism & Social Inclusion (Gender, Human Rights and Subaltern Issues)

Unit 4 – ICT and New Media: Ethical Concerns (09 Hours)

1. Globalization & Emerging Cyber cultures, Netiquette, Facets of Cybercrime, Trolling etc.
2. Information Rights and Intellectual Property Rights – Copyright and Copy Left, Plagiarism, Open-Source Approach and Creative Commons
3. Electronic Documents and Digital Signature
4. Cyber Laws Basics, Internet Governance and Regulatory Frameworks

Suggested Projects

1. How to make presentations using MS Word, Power Point, Excel etc.
2. Presentation on Cyber cultures, netiquettes, trolling, differences between new and old media
3. Presentation/Articles on how to use Internet search as a secondary research tool.

Suggested Readings

1. Castells. The Network Society: A cross -cultural perspective. Edward Elgar, 2004.

2. Dovey, Lister, Giddings Grant, and Kelly. New Media and Technologies. 2003.
3. Eugenia, Siapera. Understanding New Media. Sage, 2011.
4. Gane, Nicholas, and David Beer. New Media: The Key Concept. Berg, 2008.
5. Goldsmith, Jack, and Tim Wu. Who controls Internet? Illusions of Borderless World. US: Oxford University Press, 2006.
6. Jenkins, Henry. Convergence Culture: Where Old and New Media Collide. New York: NYU Press, 2006.
7. Khan, R, and D Kellner. "New Media and Internet Activism: From the Battle of Seattle to Blogging "New Media & Society. Vols. vol.6, No.1. 2004.
8. Lambert, Joan, and Curtis Frye. Microsoft Office 2016 Step by Step. Microsoft Press, 2016.
9. Lievrouw, and Livigstone. Hand Book of New Media. Sage, n.d.
10. Manovich, Lev. What is new Media? In the Language of New Media. Cambridge: MIT Press, 2001.
11. Martin, Lister. New Media - A Critical Introduction. Routledge, 2009.
12. Miller, Vincent. Understanding Digital Culture. Sage, 2011.
13. Narayan, Sunetra Sen, and Shalini Narayanan. India Connected: Mapping Impact of New Media. New Delhi: Sage, 2016.
14. Pavik, John V. New Media. Columbia University Press, 2001.
15. Sinha.Pradeepk, and Priti Sinha. Computer Fundamentals. 6th Ed. BPB Publication, 2011.
16. Van Dijk, J.A.G.M. " The network Society: Social Aspects of New Media. Sage, 2005.

DISCIPLINE SPECIFIC CORE COURSE – DSC C2 : MEDIA, POLITY AND LEGAL SYSTEMS IN INDIA

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Media, Polity and Legal Systems in India | 4 | 3 | 0 | 1 | Class XII Pass | NIL |

Learning Objectives

The course will introduce the students to the polity, constitution and legal systems in India.

Learning Outcomes

Knowledge of the constitution and legal systems in India will help the students to be responsible and disciplined in their journalistic endeavours and enable them to report the political and governance issues, with larger perspectives.

SYLLABUS OF DSC- – DSC C2 – Media, Polity and Legal Systems in India

Unit 1 - Indian Constitution and Governance (12 Hours)

1. Fundamental Rights: Issues and Debates (Debates on Equality and Liberty, Freedom of Speech, Issue of Reservation, Custodial Deaths, Police Atrocities etc.)
2. Directive Principles of State Policy: Issues and Debates (Uniform civil Code, Cow Protection)
3. Centre-State Relations: Federal v/s Unitary Debates, Federal Issues in Indian Politics, Governor: Power and Functions
4. Media – Government relationship (Media -Legislature, Media -Judiciary)

Unit 2 - Indian Democracy (09 Hours)

1. Legislature: Lok Sabha and Rajya Sabha: Relative Roles and Functions, Issues in Functioning of the Parliament
2. Executive: President, Prime Minister and Council of Ministers
3. Judiciary: High Court and Supreme Court, Judicial Review and Judicial Activism, Public Interest Litigation, Controversies and Issues related to Independence of Judiciary
4. Panchayati Raj Institutions and Grassroots Democracy in India

Unit 3 - Parties, Party System and Electoral Politics in India (12 Hours)

1. Party System in India and the Rise of Coalitions; Types of Parties – National and State level
2. Election Commission and Electoral Reforms
3. Law Commission and National Committee for Review of the Constitution
4. Identity Politics: Gender, Caste, Class and Religion in Indian Politics
5. E-Media and Governance; Covering Campaigns, Elections and Governance

Unit 4 – Media, Polity and Democracy (12 Hours)

1. Democracy and Freedom of the Press; Freedom of Expression and responsibility of the Journalists
2. Power and responsibility of the media; Media as a Watchdog Vs. Government censorship
3. Role of the media in semi-democratic regimes and authoritarian regimes; Media as

promoter of democracy in non-democratic regimes

4. Edward Snowden. Wiki Leaks Case Studies: Freedom of the Press versus National Security Concerns
5. Future of the News Media: Issues and Concerns

Suggested Projects

1. Group project on the success of e-governance and the role of the media
2. Present and analyse on any one aspect (class, caste, gender) and contemporary politics in India
3. Discussions on the independence of the judiciary and the recent controversies around judicial activism
4. Write a paper on the Uniform Civil Code arguing on the merits and demerits of the same

Suggested Readings

1. Austin, Granville. The Indian constitution: Cornerstone of a Nation. 1966.
2. Austin, Granville. Working a Democratic Constitution, OUP. 1999.
3. Baum, Matthew. Soft News Goes to War: Public Opinion and American Foreign Policy in the New Media Age. Princeton University Press, 2005.
4. Chakrabarty, Bidyut. Indian Politics and Society Since Independence: Events, Processes and Ideology. Routledge, 2008.
5. Iyengar, Shanto, and Jennifer A McGrady. Media Politics: A Citizen Guide. W.W. Norton, 2011.
6. Kashyap, Subhash C. Our Parliament. National book Trust, 2011.
7. Khinani, Sunil. The Idea of India. Penguin, 2003.
8. Lippman, Walter. Public Opinion. Macmillan, 1922.
9. Mitchell, Amy et al. "Millennials and Political News: Social Media the local TV for the next generation?" Pew Research Center Journalism & Mass Media. 2015.
10. Rajni, Kothari. Politics in India. Orient Longman, 1970.
11. Snowden, Edward. "The World say No to Surveillance". The New York Times, 2015.
12. Toobin, Jeffrey. Edward Snowden is No Hero. 2013.
13. White, Theodore. The Making of the President: 1960. Atheneum, 1960.
14. Young, Dannagal Goldwaite. The Daily Show as the New Journalism: In Their Own words", Laughing MATters: Humor and American politics in the Media Age. New York: Routledge, 2008.

36. Amendment to Appendix -II-A to the Ordinance V (2-A) of the Ordinances of the University vide EC Resolution 38-1-2 dated 08.12.2022 regarding Syllabi of 2nd Semester of the Departments under Faculty of Social Sciences

Add the following:

Syllabi of Semester-II of the following departments under Faculty of Social Sciences based on Under Graduate Curriculum Framework -2022 to be implemented from the Academic Year 2022-23.

FACULTY OF SOCIAL SCIENCES

DEPARTMENT OF POLITICAL SCIENCE

Category-I

BA (Hons.) Political Science

DISCIPLINE SPECIFIC CORE COURSE – 4: Perspectives on Public Administration

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|----------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Perspectives on Public Administration DSC 4 | 4 | 3 | 1 | 0 | 12th Pass | NIL |

Learning Objectives

The course provides an introduction to the discipline of public administration. This paper encompasses public administration in its historical context with an emphasis on the various classical and contemporary administrative theories. The course also explores some of the non-mainstream trends, including feminism and perspectives from the Global South on public administration

Learning outcomes

On completion of this course, the student can be expected to

- Have a comprehensive understanding of the conceptual roots of the discipline of Public Administration
- Understand how theorising is done in this discipline
- Understand how new perspectives like that of gender influence the orientation of both theory and practice in the discipline.

SYLLABUS OF DSC-4

UNIT – I (12 Hours)

Public Administration as a Discipline

- a. Ancient Roots of Public Administration: Perspectives from India (Kautilya's Arthashastra)
- b. Modern PA: An overview of the theoretical journey
- c. Principles of Public Administration
- d. Theorising Public Administration

UNIT – II (15 Hours)

Mainstream/ Traditional Theoretical Perspectives

- a. Scientific management (F.W.Taylor)
- b. Ideal-type bureaucracy (Max Weber)
- c. Human relations theory (Elton Mayo)
- d. Rational decision-making (Herbert Simon)
- e. Ecological approach (Fred Riggs)

UNIT – (09 Hours)

Contemporary Theoretical Perspectives

- a. New Public Management, New Public Service
- b. Multiple Perspectives on Governance: Good Governance, Collaborative Governance, Network Governance, Digital Governance

UNIT – IV (09 Hours)

Gender Perspectives on Public Administration

- a. Gender and Governance
- b. Gender sensitivity and participation in administration

Essential/recommended readings

Unit 1. Public Administration as a Discipline

- a. Ancient Roots of Public Administration

Kumar, A. Administration in Kautilya's Arthashastra in M.M. Shankhder & G. Kaur *Politics in India* Deep and Deep Publications, New Delhi, 2005, pp. 83-94.

Muniyapan, B. Kautilya's Arthashastra and Perspectives on Organizational Management *Asian Social Science* Vol. 4, No. 1 January 2008, PP. 30-34.

- b. Modern PA: An overview of the theoretical journey

D. Rosenbloom, R. Kravchuk. and R. Clerkin (2022), Public Administration: Understanding Management, Politics and Law in Public Sector, 9th edition, Routledge, New York, pp. 1-40.

W. Wilson (2004) 'The Study of Administration', in B. Chakrabarty and M. Bhattacharya (eds), *Administrative Change and Innovation: A Reader*, New Delhi: OUP, pp. 85-101.

c. Principles of Public Administration

Nicholas Henry, *Public Administration and Public Affairs*, Prentice Hall, Ch 2(Paradigms of Public Administration).

d. Theorising Public Administration

F. H. George, K. B. Smith, C. W. Larimer and M. J. Licari (2015) *The Public Administration Theory Primer*, Chapter Introduction: The Possibilities of Theory, Routledge.

Unit 2. Mainstream/ Traditional Theoretical Perspectives:

D. Gvishiani (1972) *Organisation and Management*, Moscow: Progress Publishers.

F. Taylor (2004), 'Scientific Management', in J. Shafritz, and A. Hyde (eds.) *Classics of Public Administration*, 5th Edition. Belmont: Wadsworth.

P. Mouzelis (2003), 'The Ideal Type of Bureaucracy' in B. Chakrabarty, And M. Bhattacharya (eds), *Public Administration: A Reader*, New Delhi: OUP.

D. Ravindra Prasad, Y. Pardhasaradhi, V. S. Prasad and P. Satyrnarayana (eds.) (2010), *Administrative Thinkers*, Sterling Publishers.

M. Weber (1946), 'Bureaucracy', in C. Mills, and H. Gerth, *From Max Weber: Essays in Sociology* Oxford: Oxford University Press.

Warren G. Bennis (1973), *Beyond Bureaucracy*, Mc Graw Hill.

R. Arora (2003) 'Riggs' Administrative Ecology' in B. Chakrabarty and M. Bhattacharya (eds), *Public Administration: A reader*, New Delhi, Oxford University Press.

F. Riggs (1964) *Administration in Developing Countries: The Theory of Prismatic Society* Boston: Houghton Mifflin.

Unit 3. Contemporary Theoretical Perspectives

a. New Public Management, New Public Service

S.P. Osborne, & K. Mclaughlin, *New Public Management in Context* in S.P. Osborne, K. Mclaughlin & E. Ferlie (eds). *New Public Management: Current Trends and Future Prospects*, Routledge, London and New York, 2002, pp.7-33.

b. Multiple Perspectives on Governance

A. Manoharan and M. Holzer, *E-Governance and Civic Engagement: Factors and Determinants of E-Democracy*, IGI Global: PA, USA, 2012.

S. Dhal, *E-Governance and Citizen Engagement: New Directions in Public Administration*, New Delhi: Sage Publishers, 2022.

Unit 4. Gender Perspectives on Public Administration

C. Stivers, *Gender Images in Public Administration: Legitimacy and the Administrative State*, California: Sage, 2002, Introduction.

A. S. Wharton, *The Sociology of Gender*, West Sussex: Blackwell-Wiley, 2012.

S. Dhall, *Public Policy Discourse and Sexual Minorities: Balancing Democratic Aspirations, Political Expediency and Moral Rights*, *Indian Journal of Public Administration*, 68 (1), 2022.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 5: Methods and Approaches in Comparative Political Analysis

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Methods and Approaches in Comparative Political Analysis DSC 5 | 4 | 3 | 1 | 0 | 12th Pass | NIL |

Learning Objectives

This is a foundational course in comparative politics. The aim of this course is to introduce students to the foundational concepts, methods, approaches and the historical legacy of the discipline. The paper offers in-depth discussion on methods, different approaches in terms of their advantages and disadvantages to help understand politics in a critical-comparative framework. Students would be made familiar to the diversity of approaches to study politics such as institutionalism, political culture, political economy and specific debates within each of the approaches. Discussion on a diversity of approaches will highlight different tools, perspectives and parameters to understand the behaviour and functioning of institutions in a political system. This paper would also impart students the ability to use the analytical frame of gender with reference to specific issues like the women's political representation in comparative perspective. The paper will inculcate reflective thinking and research aptitude in students as they will learn to apply these critical outlooks in understanding politics and political processes, particularly from the perspective of developing societies.

Learning outcomes

On successful completion of the course, students would demonstrate:

- An understanding of the nature, scope, methodology, and legacy of the sub-discipline.
- Awareness of the evolution of the sub-discipline of comparative politics and the challenge of Eurocentrism in the discipline.
- An in-depth understating of various approaches to the study of politics in a comparative framework.
- A basic training in comparative research.

SYLLABUS OF DSC- 5

UNIT – I (09 Hours)

Understanding Comparative Politics

- a. Nature and scope
- b. Why Compare

- c. Understanding Comparative Method: How to compare countries: large *n*, small *n*, single countries studies
- d. Going beyond Eurocentrism

UNIT – II (6 Hours)

Approaches to Studying Comparative Politics: Political System, Structural functional analysis

UNIT – III (6 Hours)

Approaches to Studying Comparative Politics: Traditional and Neo-Institutionalisms

- a. Historical Institutionalism
- b. Rational Choice Theory
- c. Sociological Institutionalism

UNIT – IV (9 Hours)

Approaches to Studying Comparative Politics: Political Culture

- a. Civic Culture (Sydney Verba)
- b. Subculture (Dennis Kavanagh)
- c. Hegemony (Antonio Gramsci)
- d. Post materialism (Ronald Inglehart)
- e. Social capital (R. Putnam)

UNIT – V (9 Hours)

Approaches to Studying Comparative Politics: Political Economy

- a. Underdevelopment
- b. Dependency
- c. Modernisation
- d. World Systems Theory

UNIT – VI (6 Hours)

Gendering Comparative Politics

- a. The Gender Lacuna in Comparative Politics
- b. Political Representation: Women in Government and Politics

Essential/recommended readings

Unit 1. Understanding Comparative Politics

Landman, T. (2003). *Issues and Methods in Comparative Politics: An Introduction*, second edition. London and New York: Routledge, pp. 3-22.

Gerring, J. (2007) The Case Study: What it Is and What it Does in Carles Boix and Susan C. Stokes (eds.) *The Oxford Handbook of Comparative Politics*, Oxford University Press, pp 90-122.

Lijphart, A. (1971). Comparative Politics and the Comparative Method. *The American Political Science Review*, 65, No. 3, pp. 682-693.

Mohanty, M (1975) 'Comparative Political Theory and Third World Sensitivity', in *Teaching Politics*, Nos. 1 and 2, pp. 22-38

Chandhoke N (1996) 'Limits of Comparative Political Analysis ', in *Economic and Political Weekly*, Vol. 31 (4), January 27, pp. PE 2-PE2-PE8

Kopstein J., and Lichbach, M. (eds) (2005) *Comparative Politics: Interests, Identities, and Institutions in a Changing Global Order*. Cambridge: Cambridge University Press, pp.1-5; 16-36; 253-290.

Peters, B. Guy (2020) Approaches in comparative politics, in Caramani, D. (ed.) *Comparative Politics* (5th Edition). Oxford: Oxford University Press.

Roy, A. (2001) 'Comparative Method and Strategies of Comparison', in *Punjab Journal of Politics*. Vol. xxv (2), pp. 1-15.

Unit 2. Political System, Structural functional analysis

Almond, Gabriel et al. (2011) Comparing Political Systems, in *Comparative Politics Today*, Pearson, pp. 28-38

Almond, Gabriel, Powell G. Bingham, Jr. (1966) An Overview (Ch 2), *Comparative Politics, A Developmental Approach*, Stanford University.

Unit 3. Traditional and Neo-Institutionalisms

Blondel, J. (1996) 'Then and Now: Comparative Politics', in *Political Studies*. Vol. 47 (1), pp. 152-160.

Pennington, M. (2009) 'Theory, Institutional and Comparative Politics', in J. Bara and M. Pennington (eds.) *Comparative Politics: Explaining Democratic System*. Sage Publications, New Delhi, pp. 13-40.

Hague, R. and M. Harrop and McCormick, J. (2016) Theoretical Approaches *Comparative Government and Politics: An Introduction*. (Tenth Edition). London: Palgrave McMillan.

Hall, P., and Rosemary C.R. Taylor (1996) 'Political Science and the Three New Institutionalism', *Political Studies*. XLIV, pp. 936-957.

Rakner, L. and R. Vicky (2011) 'Institutional Perspectives', in P. Burnell, et. al. (eds.) *Political in the Developing World*. Oxford: Oxford University Press, pp. 53-70.

Unit 4. Political Culture

Almond, Gabriel A. and Sidney Verba (1963). The Civic Culture: Political Attitudes and Democracy in Five Nations (Chapter 1).

Welzel, Christian and Ronald Inglehart (2020) Political culture, in Caramani, D. (ed.) *Comparative Politics* (5th Edition). Oxford: Oxford University Press

Huntington, Samuel P. (1993). The Clash of Civilizations. *Foreign Affairs*. 72 (3): 22–49.

Howard, M. (2009) 'Culture in Comparative Political Analysis', in M. Lichback and A. Zuckerman, pp. 134- S. (eds.) *Comparative Political: Rationality, Culture, and Structure*. Cambridge: Cambridge University Press.

Rosamond, B. (2008). Political Culture. In Axford, B., Browning, G. K., et. al (eds.), *Politics: An Introduction* (2nd ed.). London and New York: Routledge, pp. 82-119.

Putnam, R. (2000) Thinking About Social Change in America (Ch 1), in *Bowling Alone: The Collapse and Revival of American Community*, Simon and Schuster

Gransci, A., Hegemony (Civil Society) and Separation of Powers, in *Prison Notebooks*, Excerpt from *Selections from the Prison Notebooks of Antonio Gramsci*, edited and translated by Quentin Hoare and Geoffrey Nowell Smith (1999) Elec Book, pp. 506-507.

Unit 5. Political Economy

Chilcote, R. H. (2000) *Comparative Inquiry in Politics and Political Economy: Theories and Issues*, Oxford: Westview Press, pp. 31-52, pp. 57-81.

Esteva, G. (2010) Development in Sachs, W. (Eds.), *The Development Dictionary: A Guide to Knowledge as Power* (2nd ed.). London: Zed Books, pp. 1-23.

So, A. Y. (1990) Social Change and Development: Modernization, Dependency and World-System Theories. London: Sage, pp. 91-109.

Wallerstein, I. (1974) The Rise and Future Demise of the World Capitalist System: Concepts for Comparative Analysis, *Comparative Studies in Society and History*, Vol. 16, pp. 387-415

Unit 6. Gendering Comparative Politics

Baldez, Lisa (2010) Symposium. The Gender Lacuna in Comparative Politics. March 2010 | Vol. 8/No. 199-205.

Beckwith, Karen (2010) Comparative Politics and the Logics of a Comparative Politics of Gender. American Political Science Association. Vol. 8, No. 1 (March 2010), pp. 159-168

Hague, Rod, Martin Harrop and McCormick (2019) Political Participation in *Comparative Government and Politics: An Introduction* (11th Edition) Red Globe Press. pp.223-225.

Krook Mona Lena (2011) Gendering Comparative Politics: Achievements and Challenges. *Politics & Gender* 7(1), pp 99-105.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

**DISCIPLINE SPECIFIC CORE COURSE – 6: Introduction to International Relations:
Theories, Concepts and Debates**

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|----------|-----------------------------------|----------|------------------------|-----------------------------|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction to International Relations: Theories, Concepts and Debates DSC 6 | 4 | 3 | 1 | 0 | 12th Pass | NIL |

Learning Objectives

This paper introduces students to some of the key theories, concepts and debates of international relations. While historically contextualizing the evolution of mainstream IR theories, students will also learn about the leading debates aimed at de-centering and pluralizing the knowledge-base of IR. The debates and conversations on the genealogies of Indian perspectives on IR are anchored in this backdrop. The students will learn how to critically engage with the Eurocentric view of IR through decolonial accounts that foreground the agency of the colonial experience, race and culture that not only identify proximately with the Global South but are also co-constitutive of European modernity, the social sciences and the foundations of the IR discipline. The course weaves in some of the major concepts—power, sovereignty, empire and international order—that push the boundaries of the discipline through understandings derived from diverse standpoints. The final segment—Global IR and the relational turn in international relations—apprises the students with the new directions in the discipline.

Learning outcomes

At the end of this course, the students would have acquired:

- Familiarization with key theories, concepts, and debates of International Relations.
- Comprehensive re-reading of the origin of IR and its mainstream theories and concepts, with basic tools to question statist ontology and reification of eurocentrism.
- Appreciation of decolonial accounts that challenge the mainstream and parochial International Relations.
- Understanding of the genealogy and contributions of the IR scholarship in India to the disciplinary debates through a re-reading of its classical texts and, contemporary writings.
- Analysis of the assumptions and key concepts of IR such as power, sovereignty, empire and international order.
- Learning about the new directions in IR via a critical engagement with Global IR and the relational turn in IR.

SYLLABUS OF DSC-6

UNIT – I (12 Hours)

What is IR and, its Contested Origins

- a. What is IR
- b. Reading the Big Bangs
- c. Bringing in De-colonial Accounts
- d. Understanding the genealogy of IR discipline in India

UNIT – II (15 Hours)

Theories of IR

- a. Introduction to IR Theories
- b. Realpolitik (Kautilya)/ Realism/ Neo-Realism
- c. Liberalism/ Neo-liberalism
- d. Marxism/ Neo-Marxism
- e. Feminism
- f. Constructivism

UNIT – III (9 Hours)

Concepts

- a. Power
- b. Sovereignty
- c. Empire
- d. International Order

UNIT – IV (9 Hours)

Exploring the Future Trajectories

- a. Global IR
- b. A Relational Turn?

Essential/recommended readings

Unit I. What is IR and the story of its contested origins

a. What is IR?

Essential Readings

David Blaney (2020), “Where, When and What is IR?”, in Arlene B. Tickner and Karen Smith (eds.) *International Relations from the Global South: World of Difference*. Routledge: New York.

Robert Jackson and Georg Sørensen (2019). ‘Why study IR’, in *Introduction to International Relations: Theories and Approaches*, OUP: New York, pp.3-32.

Additional Readings

Nicholson, Michael (2002). *International Relations: A Concise introduction*, NYU Press: NY. pp. 1-15.

Richard Devetak (2012). An introduction to international relations: The origins and changing agendas of a discipline”, in R. Devetak, A. Burke and J. George (eds.) *An Introduction to International Relations*, 2nd ed, Cambridge: Cambridge University Press. pp. 1-19.

b. Reading the Big Bangs

Essential readings

B. De Carvalho, H. Leira and J. M. Hobson (2011). The Big Bangs of IR: The Myths that Your Teachers Still Tell You about 1648 and 1919. *Millennium*, 39(3): 735–758.

Kevin Blachford. (2021). ‘From Thucydides to 1648: The “Missing” Years in IR and the Missing Voices in World History’ *International Studies Perspectives*, 22:4, pp. 495-508.

Additional readings

Amitav Acharya and Barry Buzan (2019). ‘Introduction’ in A. Acharya & B. Buzan, *The Making of Global International Relations Origins and Evolution of IR at its Centenary*, Cambridge University Press: UK. pp. 1–7.

J. Havercroft (2012). “Was Westphalia ‘all that’? Hobbes, Bellarmine, and the norm of non-intervention”. *Global Constitutionalism*, 1 (1): 120-140.

Amitav Acharya and Barry Buzan (2019). ‘International Relations up to 1919: Laying the Foundations’ in *The Making of Global International Relations Origins and Evolution of IR at its Centenary*, Cambridge University Press: UK. pp. 33-66.

c. Bringing in De-colonial Account

Essential Readings

Peter Vale and Vineet Thakur (2020). ‘IR and the Making of the White Man’s World,’ in A.B. Tickner and K. Smith (eds.) *International Relations from the Global South: Worlds of Difference*, London: Routledge, pp. 56-74.

Shampa Biswas (2020). ‘Postcolonialism’, in Tim Dunne, Milja Kurki, and Steve Smith (eds.) *International Relations Theories: Discipline and Diversity*, London: OUP, pp. 219-234.

वी एन खन्ना (2014) 'उपनिवेशवाद उन्मूलन तृतीय विश्व का उदय', अंतर्राष्ट्रीय सम्बन्ध, विकास पब्लिकेशन. (पृष्ठ संख्या: 449-469).

Additional Readings

Amitav Acharya, Barry Buzan (2017). “Why is there no Non-Western International Relations Theory? Ten years on”, *International Relations of the Asia-Pacific*, 17(3): 341–370.

Zeynep Gulsah Capan (2017). Decolonising International Relations? *Third World Quarterly*, 38 (1): 1-15.

Sankaran Krishna (2018). ‘Postcolonialism: The relevance for IR in a globalized world’ in Randolph Persaud, Alina Sajed (Eds), *Race, Gender, and Culture in International Relations Postcolonial Perspectives*, Routledge: NY, London.

Pinar Bilgin (2016). ‘How to remedy Eurocentrism in IR? A complement and a challenge for The Global Transformation’, *International Theory*, 8 (3): pp. 492-501.

d. Understanding the genealogy of IR discipline in India

Essential Readings

Navnita Chadha Behara (2007). “Re-imagining IR in India”, *International Relations of the Asia-Pacific* 7(3): 341-68.

Kanti P. Bajpai and Siddharth Mallavarapu, eds. (2005). “International Relations in India: Bringing Theory Back Home” New Delhi: Orient Longman. Chp.1. pp. 17-38

Additional Readings

Ramchandra Guha (2009). 'Introduction'. In Tagore, R., *Nationalism*. New Delhi: Penguin. pp. vii-ix.

T. V. Paul (2009). "Integrating International Relations Scholarship in India into Global Scholarship," *International Studies* 46(1&2): 129-45.

Martin J. Bayly (2021). Lineages of Indian International Relations: The Indian Council on World Affairs, the League of Nations, and the Pedagogy of Internationalism, *The International History Review*, online first (pp. 1-17), DOI: 10.1080/07075332.2021.1900891.

S. Mallavarapu (2012). 'Indian Thinking in International Relations' in B.S. Chimni and Siddharth Mallavarapu ed. *International Relations: Perspectives for the Global South* (New Delhi: Pearson, 2012), pp.22-38.

Unit 2. Theories of IR

a. Introduction to IR Theories

Essential Readings

Stephen M. Walt (1998). "International Relations: One World, Many Theories." *Foreign Policy*, 110: 29–46. <https://doi.org/10.2307/1149275>.

S. Mallavarapu (2009) Development of International Relations Theory in India. *International Studies*, 46 (1–2): 165–183.

विष्णु सतपथी और सुमित कुमार पाठक (2010) 'अंतर्राष्ट्रीय संबंधों के उपागम', तपन बिस्वाल (एडिटर), अंतर्राष्ट्रीय सम्बन्ध, मैकमिलन पब्लिशर्स इंडिया लिमिटेड (पृष्ठ संख्या 1 -39).

वी एन खन्ना (2014) खंड एक: सैद्धांतिक परिवेश: अंतर्राष्ट्रीय सम्बन्ध का परिचय: यथार्थवाद, नवयथार्थवाद, उदारवाद, नवउदारवाद (पृष्ठ संख्या 1 -44), वी एन खन्ना, अंतर्राष्ट्रीय सम्बन्ध, विकास पब्लिकेशन.

Additional Readings

Karen A. Mingst, Ivan M. Arreguín-Toft (2019). 'Approaches to International Relations' in *Essentials of International Relations* (8th edition), Norton: Canada: pp. 3-18.

Toni Erskine (2013). "Normative International Relations Theory", in Tim Dunne, Milja Kurki, and Steve Smith (eds.) *International Relations: Theories, Discipline and Diversity*. Oxford University Press: UK, 3rd edition. pp. 36-58.

b. Realpolitique (Kautilya)/ Realism/ Neo-Realism

Essential Readings

Shahi, Deepshikha (2019). "Kautilya Reincarnated: Steering Arthaśāstra Toward an Eclectic Theory of International Relations" in *Kautilya and the Non-Western IR Theory*, Springer International Publishing; Palgrave Pivot. pp.95-126.

Jindal, Nirmal (2020). Kautilya's Realpolitik' in Nirmal Jindal, Kamal Kumar (eds.). *International Relations: Theory and Practice*, Sage Publications, India. Pp.151-170.

T. Dunne, M. Kurki and S. Smith (eds.) (2013). *International Relations Theories, Discipline and Diversity*. Oxford: Oxford University Press, 3rd edition. (Ch 3: Classical Realism, pp. 59-76 by Richard Ned Lebow; and Ch 4: Structural Realism by John J. Mearsheimer- pp.77-93).

Waltz, K.N (1990), 'Realist Thought and Neorealist Theory', *Journal of International Affairs Editorial Board*, Vol.44, No.1, pp.21-37.

Additional Readings

S. Kalyanaraman (2015). 'Arthashastra, Diplomatic History and the Study of International Relations in India', in P.K. Gautam et. al. (eds.) *Indigenous Historical Knowledge: Kautilya and His Vocabulary, Volume 1*, Pentagon Press: India, pp.1-4.

Medha Bisht (2015). 'Revisiting the Arthashastra: Back to Understanding IR' in Pradeep Kumar Gautam et. al. (eds.) *Indigenous Historical Knowledge: Kautilya and His Vocabulary, Volume 2*, Pentagon Press: New Delhi, pp. 20-31.

Cynthia Weber (2010). 'Realism: is international anarchy the permissive cause of war?', In *International Relations Theory: A Critical Introduction*, 3rd ed., New York: Routledge, pp. 13-36.

c. Liberalism/ Neo-liberalism

Essential Readings

Bruce Russett (2013). 'Liberalism' in Tim Dunne, Milja Kurki and Steve Smith (eds.) *International Relations: Theories, Discipline and Diversity*, 3rd Edition, Oxford: Oxford University Press, pp. 94-113.

Jennifer Sterling-Folker (2013). 'Neoliberalism' in Tim Dunne, Milja Kurki and Steve Smith (eds.) *International Relations: Theories, Discipline and Diversity*, 3rd Edition, Oxford: Oxford University Press, pp. 114-131.

Additional Readings

Robert Jackson, Georg Sørensen (2019). 'Liberalism' in *Introduction to International Relations, Theories and Approaches*, Oxford University Press: New York, pp.107-142.

Jon C. W. Pevehouse and Joshua S. Goldstein (2018). *International Relations*, 11th Edition, Pearson: US (Liberal and Social Theories, pp.83-121).

d. Marxism/ Neo-Marxism

Essential Readings

Mark Rupert (2013). 'Marxism', in Tim Dunne, Milja Kurki, and Steve Smith (eds.) *International Relations Theories, Discipline and Diversity*. Oxford: Oxford University Press, 3rd edition. pp.153-170.

Cynthia Weber (2010). 'Neo-Marxism: Is Empire the New World Order?', in *International Relations Theory: A Critical Introduction*, 3rd edition, New York: Routledge, pp.131-158.

Additional Readings

Stephanie Lawson (2015). *Theories of International Relations, Contending Approaches to World Politics*, Polity Press: Cambridge, UK (Chapter 6-Marxism, Critical Theory and World Systems Theory, pp.121-144).

Andrew Linklater (2005). 'Marxism' in Scott Burchill, Andrew Linklater, et al. *Theories of International Relations*, Palgrave Macmillan, UK, US: pp. 110-137.

e. Feminism

Essential Reading

J. Ann Tickner (2008). 'Gender in World Politics'. in J. Baylis, S. Smith and P. Owens (eds.). *The Globalization of World Politics*. Oxford: Oxford University Press, pp. 262-277.

J. Ann Tickner and Laura Sjoberg (2013). 'Chapter 11-Feminism' in Tim Dunne, Milja Kurki, and Steve Smith (eds.) *International Relations Theories, Discipline and Diversity*. Oxford University Press: UK, 3rd edition. pp.205-222.

तपन बिस्वाल (2010) 'अंतर्राष्ट्रीय संबंधों में नारीवादी दृष्टिकोण: जे एन टिकनर', अंतर्राष्ट्रीय सम्बन्ध, मैकमिलन पब्लिशर्स इंडिया लिमिटेड, इंडिया। (पृष्ठ संख्या 331-342)

Additional Reading

Helen M. Kinsella (2020) 'Feminism' in John Baylis, and Steve Smith, *The globalisation of world Politics An introduction to international relations*, Oxford University Press, 8th Edition. pp 145-159.

Chandra T. Mohanty (2003). *Feminism without Borders Decolonizing Theory, Practicing Solidarity*, Duke University Press ('Introduction-Decolonization, Anticapitalist Critique, and Feminist Commitments' pp. 1-16).

f. Constructivism

Essential Readings

Michael Barnett. (2020). 'Chapter 12-Social constructivism', in John Baylis, and Steve Smith, *The Globalisation of World Politics: An Introduction to International Relations*, Oxford University Press, 8th Edition. pp. 192-206.

Robert Jackson, Georg Sørensen (2019). 'Social Constructivism' in *Introduction to International Relations, Theories and Approaches*, Oxford University Press: New York, pp. 161-177.

Additional Readings

K. M. Fierke (2013). Constructivism in T. Dunne, M. Kurki, and S. Smith (eds.), *International Relations: Theories Discipline and Diversity*, OUP: NY, pp. 187-204.

S. Lawson (2015). *Theories of International Relations, Contending Approaches to World Politics*, Polity Press: Cambridge (Ch 7: Social Theories of International Relations, pp.145-171).

Unit 3. Concepts

a. Power

Essential Readings

David A. Baldwin (2013). "Power and International Relations," in *Handbook of International Relations*, eds. Walter Carlsnaes, Thomas Risse, and Beth A. Simmons, Los Angeles, CA: Sage Publications, pp. 273–274 & p. 280.

M. Barnett and R. Duvall (2005) Power in International Politics. *International Organization* 59 (1): pp. 39–75.

Additional Readings

H.W. Ohnesorge (2020). 'Power in International Relations: Understandings and Varieties', in *Soft Power: The Forces of Attraction in International Relations*. Springer, Cham. https://doi.org/10.1007/978-3-030-29922-4_2

Jan-Philipp N.E. Wagner (2014). 'The Effectiveness of Soft & Hard Power in Contemporary International Relations'. *E-international Relations*, May 14. Available at: <https://www.e-ir.info/2014/05/14/the-effectiveness-of-soft-hard-power-in-contemporary-international-relations/>

b. Sovereignty

Essential Readings

N.C. Behera (2020). 'State and Sovereignty,' in A. B. Tickner and K. Smith (eds.), *International Relations from the Global South: Worlds of Difference*, London: Routledge: pp.139-160.

Manish Kumar (2018), 'Revisiting Sovereignty through ancient Indian Notions of Dharma,' *Indian Journal of Politics and International Relations*, 11 (1): 23-37.

Additional Reading

S.D. Krasner (2001). "Sovereignty", *Foreign Policy*, 122 (Jan. - Feb): pp. 20-29.

A. Osiander (2001). Sovereignty, International Relations, and the Westphalian Myth. *International Organization*, 55(2): pp.251-287.

c. Empire

Essential Readings

T. Barkawi (2010). Empire and Order in International Relations and Security Studies. *Oxford Research Encyclopedia of International Studies*.
<https://doi.org/10.1093/acrefore/9780190846626.013.164>

H. Münkler (2007). 'What Is an Empire?' (pp.1-18) and 'Empire, Imperialism and Hegemony: A Necessary Distinction' (pp. 19-46) in *Empires: The Logic of World Domination from Ancient Rome to the United States*. Cambridge: Polity Press.

Additional Readings

T. Barkawi and M. Laffey (2002). Retrieving the Imperial: Empire and International Relations. *Millennium*, 31 (1), pp: 109–27.

Yale H. Ferguson and Richard Mansbach, eds (2008). 'Superpower, Hegemony, Empire', in *A World of Politics: Essays on Global Politics*, London: Routledge, pp. 200–215.

Michael Hardt and Antonio Negri (2000) *Empire*, Cambridge: Harvard University Press (Chapter 1: 'Political Constitution of the present', sub part: 'World Order'. pp. 3-21).

d. International Order

Essential Readings

K. Smith (2020). 'Order, Ordering and disorder' in Tickner and Smith (Eds) *IR from Global South*, London: Routledge. pp. 77-96.

K.P. Bajpai and S. Mallavarapu (ed.) (2019). *India, the West, and International Order*. Hyderabad: Orient Blackswan, 'Introduction'-pp.1-50.

Additional Readings

R. Baumann, K. Dingwerth (2015). Global governance vs empire: Why world order moves towards heterarchy and hierarchy. *Journal of International Relations and Development* 18, 104–128. <https://doi.org/10.1057/jird.2014.6>.

U. Baxi (2003). 'Operation Enduring Freedom: Towards a New International Law and Order?' in A. Anghie, B. Chimni, et. al (eds.) *The Third World and International Order Law, Politics and Globalization*, Brill Academic Publishers: the Netherlands. Pp. 31-46.

Unit 4. Exploring the Future Trajectories

a. Global IR

Essential Readings

A. Acharya (2020) 'Global International Relations', in T. Dunne, M. Kurki, and S. Smith (eds.) *International Relations Theories Discipline and Diversity*, 4th Ed., Oxford: OUP. pp. 304-321.

F. Anderl and A. Witt (2020) 'Problematising the Global in Global IR'. *Millennium*, 49 (1): 32-57.

Additional Readings

Deepshikha Shahi (2019). 'The Advaitic Theory of International Relations: Reconciling Dualism and Monism in the Pursuit of the 'Global'', in *Advaita as a Global International Relations Theory*. Abingdon, Oxon; New York, NY: Routledge: pp.109-142.

Giorgio Shani and Navnita Chadha Behera (2021). 'Provincialising International Relations Through a Reading of Dharma,' *Review of International Studies*. pp. 1-20. <https://doi.org/10.1017/S026021052100053X>

b. A Relational Turn?

Essential Readings

Tamara A. Trowsell, A.B. Tickner, A. Querejazu, J. Reddekop, G. Shani, K. Shimizu, N.C. Behera and A. Arian, 'Differing about difference: relational IR from around the world', *International Studies Perspectives*, 22 (1): 25-64. <https://doi.org/10.1093/isp/ekaa008>

David L. Blaney, Tamara A. Trowsell (2021) *Recrafting International Relations by Worlding Multiply. Uluslararası İlişkiler Dergisi*. pp. 45-62, <https://dergipark.org.tr/en/download/article-file/1937147>.

Additional Readings

Tamara A. Trowsell, Amaya Querejazu, Giorgio Shani, Navnita Chadha Behera, Jarrad Reddekop and Arlene B. Tickner *Recrafting International Relations through Relationality*," *E-International Relations*, January 2019, <https://www.e-ir.info/2019/01/08/recrafting-international-relations-through-relationality/>;

Milja Kurki (2021). *Relational revolution and relationality in IR: New conversations* *Review of International Studies*, page 1-16 doi:10.1017/S0260210521000127.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category II

B.A. (Prog.) with Political Science as Major discipline

DISCIPLINE SPECIFIC CORE COURSE (DSC-2A): Indian Government and Politics

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Indian Government and Politics MDSC 2A | 4 | 3 | 1 | 0 | 12th Pass | NIL |

Learning Objectives

This course aims to familiarize students with constitutional government and nature of politics in India and the relationship between the two. It focusses on the originary moment of the Indian Republic through an understanding of the philosophy and the features of the Constitution while demonstrating how the processes of state formation and nation making coincided with constitution-making and the interlacing between the two. The course also introduces students to the institutions of the state, the constitutional rules governing them and the political trajectory of their evolution. The course then proceeds by way of familiarity with varied political processes that have dominated the nature of Indian politics including reflections on the development paradigm followed by the Indian state and a critical perspective on the character of Indian state itself. While focusing on the constitutional framework and design laid down for governance, the course delves deeper into the political processes through which a divergent space for actual politics is carved out, in India.

Learning outcomes

On successful completion of the course, students would demonstrate:

- Understanding of the Indian Constitution, its basic features and the rights and duties of the citizens as well as the constitutional obligations of the state
- Knowledge of state institutions in India, the constitutional provisions governing them and actual their working
- Understanding into the nature of Indian society and its relationship with politics through the prism of caste, class, gender, religion, etc.
- Knowledge of party system and political parties in India
- Awareness of the development debates in India and its relationship with the social movements

SYLLABUS OF MDSC-2A

UNIT – I (6 Hours)

Indian Constitution: basic features, debates on Fundamental Rights, Directive Principles and Federalism

UNIT – II (6 Hours)

State formation and nation building: Integration of princely states, linguistic re-organisation of states

UNIT – III (6 Hours)

Political institutions at the Centre and State levels: Parliament, Judiciary, Prime Minister, Chief Minister

UNIT – IV (4.5 Hours)

Social structure and political power: caste, class, gender

UNIT – V (4.5 Hours)

Religion and politics: debates on secularism and communalism

UNIT – VI (4.5 Hours)

Political parties and party systems

UNIT – VII (4.5 Hours)

Development strategies: planned economy, neo-liberal restructuring

UNIT – VIII (4.5 Hours)

Social movements: workers, farmers, environmental, and women's movements

UNIT – IX (4.5 Hours)

The nature of state in India: developmental, welfare, regulatory

Essential/recommended readings

Indian Constitution: basic features, debates on Fundamental Rights, Directive Principles and Federalism

B.R. Ambedkar (2010), Basic features of the Indian Constitution, in Valerian Rodrigues (ed), *The essential writings of BR Ambedkar*. Oxford University Press, India.

D.D. Basu (2011), Fundamental Rights and Duties (pp. 79- 142), in *Introduction to the Constitution of India*, (20thed.). Lexis Nexis, India.

S.K. Chaube (2010), Duties of State and Citizens, in *The Making and Working of the Indian Constitution*, NBT, India.

D.D. Basu (2011), Distribution of Legislative and Executive Powers, in *Introduction to the Constitution of India*, (20thed.). Lexis Nexis, India.

State formation and nation building: Integration of princely states, linguistic re-organisation of states

B. Chandra, A. Mukherjee and M. Mukherjee (2008), Consolidation of India as a Nation (I), in *India Since Independence*. New Delhi: Penguin.

B. Chandra, A. Mukherjee and M. Mukherjee (2008), Consolidation of India as a Nation (II), the Linguistic Organization of the States, in *India Since Independence*. New Delhi: Penguin.

V.P. Menon (1956), CH I- Setting the Stage and Ch XXV- The Cost of Integration, in *The Story of the Integration of the Indian States*, Orient Longman.

Political institutions at the Centre and State levels: Parliament, Judiciary, Prime Minister, Chief Minister

S.K. Chaube (2010), Union Government- 1: The Executive, in *The Making and Working of Indian Constitution*, NBT, India

S.K. Chaube (2010), Union Government 2: The Legislature, in *The Making and Working of Indian Constitution*, NBT, India

G. Austin (1966), *Indian Constitution, Cornerstone of a Nation*, OUP, pp. 145- 230.

P.S. Khanna (2008), The Indian Judicial system, in K Sankaran and U K Singh (eds), *Towards Legal Literacy: An Introduction to Law in India*, OUP.

A. Thiruvengadam (2018), The Executive and the Parliament, in *The Constitution of India, a Contextual Analysis*, Hart Publishing

R. Dhavan and R. Saxena (2006), 'The Republic of India', in K. Roy, C. Saunders and J. Kincaid (eds.) *A Global Dialogue on Federalism*, Volume 3, Montreal: Queen's University Press, pp. 166-197

Social structure and political power: caste, class, gender

R. Kothari (1970) 'Introduction', in *Caste in Indian Politics*, Delhi: Orient Longman, pp. 3-25.

S. Deshpande (2016) 'Caste in and as Indian Democracy', New Delhi: *Seminar*, No.677, pp. 54-58.

S. Jhodka (2010) 'Caste and Politics'. In NirajaJayal and PratapBhanu Mehta (eds). *The Oxford companion to politics in India*, pp.154-67.

U. Chakravarti (2003)'Caste and Gender in Contemporary India', in *Gendering Caste Through a Feminist Lens*. Calcutta: Stree, pp.139-317.

M. Weiner (2001) 'The Struggle for Equality: Caste in Indian Politics', in A. Kohli. (ed.) *The Success of India's Democracy*, Cambridge: CUP, pp.193-225.

S. Chowdhury (2007) 'Globalization and Labour', in B. Nayar (ed.) *Globalization and Politics in India*, Delhi: Oxford University Press, pp.516-526.

Raju J Das (2019). 'Class Relations, Class Struggle, and the State in India'. In *Critical Reflections on Economy and Politics in India: A class Theory Perspective*. Leiden; Boston: Brill, pp. 233-282.

Religion and politics: debates on secularism and communalism

T. Pantham, (2004) 'Understanding Indian Secularism: Learning from its Recent Critics', in R. Vora and S. Palshikar (eds.) *Indian Democracy: Meanings and Practices*, New Delhi: Sage, pp. 235-256.

N. Chandhoke, (2010) 'Secularism', in P. Mehta and N. Jayal (eds.) *The Oxford Companion to Politics in India*, New Delhi: Oxford University Press, pp. 333-346.

R. Bhargava (ed.) (2006) *Secularism and its Critics*, Oxford India Paperbacks.

Political parties and party systems

R. Kothari, (2002) 'The Congress System', in Z. Hasan (ed.) *Parties and Party Politics in India*, New Delhi: Oxford University Press, pp 39-55.

Y. Yadav and S. Palshikar, (2006) 'Party System and Electoral Politics in the Indian States, 1952-2002: From Hegemony to Convergence', in P.R. DeSouza and E. Sridharan (eds.) *India's Political Parties*, New Delhi: Sage, pp. 73-115.

C. Jaffrelot and G. Verniers (2020), 'A New Party System of a New Political System?', *Contemporary South Asia*, Vol.28, No.2, pp. 141-154.

M. Vaishnav and J. Hinton (2019), 'The Dawn of India's Fourth Party System', *Carnegie Endowment for International Peace Paper*, 5 September.

P. Chibber and R. Verma (2019), 'The Rise of the Second Dominant Party System in India: BJP's New Social Coalition in 2019', *Studies in Politics*, 7 (2): 131-148.

Development strategies: planned economy, neo-liberal restructuring

A. Mozoomdar, (1994) 'The Rise and Decline of Development Planning in India', in T. Byres (ed.) *The State and Development Planning in India*. Delhi: OUP, pp. 73-108.

T. Byres (1994) 'Introduction: Development Planning and the Interventionist State Versus Liberalization and the Neo-Liberal State: India, 1989-1996', in T. Byres (ed.) *The State, Development Planning and Liberalization in India*, New Delhi: Oxford University Press, pp.1-35.

P. Chatterjee (2000) 'Development Planning and the Indian State', in Zoya Hasan (ed.), *Politics and the State in India*, New Delhi: Sage, pp.116-140.

P. Patnaik and C. Chandrasekhar (2007) 'India: Dirigisme, Structural Adjustment, and the Radical Alternative', in B. Nayar (ed.), *Globalization and Politics in India*. Delhi: Oxford University Press, pp. 218-240.

S. Mehrotra and S. Guichard (eds.) (2020), *Planning in the 20th Century and Beyond: India's Planning Commission and the Niti Aayog*, Cambridge University Press, Cambridge.

Social movements: workers, farmers, environmental, and women's movements

G. Shah, (2004) *Social Movements in India: A Review of Literature*, New Delhi: Sage Publications.

A. Roy (2010) 'The Women's Movement', in N. Jayal and P. Mehta (eds.) *The Oxford Companion to Politics in India*, New Delhi: Oxford University Press, pp.409-422

A.R. Desai, (ed.), (1986) *Agrarian Struggles in India After Independence*, Delhi: Oxford University Press, pp. xi-xxxvi

D.N. Dhanagare (2017), Understanding the Farmers' Movement in Maharashtra: Towards an Analytical Framework, in *Populism and Power Farmers' movement in western India, 1980—2014*, Routledge

S. Shyam (2003) 'Organizing the Unorganized', in *Seminar*, [Footloose Labour: A Symposium on Livelihood Struggles of the Informal Workforce, 531] pp. 47-53.

G. Omvedt (2012) 'The Anti-caste Movement and the Discourse of Power', in N. Jayal (ed.) *Democracy in India*, New Delhi: Oxford India Paperbacks, sixth ed., pp.481-508.

R. Guha, *Environmentalism: A Global History*, Longman Publishers, 1999

B. Agarwal, Environmental Management, Equity and Ecofeminism: Debating India's Experience, *Journal of Peasant Studies*, Vol. 25, No. 4, pp. 55-95.

M. Mohanty (2002) 'The Changing Definition of Rights in India', in S. Patel, J. Bagchi, and K. Raj (eds.) *Thinking Social Sciences in India: Essays in Honour of Alice Thorner Patel*, New Delhi: Sage.

The nature of state in India: developmental, welfare, regulatory

A. Chakraborty (2019) 'From Passive Beneficiary to 'Rights Claimants': What Difference Does it Make', in A. P. D'Costa and A. Chakraborty (eds.) *Changing Contexts and Shifting*

Roles of the Indian State: New Perspectives on Development Dynamics, Singapore: Springer, pp. 25-38.

P. Chatterjee (2010) 'The State', in N. G. Jayal and P. B. Mehta eds. *The Oxford Companion to Politics in India*, Delhi: Oxford University Press, pp. 3-14.

R. Khera, 2020, India's Welfare State: A Halting Shift from Benevolence to Rights, *Current History*, Vol 119, Issue 816

M. Khosla and M. Vaishnav, (2021), 'The Three Faces of the Indian State', *Open Democracy*, 32(1), pp. 111-25.

M. Mohanty, (1989) 'Duality of the State Process in India: A Hypothesis', *Bhartiya Samajik Chintan*, Vol. XII (1-2).

M.P Singh and R. Saxena, 2021 (Re-print) *Indian Politics: Constitutional Foundations and Institutional Functioning*, Third Edition, PHI Learning Pvt. Ltd. (Chapter 3).

A. K. Thiruvengadam, 'Flag-bearers of a New Era? The Evolution of New Regulatory Institutions in India (1991-2016)' in S. Rose-Ackerman, P.L. Lindseth and J. Emerson eds., *Comparative Administrative Law*, Cheltenham: Edward Elgar, pp. 218-232.

L. Tillin, R. Deshpande and K.K. Kailash eds. (2015) *Politics of Welfare: Comparisons across Indian States*, Delhi: Oxford University Press [Introduction: Comparing the Politics of Welfare across Indian States, pp. 1-39]

Additional Readings:

B.Chandra, A. Mukherjee and M. Mukherjee (2010) *India After Independence*. New Delhi: Penguin.

M.P. Singh and R. Saxena (2008) *Indian Politics: Contemporary Issues and Concerns*. New Delhi: PHI Learning.

G. Austin (1999) *Indian Constitution: Corner Stone of a Nation*. New Delhi: Oxford University Press.

G. Austin (2004) *Working of a Democratic Constitution of India*. New Delhi: Oxford University Press.

N.G. Jayal and P.B. Mehta (eds.) (2010) *Oxford Companion to Indian Politics*. New Delhi: Oxford University Press.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE (DSC-2B): India's Foreign Policy**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| India's Foreign Policy MDSC 2B | 4 | 3 | 1 | 0 | 12 th Pass | NIL |

Learning Objectives

This course introduces India's foreign policy to students by first explaining its key determining principles and objectives. They will learn about the central issues and developments pertaining to India's foreign policy at the bilateral, regional and global levels. The course also imparts an understanding of India's evolving relations with the superpowers during the Cold War and post-Cold War period with a special focus on India's neighbourhood diplomacy. India's bargaining strategies and positioning in international climate change negotiations and international economic governance will be taught to help the students understand changing positions and developments of India's role in the global domain since independence. This facilitates an understanding about the shift in India's identity from being a postcolonial state to an emerging power in the contemporary multipolar world.

Learning outcomes

At the end of this course, the students would acquire:

- Basic knowledge of the determinants, principles and key drivers of India's foreign policy.
- Understanding the original rationale of India's non-alignment policy and its relevance in the contemporary context as to how India exercises strategic autonomy in foreign policy choices.
- An insight about India's position in changing global power equations particularly its bilateral ties with powerful nations like the US and Russia along with India's largest neighbour, China.
- Understanding of India's neighbourhood diplomacy in South Asia with regard to important challenges pertaining to border disputes, migration and refugees
- Grasp of India's negotiation strategies in dealing with global challenges in the realm of trade and environmental governance.

SYLLABUS OF MDSC-2B**UNIT – I (12 Hours)****India's Foreign Policy: Meaning, Determinants and Evolution****1.1 Domestic and International Determinants of India's Foreign Policy**

- 1.2 Objectives and Principles
- 1.3 Non-Alignment and Beyond: Concepts, Policy and Relevance

UNIT – II (15 Hours)

Changing Relations with the Global Powers from Cold War to the Post-Cold War Era

- 2.1 India and USA
- 2.2 India and Russia
- 2.3 India and China
- 2.4 India and EU

UNIT – III (9 Hours)

India and the Neighbourhood: Issues and Challenges

- 3.1 Border disputes
- 3.2 Migration and Refugee Issues
- 3.3 Cross-border Terrorism

UNIT – IV (9 Hours)

India in the Contemporary Multipolar World

- 4.1 India's Engagements in Multilateral Forums: Negotiations on Trade and Climate Change
- 4.2 India as a Global Power: Prospects and Challenges

Essential/recommended readings

Unit 1. India's Foreign Policy: Meaning, Determinants and Evolution

1.1 Domestic and International Determinants/ 1.2 Objectives and Principles

Essential Readings

Bandyopadhyay, J. (2003). Basic Determinants. In *Making of India's Foreign Policy*. New Delhi: Allied Publishers, pp. 26-80.

Dixit, J.N. (1998). India's Foreign Policy: Conceptual and Philosophical Origins. In *Across Borders: Fifty Years of India's Foreign Policy*. New Delhi: Thomson Press, pp. 1-13.

Dubey, M. (2016). India's Foreign Policy: Underlying Principles, Strategies and Challenges Ahead, in *India's Foreign Policy: Coping with the Changing World*. Hyderabad: Orient Blackswan, pp. 1-54

Additional Readings

Appadorai, A. (1981). Introduction. In *The Domestic Roots of India's Foreign Policy*. New Delhi: OUP, pp.1-26

Sahni, Varun. (2007). India's Foreign Policy: Key drivers. *The South African Journal of International Affairs*, 14 (2), 21-35.

1.3 Non-Alignment and Beyond: Concepts, Policy and Relevance

Essential Readings

Rana, A.P. (1976). *Imperatives of Non-Alignment: A Conceptual Study of India's Foreign Policy*. New Delhi: Macmillan pp. 1-10.

Mishra, K.P. (1981). Towards Understanding Non-alignment. *International Studies*, 20 (1-2), 23-37.

Yadav, R.S. (2021). Paradigm Shift: Non-Alignment to Globalization in *India's Foreign Policy in the Post-Cold War Years*. New Delhi: Pearson, pp. 41-50

Additional Readings

Ganguly, S. and Pardesi, M. (2009) 'Explaining Sixty Years of India's Foreign Policy', *India Review*, Vol. 8 (1), pp. 4–19.

Khilani, S., Kumar, R. et al. (2012) 'Non-Alignment 2.0', pp. 70. Available at <https://cprindia.org/wp-content/uploads/2021/12/NonAlignment-2.pdf>.

Kaura, V. (2021). Debating the Relevance of Non-alignment in Indian Diplomacy. *India Quarterly*, 77 (3), 501-506.

Unit 2. Changing Relations with the Global Powers from Cold War to Post-Cold War

2.1 India and USA

Essential Readings

Pant, H. V. (2016). India and the US: an emerging partnership, in *Indian foreign policy: An overview*, Manchester: Manchester University Press, pp. 21-34.

Dubey, M. (2016). Indo-US Relations in *India's Foreign Policy: Coping with the Changing World*, Hyderabad: Orient Blackswan Private Limited, pp. 208-258.

Additional Readings

Hagerty, D. T. (2016). The Indo-US Entente: Committed Relationship or 'Friends with Benefits'? in Ganguly, Sumit (ed.), *Engaging the World: Indian Foreign Policy Since 1947* (pp. 133-155). New Delhi: Oxford University Press.

Dhaliwal, S. (2021). Introduction. In Shweta Dhaliwal (ed.), *Indo-US Relations: Steering through the Changing World Order*. New York: Routledge, pp. 1-9.

2.2. India and Russia

Essential Readings

Ollapally, Deepa M. (2010). The Evolution of India's Relations with Russia, In Sumit Ganguly (ed.), *India's Foreign Policy: Retrospect and Prospect* (pp. 226-247). New Delhi: Oxford University Press.

Pant, Harsh V. (2016). India and Russia: Convergence over Time, in *Indian foreign policy: An overview*. Manchester: Manchester University Press, pp. 50-63.

Saran, Shyam. (2022). Implications of the Russia-Ukraine Conflict for India, Asia-Pacific Leadership Network, <https://www.apln.network/projects/trans-urasian-security/implications-of-the-russia-ukraine-conflict-for-india>

Additional Readings

Menon, R. (2015). India and Russia: The anatomy and Evolution of a Relationship. In David M. Malone, C. Raja Mohan, & S. Raghavan (eds.), *The Oxford Handbook of Indian Foreign Policy*. Oxford: OUP. pp.509-523.

Kapoor, N. (2019). India-Russia ties in a changing world order: In pursuit of a Special Strategic Partnership. *ORF Occasional Paper*, pp. 4-36.

Ganguly, Sumit. (2022). Why India Has Been Soft on Russia Over Ukraine. *The Diplomat*, April 15, <https://thediplomat.com/2022/04/why-india-has-been-soft-on-russia-over-ukraine/>

2.3 India and China

Essential Readings

Pant, Harsh V. (2016). India and China: An Uneasy Relationship, in *Indian foreign policy: An overview*. Manchester: Manchester University Press, pp. 35-49.

Saran, S. (2017). Changing Dynamics in India–China Relations. *China Report*, 53 (2): 259–263.

Additional Readings

Bhalla, Madhu. (2021). The China factor in India's economic diplomacy. In *A 2030 Vision for India's Economic Diplomacy*, Global Policy-ORF publication, April 26, pp. 1-11. Available at: <https://www.orfonline.org/expert-speak/china-factor-india-economic-diplomacy/>

Tellis, A. and Mirski, S. (2013). Introduction. In A. Tellis and S. Mirski (eds.), *Crux of Asia: China, India, and the Emerging Global Order*, Washington: Carnegie Endowment for International Peace, pp. 3-44.

Swaran, S. (2021). COVID-19 and India-China Equations: Examining their Interface in the Indian Ocean Region. *Chinese Studies Journal*, 15, pp.11-132.

2.4 India and the EU

Essential Readings

Pant, Harsh V. (2016). 'India and the European Union: A Relationship in Search of a Meaning', in *Indian Foreign Policy: An overview*. Manchester: Manchester University Press, pp. 64-74.

Khorana, S. (2021). The European Union–India Strategic Partnership: An Examination of the Economic Aspects. In: Gieg, P., Lowinger, T., Pietzko, M., Zürn, A., Bava, U.S., Müller-Brandeck-Bocquet, G. (eds) *EU-India Relations. Contributions to International Relations*. Springer, Cham, Switzerland, pp. 141-150.

Additional Readings

Abhyankar, Rajendra M. (2009). India and the European Union: A Partnership for All Reasons. *India Quarterly*, Vol. 65, No. 4, pp. 393-404.

Jain, Rajendra K. (2011). India's Relations with the European Union. In D. Scott (ed.) *Handbook of India's International Relations*. London and NY: Routledge, pp. 223-232.

Unit 3. India and the Neighborhood: Issues and Challenges

3.1 Border Disputes

Essential Readings

Das, Pushpita. (2021). Security Threats to India's Borders, in *India's Approach to Border Management: From Barriers to Bridges*. New Delhi: KW Publishers, pp.1-40.

Godbole, Madhav. (2001). *Management of India's international borders: Some Challenges Ahead*, EPW, Vol. 36, No. 48, pp. 4442-4444.

Additional Readings

Rajan, Amit. (2018). *India-Bangladesh Border Disputes: History and Post-LBA Dynamics*, Springer, pp. 89-125.

Ortan, Anna. (2010). Ch 2: Border Dispute with China, Ch 3: Border Dispute with Pakistan, Ch 4: Border Dispute with Bangladesh and, Ch 5: Border Dispute with Nepal, in *India's Borderland Disputes: China, Pakistan, Bangladesh and Nepal*, New Delhi: Epitome Books, pp. 5-71; 72-130; 131-167; and 168-216.

3.2 Migration

Essential Readings

Chowdhory, Nasreen (2016), 'Citizenship and Membership: Placing Refugees in India', in Uddin, N., Chowdhory, N. (ed.). *Deterritorialized Identity and Trans border Movement in South Asia*, Springer, pp. 37-54.

Norbu, Dawa, 'Tibetan Refugees in South Asia: A Case of Peaceful Adjustment', in Muni, S.D and Baral, Lok Raj (ed.) (1996). *Refugees and Regional Security in South Asia*, New Delhi: Konark Publications, pp. 78-98.

Additional Readings

Samuels, F., et al. (2011). *Vulnerabilities of movement: cross-border mobility between India, Nepal and Bangladesh*, Overseas Development Institute, pp. 1-12.

Datta, A. (2012) *Refugees and borders in South Asia: the great exodus of 1971*. Routledge *Studies in South Asian Politics*. New York Routledge, pp. 44-85.

Fiddian-Qasmiyeh, E. Loescher, et al. (2014). *The Oxford Handbook of Refugee and Forced Migration Studies*, Oxford: Oxford University Press, pp. 1-22.

3.3 Terrorism

Essential Readings

Singh, Rashmi. (2018). India's Experience with Terrorism. In Sumit Ganguly, Nicolas Blarel, Manjeet S. Pardesi (eds.), *The Oxford Handbook of India's National Security*. New Delhi: Oxford University Press, pp. 247-265.

Gupta, A., Behuria, A., Ramamna, P.V., & Das, P. (2012). India's Experience in Dealing with Terrorism, pp. 44-60. In Anand Kumar (ed.), *Terror Challenge in South Asia and Prospect of Regional Cooperation*. New Delhi: Pentagon Security International.

Muni, S. D. and Chadha, Vivek. Terrorism Emerging Trends, *Asian Strategic Review* 2016, KW Publications, pp 258-281.

Additional Readings

Sakthivel, P. (2010). Terrorism in India: The Unholy Neighbours, *The Indian Journal of Political Science*, Vol. LXXI, No. 1, Jan.-Mar, pp. 153-162

Anant, Arpita. (2011). India and International Terrorism. In David Scott (ed.) *Handbook of India's International Relations*. New York: Routledge, pp. 266-277.

Cordesman, Anthony H. (2017). *Terrorism in South Asia, Global Trends in Terrorism: 1970-2016*, Washington DC: Center for Strategic and International Studies Report, pp. 291-303.

Unit 4. India in the Contemporary Multipolar world

4.1 India's Engagements in Multilateral Forums

Essential Readings

Negotiations on Trade

Sharma, Mihir Swarup and Bhogal, Preety (2022). India and Global Trade Governance: A Saga of Missed Opportunities, in Harsh V Pant (ed.), *India and Global Governance: A Rising Power and Its Discontents*. New York: Routledge, pp. 109-134.

Mehta, S. P., & Chatterjee, B. (2015). India in the International Trading System. In David M. Malone, C. Raja Mohan & S. Raghavan (eds.), *The Oxford Handbook of Indian Foreign Policy*, Oxford: Oxford University Press, pp. 636-649.

Negotiations on Climate Change

Negi, A. (2014). India and the Climate Change Regime. In Amitabh Mattoo & Happymon Jacob (eds.) *India and the International System: Theory, Policy and Structure* (pp. 287-307). New Delhi: Australia-India Institute and Manohar Publications.

Dubash, K. N., & Rajamani, L. (2015). Multilateral Diplomacy on Climate Change. In David M. Malone, C. Raja Mohan, & S. Raghavan (eds.), *The Oxford Handbook of Indian Foreign Policy* (pp. 663-677). Oxford: Oxford University Press.

Additional Readings

Narlikar, A. (2021). India's Foreign Economic Policy under Modi: Negotiations and Narratives in the WTO and Beyond. *International Politics*, 59 (1), pp.148-166.

Mukherji, R. (2014). India and Global Economic Governance: From Structural Conflict to Embedded Liberalism. *International Studies Review*, 16(3), 460-466.

Mohan, A. (2017). From Rio to Paris: India in Global Climate Politics. Observer Research Foundation, pp. 1- 42. <https://www.orfonline.org/research/rio-to-paris-india-global-climate-politics/>

Nachiappan, K. (2019). Agenda-setting from behind: India and the Framework Convention on climate change. *India Review*, 18(5), pp. 552-567.

Sengupta, Sandeep. (2013). Defending 'Differentiation': India's Foreign Policy on Climate Change from Rio to Copenhagen in Kanti P. Bajpai and Harsh V Pant (eds.), *India's Foreign Policy: A Reader*. New Delhi: Oxford University Press, pp. 389-411.

Sinha, U.K. (2011). India and Climate Change. In David Scott (ed.) *Handbook of India's International Relations*. London: Routledge, pp. 301-311.

4.2 India as a Global Power: Prospects and Challenges

Essential Readings

Kukreja, Veena. (2017). Dynamics of Change and Continuity in India's Foreign Policy under Modi's Regime in Shantesh K Singh (ed.) *India's Foreign Policy Continuity with Difference Under Modi Government*. New Delhi: Manak Publications, pp.1-16.

Saran, S. (2017). Shaping the World Order and India's Role, in *How India Sees the World: Kautilya to the 21st Century*. New Delhi: New Delhi: Juggernaut Books. pp. 258-275.

Additional Readings

Yadav, R.S. (2021). India as Rising Power Opportunities & Challenges in *India's Foreign Policy in the Post-Cold War Years*. Noida, Pearson, pp. 253-266.

Hall, Ian. (2019). Non-Alignment to Multi-Alignment, in *Modi and the Reinvention of Indian Foreign Policy*. Bristol: Bristol University Press, pp. 21-40.

Sikri, R. (2007). India's Strategic Choices in *Challenge and Strategy in Rethinking India's Foreign Policy*, New Delhi: Sage Publications., pp. 277-290.

Suggestive readings

Malone, David, Raja Mohan, C. and Raghavan, S. (eds.) (2015). *The Oxford Handbook of Indian Foreign Policy*, United Kingdom: Oxford University Press.

Ganguly, Sumit (ed.) (2016). *Engaging the World-Indian Foreign Policy since 1947*. New Delhi: Oxford University Press.

Ragi, Sangit K. et.al. (2018). *Imagining India as a Global Power: Prospects and Challenges*. New York: Routledge.

Dubey, Muchkund (2015). *India's Foreign Policy: Coping with the Changing World*, Hyderabad: Orient BlackSwan.

Ganguly, S. (2019). *Indian Foreign Policy: Oxford India Short Introductions*. Oxford University Press.

Ian Hall (ed.) (2014). *The Engagement of India: Strategies and Responses*. Washington DC: Georgetown University Press.

Dutt, V.P. (1984). *India's Foreign Policy*, Vikas Publishing House, New Delhi.

Resources in Hindi

गांगुली, सुमित (2018) भारत की विदेश नीति : पुनरावलोकन एवं संभावनाएं , अनुवादक: अभिषेक चौधरी, नई दिल्ली : ऑक्सफोर्ड यूनिवर्सिटी प्रेस।

सीकरी, राजीव (2009) भारत की विदेश नीति : चुनौती और राजनीति। नई दिल्ली : सेज भाषा।

अरोड़ा, लिपाक्षी, खन्ना, वी.एन., कुमार लेस्ली के. (2019). भारत की विदेश नीति। नई दिल्ली : विकास प्रकाशन।

दीक्षित, जे.एन. (2020) भारतीय विदेश नीति। नई दिल्ली : प्रभात प्रकाशन।

मिश्रा, राजेश (2018) भारतीय विदेश नीति : भुमंडलीकरण के दौर में। नई दिल्ली : ओरिएंट ब्लैकस्वान।

पंत, हर्ष (2022) इस संकट में चीन के हाथों रूस को खो न दें हम!

<https://www.orfonline.org/hindi/research/ukraine-crisis-russia-at-the-hands-of-china-in-this-crisis/>

सरन, समीर (2022) 75 वर्ष का भारत : नैतिकता, अर्थव्यवस्था और मिसाल।

<https://www.orfonline.org/hindi/research/india-75-ethic-economy-and-exemplar/>

आर. एस . यादव (2013), भारत की विदेश नीति। नई दिल्ली : पियर्सन एजुकेशन।

पुष्पेश पन्त (2010), भारत की विदेश नीति। नई दिल्ली : मैकग्राहिल एजुकेशन।

दत्त, वी.पी. (2015) ,बदलते दुनिया में भारत की विदेश नीति (1987 से 2008 तक)। दिल्ली : हिंदी माध्यम निदेशालय, दिल्ली विश्वविद्यालय।

यादव, आर.एस. (2013) भारत की विदेश नीति। दिल्ली : पियर्सन।

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category III

B.A. Prog. with Political Science as non-Major or Minor discipline

DISCIPLINE SPECIFIC CORE COURSE (MDSC-2A): Indian Government and Politics

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Indian Government and Politics MDSC 2A | 4 | 3 | 1 | 0 | 12 th Pass | NIL |

Learning Objectives

This course aims to familiarize students with constitutional government and nature of politics in India and the relationship between the two. It focusses on the originary moment of the Indian Republic through an understanding of the philosophy and the features of the Constitution while demonstrating how the processes of state formation and nation making coincided with constitution-making and the interlacing between the two. The course also introduces students to the institutions of the state, the constitutional rules governing them and the political trajectory of their evolution. The course then proceeds by way of familiarity with varied political processes that have dominated the nature of Indian politics including reflections on the development paradigm followed by the Indian state and a critical perspective on the character of Indian state itself. While focusing on the constitutional framework and design laid down for governance, the course delves deeper into the political processes through which a divergent space for actual politics is carved out, in India.

Learning outcomes

On successful completion of the course, students would demonstrate:

- Understanding of the Indian Constitution, its basic features and the rights and duties of the citizens as well as the constitutional obligations of the state
- Knowledge of state institutions in India, the constitutional provisions governing them and actual their working
- Understanding into the nature of Indian society and its relationship with politics through the prism of caste, class, gender, religion, etc.
- Knowledge of party system and political parties in India
- Awareness of the development debates in India and its relationship with the social movements

SYLLABUS OF MDSC-2A

UNIT – I (6 Hours)

Indian Constitution: basic features, debates on Fundamental Rights, Directive Principles and Federalism

UNIT – II (6 Hours)

State formation and nation building: Integration of princely states, linguistic re-organisation of states

UNIT – III (6 Hours)

Political institutions at the Centre and State levels: Parliament, Judiciary, Prime Minister, Chief Minister

UNIT – IV (4.5 Hours)

Social structure and political power: caste, class, gender

UNIT – V (4.5 Hours)

Religion and politics: debates on secularism and communalism

UNIT – VI (4.5 Hours)

Political parties and party systems

UNIT – VII (4.5 Hours)

Development strategies: planned economy, neo-liberal restructuring

UNIT – VIII (4.5 Hours)

Social movements: workers, farmers, environmental, and women's movements

UNIT – IX (4.5 Hours)

The nature of state in India: developmental, welfare, regulatory

Essential/recommended readings

Indian Constitution: basic features, debates on Fundamental Rights, Directive Principles and Federalism

B R Ambedkar, 2010, Basic features of the Indian Constitution, in Valerian Rodrigues (ed), *The essential writings of BR Ambedkar*. Oxford University Press, India.

D DBasu, 2011, Fundamental Rights and Duties (pp. 79- 142), in *Introduction to the Constitution of India*, (20thed.). Lexis Nexis, India.

ShibaniKinkarChaube, 2010, Duties of State and Citizens, in *The Making and Working of the Indian Constitution*, NBT, India.

D DBasu, 2011, Distribution of Legislative and Executive Powers, in *Introduction to the Constitution of India*, (20thed.). Lexis Nexis, India.

State formation and nation building: Integration of princely states, linguistic re-organisation of states

Chandra, B., Mukherjee, A. & Mukherjee, M. (2008), Consolidation of India as a Nation (I), in *India Since Independence*. New Delhi: Penguin.

Chandra, B., Mukherjee, A. & Mukherjee, M. (2008), Consolidation of India as a Nation (II), the Linguistic Organization of the States, in *India Since Independence*. New Delhi: Penguin.

V P Menon, 1956, CH I- Setting the Stage and Ch XXV- The Cost of Integration, in *The Story of the Integration of the Indian States*, Orient Longman.

Political institutions at the Centre and State levels: Parliament, Judiciary, Prime Minister, Chief Minister

S.K. Chaube, 2010, Union Government- 1: The Executive, in *The Making and Working of Indian Constitution*, NBT, India

S.K. Chaube, 2010, Union Government 2: The Legislature, in *The Making and Working of Indian Constitution*, NBT, India

Granville Austin, 1966, *Indian Constitution, Cornerstone of a Nation*, OUP, pp. 145- 230.

Punam S Khanna, 2008, The Indian Judicial system, in K Sankaran and U K Singh (eds), *Towards Legal Literacy: An Introduction to Law in India*, OUP.

ArunThiruvengadam, 2018, The Executive and the Parliament, in *The Constitution of India, a Contextual Analysis*, Hart Publishing

R. Dhavan and R. Saxena (2006), 'The Republic of India', in K. Roy, C. Saunders and J. Kincaid (eds.) *A Global Dialogue on Federalism*, Volume 3, Montreal: Queen's University Press, pp. 166-197

Social structure and political power: caste, class, gender

R. Kothari, (1970) 'Introduction', in *Caste in Indian Politics*, Delhi: Orient Longman, pp.3-25.

S. Deshpande (2016), 'Caste in and as Indian Democracy', New Delhi: *Seminar*, No.677, pp. 54-58.

Jhodka, Surinder. 2010. 'Caste and Politics'. In NirajaJayal and PratapBhanu Mehta (eds). *The Oxford companion to politics in India*, pp.154-67.

U. Chakravarti. (2003)'Caste and Gender in Contemporary India', in *Gendering Caste Through a Feminist Lens*. Calcutta: Stree, pp.139-317.

M. Weiner, (2001) 'The Struggle for Equality: Caste in Indian Politics', in A.Kohli. (ed.)*The Success of India's Democracy*, Cambridge: CUP, pp.193-225.

S. Chowdhury, (2007) 'Globalization and Labour', in B. Nayar (ed.) *Globalization and Politics in India*, Delhi: Oxford University Press, pp.516-526.

Raju. J Das. (2019). 'Class Relations, Class Struggle, and the State in India'. In *Critical Reflections on Economy and Politics in India: A class Theory Perspective*. Leiden; Boston: Brill, pp. 233-282.

Religion and politics: debates on secularism and communalism

T. Pantham, (2004) 'Understanding Indian Secularism: Learning from its Recent Critics', in R. Vora and S. Palshikar (eds.) *Indian Democracy: Meanings and Practices*, New Delhi: Sage, pp. 235-256.

N. Chandhoke, (2010) 'Secularism', in P. Mehta and N. Jayal (eds.) *The Oxford Companion to Politics in India*, New Delhi: Oxford University Press, pp. 333-346.

R Bhargava (ed.) (2006) *Secularism and its Critics*, Oxford India Paperbacks.

Political parties and party systems

R. Kothari, (2002) 'The Congress System', in Z. Hasan (ed.) *Parties and Party Politics in India*, New Delhi: Oxford University Press, pp 39-55.

Y. Yadav and S. Palshikar, (2006) 'Party System and Electoral Politics in the Indian States, 1952-2002: From Hegemony to Convergence', in P.R. DeSouza and E. Sridharan (eds.) *India's Political Parties*, New Delhi: Sage, pp. 73-115.

C. Jaffrelot and G. Verniers (2020), 'A New Party System of a New Political System?', *Contemporary South Asia*, Vol.28, No.2, pp. 141-154.

M. Vaishnav and J. Hinton (2019), 'The Dawn of India's Fourth Party System', *Carnegie Endowment for International Peace Paper*, 5 September.

Pradeep Chibber and Rahul Verma, (2019) 'The Rise of the Second Dominant Party System in India: BJP's New Social Coalition in 2019' in *Studies in Politics*, Vol. 7, No.2, Pp.131-148.

Development strategies: planned economy, neo-liberal restructuring

A. Mozumdar, (1994) 'The Rise and Decline of Development Planning in India', in T. Byres (ed.) *The State and Development Planning in India*. Delhi: Oxford University Press, pp. 73-108

T. Byres, (1994) 'Introduction: Development Planning and the Interventionist State Versus Liberalization and the Neo-Liberal State: India, 1989-1996', in T. Byres (ed.) *The State, Development Planning and Liberalization in India*, New Delhi: Oxford University Press, pp.1-35.

P. Chatterjee, (2000) 'Development Planning and the Indian State', in Zoya Hasan (ed.), *Politics and the State in India*, New Delhi: Sage, pp.116-140.

P. Patnaik and C. Chandrasekhar, (2007) 'India: Dirigisme, Structural Adjustment, and the Radical Alternative', in B. Nayar (ed.), *Globalization and Politics in India*. Delhi: Oxford University Press, pp. 218-240.

S. Mehrotra and S. Guichard, eds., (2020), *Planning in the 20th Century and Beyond: India's Planning Commission and the Niti Aayog*, Cambridge University Press, Cambridge.

Social movements: workers, farmers, environmental, and women's movements

G. Shah, (2004) *Social Movements in India: A Review of Literature*, New Delhi: Sage Publications.

A. Roy, (2010) 'The Women's Movement', in N. Jayal and P. Mehta (eds.) *The Oxford Companion to Politics in India*, New Delhi: Oxford University Press, pp.409-422

A.R. Desai, (ed.), (1986) *Agrarian Struggles in India After Independence*, Delhi: Oxford University Press, pp. xi-xxxvi

D.N. Dhanagare, (2017), *Understanding the Farmers' Movement in Maharashtra: Towards an Analytical Framework*, in *Populism and Power Farmers' movement in western India, 1980—2014*, Routledge

S. Shyam, (2003) 'Organizing the Unorganized', in *Seminar*, [Footloose Labour: A Symposium on Livelihood Struggles of the Informal Workforce, 531] pp. 47-53.

G. Omvedt, (2012) 'The Anti-caste Movement and the Discourse of Power', in N. Jayal (ed.) *Democracy in India*, New Delhi: Oxford India Paperbacks, sixth impression, pp.481-508.

R. Guha, *Environmentalism: A Global History*, Longman Publishers, 1999

B. Agarwal, Environmental Management, Equity and Ecofeminism: Debating India's Experience, *Journal of Peasant Studies*, Vol. 25, No. 4, pp. 55-95.

M. Mohanty, (2002) 'The Changing Definition of Rights in India', in S. Patel, J. Bagchi, and K. Raj (eds.) *Thinking Social Sciences in India: Essays in Honour of Alice Thorner Patel*, New Delhi: Sage.

The nature of state in India: developmental, welfare, regulatory

A. Chakraborty (2019) 'From Passive Beneficiary to 'Rights Claimants': What Difference Does it Make', in A. P. D'Costa and A. Chakraborty eds., *Changing Contexts and Shifting Roles of the Indian State: New Perspectives on Development Dynamics*, Singapore: Springer, pp. 25-38.

P. Chatterjee (2010) 'The State', in N. G. Jayal and P. B. Mehta eds. *The Oxford Companion to Politics in India*, Delhi: Oxford University Press, pp. 3-14.

R. Khera, 2020, India's Welfare State: A Halting Shift from Benevolence to Rights, *Current History*, Vol 119, Issue 816

M. Khosla and M. Vaishnav, (2021), 'The Three Faces of the Indian State', *Open Democracy*, 32(1), pp. 111-25.

M. Mohanty, (1989) 'Duality of the State Process in India: A Hypothesis', *Bhartiya Samajik Chintan*, Vol. XII (1-2).

M.P Singh and R. Saxena, 2021 (Re-print) *Indian Politics: Constitutional Foundations and Institutional Functioning*, Third Edition, PHI Learning Pvt. Ltd. (Chapter 3).

A. K. Thiruvengadam, 'Flag-bearers of a New Era? The Evolution of New Regulatory Institutions in India (1991-2016)' in S. Rose-Ackerman, P.L. Lindseth and J. Emerson eds., *Comparative Administrative Law*, Cheltenham: Edward Elgar, pp. 218-232.

L. Tillin, R. Deshpande and K.K. Kailash eds. (2015) *Politics of Welfare: Comparisons across Indian States*, Delhi: Oxford University Press [Introduction: Comparing the Politics of Welfare across Indian States, pp. 1-39]

Additional Readings:

Chandra, B., Mukherjee, A. & Mukherjee, M. (2010) *India After Independence*. New Delhi: Penguin.

Singh, M.P. & Saxena, R. (2008) *Indian Politics: Contemporary Issues and Concerns*. New Delhi: PHI Learning.

Austin, G. (1999) *Indian Constitution: Corner Stone of a Nation*. New Delhi: Oxford University Press.

Austin, G. (2004) *Working of a Democratic Constitution of India*. New Delhi: Oxford University Press.

Jayal, N. G. and Mehta, P. B. (eds.) (2010) *Oxford Companion to Indian Politics*. New Delhi: Oxford University Press.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

**COMMON POOL OF GENERIC ELECTIVES (GE) COURSES OFFERED BY THE
DEPARTMENT OF POLITICAL SCIENCE**

Credit distribution, Eligibility and Pre-requisites of the Course

GENERIC ELECTIVES (GE-1): Ideas in Indian Political Thought

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|----------|-----------------------------------|----------|---------------------|-----------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Ideas in Indian Political Thought GE-1 | 4 | 3 | 1 | 0 | 12th Pass | NIL |

Learning Objectives

This paper is designed for students who are from other disciplines and wish to have a basic understanding of the various themes that has shaped Indian society and politics. It revolves around key concepts based on original texts which would help the students to critically engage with the ideas.

Learning outcomes

After completion of this course, students will be able to

- answer about the nature and form of statecraft that existed in Ancient India.
- explain how the texts in ancient India interpreted Dharma and Danda
- answer what were sources and mechanisms to practice Nyay in ancient India.
- make distinction between Rastra and Rajya.
- explain the meaning and foundations of Varna and how are they different from caste.

SYLLABUS OF GE-1

UNIT – I (6 Hours)

Dharma and Danda: Kautilya

UNIT – II (6 Hours)

Gender: Tarabai Shinde

UNIT – III (6 Hours)

Culture and Nationalism: Vivekananda

UNIT – IV (6 Hours)

Swaraj: Gandhi

UNIT – V (6 Hours)

Nyaya: Ambedkar

UNIT – VI (7.5 Hours)

Hindutva: Savarkar

UNIT – VII (7.5 Hours)

Integral Humanism: Deen Dayal Upadhyaya

Essential/recommended readings

1. Dharma and Danda: Kautilya

Mehta, V.R. (1992) 'The Pragmatic Vision: Kautilya and His Successor', in *Foundations of Indian Political Thought*, Delhi: Manohar, pp. 88- 109.

Sharma, R S (2005), *Aspects of Political Ideas and Institutions in Ancient India*, Motilal Banarsidass, New Delhi pp 143-164

2. Gender: Tarabai Shinde

O' Hanlon, Rosalind (2002) *A comparison between women and men: Tarabai Shinde and the critique of Gender Relations in Colonial India*. New Delhi: Oxford University Press.

Lele, Jayant (1998) *Gender Consciousness in Mid-Nineteenth Century Maharashtra*, in Anne Feldhaus *Images of women in Maharastrain Society*. The University of New York Press: New York

3. Culture and Nationalism: Vivekananda

Sen, Amiya P. (2011), 'Vivekanand: Cultural Nationalism', in M. P. Singh and Himanshu Roy (ed.), *Indian Political Thought: Themes and Thinkers* Delhi. Pearson

Kiggley, Dermot (1990) 'Vivekananda's western message from the East' in William Radice (ed) *Swami Vivekananda and modernization of Hinduism*, New Delhi: Oxford University Press.

4. Swaraj: Gandhi

Parel, A. (ed.) (2002), 'Introduction', in *Gandhi, freedom and Self Rule*, Delhi: Vistaar Publication.

Dalton, Denis (1982) *Indian Idea of freedom*, Gurgaon: Academic Press, pp 154-190

5. Nyaya: Ambedkar

Pantham, Thomas and Kenneth Deutsch (ed) (1986) *Political Thought in Modern India*, New Delhi: Sage, pp 161-175

Rodrigues, Valerian (2002) *The Essential writings of B.R Ambedkar*, Delhi: Oxford University Press, pp 1-44

6. Hindutva: Savarkar

Savarkar, Vinayak Damodar (1922-23) *Essentials of Hindutva*, 1922, available at: http://savarkar.org/en/encyc/2017/5/23/2_12_12_04_essentials_of_hindutva.v001.pdf_1.pdf

Sampath, Vikram (2021) *Savarkar: A Contested Legacy, 1924-1966*, Gurugram: Penguin Random House India

7. Integral Humanism: Deen Dayal Upadhyaya

Upadhyaya, Deendayal. (1964), *Integral Humanism*, Delhi: Bharatiya Jan Sangh.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-2) : Introduction to the Indian Constitution

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|----------|-----------------------------------|----------|---------------------|-----------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction to the Indian Constitution GE-2 | 4 | 3 | 1 | 0 | 12th Pass | NIL |

Learning Objectives

The course aims to introduce the students to the foundational text of constitutional democracy in India - the Indian Constitution. By providing an overview of the socio-political context of its origin and its basic tenets, which provide the organizing framework for democracy in India, the course expects to bring historical insights in making the constitutional text comprehensible. The course traces the history of the Constitution both in the colonial legislations and in the declaration and reports produced in the course of the Indian National Movement. It focuses on the creation and the working of the Constituent Assembly as part of a transformative vision for independent India. The basic features of the Constitution form the core themes of the course introducing students to the philosophy behind them and the final form in which they were adopted in the Indian Constitution to make it a document for social revolution. The course aims at providing students with both a textual and a contextual introduction to the Indian Constitution.

Learning outcomes

On successful completion of the course, the students will demonstrate

- Knowledge of the origin and contents of the Indian Constitution
- Awareness of the rights and duties of the citizens and the obligations of the state
- Familiarity with the functioning of constitutional governance in India and the division of power between different tiers of the government.

SYLLABUS OF GE-2

UNIT – I (8 Hours)

Constitutional antecedents and the making of the Constitution of India

UNIT – II (7 Hours)

Basic features of the Indian Constitution

UNIT – III (8 Hours)

Fundamental Rights

UNIT – IV (7 Hours)

Obligations of State and Duties of Citizens

UNIT – V (8 Hours)

UNIT – VI (7 Hours)

Centre-State Relations and Decentralization

Essential/recommended readings

Readings:

1. Constitutional antecedents and the making of the Constitution of India

(a) Constitutional antecedents

Shibani Kinkar Chaube, 2010, Pre History, in *The Making and Working of the Indian Constitution*, NBT, India.

Arun Thiruvengadam, 2018, Origin and Crafting of the Constitution (pp. 11 to 26), in *The Constitution of India, a Contextual Analysis*, Hart Publishing.

D D Basu, 2011, The Historical background, in *Introduction to the Constitution of India* (20thed.). Lexis Nexis, India.

(b) Making of the Constitution of India

Shibani Kinkar Chaube, 2000, Birth of the Constituent Assembly, in *Constituent Assembly of India: Springboard of Revolution*, Manohar.

Granville Austin, 1966, The Constituent Assembly- Microcosm in Action, in *Indian Constitution, Cornerstone of a Nation*, OUP.

Subhash Kashyap, 1994, Making of the Constitution, in *Our Constitution: An Introduction to India's Constitution and Constitutional Law*, NBT, India.

2. Basic Features of the Indian Constitution

B R Ambedkar, 2010, Basic features of the Indian Constitution, in Valerian Rodrigues (ed), *The essential writings of BR Ambedkar*. Oxford University Press, India.

D D Basu, 2011, Outstanding Feature of Our Constitution, in *Introduction to the Constitution of India* (20thed.). Lexis Nexis, India.

Ivor Jennings, 1953, Introduction, in *Some Characteristics of Indian Constitution*, G Cumberlege and Oxford University Press.

3. Fundamental Rights

Primary text: Article 14- 32, Part III, The Constitution of India

Granville Austin, 1966, The Conscience of the Constitution- Fundamental Rights and Directive Principles of State Policy- I (pp. 63-94), in *Indian Constitution, Cornerstone of a Nation*, OUP

Shibani Kinkar Chaube, 2010, Rights of Indians, in *The Making and Working of the Indian Constitution*, NBT, India.

D D Basu, 2011, Fundamental Rights and Duties (pp. 79- 142), in *Introduction to the Constitution of India* (20thed.). Lexis Nexis, India.

Arun Thiruvengadam, 2018, Fundamental rights, Directive Principles and the Judiciary (pp. 118-137), in *The Constitution of India, a Contextual Analysis*, Hart Publishing.

4. Obligations of State and Duties of Citizens

Primary text: Article 36- 51A, Part IV and IVA, The Constitution of India

Shibani Kinkar Chaube, 2010, Duties of State and Citizens, in *The Making and Working of the Indian Constitution*, NBT, India.

D D Basu, 2011, Directive Principles of State Policy (pp. 79- 142), in *Introduction to the Constitution of India* (20th ed.). Lexis Nexis, India.

Gautam Bhatia, 2016, Directive Principles of State Policy, in Sujit Choudhry, *et al*, *The Oxford Handbook of the Indian Constitution*, New Delhi: OUP

Ivor Jennings, 1953, Directives of Social Policy, in *Some Characteristics of Indian Constitution*, G Cumberlege and Oxford University Press.

5. Organs of Constitutional Governance- Legislature, Executive and Judiciary

Primary Text: Part V, The Constitution of India

S.K. Chaube, Union Government- 1: The Executive, in *The Making and Working of Indian Constitution*, NBT, India

S.K. Chaube, Union Government 2: The Legislature, in *The Making and Working of Indian Constitution*, NBT, India

Granville Austin, 1966, *Indian Constitution, Cornerstone of a Nation*, OUP, pp. 145- 230.

Arun Thiruvengadam, 2018, The Executive and the Parliament, in *The Constitution of India, a Contextual Analysis*, Hart Publishing

M.R. Madhavan, 2017, Parliament, in D. Kapur, P.B. Mehta and M Vaishnav (eds.), *Rethinking Public Institutions in India*, Oxford University Press

D.D. Basu, 2011, The Judicature (pp. 299- 313), in *Introduction to the Constitution of India* (20thed.). Lexis Nexis, India.

Pratap Bhanu Mehta, 2005, India's Judiciary: the Promise of Uncertainty, in *Public Institutions in India: Performance and Design*, OUP, India.

Punam S Khanna, 2008, The Indian Judicial system, in K Sankaran and U K Singh (eds), *Towards Legal Literacy: An Introduction to Law in India*, OUP.

6. Centre-State Relations and Decentralization

D D Basu, 2011, Distribution of Legislative and Executive Powers, in *Introduction to the Constitution of India* (20thed.). Lexis Nexis, India.

M.P. Singh and Rekha Saxena, 2013, Asymmetrical Federalism, in *Federalising India in the Age of Globalisation*, Primus

Ivor Jennings, 1953, Indian Federalism, in *Some Characteristics of Indian Constitution*, G Cumberlege and Oxford University Press.

S.K. Chaube, Local Government, in *The Making and Working of Indian Constitution*, NBT, India.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-3): Nationalism in India

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--------------------------------------|----------|-----------------------------------|----------|---------------------|-----------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Nationalism in India GE-3 | 4 | 3 | 1 | 0 | 12th Pass | NIL |

Learning Objectives

The course aims to help students understand the national movement in India. It looks at the movement from different theoretical perspectives that highlight its varied dimensions. The course begins by looking at the Indian responses to colonial dominance in the nineteenth century, and traces the development of the anti-colonial struggle up to the mid-20th century. It successively focuses on the events leading to the Partition and the Independence in 1947. In the process, the course also tries to focus on the various tensions and debates within nationalism in India as it engaged with the questions of communalism, class struggle, caste and gender.

Learning outcomes

On successful completion of the course, students would:

- Gain an understanding of the different theoretical views on the emergence and development of nationalism in India and the tensions that existed between them
- Demonstrate knowledge of the historical trajectory of the development of the nationalist movement in India, with specific focus on its different phases
- Understand the contribution of various social movements in the anti-colonial struggle
- Demonstrate awareness of the history of partition and independence

SYLLABUS OF GE-3

UNIT – I (8 Hours)

Approaches to the Study of Nationalism in India: Nationalist, Imperialist, Marxist, and Subaltern

UNIT – II (7 Hours)

Reformism and Anti-Reformism in the Nineteenth Century: Major Social and Religious Movements in 19th century

UNIT – III (12 Hours)

Nationalist Politics and Expansion of its Social Base

- a. Phases of Nationalist Movement: Liberal Constitutionalists, Swadeshi and the Radicals; Beginning of Constitutionalism in India
- b. Gandhi and Mass Mobilisation: Non-Cooperation Movement, Civil Disobedience Movement, and Quit India Movement
- c. Revolutionaries, Socialists, and Communists

UNIT – IV (12 Hours)

Social Movements

Peasants, Tribals, Workers, Women and anti-caste movements

UNIT – V (6 Hours)

Partition, Independence and Integration of states

Communalism in Indian Politics, The Two-Nation Theory and Partition, Independence and Integration of Indian States

Essential/recommended readings

Approaches to the Study of Nationalism in India

S. Bandopadhyay (2004) *From Plassey to Partition: A History of Modern India*, New Delhi: Orient Longman, pp. 184-191.

R. Thapar (2000) 'Interpretations of Colonial History: Colonial, Nationalist, Post-colonial', in P. DeSouza (ed.) *Contemporary India: Transitions*, New Delhi: Sage Publications, pp. 25-36.

Reformism and Anti-Reformism in the Nineteenth Century

S. Bandopadhyay (2004) *From Plassey to Partition: A History of Modern India*, New Delhi: Orient Longman, pp.139-158, 234-276.

A. Sen (2007) 'The idea of Social Reform and its Critique among Hindus of Nineteenth Century India', in S. Bhattacharya (ed.) *Development of Modern Indian Thought and the Social Sciences*, Vol. X. New Delhi: Oxford University Press.

Nationalist Politics and Expansion of its Social Base

S. Bandopadhyay (2004) *From Plassey to Partition: A History of Modern India*. New Delhi: Orient Longman, pp. 279-311.

S. Sarkar (1983) *Modern India (1885-1947)*, New Delhi: Macmillan,

P. Chatterjee (1993) 'The Nation and its Pasts', in P. Chatterjee, *The Nation and its Fragments: Colonial and Postcolonial Histories*. New Delhi: Oxford University Press, pp. 76-115.

Social Movements

S. Bandopadhyay (2004) *From Plassey to Partition: A history of Modern India*. New Delhi: Orient Longman, pp. 342-357, 369-381.

Desai, A.R. (2019, reprint- 6th edition) *Crusade Against Caste System*, in *Social Background of Indian Nationalism*, Sage.

Desai, A.R. (2019, reprint- 6th edition) *Crusade Against Untouchability*, in *Social Background of Indian Nationalism*, Sage.

Desai, A.R. (2019, reprint- 6th edition) *Movement for the Emancipation of Women*, in *Social Background of Indian Nationalism*, Sage.

G. Shah (2002) *Social Movements and the State*, New Delhi: Sage, pp. 13-31

Partition, Independence and Integration of States

A. Jalal, and S. Bose (1997) *Modern South Asia: History, Culture, and Political Economy*. New Delhi: Oxford University Press, pp. 135-156.

A. Nandy (2005) *Rashtravadbanam Deshbhakti* Translated by A. Dubey, New Delhi: Vani Prakashan. pp. 23-33. (The original essay in English is from A. Nandy (1994) New Delhi: Oxford University Press, pp. 1-8.)

V P Menon (1956), CH I- Setting the Stage and Ch XXV- The Cost of Integration, in *The Story of the Integration of the Indian States*, Orient Longman.

Suggestive readings

B.Chakrabarty and R. Pandey (2010) *Modern Indian Political Thought*, New Delhi: Sage Publications.

P. Chatterjee (1993) *The Nation and its Fragments: Colonial and Postcolonial Histories*, New Delhi: Oxford University Press.

R. Pradhan (2008) *Raj to Swaraj*, New Delhi: Macmillan (Available in Hindi).

S. Islam (2006) *Bharat Mein Algaovadaur Dharm*, New Delhi: Vani Prakashan.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-4): Understanding International Relations

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|----------|-----------------------------------|----------|---------------------|-----------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Understanding International Relations GE-4 | 4 | 3 | 1 | 0 | 12th Pass | NIL |

Learning Objectives

This course aims to make students understand the intersections between politics, economics, culture and nature that shape human life in the contemporary world. These intersectional relations foreground the multiple interactions that constitute the reality of the group life of humans. The issues around which the course is designed consists of the role of state in international politics, cultural identities such as the nation and, issues such as global poverty and global inequalities. Additionally, the course dwells on the psycho-cultural and politico-economic causes of violence, oppression and injustices that make the world a contested space. It examines the ways in which information technology shapes the course of human life in the age of globalization and how the phenomenon of the international manifests both in the virtual and the material world. Going beyond the Westphalian conception of territoriality, the course looks at the ways in which IR manifests in the realm of art/cinema/museums.

Learning outcomes

On successful completion of the course, students would be able to:

- Understand the nature of the contemporary world in which we live through connected histories, economies and societies.

- Analyze the ways in which our world is shaped in both territorial and non-territorial forms leading to basic planetary understandings of both human and non-human relations.
- Enhance cognitive abilities to map out the multiple and complex interactions in international relations between peoples, histories and civilisations.
- To understand the role of the state and its interface with the market, probe into the cultural identities of a nation, analyse global poverty and climate change politics.
- To critically analyse the politics of ‘common yet differentiated responsibilities.’
- Think critically about issues of global inequalities, violence, and injustices in the age of globalization.
- Appreciate the ways in which aesthetic articulation(s) problematize and interrogate the international and our ways of being therein.

SYLLABUS OF GE-4

UNIT – I (7.5 Hours)

Making Sense of the World

- 1.1 What is IR?
- 1.2 Understanding Space: How do we sense our planet
- 1.3 Ways of knowing and being: - Peoples, Histories and Civilisations

UNIT – II (11 Hours)

States, Nations and Markets

- 2.1 State and Diffusion of authority/power
- 2.2 Nations and Nationalism
- 2.3 States and Markets

UNIT – III (11 Hours)

Inequalities

- 3.1 Politico-military inequalities: big states, small states
- 3.2 Economic inequalities: rich states, poor states
- 3.3 Climate Change: Global commons and differentiated responsibilities

UNIT – IV (7.5 Hours)

Sites of Conflict and Forms of Violence

- 4.1 Changing Landscape/ Nature of Conflict
- 4.2 Forms of Violence

UNIT – V (8 Hours)

Knowing our Virtual and Creative World: The Visual Turn in IR

- 5.1 Internet
- 5.2 Museums
- 5.3 Cinemas

Essential/recommended readings

1.1. What is IR?

David Blaney, “Where, When and What is IR?” in Arlene B, Tickner and Karen Smith (eds.), *International Relations from the Global South: World of Difference*, New York: Routledge, 2020, pp. 38-55.

1.2. Understanding Space: How can we understand our planet.

Simon Dalby, "What happens if we don't take nature for granted," in Jenny Edkins and Maja Zehfuss (eds.), *Global Politics: A New Introduction*, New York: Routledge, 2008, pp. 39-60. Dipesh Chakrabarty, 'The Climate of History in a Planetary Age,' London: University of Chicago Press, 2021, pp. 1-20.

1.3. Ways of knowing and being: - Peoples, Histories and Civilisations

Veronique Pin-Fat, "How do we begin to think about the world," in Jenny Edkins and Maja Zehfuss (eds.), *Global Politics: A New Introduction*, New York: Routledge, 2008, pp. 20-38. Tamara A. Trownsell, Amaya Querejazu, Giorgio Shani, Navnita Chadha Behera, Jarrad Reddekop and Arlene B. Tickner Recrafting International Relations through Relationality," *E-International Relations*, January 2019. <https://www.e-ir.info/2019/01/08/recrafting-international-relations-through-relationality/>.

Tamara A. Trownsell, Arlene B. Tickner, Amaya Querejazu, Jarrad Reddekop, Giorgio Shani, Kosuke Shimizu, Navnita Chadha Behera and Anahita Arian, 'Differing about difference: relational IR from around the world,' *International Studies Perspectives*, 22:1, February 2021, pp. 25-64.

Giorgio Shani, 'IR as inter-cosmological relations?' *International Politics Review*, 9 (2021) 306–312. <https://doi.org/10.1057/s41312-021-00120-2>.

Additional Readings:

Milja Kurki, "International Relations in a Relational Universe," *Oxford University Press* (2020) 1-16.

Arturo Escobar, 'Introduction: Another possible is possible,' and 'Theory and the un/real: Tools for rethinking "Reality" and the possible,' in *Pluriversal Politics: The Real and the Possible*, Durham: Duke University Press, 2020, pp. 1-30.

Ashish Kothari, Ariel Salleh, Arturo Escobar, Federico Demaria, Albert Acosta, 'Introduction: Finding Pluriversal Paths', in Ariel Salleh, Arturo Escobar, Federico Demaria, Albert Acosta (eds.), '*Pluriverse: a post-development dictionary*', New Delhi: Tulika Books, 2019, pp. xxii-xl.

Also, see, <https://kalpavriksh.org/ourteam/ashish-kothari/>

2.1 State and Diffusion of authority/power

Shibashish Chatterjee, 'Reconsidering the State in International Relations,' in Kanti and Siddharth Mallavarapu (eds.), *International Relations in India: Bringing Theory back home*, New Delhi: Orient Longman, 2005, pp. 451-489.

David Held, "The territorial State and Global Politics," in *Global Transformations: Politics, Economics and Culture*, USA: Stanford University Press, 1999, pp. 32-48.

Susan Strange, "The State of the State," in *The Retreat of the State: The Diffusion of Power in the World Economy*, Cambridge: Cambridge University Press, 1996, pp. 66- 88.

2.2 Nations and Nationalism

Andrew Heywood, "Nations and Nationalism" in *Politics*, China: Palgrave Macmillan, 2013, pp. 108-127.

Michael J. Shapiro, "Does the nation-state work?" in Jenny Edkins and Maja Zehfuss (eds.), *Global Politics: A New Introduction*, New York: Routledge, 2008, pp. 269- 287.

Elena Barabantseva, “How do people come to identify with nations?” in Jenny Edkins and Maja Zehfuss (eds.), *Global Politics: A New Introduction*, New York: Routledge, 2008, pp. 245-268.

Sanjay Chaturvedi, ‘Indian Geo-politics: ‘Nation-State and the Colonial Legacy’ in Kanti Bajpai and Siddharth Mallavarapu (eds.), *International Relations in India: Theorising the Region and Nation*, New Delhi: Orient Longman, 2005, pp. 238-283.

2.3 States and Markets

Lavanya Rajamani, “The principle of common but differentiated responsibilities and respective capabilities in the international climate change regime” in Ludwig Kramer and Emanuela Orlando (eds.), *Principles of Environmental Law*, Sussex: Edward Elgar publishing, 2018, pp. 46-60.

David Held, Chapter five on “Corporate Power and Global Production Networks,” in *Global Transformations: Politics, Economics and Culture*, Stanford: Stanford University Press, 1999, pp. 236-282.

Matthew Watson, ‘Understanding the State within Modern Society’ and ‘Understanding the Market within Modern Society’ in *Foundations of International Political Economy*, New York: Palgrave, 2005, pp. 161-196.

Additional Readings:

Thomas L. Friedman, *The World is Flat: A Brief History of the Twenty-First Century*, New York: Picador Publication, 2005, pp. 1-50.

Yuval Noah Harari, “Nationalism,” in *21 Lessons for the 21st Century*, USA: Spiegel & Grau, Jonathan Cape, 2018, pp. 104-117.

Dr V. Basil Hans, ‘State and the Market- Debate and Developments,’ January 2014, <http://dx.doi.org/10.2139/ssrn.2373827>

Andrew Heywood, “Sovereignty, the Nation and Supranationalism,” in *Political Ideas and Concept*, New York: St. Martin’s Press, 1994, pp. 48-77.

Stuart Elden, “Why the World Divided Territorially,” in Jenny Edkins and Maja Zehfuss (eds.), *Global Politics: A New Introduction*, New York: Routledge, 2008, , pp. 220-244.

Robert Gilpin, “Nature of political economy,” in *Global Political Economy: Understanding the International Economic Order*, Princeton: Princeton University Press, 2001, pp- 25-45.

Stephen D. Krasner, ‘Sharing Sovereignty: New Institutions for Collapsed and Failing States,’ *International Security*, 29: 2, 2004, pp. 85-120.

Susan Strange, Chapters 3-6, on ‘The Security Structure’, ‘The Production Structure’, ‘The Financial Structure’, ‘The Knowledge Structure’, in *States and Markets*, London: Bloomsbury, 2015,

Unit 3. Inequalities

Mohammad Ayoob, ‘Inequality and Theorizing in International Relations: The Case for Subaltern Realism,’ *International Studies review*, 4:3, 2002, pp. 27-48.

3.1 Mapping inequalities in IR

Joao Pontes Nogueira, "Inequality," in Arlene B. Tickner and Karen Smith (eds.), *International Relations from the Global South: World of Difference*, New York: Routledge, 2020, pp. 240-255.

Paul Cammack, "Why are Some People Better off than Others," in Jenny Edkins and Maja Zehfuss (eds.), *Global Politics: A New Introduction*, New York: Routledge, 2008, pp. 405-428.

3.2 Climate Change: Global commons and differentiated responsibilities

A. Damodaran, 'Encircling the Seamless- India, Climate Change, and the Global Commons,' Oxford University Press, 2010, India. Chapters 1 and 2.

Additional Readings:

Amartya Sen, "Capabilities and Resources," in *The Idea of Justice*, New York: Penguin Books, 2009, pp. 253-268.

Amartya Sen, "Measures of Inequality," in *On Economic Inequality*, New York: Clarendon Press Oxford, 1997, pp. 24-46.

Dipesh Chakrabarty, Chapter 7 on 'Anthropocene Time,' in *The Climate of History in a Planetary Age*, University of Chicago Press London, 2021, pp. 155-181.

Graham Thompson, "Global Inequality, Economic Globalization and Technological Change," Chapter Eleven in 'A World of Whose Making- Ordering the International: History, Change and Transformation' by William Brown, Simon Bromley, and Suma Athreye. Pluto Press, 2004, pp. 377-415.

Unit 4. Sites of Conflict and Forms of Violence

Arlene B. Tickner, "War and Conflict," in Arlene B. Tickner and Karen Smith (eds.), *International Relations from the Global South: World of Difference*, New York: Routledge, 2020, pp. 115-138.

4.1 Changing Landscape/ Nature of Conflict

Michael Dillon, "What makes the world dangerous," in Jenny Edkins and Maja Zehfuss (eds.), *Global Politics: A New Introduction*, New York: Routledge, 2008, pp. 519-538

Mary Kaldor, 'In Defense of New Wars', *Stability: International Journal of Security and Development*, 2:1, 2013, 1-16. <http://dx.doi.org/10.5334/sta.at>.

4.2 Forms of Violence

Joanna Bourke, "Why Does Politics Turn into Violence?" in Jenny Edkins and Maja Zehfuss (eds.), *Global Politics: A New Introduction*, New York: Routledge, 2008, pp. 472-495.

Anuradha M. Chenoy, "Militarization, Conflict and Women in South Asia," in Lois Ann Lorentzen and Jennifer Turpin (eds.), *The Women and War Reader*, New York: New York University Press, 1998, pp. 101-110.

Additional Readings:

Roland Bleiker, "Can we move beyond Conflict," in Jenny Edkins and Maja Zehfuss (eds.), *Global Politics: A New Introduction*, New York: Routledge, 2008, pp. 564- 589.

David Held, "Expanding reach of organized violence," in *Global Transformations: Politics, Economics and Culture*, Stanford: Stanford University Press, 1999, pp. 87- 92.

5.1 Internet

M. I. Franklin, "How does the way we use the Internet make a difference?" in Jenny Edkins and Maja Zehfuss (eds.), *Global Politics: A New Introduction*, New York: Routledge, 2008, pp. 176-199.

Jr. Harry M. Cleaver, 'The Zapatista Effect: The Internet and the Rise of an Alternative Political Fabric,' *Journal of International Affairs*, 51:2, 1998, pp. 621- 640.

5.2 Museums

Christine Sylvester, "Can International Relations and Art/Museums Come Together," in *Art/Museums: International Relations Where We Least Expect it*, New York: Routledge, 2016, pp. 1-24.

<https://www.ushmm.org/teach/teaching-materials/holocaust>

<https://www.partitionmuseum.org/event/remembering-the-jallianwala-bagh-massacre-100-years-later/>

5.3 Cinemas

Cynthia Weber, "Culture, Ideology, and the Myth Function in IR Theory," in *International Relations Theory: A Critical Introduction*, London: Routledge, 2013, pp. 1-12.

Cynthia Weber, "Case Study: Modernization and Development theory: is there a clash of civilizations? Movie analysis of East is East," in *International Relations Theory: A Critical Introduction*, London: Routledge, 2013, pp. 173-202.

Additional Readings:

Maria Elena Martinez- Torres, 'Civil Society, the Internet, and the Zapatistas,' *Journal of Social Justice*, 13:3, 2001, pp. 347-355.

Lene Hansen, Rebecca Adler-Nissen and Katrine Emelie Andersen, 'The visual international politics of the European refugee crisis: Tragedy, humanitarianism, borders,' *Cooperation and Conflict*, 56:44, 2021, pp. 367-393.

Mirzoeff, Nicholas, "Global Visual Cultures" in *An Introduction to Visual Culture* 2nd Edition, London: Routledge, 2009, pp. 1-16.

Azmat Rasul and Mudassir Mukhtar, 'Bollywoodization of foreign policy: How film discourse portrays tensions between states' *Journal of Media Critiques*, 1:1, June 2015, pp. 11-27.

Roland Bleiker, *Visual Global Politics*, London and New York: Routledge, 2018, pp.1-29.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-5): Governance: Issues and Challenges

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|----------|-----------------------------------|----------|---------------------|-----------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Governance: Issues and Challenges GE-5 | 4 | 3 | 1 | 0 | 12th Pass | NIL |

Learning Objectives

This paper deals with concepts and different dimensions of governance highlighting the major debates in the contemporary times. There is a need to understand the importance of the concept of governance in the context of a globalising world, environment, administration, development. The essence of governance is explored through the various good governance initiatives introduced in India.

Learning outcomes

On successful completion of the course, the students will be

- acquainted with the changing nature of governance in the era of globalization.
- introduced to the most contemporary ideas of sustainable development and green governance.
- familiarised with a rigorous introduction to the best practices in India on good governance.

SYLLABUS OF GE-5

UNIT – I (11 Hours)

Government and Governance: Concepts

- a) Role of State in The Era of Globalisation
- b) State, Market and Civil Society

UNIT – II (7 Hours)

Governance and Development

Changing Dimensions of Development Strengthening Democracy through Good Governance

UNIT – III (8 Hours)

Environmental Governance

- a) Human-Environment Interaction
- b) Green Governance: Sustainable Human Development

UNIT – IV (7 Hours)

Local Governance

- a) Democratic Decentralisation
- b) People's Participation in Governance

UNIT – V (12 Hours)

Good Governance Initiatives in India: Best Practices

- a) Public Service Delivery
- b) Electronic Governance
- c) Citizens Charter & Right to Information
- d) Corporate Social Responsibility

Essential/recommended readings

Government and Governance: Concepts

B. Chakrabarty and M. Bhattacharya (eds.) The Governance Discourse. New Delhi: Oxford University Press, 1998

Surendra Munshi and Biju Paul Abraham (eds.), Good Governance, Democratic Societies and Globalisation, Sage Publishers, 2004

United Nation Development Programme, Reconceptualising Governance, New York, 1997

Carlos Santiso, Good Governance and Aid Effectiveness: The World Bank and Conditionality, Johns Hopkins University, The Georgetown Public Policy Review, Volume VII, No.1, 2001

Vasudha Chotray and Gery Stroker, Governance Theory: A Cross Disciplinary Approach, Palgrave Macmillan, 2008

J. Rosenau, 'Governance, Order, and Change in World Politics', in J. Rosenau, and E. Czempiel (eds.) Governance without Government: Order and Change in World Politics, Cambridge: Cambridge University Press, 1992

B. Nayar (ed.), Globalization and Politics in India. Delhi: Oxford University Press, 2007 pp. 218-240.

Smita Mishra Panda, Engendering Governance Institutions: State, Market and Civil Society, Sage Publications, 2008

Neera Chandhoke, State and Civil Society Explorations in Political Theory, Sage Publishers, 1995

सिंह, अभय प्रसाद एवं कृष्ण मुरारी (2018), शासन: मुद्दे एवं चुनौतियाँ, ओरियंट ब्लैकस्वान, नई दिल्ली

चक्रवर्ती, बिद्युत, प्रकाश चंद (2018), वैश्वीकृत दुनिया में लोक प्रशासन, सेज भाषा, नई दिल्ली

सिन्हा, मनोज (2010) प्रशासन एवं लोकनीति, ओरियंट ब्लैकस्वान, नई दिल्ली

Governance and Development

B. C. Smith, Good Governance and Development, Palgrave, 2007

World Bank Report, Governance and Development, 1992

P. Bardhan, 'Epilogue on the Political Economy of Reform in India', in *The Political Economy of Development in India*. 6th edition, Delhi: Oxford University Press, 2005

J. Dreze and A. Sen, *India: Economic Development and Social Opportunity*. New Delhi: Oxford University Press, 1995

Niraja Gopal Jayal [ed.], *Democracy in India*, Oxford University Press, 2007

Environmental Governance

Ramachandra Guha, *Environmentalism: A Global History*, Longman Publishers, 1999

J.P. Evans, *Environmental Governance*, Routledge, 2012

Emilio F. Moran, *Environmental Social Science: Human - Environment interactions and Sustainability*, Wiley-Blackwell, 2010

Burns H Weston and David Bollier, *Green Governance: Ecological Survival, Human Rights and the Law of the Commons*, Cambridge University Press, 2013

Bina Agarwal, *Gender And Green Governance*, Oxford University Press, Oxford, 2013

J. Volger, 'Environmental Issues', in J. Baylis, S. Smith and P. Owens (eds.) *Globalization of World Politics*, New York: Oxford University Press, 2011, pp. 348-362.

A. Heywood, *Global Politics*, New York: Palgrave, 2011, pp. 383-411.

N. Carter, *The Politics of Environment: Ideas, Activism, Policy*, Cambridge: Cambridge University Press, 2007, pp. 13-81.

Local Governance

Pranab Bardhan and Dilip Mookherjee, *Decentralization and Local Governance in Developing Countries: A Comparative Perspective*, MIT Press, 2006

T.R. Raghunandan, *Decentralization And Local Governments: The Indian Experience, Readings On The Economy, Polity And Society*, Orient Blackswan, 2013

Pardeep Sachdeva, *Local Government In India*, Pearson Publishers, 2011

P. de Souza (2002) 'Decentralization and Local Government: The Second Wind of Democracy in India', in Z. Hasan, E. Sridharan and R. Sudarshan (eds.) *India's Living Constitution: Ideas, Practices and Controversies*, New Delhi: Permanent Black, 2002

Mary John, 'Women in Power? Gender, Caste and Politics of Local Urban Governance', *Economic and Political Weekly*, Vol. 42(39), 2007

Good Governance Initiatives in India: Best Practices

Niraja Gopal Jayal, *Democracy and the State: Welfare, Secularism, and Development in Contemporary India*, Oxford University Press, 1999

Reetika Khera[ed.], *The Battle for Employment Guarantee*, Oxford University Press, 2011

Nalini Juneja, *Primary Education for All in the City of Mumbai: The Challenge Set By Local Actors*, International Institute For Educational Planning, UNESCO: Paris, 2001

Maxine Molyneux and Shahra Razavi, *Gender, Justice, Development, and Rights*, Oxford University Press, 2002

Jugal Kishore, National Health Programs of India: National Policies and Legislations, Century Publications, 2005

Jean Drèze and Amartya Sen, India, Economic Development and Social Opportunity, Oxford University Press, 1995

K. Lee and Mills, The Economic Of Health In Developing Countries, Oxford University Press, 1983

Marmar Mukhopadhyay and Madhu Parhar (eds.) Education in India: Dynamics of Development, Shipra Publications, 2007

K. Vijaya Kumar, Right to Education Act 2009: Its Implementation as to Social Development in India, Akansha Publishers, 2012

Amartya Sen and Jean Dreze, Omnibus: Poverty and Famines, Hunger and Public Action, India- Economic Development and Social Opportunity, Oxford University Press, 1998

Jean Dreze and Amartya Sen, An Uncertain Glory: India and Its Contradictions, Princeton University Press, 2013

Reetika Khera, 'Rural Poverty and Public Distribution System', Economic and Political Weekly, Vol-XLVIII, No.45-46, Nov 2013

Pradeep Chaturvedi, Women and Food Security: Role Of Panchayats, Concept Publishing House, 2002

Bidyut Mohanty, "Women, Right to Food and Role of Panchayats", Mainstream, Vol. LII, No. 42, October 11, 2014

D. Crowther, Corporate Social Responsibility, Deep and Deep Publishers, 2008

Sanjay K. Agarwal, Corporate Social Responsibility in India, Sage Publishers, 2008

Pushpa Sundar, Business & Community: The Story of Corporate Social Responsibility in India, New Delhi: Sage Publications, 2013.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-6): Western Political Philosophy

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|----------------|--|-----------------|----------------------------|-----------------------------|------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Western Political Philosophy GE-6 | 4 | 3 | 1 | 0 | 12th Pass | NIL |

Learning Objectives

This course familiarizes the students with the manner in which the political questions are posed and answered normatively by select thinkers. The aim is to introduce to the students the questions, ideas and values of political philosophy addressed by political thinkers and juxtapose the same to contemporary political thinking.

Learning outcomes

By the end of the course students would be able to:

- Understand how to read and decode the classics and use them to engage contemporary socio-political issues.
- Connect with historically written texts and their interpretations.
- Clearly present their own arguments and thoughts about contemporary issues and develop ideas to engage with the latter.

SYLLABUS OF GE-6

UNIT – I (18 Hours)

Classical Political Philosophy

- a) Plato
- b) Aristotle

UNIT – II (27 Hours)

Renaissance and Modern Political Philosophy

- a) Machiavelli
- b) Hobbes
- c) Rousseau
- d) Mill
- e) Marx

Essential/recommended readings

Unit 1

R. Kraut (1996) 'Introduction to the study of Plato', in R. Kraut (ed.) *The Cambridge Companion to Plato*. Cambridge: Cambridge University Press, pp. 1-50.

D. Boucher and P. Kelly (eds) *Political Thinkers: From Socrates to the Present*, Oxford: Oxford University Press, pp. 62-80

A. Skoble and T. Machan (2007) *Political Philosophy: Essential Selections*. New Delhi: Pearson Education pp. 53-64.

J. Barnes (ed.), *The Cambridge Companion to Aristotle*. Cambridge: Cambridge University Press.

Q. Skinner (2000) *Machiavelli: A Very Short Introduction*, Oxford: Oxford University Press, pp. 23-53

Unit 2

C. Macpherson (1962) *The Political Theory of Possessive Individualism: Hobbes to Locke*. Oxford University Press.

D. Boucher and P. Kelly (eds) *Political Thinkers: From Socrates to the Present*. Oxford: Oxford University Press, pp. 207-224

J. Coleman (2000) 'Introduction', in *A History of Political Thought: From Ancient Greece to Early Christianity*, Oxford: Blackwell Publishers.

I. Hampsher-Monk (2001) *A History of Modern Political Thought: Major Political Thinkers from Hobbes to Marx*, Oxford: Blackwell Publishers.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-7): Politics of Globalisation

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-----------------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Politics of Globalisation GE-7 | 4 | 3 | 1 | 0 | 12 th Pass | NIL |

Learning Objectives

This course examines the paradoxes of contemporary globalisation. It has been crafted in a manner as to introduce to the students from diverse disciplinary backgrounds the complex multifaceted nature of the contemporary phenomenon of globalization. Students will learn about the evolution of globalization by examining whether globalization is a mere historical process, or, it is also a socio-cultural, politico-economic and, psychological phenomenon and, understand these through different conceptual frames. It then makes the students understand the debates that have been put forth for and against globalization. The course introduces the discourse regarding the Eurocentric formulations of globalization and the ways in which the non-European voices have historically been marginalized in the shaping of Western modernity. Students will also learn about the political, economic and cultural facets of globalization. As a political phenomenon, the course seeks to understand as to how globalization has impacted upon the functioning of the sovereignty of nation-states. In the realm of economy, it introduces the impact of time/space compression upon the macroeconomic structures of trade and finance as well as the structural transformation that information and communications technology has brought in the working of the global political economy. As a cultural phenomenon, the course also discusses the new global mobilizations in the form of global social movements, movements of people across borders and the political and economic impact of global epidemics.

Learning outcomes

Upon successful completion of this course, students will have the knowledge and skills to:

- Understand the nature, significance, and principal debates in the literature on globalisation and the concept of globalization as both a historical process and, a socio-cultural phenomenon.
- Study various approaches which will augment student's knowledge on international political economy.
- Demonstrate basic knowledge of the interconnectedness of global issues, processes, and dynamics.
- Develop insight into the alternative understanding of globalisation and various critical aspects related to it like who are the beneficiaries in this process.
- Understand diverse global challenges like global migration and epidemics.

- Learn the ways in which globalization holds promise for a better world and a developed world and, at the same time, understand how it is laden with deep-seated tendencies to engender strands of inequalities and spur erosion of local cultures.

SYLLABUS OF GE-7

UNIT – I (11 Hours)

Conceptualizing Globalisation

- 1.1 Is Globalisation New? Historical Perspectives
- 1.2 Approaches to Understand globalisation
- 1.3 The Globalisation Debate

UNIT – II (7 Hours)

Globalization: A Eurocentric Project?

- 2.1 The Question of Post-Coloniality
- 2.2 Making Sense of Globalization for the People at the Margins

UNIT – III (8 Hours)

Sovereign State in a Globalised World

- 3.1 Political Dimensions
- 3.2 Shift from State to Market?

UNIT – IV (8 Hours)

Role of International Institutions: Multi-dimensionality of Globalisation

- 4.1 World Bank, International Monetary Fund, World Trade Organisation and, G-20
- 4.2 The Globalisation of Trade
- 4.3 Global Epidemics and Working of World Health Organization

UNIT – V (11 Hours)

Responses and Resistances to Globalization

- 5.1 Global Social Movements
- 5.2 International Migration

Essential/recommended readings

Unit 1. Conceptualizing Globalisation

Essential Readings

1.1 Is Globalisation New? Historical Perspectives

Hirst, Paul and Thompson, G. “*Globalisation in Question*” (Third Edition), UK: Polity Press, 2009, pp. 25-52.

Ritzer, George and Paul D. Paul, *Globalization: A Basic Text* (Second Edition), UK: Wiley Blackwell, 2015, pp. 14-53.

1.2 Approaches to Understand Globalisation

Held, D and et. al. “Rethinking Globalisation” in Held, David and Anthony McGrew (eds.) *The Global Transformations Reader: An Introduction to the Globalisation Debate*, (Second Edition). Cambridge: Polity Press, Blackwell Publishing, 2003, pp. 60-67.

Ritzer, G and Dean, P. *Globalisation: The Essentials*, UK: Wiley-Blackwell, 2019, pp. 55-92.

1.3 The Globalisation Debate

Bishop, Matthew Louis & Anthony, “The political economies of different Globalizations: Theorising Reglobalization”, *Globalizations*, Vol. 18, June 2020, pp. 1- 21.

Keohane, Robert O. and Nye Jr, Joseph S., “What’s New? What’s Not? (And So What?)”, in Held, D and McGrew, A (ed.), *The Global Transformations Reader: An Introduction to the Globalisation Debate* (2nd edition). Cambridge: Polity Press, Blackwell Publishing, 2003, pp. 75-84.

Additional Readings

Held, David and Anthony McGrew (eds.) *The Global Transformations Reader: An Introduction to the Globalisation Debate* (Second Edition). Cambridge: Polity Press, Blackwell Publishing, 2000, pp 1-42.

Bhagwati, J. “*In Defence of Globalisation*”, UK: Oxford University Press, 2007, pp. 3-36, 199-220.

Dwivedi, Sangit S., “Localisation vs Globalisation: A Conscious Vision of India” in Tyagi, R., S. Mangla and Giri (eds.), *Glocalization and Federal Governance in India*, Bloomsbury. 2019, pp. 141-154.

Michie, Jonathan. (eds.), “Globalisation in Questions?”, *Handbook of Globalisation*, UK, Edward Elgar, 2003, pp: 17-79.

McGrew, A. “Globalisation and Global Politics” in Baylis J., Smith and Owens (eds.), *The Globalisation of World Politics: An Introduction to International Relations*, New York: Oxford University Press. 2017, pp. 15-31.

Unit 2. Globalization: A Eurocentric Project?

Essential Readings

2.1 The Question of Post-Coloniality

Chatterjee, P. *Our Modernity* (SEPHIS) and (CODESRIA), Rotterdam/Dakar. 1997 pp. 3-20.

Sanjeev Kumar H.M., “Contesting Modernity: Crisis of Democratization in South Asia,” *India Quarterly*, LXIV (4), October-December 2008, pp. 124-155.

2.2 Making Sense of Globalization for the People at the Margins

Vandana Shiva, “Ecological Balance in an Era of Globalisation,” in Frank J. Lechner and John Boli (eds.), *The Globalization Reader*, Oxford: Blackwell, 2004: pp. 422-429.

Kirsten Foot, “Actors and Activities in the Anti-Human Trafficking Movement,” in Jorge Heine and Ramesh Thakur (eds.), *The Dark Side of Globalization*, Tokyo: UN University Press, 2011, pp. 249-265.

Additional Readings

Sen, A. “Introduction” and “The Perspective of Freedom” *Development as freedom* (2nd ed.). New York: Oxford University Press. 2001 pp.1- 34.

Hirst, P. and Thompson, G. “The Future of Globalization”, *Cooperation and Conflict*, Vol. 37, No. 3, Special Issue on Globalization, *Cooperation and Conflict*, September 2002, pp. 247-265.

Appadurai, Arjun. *Modernity at Large: Cultural Dimensions of Globalisation*. Minneapolis: University of Minnesota Press, 1996, pp. 66-88.

Ashcroft, Bill, Gareth Griffiths, and Helen Tiffins, eds. *The Empire Writes Back: Theory and Practice in Post-Colonial Literature*. London: Routledge, 1989, pp.1-32; 193-220.

Gustava Esteva and Madhu Suri Prakash, "From Global to Local: Beyond Neo-liberalism to International Hope," in Frank J. Lechner and John Boli (eds.), *The Globalization Reader*, Oxford: Blackwell, 2004: pp. 410-416.

Research Foundation for Science, Technology and Diversity, "Jaiv Panchayat: Biodiversity Protection at the Village Level," in Robin Broad (ed.), *Global Backlash: Citizen Initiatives for a Just World Economy*, Boulder: Rowman and Littlefield, 2002, pp. 269-272.

Unit 3. Sovereign State in a Globalised World

Essential Readings

3.1 Political Dimensions

Bull, Hedley. "Beyond the state system?" in David Held and Anthony McGrew (eds.) *The Global Transformations Reader: An Introduction to the Globalisation Debate* (Second Edition). Cambridge: Polity Press, Blackwell Publishing, 2000, pp 577-582.

Elizabeth, A. and Ozioko, M. V, *Effect of Globalisation on Sovereignty of States*, UN Document, 2000, pp. 256-270.

3.2 Shift from State to Market?

Susan Strange, "The Declining Authority of States," in Frank J. Lechner and John Boli (eds.), *The Globalization Reader*, Oxford: Blackwell, 2004: pp. 219-224.

Jessica T. Mathews, "Power Shift," in David Held and Anthony McGrew (eds.), *The Global Transformations Reader: An Introduction to the Globalisation Debate* (Second Edition). Cambridge: Polity Press, Blackwell Publishing, 2003, pp. 204-212.

Unit 4. Role of International Institutions: Multi-dimensionality of Globalisation

Essential Readings

4.1 World Bank, International Monetary Fund, World Trade Organisation and, G-20

Coffey Peter, Riley, Robert, *Reform of the International Institutions - The IMF, World Bank and the WTO*, Part-2, Edward Elgar Publishing, 2006, pp. 12-84.

Dash, P., Shaw, Khandelwal, "Evolution of G20 Process: From Crisis Management to Development Cooperation", *G 20 Digest*, pp. 5-12. Available at: https://www.g20-insights.org/wp-content/uploads/2020/01/Dash_Shaw_Khandelwal_Evolution_G20.pdf

4.2 The Globalisation of Trade

Woods, N. "International Political Economy in an Age of Globalisation", and Watson, M. "Global Trade and Global Finance", in Baylis J., Smith and Owens (eds.) *The Globalisation of World Politics: An Introduction to International Relations*, New York: Oxford University Press. 2017, pp. 243-257, 417-428.

4.3. Global Epidemics and Working of World Health Organization

Editors, CFR. "What does the World Health Organisation do?" *Council on Foreign Relations*, 29 Jan. 2021, New York: 1-14. <https://www.cfr.org/background/what-does-world-health-organization-do>

Lee, Kelley and Julliane Piper, "The WHO and Covid-19 Pandemic", *Global Governance and Review of Multilateral Organizations*, 2020. <https://brill.com/view/journals/gg/gg-overview.xml>

Additional Readings

Stiglitz, J. "The Promise of Global Institutions", *Globalisation and its Discontents*, New York: Norton, 2002, pp. 3-22.

Cypher, J. and Dietz, J. “The International Monetary Fund, the World Bank and Foreign Aid”, *The Process of Economic Development*. New York: Routledge, 2009, pp. 555-591.

Oatley, Thomas, “Trade and Development: Import Substitution Industrialization”, *International Political Economy: Interests and Institutions in the Global Economy*, 2011. 5th ed, pp. 111-132.

Hoekman, B. and Kostecki, M, “The Trading System in Perspective”, *The Political Economy of the World Trading System: From GATT to WTO*, 3rd Ed, 2009, New York: OUP, pp. 7-57.

Friedman, T., *Lexus and the Olive Tree: Understanding Globalization*, 2000, New York: Anchor, pp. 101-142.

Gilpin, Robert, *The Challenge of Global Capitalism: The World Economy in the 21st Century*, USA: Princeton University Press, 2000, pp. 15-52, 293–324.

Charles, Clift. *The Role of the World Health Organisation in the International System*. London: Chatham House, 2013: 1-51.

Lorena, Barberia et.al. “The Political Science of Covid-19: An Introduction”, *Social Science Quarterly*, 2021. pp. 2045-2054.

Lebni Javed Y. and Abbas Jaffar et al., “How the COVID-19 pandemic affected economic, social, political, and cultural factors: A lesson from Iran”, *Journal of Social Psychiatry*, 2021, 63 (7). pp: 298-300

Unit 5. Responses and Resistances to Globalization

Essential Readings

5.1 Global Social Movements

Donatella della Porta, et al, “The Study of Social Movements: Recurring Questions” and “Social Movements and Democracy”, *Social Movements in a Globalising World*, UK: Macmillan, 1999, pp. 3-23; 223-248.

5.2 International Migration

Keeley, B. “International Migration: The Human Face of Globalisation”, OECD, 2009, pp: 9-40

Inglis Christine et al (edited), “Introduction,” in *The Handbook of International Migration*, New Delhi: Sage Publication, 2020, pp. 1-17

Additional Readings

Khagram, Sanjeev et al (ed.) “Women’s Rights are Human Rights”, and “Globalisation, Global Alliances, and the Narmada Movement”, *Restructuring World Politics: Transnational Social Movements: Social Movements, Protest, and Contention, Volume 14*, MN: University of Minnesota Press. 2002. pp. 96-122; pp. 231-244

Berger, S., “Globalisation and Politics”, *Annual Review of Political Science*, 2000, vol- 3, pp. 43-62.

Schaeffer, Robert K. *Social Movement and Global Social Change: The Rising Tide*, UK: Rowman & Littlefield, 2014, pp. 1-18.

Tarrow, S. “The Global in the Local: Global Framing”, *The New Transnational Activism*, New York: Cambridge University Press, 2005, pp 35-59.

Suggestive readings

Gottlieb, G. “*Nation against State: New Approach to Ethnic Conflicts and The Decline of Sovereignty*”, New York: Council on Foreign Press, 1993, pp: 6-47

Smith, G. and Naim, M. *Altered States: Globalization, Sovereignty and Governance*, IDRC, 2000. pp. 5-20.

Hardt, M. and Negri, A., "Passages of Sovereignty", *Empire*, England: Harvard University Press, 2000 pp. 67-183.

Stiglitz, J. E., *Globalization and Its Discontents Revisited: Anti-Globalization in the Era of Trump*, New York: W.W. Norton & Company, 2018. pp. 89-132

कोर्स से सम्बन्धित हिंदी माध्यम की पुस्तकें

दुबे, अभय कुमार (संपादक), *भारत का भूमंडलीकरण, लोक चिंतन ग्रंथमाला*, नई दिल्ली: वाणी प्रकाशन, २००३

पंत, पुष्पेश, *भूमंडलीकरण एवं भारत*, नई दिल्ली: एक्सेसपब्लिशिंग, २०१६

खन्ना, वीएन, *अंतराष्ट्रीय सम्बन्ध*, नॉएडा (उप्र): विकास पब्लिशिंग हाउस, २०२०

चक्रवर्ती, बिद्युत एवं प्रकाश चंद कंडपाल, *वैश्वीकृत दुनिया में लोक प्रशासन: सिद्धांत और पद्धतियां*, २०१८

भार्गव, नरेश, *वैश्वीकरण: समाज शास्त्रीय परिप्रेक्ष्य*, २०१४

पांडेय, ब्रज कुमार , *भूमंडलीकरण की समझ* , महावीर प्रकाशन दिल्ली

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-8): Introduction to Public Policy

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|------------------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction to Public Policy GE-8 | 4 | 3 | 1 | 0 | 12 th Pass | NIL |

Learning Objectives

The paper seeks to provide an understanding to the concept of Public Policy. Public Policy is a proposed course of action of a government to realize its socio-economic objectives. The essence of public policy lies in its effectiveness in translating the governing philosophy into programmes and policies and making it a part of community living. This course will help to understand the complexities of public policy and its interaction with the socio-economic structure.

Learning outcomes

By the end of this course a student will acquire the following knowledge and skills.

- Contextualization of knowledge;
- Praxis and technique;

- c. Critical Thinking;
- d. Research and Communication

SYLLABUS OF GE-8

UNIT – I (9 Hours)

Public Policy

- (a) Concept, Characteristics and Significance
- (b) Determinants of Public Policy
- (c) Policy Impact: Socio-Economic

UNIT – II (14 Hours)

Theoretical Approaches to Public Policy

- (a) Elite Theory
- (b) Group Theory
- (c) Incremental Theory
- (d) Rational Choice Theory

UNIT – III (9 Hours)

Process of Public Policy

- (a) Policy Formulation
- (b) Policy Implementation
- (c) Policy Evaluation

UNIT – IV (13 Hours)

Public Policy: Case Studies

- (a) Education – National Education Policy (NEP) 2020
- (b) Health – National Health Mission (NHM)
- (c) Employment – Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA)
- (d) Economic Empowerment – Pradhan Mantri Jan-Dhan Yojana (PMJDY), Direct Benefit Transfer (DBT)

Essential/recommended readings

Unit 1

Anderson, J. (1975) Public Policy making. New York: Thomas Nelson and Sons Ltd.

Dye, T. (2002) Understanding Public Policy. New Delhi: Pearson.

Unit 2

Henry, Nicholas (2019) Public Administration and Public Affairs. New York: Routledge.

Simon, Herbert A. (1997) Administrative Behavior. New York: MacMillan.

Unit 3

Sapru, R.K. (1996) Public Policy: Formulation, Implementation and Evaluation. New Delhi: Sterling.

Self, Peter (1972) Administrative Theories and Politics. London: Allen and Unwin.

Unit 4

National Education Policy (NEP) 2020, Ministry of Human Resource Development, Government of India.

National Health Mission, Ministry of Health, Government of India.

Mahatma Gandhi National Rural Employment Guarantee Act-2005, Ministry of Rural Development, Government of India.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-9): Women and Politics in India: Concepts and

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|----------------|--|-----------------|----------------------------|-----------------------------|------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Women and Politics in India: Concepts and Debates GE-9 | 4 | 3 | 1 | 0 | 12th Pass | NIL |

Learning Objectives

The course attempts to bring together feminist theory and praxis by focussing on conceptual categories theorized by feminism and the mobilization of the feminist epistemology to focus on key concerns surrounding the everyday existence of women. This course would serve as the fundamental introduction to the history of women's movement with particular emphasis on the women's movement in India. The course opens up the question of women's agency, taking it beyond the question of women empowerment and locates women as radical social agents. It attempts to question the complicity of social structures and relations in preserving gender inequality. This is extended to cover new forms of precarious work and labour under the new economy.

Learning outcomes

After completing this course, the students will be able to:

- Understand the concept of patriarchy, feminism, gender, etc.
- Understand the intersection between family, community and state in feminist debates
- Demonstrate awareness of the history of the women's movement in India
- Show familiarity with and awareness of the key issues taken up by the women's movement

SYLLABUS OF GE-9

UNIT – I (7.5 Hours)

Patriarchy and Feminism

- a. Sex-Gender Debates
- b. Public and Private Dichotomy
- c. Power

UNIT – II (7.5 Hours)

Family and Community

UNIT – III (7.5 Hours)

Law, State and Women

UNIT – IV (7.5 Hours)

History of the Women's Movement in India

UNIT – V (7.5 Hours)

Violence against women

UNIT – VI (7.5 Hours)

Women and Labour: Unpaid labour, Reproductive and care work, Sex work

Essential/recommended readings

Patriarchy and Feminism

N. Menon (2008) 'Gender', in R. Bhargava and A. Acharya (eds), *Political Theory: An Introduction*, Delhi: Pearson

V Geetha (2002) *Gender*, Kolkata, Stree, pp. 1-20.

M. Kosambi (2007) *Crossing the Threshold*, New Delhi, Permanent Black, pp. 3-10; 40-46.

N. Menon (2008) 'Power', in R. Bhargava and A. Acharya (eds), *Political Theory: An Introduction*, Delhi: Pearson, pp.148-157

B. Hooks (2010) 'Feminism: A Movement to End Sexism', in C. McCann and S. Kim (eds), *The Feminist Reader: Local and Global Perspectives*, New York: Routledge, pp. 51-57.

R. Delmar (2005) 'What is Feminism?', in W. Kolmar & F. Bartkowski (eds) *Feminist Theory: A Reader*, pp. 27-37

N. Menon (2015), Is Feminism about 'Women'? A Critical View on Intersectionality from India, *International Viewpoint*,
http://www.internationalviewpoint.org/IMG/article_PDF/article_a4038.pdf.

T. Shinde (1993) 'Stree Purusha Tulna', in K. Lalitha and Susie Tharu (eds), *Women Writing in India*, New Delhi, Oxford University Press, pp. 221-234

U. Chakravarti (2001) 'Pitrasatta Par ek Note', in S. Arya, N. Menon & J. Lokneeta (eds.) *Naarivaadi Rajneeti: Sangharsh evam Muddey*, University of Delhi: Hindi Medium Implementation Board, pp.1-7

Family and Community

R. Palriwala (2008) 'Economics and Patriliney: Consumption and Authority within the Household' in M. John. (ed) *Women's Studies in India*, New Delhi: Penguin, pp. 414-423

Saheli Women's Centre (2007) *Talking Marriage, Caste and Community: Women's Voices from Within*, New Delhi: monograph 114

U. Chakravarti (2003) *Gendering Caste through a Feminist Lens*, Kolkata, Stree, pp. 139-159.

S. Rege (2005), A Dalit Feminist Standpoint, in Gender and Caste, in Anupama Rao (ed) *Gender and Caste*, Zed Books, pp. 90-101

Kumkum Sangari (1995) Politics of Diversity: Religious Communities and Multiple Patriarchies, *Economic and Political Weekly*, Vol. 30, No. 52,, pp. 3381-3389

Law, State and Women

C. MacKinnon, 'The Liberal State' from *Towards a Feminist Theory of State*, Available at <http://fair-use.org/catharine-mackinnon/toward-a-feminist-theory-of-the-state/chapter-8>

R. Kapur & B. Cossman (1999) 'On Women, Equality and the Constitution: Through the Looking Glass of Feminism' in Nivedita Menon (ed) *Gender and Politics in India*, Oxford University Press

C MacKinnon (2006) 'Sex Equality under the Constitution of India: Problems, Prospects and Personal Laws', *International Journal of Constitutional Law*, Volume 4, Issue 2, 181–202.

Ved Kumari (1999) 'Gender Analyses of Indian Penal Code' in Amita Dhanda, Archana Parashar(eds) *Engendering Law - Essays in Honour of Lotika Sarkar*, Eastern Book Company, 139-160

History of the Women's Movement in India

Radha Kumar (1993), *The History of Doing: An Illustrated Account of Movements for Women's Rights and Feminism in India, 1800-1990*, Zubaan

Anupama Roy (2010) *Women's Movement in N.G. Jayal and P.B. Mehta (Ed.) Oxford Companion to Indian Politics*, New Delhi, Oxford

I. Agnihotri and V. Mazumdar (1997) 'Changing the Terms of Political Discourse: Women's Movement in India, 1970s-1990s', *Economic and Political Weekly*, 30 (29), pp. 1869-1878.

R. Kapur (2012) 'Hecklers to Power? The Waning of Liberal Rights and Challenges to Feminism in India', in A. Loomba *South Asian Feminisms*, Durham and London: Duke University Press, pp. 333-355

Violence against women

N. Menon (2004) 'Sexual Violence: Escaping the Body', in *Recovering Subversion*, New Delhi: Permanent Black, pp. 106-165

F. Agnes (1992), Protecting Women Against Violence – Review of a Decade of Legislation 1980-89, *Economic and Political Weekly*, Vol. 27, Issue No. 17, Apr. 25.

Sunita V S Bandewar, Amita Pitre & Lakshmi Lingam (2018) Five Years Post Nirbhaya: Critical Insights into the Status of Response to Sexual Assault, in *Indian Journal Of Medical Ethics*, available at <https://pubmed.ncbi.nlm.nih.gov/29650498/>

A. Verma, H. Qureshi & J.Y. Kim (2017) Exploring the trend of violence against women in India, *International Journal of Comparative and Applied Criminal Justice*, 41:1-2, 3-18

Women and Labour

P Swaminathan (2014) Outside the Realm of Protective Legislation: The Saga of Unpaid Work in India, in *Women and Law: Critical Feminist Perspective*: New Delhi: Sage, pp. 115-143

P. Swaminathan (2012) 'Introduction', in *Women and Work*, Hyderabad: Orient Blackswan, pp.1-17

J. Tronto (1996) 'Care as a Political Concept', in N. Hirschmann and C. Stephano, *Revisioning the Political*, Boulder: Westview Press, pp. 139-156.

Darbar Mahila Samanwaya Committee, Kolkata (2011) 'Why the so-called Immoral Traffic (Preventive) Act of India Should be Repealed', in P. Kotiswaran, *Sex Work*, New Delhi, Women Unlimited, pp. 259-262

N. Jameela (2011) 'Autobiography of a Sex Worker', in P. Kotiswaran, *Sex Work*, New Delhi: Women Unlimited, pp. 225-241

Suggestive readings

K. Millet (1968) *Sexual Politics*, <http://www.marxists.org/subject/women/authors/millett-kate/sexualpolitics.htm>

S. de Beauvoir (1997) *Second Sex*, London: Vintage.

F. Engels, *Family, Private Property and State*, <http://readingfromtheleft.com/PDF/EngelsOrigin.pdf>

S. Brownmiller (1975) *Against our Wills*, New York: Ballantine.

R. Hussain (1988) 'Sultana's Dream', in *Sultana's Dream and Selections from the Secluded Ones – translated by Roushan Jahan*, New York: The Feminist Press.

S. Ray 'Understanding Patriarchy', http://www.du.ac.in/fileadmin/DU/Academics/course_material/hrge_06.pdf,

C. Zetkin, 'Proletarian Woman', <http://www.marxists.org/archive/zetkin/1896/10/women.htm>

J. Ghosh (2009) *Never Done and Poorly Paid: Women's Work in Globalising India*, Delhi: Women Unlimited

Justice Verma Committee Report, <http://nlrd.org/womensrightsinitiative/justiceverma-committee-report-download-full-report>

N. Gandhi and N. Shah (1992) *Issues at Stake – Theory and Practice in the Women's Movement*, New Delhi: Kali for Women.

V. Bryson (1992) *Feminist Political Theory*, London: Palgrave-MacMillan, pp. 175-180; 196- 200

M. Mies (1986) 'Colonisation and Housewifisation', in *Patriarchy and Accumulation on a World Scale* London: Zed, pp. 74-111, <http://caringlabor.wordpress.com/2010/12/29/maria-mies-colonizationand-housewifization/>

R. Ghadially (2007) *Urban Women in Contemporary India*, Delhi: Sage Publications.

Saheli Women's Centre (2001) 'Reproductive Health and Women's Rights, Sex Selection and feminist response' in S Arya, N. Menon, J. Lokneeta (eds), *NariwadiRajneeti*, Delhi, pp. 284- 306

V. Bryson (2007) *Gender and the Politics of Time*, Bristol: Polity Press

Readings in Hindi:

D. Mehrotra (2001) *Bhartiya Mahila Andolan: Kal, Aaj aur Kal*, Delhi: Books for Change

G. Joshi (2004) *Bharat Mein Stree Asmaanta: Ek Vimarsh*, University of Delhi: Hindi Medium Implementation Board

N. Menon (2008) 'Power', in R. Bhargava and A. Acharya (eds) *Political Theory: An Introduction*, New Delhi: Pearson

N. Menon (2008) 'Gender', in R. Bhargava and A. Acharya (eds) *Political Theory: An Introduction*, New Delhi, Pearson

R. Upadhyay and S. Upadhyay (eds.) (2004) *Aajka Stree Andolan*, Delhi: Shabd Sandhan.

मेनन, निवेदिता, साधना आर्या और जिनी लोकनीता (ed.) नारीवादी राजनीति: संघर्ष एवं मुद्दे, दिल्ली: हिंदी माध्यम कार्यन्वय निदेशालय, 2001.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-10): Digital Social Sciences

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-------------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Digital Social Sciences GE-10 | 4 | 3 | 1 | 0 | 12 th Pass | NIL |

Learning Objectives

Digital technology in the discipline of Social Science cannot be viewed only as a tool for research but as something that transforms the nature of Social Science and the object of its study- the society- in course of researching about it. This very aspect of digital technology and its capacity for social transformation is the mainstay of the emerging field of Digital Social Sciences. The course aims to introduce students to this field of Digital Social Science sby primarily focussing on two intertwined aspects of the field- first, impact of digital technologies on the society and two, the role of digital technologies in the study of Social Sciences or the study of society. The intertwined aspect of the twin focus can be alternately formulated as the attempt of the course to understand social change taking place under the impact of digital technology while digital technology providing with the tools to map out these changes. The course begins with a basic introduction to digital literacy and its contribution to pedagogic Social Science and proceeds by way of foundational introduction to prominent technologies and digital spaces through which the aspects of the social can be understood. The course throws light on how the digital turn has redefined the contours of debates surrounding personal identity and social identification through biometrical techniques having consequences both for social welfare and social surveillance; whether access to the digital spaces is impacting social cleavages, creating space for democracy or re-entrenching social inequality through the digital divide; is the digital economy offering new forms of employment or restructuring the vulnerability of the forms of labour; and how is algorithm driven digital space reformulating social choice and social classification. These are some of the illustrative questions through which the course intends to reflect upon the evolving relationship between digital technologies and social sciences.

Learning outcomes

On successful completion of the course, the students would demonstrate:

- An understanding of digital technology and the ways in which it shapes the society.
- An understanding into how digital tools are used as research and pedagogic devices to map out social changes
- Clarity on concepts of the digital world such as Big Data, Artificial Intelligence, Algorithm, etc.
- Familiarity with digital techniques such as the biometrics and digital spaces such as the Social Media in the sphere of communication or the Gig Economy in the market sphere

SYLLABUS OF GE-10

UNIT – I (4 Hours)

Digital Literacy in Social Sciences

UNIT – II (7 Hours)

Digital Information and Science of Society

UNIT – III (7 Hours)

Biometrics and identification

UNIT – IV (8 Hours)

Access to Technology and the Internet

UNIT – V (8 Hours)

Social Media and Public Sphere

UNIT – VI (4 Hours)

Labour in Digital Economy

UNIT – VII (7 Hours)

Artificial Intelligence and Algorithm

Essential/recommended readings

1. Digital Literacy in Social Sciences

Polizzi, Gianfranco, 'Information literacy in the digital age: why critical digital literacy matters for democracy.' In: Goldstein, Stéphane (ed.) *Informed societies: why information literacy matters for citizenship, participation and democracy*. Facet Publishing, London, UK (2020), 1-23.

Robert Todd Perdue & Joshua Sbicca (2013) "Public Access: For Socially Relevant. Knowledge Production and a Democratic Cybersphere", *Fast Capitalism*, Volume 10, Issue 1, 2013

2. Digital Information, Data and Society

Buckland, Michael. *Information and Society*. United Kingdom: MIT Press, 2017. (Chapter 1 and 2)

Sandeep Mertia (edited), *Lives of Data: Essays on Computational Cultures from India*. Netherlands: Institute of Network Cultures, 2020. (Introduction), pp. 9-25.

Holmes, Dawn E.. *Big Data: A Very Short Introduction*. United Kingdom: Oxford University Press, 2017.

Sinha, Amber (2019). "The Politics of India's Data Protection Ecosystem," *Economic and Political Weekly*. Vol. 54, Issue No. 49, 14 Dec, 2019.

3. Biometrics and identification

Fairhurst, Michael. *Biometrics: A Very Short Introduction*. United Kingdom: OUP Oxford, 2018.

Nayar, Pramod K., 'I Sing the Body Biometric': Surveillance and Biological Citizenship,' *Economic and Political Weekly*, Vol. 47, No. 32 (August 11, 2012)

Singh, P. 'Aadhaar: Platform over Troubled Waters.' In: Athique, A., Parthasarathi, V. (eds) *Platform Capitalism in India. Global Transformations in Media and Communication Research*, Palgrave Macmillan, 2020.

4. Access to Technology and the Internet

Agrawal, Ravi. 2018. *India Connected: How the Smartphone is Transforming the World's Largest Democracy*. New Delhi: Oxford University Press.

Jeffrey, Robin and Assa Doron. 2013. *Cell Phone Nation: How Mobile Phones Have Revolutionized Business, Politics and Ordinary Life in India*. Hachette India.

Narayanan Shalini and Sunetra Sen Narayan, *India Connected: Mapping the Impact of New Media*. India: SAGE Publications, 2016.

Venkatraman, Shriram. *Social Media in South India*. United Kingdom: UCL Press, 2017. (Chapter 6: *The Wider World: Social Media and Education in a Knowledge Economy*)

5. Social Media and Public Sphere

Sunstein, Cass R. *#Republic: Divided Democracy in the Age of Social Media*. United Kingdom: Princeton University Press, 2018.

Castells, Manuel. *Networks of Outrage and Hope: Social Movements in the Internet Age*. Germany: Polity Press, 2015. (Chapter 1)

Sinha, Amber. *The Networked Public: How Social Media Changed Democracy*. New Delhi: Rupa, 2019.

Philipose, Pamela. *Media's Shifting Terrain: Five Years that Transformed the Way India Communicates*. India: Orient BlackSwan, 2019.

Biju. P. R., *Political Internet: State and Politics in the Age of Social Media*. Taylor & Francis, 2016.

Rodrigues, U. (2020). Political Communication on Social Media Platforms. In: Athique, A., Parthasarathi, V. (eds) *Platform Capitalism in India. Global Transformations in Media and Communication Research*, Palgrave Macmillan, 2020.

6. Labour in Digital Economy

Chander, Anupam. *The Electronic Silk Road: How the Web Binds the World Together in Commerce*. United Kingdom: Yale University Press, 2013.

Dolber, Brian, Chenjerai Kumanyika, Michelle Rodino-Colocino, Todd Wolfson (edited), *The Gig Economy: Workers and Media in the Age of Convergence*. United Kingdom: Taylor & Francis, 2021. (Chapter 1 and 3)

Verma, Ravinder Kumar, P. Vigneswarallavarasan, and Arpan Kumar Kar, 'Inequalities in Ride-Hailing Platforms.' In: Athique, A., Parthasarathi, V. (eds) Platform Capitalism in India. Global Transformations in Media and Communication Research, Palgrave Macmillan, 2020.

7. Artificial Intelligence and Algorithms

Boden, Margaret A. *Artificial Intelligence: A Very Short Introduction*. London: Oxford University Press, 2018.

Frey, Carl Benedikt. *The Technology Trap: Capital, Labor, and Power in the Age of Automation*. United Kingdom: Princeton University Press, 2020. (Chapter 12: Artificial Intelligence)

Eubanks, Virginia. *Automating Inequality: How High-Tech Tools Profile, Police and Punish the Poor*. St Martin's Press. (2018) (Introduction: Red Flags)

Cheney-Lippold, J. *We Are Data: Algorithms and the Making of Our Digital Selves*. United States: NYU Press. (2017). (Introduction)

Pasquale, Frank. *The Black Box Society: The Secret Algorithms That Control Money and Information*. United States: Harvard University Press, 2015. (Introduction)

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DEPARTMENT OF ECONOMICS

CATEGORY-I BA (HONS.) ECONOMICS

DISCIPLINE SPECIFIC CORE COURSE -4 (DSC-4): INTRODUCTORY MACROECONOMICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introductory Macroeconomics ECON004 | 4 | 3 | 1 | 0 | Class XII pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To introduce students to the basic concepts of macroeconomics
- To discuss the preliminary concepts associated with the determination and measurement of aggregate macroeconomic variables like GDP, savings, investment, money, inflation, unemployment and the balance of payments
- To introduce the simple analytical frame- work (e.g., the IS-LM model) for analysing the relationships among key macroeconomic variables

Learning outcomes

The Learning Outcomes of this course are as follows:

- The students would be able to familiarise the broad macroeconomic concepts like GDP, inflation, money supply, interest rate and their inter-linkages and their interrelationships.
- By studying the course, the students will able to critically evaluate various macroeconomic policies and their effects on output and interest rate in the economy.

SYLLABUS OF DSC-4

UNIT – I: Introduction to Macroeconomic issues and National Income Accounting (12 Hours)

Basic issues studied in macroeconomics; measurements of gross domestic product, income, expenditure and the circular flow; real versus nominal GDP; price indices; national income accounting for open economy, balance of payments accounts; current, capital and financial accounts.

UNIT – II: Money (10 Hours)

Functions of money; quantity theory of money; demand for money; determination of money supply and demand; credit creation; tools of monetary policy.

UNIT – III: Simple Theory of Income Determination (11 Hours)

Classical and Keynesian systems; simple Keynesian model of income determination

UNIT – IV: IS-LM Analysis and Aggregate Demand (12 Hours)

Derivations of the IS and LM curves; fiscal and monetary multipliers; derivation of aggregate demand

Practical component (if any) - NIL

Essential/recommended readings:

- Andrew Abel, Ben Bernanke and Dean Croushore (2011). *Macroeconomics* (7th edition), Pearson.
- Richard T. Froyen (2013). *Macroeconomics: Theories and Policies* (10th ed.), Pearson.
- Blanchard, O. (2006). *Macroeconomics* (6th edition). Pearson
- Blanchard, O. (2017). *Macroeconomics* (7th edition). Pearson
- Dornbusch, R., S. Fischer and R. Startz. *Macroeconomics* (6th edition). McGraw- Hill
- Dornbusch, R., S. Fischer and R. Startz. *Macroeconomics* (11th edition). McGraw-Hill

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 5 (DSC-5): INTERMEDIATE MATHEMATICAL METHODS FOR ECONOMICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PREREQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Intermediate Mathematical Methods for Economics ECON005 | 4 | 3 | 1 | 0 | Class XII pass with Mathematics | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To transmit the body of basic mathematics that enables the study of economic theory at the undergraduate level, specifically the courses on microeconomic theory, macroeconomic theory, statistics and econometrics set out in this syllabus
- Particular economic models are not the ends, but the means for illustrating the method of applying mathematical techniques to economic theory in general
- The sophistication would be maintained at a standard level to grow in the profession

Learning outcomes

The Learning Outcomes of this course are as follows:

- The course builds the mathematical foundations necessary for further study of a variety of disciplines including postgraduate economics, statistics, computer science, finance and data analytics
- The analytical tools introduced in this course have applications wherever optimization techniques are used in business decision-making for managers and entrepreneurs alike
- These tools are necessary for anyone seeking employment as an analyst in the corporate world.

SYLLABUS OF DSC- 5

UNIT –I: Linear Algebra (15 Hours)

Vector spaces: algebraic and geometric properties, scalar product, norm, orthogonality; linear transformations: properties, matrix representation and elementary operations; systems of linear equations: properties of their solution sets; determinants: characterization, properties and applications; eigenvalues and eigenvectors, diagonalization, spectral theorem.

UNIT – II: Functions of several real variables (15 Hours)

Geometric representation: graphs and level curves; differentiable functions: characterisation, properties with respect to various operations and applications; second order derivatives: properties and applications; the implicit function theorem, application to comparative statics; homogeneous and homothetic functions: characterisation, applications.

UNIT – III: Multivariate optimization (15 Hours)

Convex sets; geometric properties of functions: convex functions, their characterisation, properties and applications; quasi convex functions, their characterisation, properties and applications; unconstrained optimisation: geometric characterisation, characterisation using calculus, applications.

Essential/recommended readings

- Sydsaeter, K., Hammond, P. (2002). *Mathematics for economic analysis*, Pearson Educational.
- Hoy, M., Livernois, J., McKenna, C., Rees, R., Stengos, T. (2001). *Mathematics for Economics*, Prentice-Hall India.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE– 6 (DSC-6): INTERMEDIATE STATISTICS FOR ECONOMICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Intermediate Statistics for | 4 | 3 | 1 | 0 | Class XII with pass | NIL |

| | | | | | | |
|------------------------------|--|--|--|--|--------------------|--|
| Economics ECON006 | | | | | Mathematics | |
|------------------------------|--|--|--|--|--------------------|--|

Learning Objectives

The Learning Objectives of this course are as follows:

- This course focuses on techniques for statistical inference. The main objective of the course is to help students understand how to draw inference from samples regarding the underlying populations using point estimation, interval estimation and hypothesis testing.

Learning outcomes

The Learning Outcomes of this course are as follows:

- An important learning outcome of the course will be the capacity to use and analyse statistics in everyday life. The course will improve students' ability to analyse data, make decisions, form predictions, and conduct research.

SYLLABUS OF DSC-6

UNIT - 1: Sampling distribution of a Statistic (12 Hours)

Concept of Statistic and parameter, Sampling distributions, Central Limit Theorem.

UNIT - 2: Estimation (12 Hours)

Estimator and methods of estimation, Point Estimation: method of moments and method of maximum likelihood; Interval Estimation, Properties of an estimator: Consistency, Unbiasedness, Efficiency and Sufficiency, confidence level and sample size, intervals based on Z-distribution, t-distribution and chi-squared distribution, F-distribution.

UNIT – 3: Inference (9 Hours)

Meaning of a statistical hypothesis, errors in hypothesis testing: Type 1 and Type 2 errors, power of a test.

UNIT - 4: Hypothesis Testing (12 Hours)

Testing of a population Mean, proportions - small and large sample tests, P-value; Testing for variance; Testing hypothesis for two samples, testing for equality of means; testing for ratio of variances.

Practical component (if any) - NIL

Essential/recommended readings

- Devore, J. (2012). *Probability and statistics for engineers*, 8th ed. Cengage Learning.
- John A. Rice (2007). *Mathematical Statistics and Data Analysis*, 3rd ed. Thomson Brooks/Cole
- Larsen, R., Marx, M. (2011). *An introduction to mathematical statistics and its applications*. Prentice Hall.
- Miller, I., Miller, M. (2017). *J. Freund's mathematical statistics with applications*, 8th ed. Pearson.
- Demetri Kantarelis, D. and Malcolm O. Asadoorian, M. O. (2009). *Essentials of*

Inferential Statistics, 5th edition, University Press of America.

- Hogg, R., Tanis, E., Zimmerman, D. (2021) *Probability and Statistical inference*, 10TH Edition, Pearson

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category II

B.A. Programmes with Economics as Major discipline

DISCIPLINE SPECIFIC CORE COURSE -3 (DSC-3) – : INTRODUCTORY MACROECONOMICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|----------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introductory Macroeconomics ECON004 | 4 | 3 | 1 | 0 | Class XII pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To introduce students to the basic concepts of macroeconomics
- To discuss the preliminary concepts associated with the determination and measurement of aggregate macroeconomic variables like GDP, savings, investment, money, inflation, unemployment and the balance of payments
- To introduce the simple analytical framework (e.g., the IS-LM model) for analysing the relationships among key macroeconomic variables

Learning outcomes

The Learning Outcomes of this course are as follows:

- The students would be able to familiarise the broad macroeconomic concepts like GDP, inflation, money supply, interest rate and their inter-linkages and their interrelationships.
- By studying the course, the students will be able to critically evaluate various macroeconomic policies and their effects on output and interest rate in the economy.

SYLLABUS OF DSC-3

UNIT – I: Introduction to Macroeconomic issues and National Income Accounting (12 Hours)

Basic issues studied in macroeconomics; measurements of gross domestic product, income, expenditure and the circular flow; real versus nominal GDP; price indices; national income accounting for open economy, balance of payments accounts; current, capital and financial accounts.

UNIT – II: Money (10 Hours)

Functions of money; quantity theory of money; demand for money; determination of money supply and demand; credit creation; tools of monetary policy.

UNIT – III: Simple Theory of Income Determination (11 Hours)

Classical and Keynesian systems; simple Keynesian model of income determination

UNIT – IV: IS-LM Analysis and Aggregate Demand (12 Hours)

Derivations of the IS and LM curves; fiscal and monetary multipliers; derivation of aggregate demand

Practical component (if any) - NIL

Essential/recommended readings:

- Andrew Abel, Ben Bernanke and Dean Croushore (2011). *Macroeconomics* (7th edition), Pearson.
- Richard T. Froyen (2013). *Macroeconomics: Theories and Policies* (10th ed.), Pearson.
- Blanchard, O. (2006). *Macroeconomics* (6th edition). Pearson
- Blanchard, O. (2017). *Macroeconomics* (7th edition). Pearson
- Dornbusch, R., S. Fischer and R. Startz. *Macroeconomics* (6th edition). McGraw- Hill
- Dornbusch, R., S. Fischer and R. Startz. *Macroeconomics* (11th edition). McGraw-Hill

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 4 (DSC-4): BASIC STATISTICS FOR ECONOMICS
CREDIT DISTRIBUTION, ELIGIBILITY AND PREREQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Statistics for Economics ECON022 | 4 | 3 | 1 | 0 | Class XII pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- The course teaches students the basics of probability theory and statistical inference based on simple technical rigor. It includes introductory probability theories, sample

distribution and hypothesis testing that set a necessary foundation for the econometrics course taught as a General Elective.

Learning outcomes

The Learning Outcomes of this course are as follows:

- The student will be able to analyse the data using basic statistical concepts. They will understand sampling characteristics, estimation as well as examine the hypotheses using discrete and continuous distributions.

SYLLABUS OF DSC- 4

UNIT – I: Introduction and overview (09 Hours)

Populations and samples; sample statistics; Descriptive Statistics.

UNIT – II: Basic concepts of probability (12 Hours)

Spaces and events; probability concepts, conditional probabilities

UNIT – III: Probability distributions and Sampling (12 Hours)

Random variables – discrete and continuous, various probability distributions - functions and characteristics; Commonly used distributions - uniform, binomial, exponential, Poisson, hypergeometric and Normal random variables. Jointly distributions- conditional distributions and expectations, covariance and correlation

Unit – IV: Estimation and Hypothesis testing (12 Hours)

Estimation of population parameters - methods of moments and maximum likelihood procedures; properties of estimators; confidence intervals; Defining statistical hypotheses; distributions of test statistics; testing hypotheses related to population parameters; Type I and Type II errors; power of a test

Practical component (if any) - NIL

Essential/recommended readings

- Larsen, R., Marx, M. (2011). *An Introduction to Mathematical Statistics and its Applications*, Prentice Hall.
- James McClave, P. George Benson, Terry Sincich (2017), *Statistics for Business and Economics*, Pearsons Publication.
- Anderson D. R, Sweeney D.J. et. al (2019), *Statistics for Business & Economics*, 13th ed. Cengage Learning.
- Sheldon Ross (2017), *Introductory Statistics*, 4th Edition, Academic Press

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category III

B.A. Programmes with Economics as Non-Major or Minor discipline

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|----------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introductory Macroeconomics ECON004 | 4 | 3 | 1 | 0 | Class XII pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To introduce students to the basic concepts of macroeconomics
- To discuss the preliminary concepts associated with the determination and measurement of aggregate macroeconomic variables like GDP, savings, investment, money, inflation, unemployment and the balance of payments
- To introduce the simple analytical framework (e.g., the IS-LM model) for analysing the relationships among key macroeconomic variables

Learning outcomes

The Learning Outcomes of this course are as follows:

- The students would be able to familiarise the broad macroeconomic concepts like GDP, inflation, money supply, interest rate and their inter-linkages and their interrelationships.
- By studying the course, the students will be able to critically evaluate various macroeconomic policies and their effects on output and interest rate in the economy.

SYLLABUS OF DSC-3

UNIT – I: Introduction to Macroeconomic issues and National Income Accounting (12 Hours)

Basic issues studied in macroeconomics; measurements of gross domestic product, income, expenditure and the circular flow; real versus nominal GDP; price indices; national income accounting for open economy, balance of payments accounts; current, capital and financial accounts.

UNIT – II: Money (10 Hours)

Functions of money; quantity theory of money; demand for money; determination of money supply and demand; credit creation; tools of monetary policy.

UNIT – III: Simple Theory of Income Determination (11 Hours)

Classical and Keynesian systems; simple Keynesian model of income determination

UNIT – IV: IS-LM Analysis and Aggregate Demand (12 Hours)

Derivations of the IS and LM curves; fiscal and monetary multipliers; derivation of aggregate demand

Practical component (if any) - NIL

Essential/recommended readings:

- Andrew Abel, Ben Bernanke and Dean Croushore (2011). *Macroeconomics* (7th edition), Pearson.
- Richard T. Froyen (2013). *Macroeconomics: Theories and Policies* (10th ed.), Pearson.
- Blanchard, O. (2006). *Macroeconomics* (6th edition). Pearson
- Blanchard, O. (2017). *Macroeconomics* (7th edition). Pearson
- Dornbusch, R., S. Fischer and R. Startz. *Macroeconomics* (6th edition). McGraw- Hill
- Dornbusch, R., S. Fischer and R. Startz. *Macroeconomics* (11th edition). McGraw-Hill

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category-IV

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES OFFERED BY DEPARTMENT OF ECONOMICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|------------------------|----------------------|-----------------------------|
| | | | | | | |
| GENERIC ELECTIVES (GE-4): PRINCIPLES OF MACROECONOMICS I | | | | | | |
| | | Lecture | Tutorial | Practical/ Practice | | |
| Principles of Macroeconomics I ECON026 | 4 | 3 | 1 | 0 | Class XII pass | NIL |
| Learning Objectives | | | | | | |

The Learning Objectives of this course are as follows:

- This course introduces the basic concepts in Macroeconomics both in closed and open economy. It deals with the behaviour and characteristics of aggregate economy. This course introduces the definition, measurement of the macroeconomic variables like GDP, consumption, savings, investment and balance of payments. The course also discusses various theories and approaches of determining GDP.

Learning outcomes

The Learning Outcomes of this course are as follows:

- The students will learn the broad understanding of macroeconomic variables and their measurement issues like GDP, inflation, money supply, interest rate and their inter-linkages. It will also allow them to critically evaluate various macroeconomic policies and their effects on output and interest rate in the economy.

SYLLABUS OF GE-4

UNIT – I: Introduction (05 Hours)

What is macroeconomics? Macroeconomic issues in an economy

UNIT – II: National Income Accounting (10 Hours)

Concepts of GDP and National Income; measurement of national income and related aggregates; nominal and real income; limitations of the GDP concept

UNIT – III: Determination of GDP (10 Hours)

Actual and potential GDP; aggregate expenditure; consumption function; investment function; equilibrium GDP; concepts of MPS, APS, MPC, APC; autonomous expenditure; Concept of multiplier

UNIT – IV: National Income Determination in an Open Economy with Government (10 Hours)
Income determination; Fiscal Policy: impact of changes in government expenditure and taxes; net exports function; net exports and equilibrium national income.

UNIT – V: Money in a Modern Economy (10 Hours)

Concept of money in a modern economy; monetary aggregates; demand for money; quantity theory of money; liquidity preference and rate of interest; money supply and credit creation; monetary policy.

Practical component (if any) - NIL

Essential/recommended readings

- Andrew Abel, Ben Bernanke and Dean Croushore (2011). *Macroeconomics* (7th edition). Pearson
- Richard T. Froyen (2013). *Macroeconomics: Theories and Policies* (10th ed.), Pearson.
- Blanchard, O. (2018). *Macroeconomics* (7th edition). Pearson
- Blanchard, O. (2006). *Macroeconomics* (6th edition). Pearson
- Dornbusch, R., and S. Fischer. (1994). *Macroeconomics* (6th edition). McGraw- Hill
- R. Dornbusch, S. Fischer and R. Startz. (2018). *Macroeconomics* (12th edition). McGraw-Hill

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-5): BASIC STATISTICS FOR ECONOMICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Statistics for Economics ECON022 | 4 | 3 | 1 | 0 | Class XII pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- The course teaches students the basics of probability theory and statistical inference based on simple technical rigor. It includes introductory probability theories, sample

distribution and hypothesis testing that set a necessary foundation for the econometrics course taught as a General Elective.

Learning outcomes

The Learning Outcomes of this course are as follows:

- The student will be able to analyse the data using basic statistical concepts. They will understand sampling characteristics, estimation as well as examining the hypotheses using discrete and continuous distributions.

SYLLABUS OF GE- 5

UNIT – I: Introduction and overview (09 Hours)

Populations and samples; sample statistics; Descriptive Statistics.

UNIT – II: Basic concepts of probability (12 Hours)

Spaces and events; probability concepts, conditional probabilities

UNIT – III: Probability distributions and Sampling (12 Hours)

Random variables – discrete and continuous, various probability distributions - functions and characteristics; Commonly used distributions - uniform, binomial, exponential, Poisson, hypergeometric and Normal random variables. Jointly distributions- conditional distributions and expectations, covariance and correlation

Unit – IV: Estimation and Hypothesis testing (12 Hours)

Estimation of population parameters - methods of moments and maximum likelihood procedures; properties of estimators; confidence intervals; Defining statistical hypotheses; distributions of test statistics; testing hypotheses related to population parameters; Type I and Type II errors; power of a test

Practical component (if any) - NIL

Essential/recommended readings

- Larsen, R., Marx, M. (2011). *An Introduction to Mathematical Statistics and its Applications*, Prentice Hall.
- James McClave, P. George Benson, Terry Sincich (2017), *Statistics for Business and Economics*, Pearsons Publication.
- Anderson D. R, Sweeney D.J. et. al (2019), *Statistics for Business & Economics*, 13th ed. Cengage Learning.
- Sheldon Ross (2017), *Introductory Statistics*, 4th Edition, Academic Press

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-6): INDIAN ECONOMY

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-------------------------------|----------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Indian Economy ECON030 | 4 | 3 | 1 | 0 | Class XII pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- This course introduces the economic problems related to the Indian economy by familiarizing them with the research studies on areas relating to economic development and policy in India with an emphasis on contemporary debates.

Learning outcomes

The Learning Outcomes of this course are as follows:

- The students will be able to learn the development paradigm adopted in India since independence and evaluate its impact on economic as well as social indicators of progress. Students will have the ability to explore current policy debates and contribute to policy making in an informed way using relevant databases. They will also learn how to conduct independent research in these areas

SYLLABUS OF GE-3

Unit 1 : Historical and general overview of Indian economy since Independence (05 Hours)

Unit 2 : Growth and structural change (09 Hours)

Unit 3 : The Indian economy in a comparative perspective (09 Hours)

Unit 4 : Key issues: poverty, inequality, education, health and gender (09 Hours)

Unit 5 : Agriculture, industry, services and international trade (09 Hours)

Practical component (if any) - NIL

Essential/recommended readings

- Kumar, Dharma (2005) ed the article on The Indian Economy 1970 to 2003 in revised version of CEHI Vol II
- Balakrishnan, Pulapre (2010) *Economic Growth in India: History and Prospect*. OUP.
- Rakshit, Mihir (2011) *Macroeconomics of Post-reform India*. OUP
- Rakshit, Mihir (2010) *Money and Finance in the Indian Economy*. OUP
- Goyal, Ashima(ed) (2015) *A Concise handbook of Indian Economy in the 21st*

Century .OUP

- Ghate, Chetan (ed) (2012) *The Oxford Handbook of Indian Economy*. OUP.
- Bosworth, B., Collins, S. M., & Virmani, A. (2007). *Sources of growth in the Indian economy*.
- Goyal, A. (Ed.). (2019). *A Concise Handbook of the Indian Economy in the 21st Century*. Oxford University Press.
- Pulapre Balakrishnan, 2007, “The Recovery of India: Economic Growth in the Nehru Era”, *Economic and Political Weekly*, November.
- Rakesh Mohan, 2019, *Moving India to a new Growth Trajectory: Need for a Comprehensive Big Push*, Brookings India, Section 1 and 2, 9-30.
- Ahluwalia, M. S., 2019, “India’s economic reforms: Achievements and Next Steps”, *Asian Economic Policy Review*, 14(1), 46-62.
- James, K.S., & Srinivas Goli, 2016, “Demographic Changes in India: Is the Country Prepared for the Challenge?” *Brown Journal of World Affairs*, Fall/Winter 2016, Volume XXIII, Issue I.
- Desai, S., 2015, “Demographic deposit, dividend and debt”, *The Indian Journal of Labour Economics*, 58, 217-232
- Arvind Subramanian and Josh Felman (2021) India’s Stalled Rise-How the State Has Stifled Growth, *Foreign Affairs* on 14.12. 2021
- Executive Summary, 2014, Report of the Expert Group to Review the Methodology for Measurement of Poverty (Rangarajan Committee report), GOI, 1-5
- Thomas, J. J. (2020). ‘Labour Market Changes in India, 2005–18’, *Economic and Political Weekly*, 55(34), 57

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DEPARTMENT OF GEOGRAPHY

Category-I **BA (Hons.) Geography**

DISCIPLINE SPECIFIC CORE COURSE – 4 (DSC-4): GEOMORPHOLOGY

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GEOMORPHOLOGY | 4 | 3 | 1 | 0 | 12 th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand the association between geomorphologic landforms, concepts and processes.
- To critically evaluate and connect information about geomorphic processes.
- To provide a theoretical and empirical framework for understanding landscape evolution and the characteristics of individual types of geomorphic landscapes.

Learning outcomes

The Learning Outcomes of this course are as follows:

- To know the functioning of earth systems in real time and analyze how the natural and anthropogenic operating factors affects the development of landforms.
- To distinguish between the mechanisms that controls these processes.
- To assess the roles of structure, stage and time in shaping the landforms, interpret geomorphological maps and apply the knowledge in geographical research.

SYLLABUS OF DSC-4

UNIT – I (3 Hours)

Geomorphology: Definitions, Principles, Recent Trends

UNIT – II (9 Hours)

Plate Tectonics: Concept, Mechanism, Boundaries, Movements and Resultant effects

UNIT – III (9 Hours)

Denudation: Weathering, Mass Wasting, Erosion

UNIT – IV (10 Hours)

Landform development: Cyclic (ideas of Davis and Penck), non-cyclic and poly-cyclic concepts

UNIT – V (14 Hours)

Landforms: Fluvial, Aeolian, Glacial, and Coastal Landforms

Practical component (if any) - NIL

Suggestive readings

1. Bloom, A.L., (2003). Geomorphology: A Systematic Analysis of Late Cenozoic Landforms. First Indian Reprint. Delhi: Pearson Education (Singapore) Pte. Ltd.
2. Dyal., P. (2014). Bho-Akriti Vigyan. Rajesh Publications, New Delhi (Hindi).
3. Gupta, S.L. (2008). Bho-Akriti Vigyan. University of Delhi (Hindi).
4. Jat., B.C. (2004). Bho-Akriti Vigyan. Rawat Publications, New Delhi, (Hindi).
5. Singh, S. (1998). Geomorphology. PrayagPuskak Bhawan: Allahabad.
6. Strahler, A.H. and Strahler, A.N. (1992). Modern Physical Geography, Fourth Edition. John Wiley & Sons, Canada.
7. Summerfield, M.A, (1991). Global Geomorphology: an Introduction to the Study of Landforms. Longman, New York.
8. Tarbuck, E.J., Lutgens, F.K and Tasa, D. (2012). Earth Science, Thirteenth Edition, Prentice Hall. Delhi.
9. Thornbury, W.D., (1993). Principles of Geomorphology, Second Edition. Wiley Eastern Limited, New Delhi.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 5 (DSC-5): POPULATION GEOGRAPHY

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| POPULATION GEOGRAPHY | 4 | 3 | 1 | 0 | 12 th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- It introduces the basic concepts of population geography to the students.
- An understanding of the importance and need of Demographic data.
- Spatial understanding of population dynamics.

Learning outcomes

The Learning Outcomes of this course are as follows:

- The students would get an understanding of the distribution and trends of population growth in the developed and less developed countries, along with population theories.
- The students would get an understanding of the dynamics of the population.
- An Understanding of the implications of population composition in different regions of the world.

SYLLABUS OF DSC-5

UNIT – I (5 Hours)

Nature and Scope of Population Geography, Sources of Population Data with special reference of Indian Census.

UNIT – II (10 Hours)

Population Size, Distribution and Growth – Determinants and Patterns; Theories of Growth – Malthusian Theory and Demographic Transition Theory.

UNIT – III (10 Hours)

Population Dynamics: Fertility and Mortality – Measures and Determinants, Migration – Determinants and Implications.

UNIT – IV (10 Hours)

Dynamics of Population Pyramids and Women Empowerment and Indian Population Policies.

UNIT – V (10 Hours)

Contemporary Issues - Ageing of Population, Demographic Dividends, Global Refugee Crisis.

Practical component (if any) - NIL

Suggestive readings

1. Bhende A. and Kanitkar T. (2019). Principles of Population Studies. Himalaya Publishing House, New Delhi, India.
2. Chandna, R.C. (2017). Geography of Population. Kalyani Publishers, Ludhiana, India.
3. Clarks, John, I. (1972). Population Geography. Pergamon Press, New York.
4. Hassan M.I. (2020). Population Geography, A Systematic Exposition. Routledge Taylor and Francis Group, New York.
5. Lutz, W., Warren, C. S. and Scherbov, S. (2004). The End of the World Population Growth in the 21st Century. UK: Earthscan.
6. Majumdar, P.K. (2010). Fundamentals of Demography. Rawat publications, Jaipur.
7. Maurya, S. D. (2021). *JansankyaBhugol*. Sharda Pustak Bhawan, Allahabad.
8. Newbold, K. B. (2017). Population Geography: Tools and Issues. Rowman and Littlefield Publishers, NY, USA.

9. Saroha, J. (2021). JansankhyaBhugol, JanankikievamJansankhyaAdhayan. M.K. Books, New Delhi.
10. Weeks, John R. (2020) Population: An Introduction to Concepts and Issues. Cengage Learning, Boston.

DISCIPLINE SPECIFIC CORE COURSE – 6 (DSC-6): STATISTICAL METHODS IN GEOGRAPHY

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| STATISTICAL METHODS IN GEOGRAPHY (PRACTICAL) | 4 | 0 | 0 | 4 | 12th Pass | NIL |

Note: one credit of practical is equal to two hours

Learning Objectives

The Learning Objectives of this course are as follows:

- The concept of quantitative information in general and Geographical data in particular. The importance of data analytics. The ways data is collected, or data is taken from different sources. The sampling methods' application for data collection purposes.
- To understand the ways to handle the collected data through classification, tabulation and stigmatization.
- To compute relations and impacts among the data series.

Learning outcomes

The Learning Outcomes of this course are as follows:

- To differentiate between qualitative and quantitative information.
- To know the nature of various data, different sources and methods of data collection.
- To present data through graphical and diagrammatic formats.
- To analyse the variations in spatial and non-spatial data.

SYLLABUS OF DSC-6

UNIT – I (20 Hours)

Data in Geography: Sources of Data, Scales of Measurements in Geography, Tabulation, Frequency Distribution, Geographical Data Matrix.

UNIT – II (30 Hours)

Descriptive Statistics: Central Tendencies – Mean, Median, Mode; Measures of Partitions - Quartile, Decile, Percentile; Measures of Dispersion- Standard Deviation and Coefficient of Variation; Spatial Centro-graphic Techniques – Mean Centre, Median Centre.

UNIT – III (20 Hours)

Sampling Methods: Sampling (Simple Random, Systematic, and Stratified); and Non-probability sampling.

UNIT – IV (30 Hours)

Theoretical Distribution: Concept of Probability Distribution (Theoretical only), Normal Distribution – Characteristics, Area under Normal Curve.

UNIT – V (20 Hours)

Relationship Analysis: Correlation - Spearman's and Karl Pearson's coefficient of correlation; Simple Regression.

Practical component (if any) – Practical File*

Suggestive readings

1. Alvi Z. (1995). Statistical Geography: Methods and Applications. Rawat Publications, Jaipur.
2. Mahmood A. (1999). Statistical Methods in Geographical Studies. Rajesh Publications, New Delhi.
3. Pal S. K. (1998). Statistics for Geoscientists. Tata McGraw Hill, New Delhi.
4. Rogerson P.A. (2014). Statistical Methods for Geography: A Student's Guide. Sage, New Delhi.
5. Singh D. (2018). प्रारंभिक सांख्यिकी विधियाँ. New Delhi. R K Books, New Delhi.
6. Ebdon D. (1977). Statistics in Geography: A Practical Approach. Oxford, UK. Blackwell.
7. Singh D. (2018). Elementary Statistical Methods. R K Books, New Delhi.
8. Sinha, I. (2007). सांख्यिकी भूगोल. Discovery Publishing House, New Delhi.
9. Walford N. (2011). Practical Statistics for Geographers and Earth Scientists. Wiley-Blackwell, West Sussex, United Kingdom.
10. SPSS (Statistical Package for Social Sciences)
11. Tableau Desktop software/R.

Note:

- *1. Students should construct/collect data matrix (75X5) with each row 75 representing an aerial unit (district/village/town) and 5 columns of relevant attributes of areal units.
2. All the exercises will be based on the data matrix collected by the students.
3. Simple calculator is allowed in the examination.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category II

B.A. Programmes with Geography as Major discipline

DISCIPLINE SPECIFIC CORE COURSE – 3 (DSC-3): GEOMORPHOLOGY

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GEOMORPHOLOGY | 4 | 3 | 1 | 0 | 12 th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand the association between geomorphologic landforms, concepts and processes.
- To critically evaluate and connect information about geomorphic processes.
- To provide a theoretical and empirical framework for understanding landscape evolution and the characteristics of individual types of geomorphic landscapes.

Learning outcomes

The Learning Outcomes of this course are as follows:

- To understand the functioning of earth systems in real time and analyze how the natural and anthropogenic operating factors affects the development of landforms.
- To distinguish between the mechanisms that controls these processes.
- To assess the roles of structure, stage and time in shaping the landforms, interpret geomorphological maps and apply the knowledge in geographical research.

SYLLABUS OF DSC-3

UNIT – I (3 Hours)

Geomorphology: Definitions, Principles, Recent Trends

UNIT – II (9 Hours)

Plate Tectonics: Concept, Mechanism, Boundaries, Movements and Resultant effects

UNIT – III (9 Hours)

Denudation: Weathering, Mass Wasting, Erosion

UNIT – IV (10 Hours)

Landform development: Cyclic (ideas of Davis and Penck), non-cyclic and poly-cyclic concepts

UNIT – V (14 Hours)

Landforms: Fluvial, Aeolian, Glacial, and Coastal Landforms

Practical component (if any) - NIL

Suggestive readings

1. Bloom, A.L., (2003). Geomorphology: A Systematic Analysis of Late Cenozoic Landforms. First Indian Reprint. Delhi: Pearson Education (Singapore) Pte. Ltd.
2. Dyal., P. (2014). Bho-Akriti Vigyan. Rajesh Publications, New Delhi (Hindi).
3. Gupta, S.L. (2008). Bho-Akriti Vigyan. University of Delhi (Hindi).
4. Jat., B.C. (2004). Bho-Akriti Vigyan. Rawat Publications, New Delhi, (Hindi).
5. Singh, S. (1998). Geomorphology. PrayagPuskak Bhawan: Allahabad.
6. Strahler, A.H. and Strahler, A.N. (1992). Modern Physical Geography, Fourth Edition. John Wiley & Sons, Canada.
7. Summerfield, M.A, (1991). Global Geomorphology: an Introduction to the Study of Landforms. Longman, New York.
8. Tarbuck, E.J., Lutgens, F.K and Tasa, D. (2012). Earth Science, Thirteenth Edition, Prentice Hall. Delhi.
9. Thornbury, W.D., (1993). Principles of Geomorphology, Second Edition. Wiley Eastern Limited, New Delhi.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 4 (DSC-4): POPULATION GEOGRAPHY

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| POPULATION GEOGRAPHY | 4 | 3 | 1 | 0 | 12 th Pass | NA |

Learning Objectives

The Learning Objectives of this course are as follows:

- It introduces the basic concepts of population geography to the students.
- An understanding of the importance and need for Demographic data.
- Spatial understanding of population dynamics.

Learning outcomes

The Learning Outcomes of this course are as follows:

- The students would get an understanding of the distribution and trends of population growth in the developed and less developed countries, along with population theories.

- The students would get an understanding of the dynamics of the population.
- An Understanding of the implications of population composition in different regions of the world.

SYLLABUS OF DSC-4

UNIT – I (5 Hours)

Nature and Scope of Population Geography, Sources of Population Data with special reference of Indian Census.

UNIT – II (10 Hours)

Population Size, Distribution and Growth – Determinants and Patterns; Theories of Growth – Malthusian Theory and Demographic Transition Theory.

UNIT – III (10 Hours)

Population Dynamics: Fertility and Mortality – Measures and Determinants, Migration – Determinants and Implications.

UNIT – IV (10 Hours)

Dynamics of Population Pyramids and Women Empowerment and Indian Population Policies.

UNIT – V (10 Hours)

Contemporary Issues - Ageing of Population, Demographic Dividends, Global Refugee Crisis.

Practical component (if any) - NIL

Suggestive readings

1. Bhende A. and Kanitkar T. (2019). Principles of Population Studies. Himalaya Publishing House, New Delhi, India.
2. Chandna, R.C. (2017). Geography of Population. Kalyani Publishers, Ludhiana, India.
3. Clarks, John, I. (1972). Population Geography. Pergamon Press, New York.
4. Hassan M.I. (2020). Population Geography, A Systematic Exposition. Routledge Taylor and Francis Group, New York.
5. Lutz, W., Warren, C. S. and Scherbov, S. (2004). The End of the World Population Growth in the 21st Century. UK: Earthscan.
6. Majumdar, P.K. (2010). Fundamentals of Demography. Rawat publications, Jaipur.
7. Maurya, S. D. (2021). *JansankhyaBhugol*. Sharda Pustak Bhawan, Allahabad.
8. Newbold, K. B. (2017). Population Geography: Tools and Issues. Rowman and Littlefield Publishers, NY, USA.
9. Saroha, J. (2021). JansankhyaBhugol, JanankikievamJansankhyaAdhayan. M.K. Books, New Delhi.
10. Weeks, John R. (2020) Population: An Introduction to Concepts and Issues. Cengage Learning, Boston.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category III

B.A. Programmes with Geography as non-Major discipline

DISCIPLINE SPECIFIC CORE COURSE – 5 (DSC-5): POPULATION GEOGRAPHY

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| POPULATION GEOGRAPHY | 4 | 3 | 1 | 0 | 12 th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- It introduces the basic concepts of population geography to the students.
- An understanding of the importance and need of Demographic data.
- Spatial understanding of population dynamics.

Learning outcomes

The Learning Outcomes of this course are as follows:

- The students would get an understanding of the distribution and trends of population growth in the developed and less developed countries, along with population theories.
- The students would get an understanding of the dynamics of the population.
- An Understanding of the implications of population composition in different regions of the world.

SYLLABUS OF DSC-5

UNIT – I (5 Hours)

Nature and Scope of Population Geography, Sources of Population Data with special reference of Indian Census.

UNIT – II (10 Hours)

Population Size, Distribution and Growth – Determinants and Patterns; Theories of Growth – Malthusian Theory and Demographic Transition Theory.

UNIT – III (10 Hours)

Population Dynamics: Fertility and Mortality – Measures and Determinants, Migration – Determinants and Implications.

UNIT – IV (10 Hours)

Dynamics of Population Pyramids and Women Empowerment and Indian Population Policies.

UNIT – V (10 Hours)

Contemporary Issues - Ageing of Population, Demographic Dividends, Global Refugee Crisis.

Practical component (if any) - NIL

Suggestive readings

11. Bhende A. and Kanitkar T. (2019). Principles of Population Studies. Himalaya Publishing House, New Delhi, India.
12. Chandna, R.C. (2017). Geography of Population. Kalyani Publishers, Ludhiana, India.
13. Clarks, John, I. (1972). Population Geography. Pergamon Press, New York.
14. Hassan M.I. (2020). Population Geography, A Systematic Exposition. Routledge Taylor and Francis Group, New York.
15. Lutz, W., Warren, C. S. and Scherbov, S. (2004). The End of the World Population Growth in the 21st Century. UK: Earthscan.
16. Majumdar, P.K. (2010). Fundamentals of Demography. Rawat publications, Jaipur.
17. Maurya, S. D. (2021). *JansankyaBhugol*. Sharda Pustak Bhawan, Allahabad.
18. Newbold, K. B. (2017). Population Geography: Tools and Issues. Rowman and Littlefield Publishers, NY, USA.
19. Saroha, J. (2021). JansankhyaBhugol, JanankikievamJansankhyaAdhayan. M.K. Books, New Delhi.
20. Weeks, John R. (2020) Population: An Introduction to Concepts and Issues. Cengage Learning, Boston.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category-IV

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES OFFERED BY THE DEPARTMENT OF GEOGRAPHY

GENERIC ELECTIVES (GE-4): GLOBALIZATION AND MOBILITY

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|----------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GLOBALIZATION AND MOBILITY | 4 | 3 | 1 | 0 | 12 th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand the concept of mobility and migration.
- To understand the global cities, global village and borderless world.
- To understand flexible labour market and mass mobility.

Learning outcomes

The Learning Outcomes of this course are as follows:

- The students will able to learn the concept of migration.
- Students will able to differentiate between mobility and migration.
- Students will able to learn the implications of flexible labour market.

SYLLABUS OF GE-4

UNIT – I (3 Hours)

Globalization: Concept and Indicators; Mobility and Migration: Concept and Significance.

UNIT – II (12 Hours)

Global Cities, Global Village and Borderless World: Intensification and integration of Economic and Political Relations across borders.

UNIT – III (10 Hours)

Role of freedom of Trade and Information Technology on Human Mobility. Challenges of Globalization.

UNIT – IV (10 Hours)

Mobility: Frequency, Trends, Patterns and Factors; Pressure on Social Infrastructure.

UNIT – V (10 Hours)

Globality: Implications of Flexible Labour Market, Individual and Mass Mobility.

Practical component (if any) - NIL

Suggestive readings

1. Acharya, L.M. (2012). Economic Geography, Migration and Global Politics. KUNAI Books.
2. Ahmad, Aijazuddin (2002). Social Geography. Rawat Books, Jaipur.
3. Jone, V and Pertierra (2013). Migration, Diaspora and Information technology in Global Societies. Routledge Publication.
4. Kent, Bruce (1991). Building the Global Village. Hopper Collins Publishers Inc.
5. Marshall, Tim (2021). The Power of Geography: Ten Maps That Reveal The Future of Our World. Elliott & Thompson limited.
6. Rajgopalan, S (2012). Rural Urban Migration: Trends, Challenges and Strategies. SBS Publishers.
7. Sengupta, Anita (2015). Globalizing Geographies. KW Publishers Pvt. Ltd.
8. Shrinivasan, Ramesh (2017). Whose Global Village? Rethinking How Technology Shapes Our World. NYU Press.
9. Shroff, Menon (2019). Social Changes in Migration Globalization. Amiga Press Inc.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-5): DISASTER MANAGEMENT

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DISASTER MANAGEMENT | 4 | 3 | 1 | 0 | 12 th Pass | NA |

Learning Objectives

The Learning Objectives of this course are as follows:

- Understanding the basic concepts of disaster management.
- Detailed analysis about the different types of disasters in India.
- Evaluating the role of institutional frameworks to mitigate the disasters in the country.

Learning outcomes

The Learning Outcomes of this course are as follows:

- In depth understanding about the various disasters in the country.

- It will provide thorough understanding about the human responses to the disasters.
- It will highlight the responses and mitigation measures to both natural and manmade disasters.

SYLLABUS OF GE-5

UNIT – I (10 Hours)

Disasters, Hazards, Risk, Vulnerability- Definition, Concept and Classification; Hazard, Risk Vulnerability Capacity (HRVC) - Methods, Analysis and Mapping

UNIT – II (10 Hours)

Disaster Management- Disaster Management Cycle, Community Based Disaster Management

UNIT – III (7 Hours)

Floods, Earthquake, Drought, Cyclone

UNIT – IV (10 Hours)

Industrial, War, Fire, Epidemics, Nuclear

UNIT – V (8 Hours)

Strategies for disaster management: International- Yokohama Strategy for a Safer World 1994, Hyogo framework for Action 2005-2015; Sendai Framework for Disaster Risk Reduction 2015-2030; Indian Policy for disaster management: Disaster Management Act 2005, 10 point Agenda of Prime minister on DRR

Practical component (if any) - NIL

Suggestive readings

1. Asthana , N.C. and Asthana P. (2014). Disaster Management. Pointer Publishers
2. Bryant , E.(2004). Natural Hazards. Cambridge University Press, India
3. Kapur ,Anu(2010). Vulnerable India: A Geographical Study Of Disasters. Sage Publications,
4. Savinder Singh(2019). ApdaPrabandhan.PravalikaPrakashan (Hindi).
5. Smith, Keith (2013). Environmental Hazards: Assessing risk and reducing disasters
6. Wisner, B., Blaikie P et al. (2004). At Risk: Natural Hazards, People's Vulnerability and Disasters. Routledge Taylor and Francis Group , NY (https://www.preventionweb.net/files/670_72351.pdf)
7. Singh R.B. (ed.) (2006). Natural Hazards and Disaster Management: Vulnerability and Mitigation . Rawat Publications, Jaipur.
8. Singh, J. (2007). Disaster Management: Future Challenges and Opportunities.IK International Pvt. Ltd, New Delhi.
9. Sinha, A. (2001). Disaster Management: Lessons drawn and Strategies for Future. New United Press, New Delhi.
10. Modh, S. (2010). Managing Natural Disaster: Hydrological, Marine and Geological Disasters. Macmillan, Delhi.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-6): INDIGENOUS KNOWLEDGE SYSTEM AND PRACTICES

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|------------------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| INDIGENOUS KNOWLEDGE AND PRACTICES | 4 | 3 | 1 | 0 | 12 th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To know the meaning of indigenous knowledge system and its significance.
- To be aware of the concept of sustainability and ecosystem services.
- To be acquainted with about the indigenous knowledge of soil and water conservation techniques.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Students will be able to know the importance of our indigenous knowledge system.
- Students will learn how indigenous knowledge system will be effective to conserve out resources.
- Students will able to know about the intellectual property rights and socio-cultural heritage.

SYLLABUS OF GE-6

UNIT – I (5 Hours)

Introduction: Concept, Meaning and Definition, Approaches of Indigenous Knowledge System, Identification, Documentation, and Validation of Indigenous Knowledge system, Significance of Indigenous Knowledge System.

UNIT – II (10 Hours)

Indigenous Knowledge System (IKS), Sustainability and Ecosystem Services: Indigenous Knowledge and Sustainability, Indigenous Knowledge and Ecosystem Services, Nature Based Solutions (NBSs).

UNIT – III (10 Hours)

Indigenous Knowledge System and Practice: Case Studies: Agriculture, Land and Soil, Water, Forest.

UNIT – IV (10 Hours)

Indigenous Knowledge System and Rights of Communities: Role of Institutions, Intellectual Property Rights (IPRs), Indigenous Knowledge System and Socio-cultural Heritage.

UNIT – V (10 Hours)

Policy Implications/Way Forward: Revival and recognition of Indigenous Knowledge System, Integration of Intergenerational transmission of Indigenous Knowledge System, Need for Policy framework and Role of Various Initiatives with respect to India, Strength, Weakness, Opportunities and Threats (Challenges).

Practical component (if any) - NIL

Suggestive readings

1. Berkes, F. and Gadgil, M. (1995). Indigenous Knowledge for biodiversity conservation. *Ambio*, 22(2-3): 151-156.
2. Berkes, F. (1999). *Sacred Ecology: Traditional Ecological Knowledge and Resource Management*. Milton Park: Taylor & Francis.
3. Brokensha D.W., Warren D.M. and Werner, O. (1980). *Indigenous Knowledge Systems and Development*. Washington DC: University Press of America.
4. Brush, S. (1993). Indigenous knowledge of biological resources and intellectual property rights: The role of anthropology. *American Anthropologist*, 95 (3): 653–86.
5. Ford, J. and Martínez, D. (2000). Traditional ecological knowledge, ecosystem and environmental management. *Ecol. Application*, 10: 1249-1250.
6. Melissa, N. and Shilling, D. (2018). *Traditional Ecological Knowledge: Learning from Indigenous Environmental Sustainability*. Cambridge University Press.
7. Mishra, P.K. and Rai S.C. (2013). Use of Indigenous Soil and Water Conservation Practices among Farmers in Sikkim Himalaya. *Indian Journal of Traditional Knowledge*, 12(3), July, Pp. 454-464. NISCAR, CSIR, New Delhi.
8. Rai, S.C. and Mishra, P.K. (2022). *Traditional Ecological Knowledge of Resource Management in Asia*. Springer Nature Switzerland AG (In Press).
9. Stori F.T., Peres C.M., Turra, A. and Pressey R.L. (2019) Traditional Ecological Knowledge Supports Ecosystem-Based Management in Disturbed Coastal Marine Social-Ecological Systems. *Frontier in Marine Science*, 6:571.
10. Warren D.M., Slikkerveer L.J. and Brokensha, D. (1995) *The cultural dimension of development: Indigenous Knowledge Systems*. Intermediate Technology Publications, London.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DEPARTMENT OF SOCIAL WORK**Category I****BA (Hons.) Social Work****DISCIPLINE SPECIFIC CORE COURSE -1 (DSC-4) – :
INDIAN CONSTITUTION AND SOCIAL JUSTICE****CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE
COURSE**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| INDIAN CONSTITUTION AND SOCIAL JUSTICE DSC 4 SW201 | 4 | 3 | 0 | 1 | 12th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand the basic framework of Indian Constitution within the context of social justice
- To sensitize the students to promote social justice in relation to the vulnerable people
- To understand the application of social work interventions

Learning outcomes

At the end of the semester the students will be able to

- Understand the Indian Constitution within the context of social justice and its linkages with social work practice
- Be sensitive towards promoting social justice in relation to the society
- Apply social work interventions in real life situations

SYLLABUS OF DSC-4

| | |
|--|-----------------|
| Unit I: Constitutional and Legal Framework in India | 15 Hours |
|--|-----------------|

| | |
|---|-----------------|
| <p>Unit Description: This unit will reflect upon the constitutional and legal framework in India for ensuring social justice, equality, and rights.</p> | |
| <p>Subtopics:</p> <ul style="list-style-type: none"> ● Basic frame work of the constitution: Preamble, Fundamental Rights, Fundamental Duties and Directive Principle of State Policy ● Indian legal system: Relevant sections for women and children from Indian Penal Code (IPC) ● Role of Juvenile Justice Board, Child Welfare Committees and Special Women cell | |
| <p>Unit II: Understanding Social Justice</p> <p>Unit Description: This unit will provide a conceptual understanding about social justice.</p> | 15 Hours |
| <p>Subtopics:</p> <ul style="list-style-type: none"> ● Social justice: Concept, philosophy, features and forms ● Manifestations of social injustice in the Indian context: Exclusion, oppression and marginalization ● Social Justice as a core value and principle of social work profession | |
| <p>Unit III: Instruments of Social Justice</p> <p>Unit Description: This unit will give an insight about various instruments of social justice</p> | 15 Hours |
| <p>Subtopics:</p> <ul style="list-style-type: none"> ● Instruments of Social Justice: Positive and Protective Discrimination, legal and public advocacy, Public Interest Litigation (PIL), Legal Literacy and Right to Information (RTI) ● Statutory bodies for justice: National and State Commissions for Women, Minorities, Scheduled Castes, Scheduled Tribes and Human Rights ● Role of professional social workers and mass media in promoting social justice | |
| <p>Unit IV: Application of Social Work in Promoting Social Justice</p> <p>Unit Description: This unit will give an exposure to promote social justice, equality and ensuring rights.</p> | 30 Hours |
| <p>Subtopics:</p> <ul style="list-style-type: none"> ● Application of instruments of Social Justice: legal literacy/free legal aid/RTI/PIL ● Approaches of intervention: Children, Women, Elderly, persons with disability | |

| | |
|--|--|
| <ul style="list-style-type: none"> ● Professional ethics: sensitivity and empathetic attitudes towards vulnerable populations | |
|--|--|

Practical component (if any) – Unit IV application based

Essential Readings

- Bakshi, P.M. (2014). The Constitution of India. Universal Law Publishing Co. Pvt. Ltd, New Delhi.
- Clayton, Matthew and Williams, Andrew (2004), Social Justice, Wiley-Blackwell.
- International Federation of Social Workers (1994). Human Rights and Social Work: A Manual for Schools of Social Work and the Social Work Profession, Berne: International Federation of Social Workers.
- Iyer, V.R.K. (1980). Some Half Hidden Aspects of Indian Social Justice. Lucknow: Eastern Book Company.
- K.D Gaur, (2015). Textbook on Indian Penal Code, Universal Law Publishing, New Delhi.
- Mahajan, G. (ed.) (1998). Democracy, Difference and Social Justice. New Delhi: Cambridge University Press.
- Pandya, R. (2013) Social Justice and Empowerment of Disadvantaged Groups in India, New Century Publications, New Delhi.

Suggested Readings

- Basu, D.D. (2008). Introduction to the Constitution of India (Lexis-Nexis-Butterworth Wadhwa.
- Braithwaite, J. (1979). Inequality, Crime and Public Policy. London: Routledge.
- Saraf, D.N. (ed), (1984). Social Policy Law and Protection of Weaker Section of Society, Lucknow, Eastern Book Company.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

**DISCIPLINE SPECIFIC CORE COURSE – 5 (DSC-5):
HUMAN GROWTH AND PERSONALITY DEVELOPMENT**

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| HUMAN GROWTH AND PERSONALITY DEVELOPMENT DSC 5 SW202 | 4 | 3 | 0 | 1 | 12th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand the basic concepts and processes in psychology essential for social work practice
- To develop understanding about personality development and associated theories
- To acquire skill base for applying concepts of psychology in social work practice

Learning outcomes

At the end of the semester the students will be able to

- Learn about human growth and stages of development across the life span
- Learn about personality development theories and integrate the same in social work practice
- Apply the basic psychological processes in Social Work Practice

SYLLABUS OF DSC- 5

| | |
|---|-----------------|
| Unit I: Growth and Development Unit Description: The unit will introduce the basic principles of growth and development. The students will learn about the developmental stages across the lifespan. | 15 Hours |
| Subtopics: | |

| | |
|--|-----------------|
| <ul style="list-style-type: none"> ● Growth and development: Concepts, Principles, and Differences ● Developmental tasks, needs and challenges: Prenatal, infancy and babyhood periods, Early childhood and Late childhood ● Developmental tasks, needs and challenges: Adolescence, Adulthood, Old age | |
| Unit II: Personality Development Unit Description: The students will gain insights into factors contributing to development of personality. The students will also gain critical insight into personality theories. | 15 Hours |
| Subtopics: <ul style="list-style-type: none"> ● Personality: Concept, hereditary and environmental perspectives, ● Personality theories: Freud's Psycho-analytic theory and Erikson's Psycho-social theory ● Child-rearing practices | |
| Unit III: Basic Psychological Processes Unit Description: This unit will introduce the basic psychological process with an emphasis on applications of psychology in real life situations. | 15 Hours |
| Subtopics: <ul style="list-style-type: none"> ● Learning: Concept and theories: Skinner and Pavlov ● Motivation: Concept and theories (Maslow) ● Memory, Emotions, Intelligence, central nervous system | |
| Unit IV: Application of psychological understanding in field work setting Unit Description: This unit will give practical exposure to apply behavioural and psychological learning in field situations. | 30 Hours |
| Subtopics: <ul style="list-style-type: none"> ● Psychosocial assessment and Case studies ● Observation based Project Report on developmental tasks, needs and challenges on any one life stage ● Application of Behavioural theory/learning theories with children/adolescence | |

Practical component (if any) – Unit IV application based

Essential readings

- Baron, R. & Misra, G. (2013). Psychology. New Delhi: Pearson
- Bocket, C. (2002): Human Growth and Development: A Psycho-social Introduction, London: Sage Publications
- Chowdhary, R. (2006). Manovigyan Tatha Manovagyanik Prakriyaen. New Delhi: Radha Publication.
- Chowdhary, R. (2010). Vikasatmak Manovigyan. New Delhi: Naman Prakashan.
- Cicarelli, S.K. and White, N.J. (2017). Psychology. Boston: Pearson
- Hall & Lindzey (2009): Theories of Personality. New York: John Wiley and Sons
- Morgan & King (2017): Introduction to Psychology, New Delhi: Tata McGraw Hill, Publishing Company Ltd.

Suggested readings

- Feldman, R. (2004). Understanding Psychology, Tata McGraw Hill Publishing Co. td
- Santrock, J. W. (2011). Child Development (13th Ed.). New Delhi: McGraw Hill.
- Santrock, J.W. (2012). Life Span Development (13th ed.) New Delhi: McGraw Hill.
- Srivastava, A.K. (1997). Child Development: An Indian Perspective. New Delhi.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE– 6 (DSC-6): FIELD WORK PRACTICUM- II

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|----------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| FIELD WORK PRACTICUM-II DSC 6 SW203 | 4 | 0 | 0 | 4 | 12th Pass | NIL |

Learning Objectives

- To develop understanding of identities of people, dynamics of relationships, resources and opportunities to deal with them
- Develop an ability to critically examine and appreciate programmes and services of governmental and non-governmental social welfare/developmental organizations
- To acquire skills of working with people at individual, group and community level by integrating class room learning into real life situation

Learning outcomes

At the end of the semester, students will be able to

- Critically examine the agency's structure, functions, resources, service delivery system etc.
- Integrate theoretical knowledge with field practice (i.e. methods, principles, skills, techniques etc.)
- Write analytical field work reports

SYLLABUS OF DSC-6

Tasks/Activities:

1. Perform the assigned tasks during scheduled concurrent field work. The field work agency will remain the same in an academic year. Every student will be assigned a College supervisor for personalized learning and mentoring throughout the academic year.
2. Field work includes- observation visits, orientation programmes, task-based field visits, individual conferences/ mentoring, group conference scientific or experienced based paper presentation, report writing, critical discussion of the reports, workshops, seminars and skill-oriented sessions. Direct field work hours have to be 120 hours in a semester.
3. Work with volunteers, para-professionals/outreach workers in the field work agency such as - non-governmental organisations (NGOs) or voluntary organisations (VOs) and governmental organisations (GOs); and/or community.
4. Student will perform the agency-based field work tasks assigned by the respective Agency Supervisor.
5. Regular reporting to all concerned persons (both at agency and college level) during scheduled field visits, meetings and supervisory/individual conferences to seek regular guidance. Minimum 80% of attendance is required in each components of field work.
6. Prepare daily report in prescribed format and submit to the college supervisor on weekly basis. Prepare learning plan, agency/community profile in a timely and appropriate manner to both the College and Agency Supervisor. Students will engage in 3 hours of report writing per week.
7. The students must get the reports checked during the scheduled Individual Conference (IC) with the college supervisor on weekly basis. Attend Group conferences (GC), prepare group conference paper in consultation with college supervisor, thus learning the roles of presenter, chairperson, and recorder. The individual mentoring (IC & GC) to students by the college supervisor will include 1 hour per week.
8. Attend skill-based workshops as and when organised by the Department.
9. The students are required to submit self-evaluation report in the prescribed format for term end examination. Field work practicum follows continuous evaluation by the supervisor.

Practical component (if any) – 100% Field work

(Direct field work: 120 hours, field work mentoring & report writing: 60 hours)

Essential Readings

- Bhanti, R. (1996). Field Work in Social Work Perspective. Udaipur: Hiamanshu Publications.
- Brown, S.C. & Gloyne, E.R. (1966). The Field Training of Social Workers: A Survey. London: Allen and Unwin.
- Garthwarf, E. (2005). The Social Work Practicum. Boston: Pearson Education.
- Singh, R. R. (1985). Field Work in Social Work Education. New Delhi: Concept Publishing Company.
- Singh, A.P. (2017). Strengthening Field Work in Social Work Education. Lucknow, India: Rapid Book Service.
- Subhedar, I. S. (2001). Field Work Training in Social Work. New Delhi: Rawat Publications.
- Tsui, M. (2005). Social Work Supervision: Contexts and Concepts. New Delhi: Sage Publications.

Suggested readings

- Doel, M. & Shardlow, S. M. & Johnson, P. G. (2011). Contemporary Field Social Work: Integrating Field and Classroom Experience. Thousand Oaks, CA: Sage Publications.
- Doel, M. & Shardlow, S. M. (2005). Modern Social Work Practice: Teaching and Learning in Practice Settings. Burlington, VT: Ashgate.
- Verma, R.B.S. & Singh, A.P. (2011). Handbook of Field Work Practice Learning in Social Work. Lucknow, India: New Royal Book Company.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

CATEGORY-IV

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES OFFERED BY DEPARTMENT OF SOCIAL WORK

GENERIC ELECTIVES (GE-3): SOCIAL WORK WITH YOUTH

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|----------|-----------------------------------|----------|---------------------|-----------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| SOCIAL WORK WITH YOUTH GE 3 SW 211 | 4 | 3 | 1 | 0 | 12th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand the concept of youth, their developmental needs, concerns and challenges
- To gain understanding about the various policies and programmes concerning the Youth
- To identify the role of youth in the national development

Learning outcomes

At the end of the semester, the student will be able to

- Understand differential needs, concerns and challenges of the youth
- Develop insight about the effectiveness of various policies and programmes for the youth
- Know the significance and modalities of youth participation for the nation's development

SYLLABUS OF GE-3

| | |
|--|-----------------|
| Unit I: Understanding Youth Unit description: The unit will introduce with demographic profile of youth in India. The students will also learn about the needs and empowerment strategies for the youth in contemporary context. | 15 Hours |
| Subtopics: <ul style="list-style-type: none"> • Concepts and perspectives of Youth • Socio-demographic variables (like gender, caste, class, locale) influencing youth development and empowerment • Youth Empowerment: Needs, Importance and strategies | |
| Unit II: Challenges before Youth Unit description: This unit will introduce students with the challenges faced by the youth. The students will also learn about the intergenerational challenges in urban and rural context. | 15 Hours |
| Subtopics: <ul style="list-style-type: none"> • Interpersonal concerns and dynamics: Urban and Rural youth, • Intergenerational challenges faced by youth • Youth Unrest, Unemployment, skill development, depression & suicidal tendency | |
| Unit III: Youth Policies and Programme Unit description: This unit will introduce students with National policies and various programmes for youth development. | 15 Hours |
| Subtopics: <ul style="list-style-type: none"> • National Youth Policy • Youth Development Programmes: National Cadet Corps (NCC), National Service Scheme(NSS), Nehru Yuva Kendra Sangathan (NYKS) • Entrepreneurship schemes: Technology, and education for youth development | |
| Unit IV: Social Work and Youth Unit description: This unit will help students to reflect upon the youth movement and leadership strategies. The students will also analyze the use of mass media and social work interventions. | 15 Hours |
| Subtopics: <ul style="list-style-type: none"> • Youth movement and Leadership • Effective use of mass media in advocacy, participation and awareness generation • Social Work interventions with Youth | |

Practical component (if any) - NIL

Essential readings

- Barry, M. (2005). Youth Policy and Social Inclusion, Routledge, London.

- Deb, S., Majumdar, B.& Sunny A. M. (2022). Youth Development in India Future Generations in a Changing World, 1st, Edition Routledge India.
- Gill, J. (2009). Youth, Polity Press, UK.
- Kehily J.M (Etd.) (2007). Understanding Youth: Perspectives, identities & practices, Sage Publication, London.
- Mahadevan, U. Rozario, H K. Greesan, botcha, R. (ed.) (2016). Youth Development: Emerging Perspectives, Shipra Publications.
- Vasanti, R & Paul, D (2006). Youth and Globalisation, Proceedings of the workshop on youth and Globalisation, Rajiv Gandhi National Institute of Youth Development, Sriperumbudur and TISS, Mumbai.
- Wood, J. & Hine, J. (2009). Theory and Policy for Practice, Sage Publication.

Suggested readings

- S. Narayanasamy (2003). Youth Development in The New Millennium, Discovery Publishing House
- Sarumathy, M. & Kalesh, H. (2007). Youth Policies and Programmes in South Asia Region, Rajiv Gandhi Institute of Youth Development, Ministry of Youth Affairs and Sports. GOI.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-4): MANAGEMENT OF CIVIL SOCIETY ORGANIZATION

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| MANAGEMENT OF CIVIL SOCIETY ORGANIZATION GE 4 SW 212 | 4 | 3 | 1 | 0 | 12 th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- Develop an understanding about civil society organizations
- Learn the process of establishing civil society organizations
- Acquire skills and competencies in managing civil society organizations

Learning outcomes

At the end of the semester the students will be able to

- Able to develop conceptual understanding about civil society organizations
- Capable to learn overall procedure of establishing civil society organizations
- Develop skills in managing civil society organizations and formulating, implementation, monitoring and evaluating of development project

SYLLABUS OF GE-4

| | |
|--|-----------------|
| Unit I: Conceptual Framework of Civil Society Organizations (CSO) Unit Description: This unit will give an opportunity to the students to understand the concept of civil society organizations and voluntary initiatives in India. | 15 Hours |
| Subtopics: <ul style="list-style-type: none"> • Historical development of voluntary initiatives in India • Civil society organizations: Concept, characteristics, nature, types and forms | |

| | |
|--|-----------------|
| <ul style="list-style-type: none"> Civil society sector: critical assessment of needs in contemporary context, interface between government and CSOs | |
| Unit II: Establishing an NGO Unit Description: This unit will give an opportunity to the students to learn the process of establishing an NGO. | 15 Hours |
| Subtopics: <ul style="list-style-type: none"> Salient features of legal provisions: The Societies Registration Act, 1860; The Indian Trusts Act, 1882; The Charitable & Religious Trusts Act, 1920; Religious Endowment Act, 1863; and The Companies Act, 1956, FCRA Act, 1976 National policy on voluntary sector, Registration and formation of an NGO, National policy on voluntary organisations Legal compliances and Taxation requirements | |
| Unit III: Management of NGOs Unit Description: This unit will give an opportunity to the students to learn the management of Non-governmental organizations. | 15 Hours |
| Subtopics: <ul style="list-style-type: none"> Organizational Planning: Vision, mission, goals, formulation of objectives, strategies and manpower/human resource planning Management and functions of NGOs: Recruitment, selection, induction, placement, training, employee remuneration and motivation Organizational environment, work culture, leadership, coordination and employee discipline | |
| Unit IV: Project Implementation, Monitoring and Evaluation Unit Description: This unit will engage students in learning formulation, implementation, monitoring and evaluation of development projects. | 15 Hours |
| Subtopics: <ul style="list-style-type: none"> Developing projects on different issues: Types, stages, factors Project implementation: Mobilization of resources, fund raising and grant-in-aid Project monitoring and evaluation | |

Practical component (if any) - NIL

Essential Readings

- Abraham, Anita. (2011). Formation and Management of NGOs. Delhi, India. Universal Law Publishing Co.
- Bhatia S.K. (n.d.). Training & Development. New Delhi: Deep & Deep Publication Pvt. Ltd.

- Chandra, S. (2001). NGO: Structure, Relevance and Functions. New Delhi: Kanishka Publishers.
- Chowdhary, S. (1990). Project Management. Delhi: Tata McGraw-Hill.
- Coley, S.M. & Schein, C.A. (1990). Proposal Writing (Sage Services Guides). New Delhi: Sage Publication.
- Dadrawala, N.H. (2004). The Art of Successful Fund Raising. New Delhi: CA.
- Edwards, Michale R. (2002). The Earthscan Reader on NGO Management. London: Alan Fowler.
- GOI (2018): Foreign Contribution (Regulation) Act, 2010 along with rules and regulations, BARE Act. Universal Publications, New Delhi.
- Horton Douglas & Anastasia A. (2003). Evaluating Capacity Development. Canada: International Development Research Centre.
- Indian Center of Philonthropy, (2002). Investing in Ourselves: Giving & Fund Raising In India, New Delhi: Sampradan
- Jackson, J.E. (1989). Evaluation for Voluntary Organisation. Delhi: Information and News Network.
- Levis, David (2001). The Management of NGO Development Organization: An Introduction. London: Routledge.
- Mukherjee, K.K. (1999). A Guide Book for Strengthening Voluntary Organization. Ghaziabad, India: Gram Nivajana Kandra.
- Nabhi Board of Editors (2020): Nabhi's Handbook for NGOs. New Delhi: Nabhi Publications.
- Naik, B. M. (1985). Project Management: Scheduling and Monitoring. Delhi: Vani Educational Book.
- Norton M. & Murray C. (2000). Getting Started in Fund Raising. Sage Publication Pvt. Ltd.
- Padaki, V. & Vaz, M. (2004). Management Development and Non-Profit Organisation. New Delhi: Sage Publication.
- Pamecha, V.K. (2012). Project Proposal Formulation & Funding of NGOs & NPOs in India. New Delhi: Jain Book Agency.

- Sankaran & Rodrigues. (1983). Handbook for the Management of Voluntary Organisation.' Madras: Alpha Publications.
- Verma R.B.S. & Singh, Atul Pratap. (2005). Manav Sansadhan Vikas Evam Prabandhan Ki Rooprekha (Hindi). Lucknow, India: New Royal Book Company.

Suggested Readings

- PRIA. (2001). Defining Voluntary Sector in India: Voluntary Civil or Non-profit. New Delhi: Participatory Research in Asia- PRIA.
- PRIA. (2001). NGOs in India: A Critical Study. Delhi: PRIA.
- Save the Children. (2006). Toolkit: A Practical Guide to Planning, Monitoring, Evaluating and Impact assessment. London, UK: Save the Children.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DEPARTMENT OF SOCIOLOGY

Category I

BA (Honors) Sociology

DISCIPLINE SPECIFIC CORE COURSE – 04: Sociological Perspectives

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|------------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DSC 04 Sociological Perspectives | 4 | 3 | 1 | 0 | 12th Pass | Nil |

Course Learning Objectives:

1. To introduce students to how society is studied by sociologists.
2. To inculcate the ability to distinguish between different sociological perspectives.
3. To introduce original sociological writing, to familiarize students with the rich texture of sociological prose and understand the need to engage with complex ideas about society.
4. To make students alive to the productive tension between universal and particular in the development of theoretical approaches in sociology by understanding the social context of different theoretical approaches.

Course Learning Outcomes:

Students will be able to:

1. *Describe* major theoretical perspectives in sociology and the context of their emergence.
2. *Read* and critically *engage* with the original works of various sociological thinkers and *interpret* the central argument.
3. *Distinguish* and *compare* different theoretical perspectives in sociology.
4. *Use* theoretical perspectives to examine social realities.

Outline Syllabus of DSC-4:

Unit 1. On the Plurality of Sociological Perspective (08 Hours)

Unit 2. Functionalism (12 Hours)

Unit 3. Conflict Perspective (12 Hours)

Unit 4. Interpretive Sociology (12 Hours)**Unit 5. Interactionism (08 Hours)****Unit 6. Feminist Perspective (08 Hours)**

Practical component (if any) - NIL

Essential/Recommended Readings:**Unit 1. On the Plurality of Sociological Perspectives**

Willis, Evan, 1996, *The Sociological Quest: An Introduction to the Study of Social Life*. New Jersey: Rutgers University Press. Ch. 7. Theory and Method. Pp 107-132.

Unit 2 Functionalism

Turner, Jonathan. 1987, *The Structure of Sociological Theory*, New Delhi: Rawat Publications. Chapter 2, Functional Theorizing. Pp 37-56.

Durkheim, Emile. 1982, *The Rules of Sociological Method*, New York: Free Press. Chapter 1, What is a Social Fact? Pp. 50 – 59.

Unit 3. Conflict Perspective

Sanderson, Stephen. 2007. Conflict Theory. In *The Blackwell Encyclopaedia of Sociology*, edited George Ritzer, New York: Blackwell Publishing. Pp. 662-665.

Marx, K. and F. Engels. 1969. Selected Works Vol. 1. Moscow: Progress Publishers. Pp. 502-506 (Abstract of Preface from A Contribution to the Critique of Political Economy).

Marx, Karl and Fredrich Engels. 1977. *The Manifesto of the Communist Party*. In The Selected Works, Volume I. Moscow: Progress Publishers. Pp. 108-119.

Unit 4. Interpretive Sociology

Freund, Julien, 1970, *The Sociology of Max Weber*, Penguin Books. Chapter 3, Interpretative Sociology. Pp 87-116.

Weber, Max., 2004. Science as a Vocation. in David Owen and Tracy Strong eds. Max Weber: The Vocation Lectures. 2004. Indianapolis/ Cambridge, Hachette Publishing Company. pp.1-31.

Unit 5. Interactionism

Giddens, Anthony, 2010, *Sociology*, 6th edition, Polity, Chapter 7, ‘Social Interaction in Everyday Life’, Pp. 247-280.

Goffman, Erving, 1979. *Gender Advertisements*, New York: Harper and Row Publications, Chapter 1, Gender Display. Pp. 1-9.

Unit 6. Feminist Perspective

Jackson, S. and S. Scott (eds.), 2002, *Gender: A Sociological Reader*, London: Routledge, Introduction, & Liz Stanley, Should 'Sex' Really be 'Gender'-Or 'Gender' Really be 'Sex'?, Pp. 1-26, Pp 31-41.

Suggested Readings:

Blumer, Herbert. 2002 'Symbolic Interactionism' from Craig Calhoun (ed.) *Contemporary Sociological Theory*. Oxford: Blackwell. Pp. 66 – 77.

Scott, S. *Making Sense of Everyday Life*. Cambridge: Polity Press. Chapter 2 Theorizing the Mundane. Pp 10-32.

Smith, Dorothy E. 1987, *The Everyday World as Problematic*. Boston: North West University Press. Chapter 2. A Sociology for Women. Pp. 49-69.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE –05: Social Stratification

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DSC 05 Social Stratification | 4 | 3 | 1 | 0 | 12th Pass | Nil |

Course Learning Objectives:

1. To introduce social stratification which is the systematic study of structured social inequalities as a substantive area that lies at the heart of sociology.
2. To introduce students to theoretical perspectives and empirical studies that are integral to the discipline.
3. To teach students how social inequality is constituted as a sociological problematique
4. To familiarize students with key concepts and theoretical perspectives that inform the study of stratification.
5. To examine key axes of stratification such as caste, class, gender, ethnicity and race and their intersections.
6. To familiarize students with key processes of stratification: social mobility and social reproduction.
7. To appraise students of the multiple operations of social inequalities and the reproduction of inequality in society.

Course Learning Outcomes:

Students will be able to:

1. *Recognize* social inequalities as a multifarious and culturally specific social reality.
2. *Define* the concepts, *outline* the principal theories and *recall* the critical debates in the arena of social stratification.
3. *Appreciate* the significance of sociological knowledge of social stratification for public discourse and *translate* the conceptual learning into well formulated sociological research projects.

Outline Syllabus of DSC-05:

Unit I: Understanding Social Stratification (16 Hours)

Unit II: Social Stratification: Axes and Issues (44 Hours)

- a. Caste
- b. Class

- c. **Gender**
- d. **Ethnicity**
- e. **Race**
- f. **Social Mobility and Social Reproduction**

Practical component (if any) - NIL

Essential/Recommended Readings:

Unit I: Understanding Social Stratification

Mills, C. Wright. (1963), *The Sociology of Stratification*. In *Power, Politics and People: The Collected Essays of C. Wright Mills*. New York: OUP. Pp 305-323.

Gerald D. Berreman. (1972) 'Race, Caste, And Other Invidious Distinctions in Social Stratification', In *Race and Class*, 13:4. Pp 385-414.

Grusky, David B. (2008), *Social Stratification: Class, Race and Gender in Sociological Perspective*, Philadelphia: Westview Press. Pp. 30-32, 41-48.

Unit II: Social Stratification: Axes and Issues

a. Caste

Gupta, Dipankar. (1991), Ed. *Social Stratification*. Delhi: Oxford University Press. Pp. 23-34, 74-92, 195-212.

Deliege, Robert. (1999), *The Untouchables of India*. Oxford: Berg. Pp. 89-115, 124-134.

b. Class

Joyce, Patrick. Ed. (1995) *Class*, Oxford: OUP. Pp. 21-40, 43-55.

Gupta, Dipankar. (1991), *Social Stratification*. Delhi: OUP. Pp. 227-230, 248-275.

c. Gender

Mullings, Leith. (1988), 'Notes On Women, Work and Society', In Johnnetta B. Cole. Ed. *Anthropology for the Nineties*. New York: The Free Press. 312-320.

Collins, Patricia Hill. (Fall 1993), 'Toward a New Vision: Race Class and Gender as Categories of analysis and Connection' in *Race, Sex & Class*, Vol. 1, No. 1, pp. 25-45.

d. Ethnicity

Hutchinson, John and Anthony D. Smith. (1996), *Ethnicity*. Oxford: OUP. Pp. 17-18, 28-31, 35-45, 197-202; 301-304.

e. Race

Back, Les and John Solomos. eds. (2009), *Theories of Race and Racism: A Reader*. Pp. 181-188.

Grusky, David B. (2008), *Social Stratification: Class, Race and Gender in Sociological Perspective*, Philadelphia: Westview Press. 3e. Pp. 691- 709.

f. Social Mobility and Social Reproduction:

Keister, Lisa A., Darby E. Southgate. (2012), *Inequality: A Contemporary Approach to Race, Class, and Gender*. Cambridge: Cambridge University Press. Chapter 8. Social Mobility. Pp. 294-313

Lareau, Annette. (2008), 'Unequal Childhoods: Class, Race and Family Life' in David B. Grusky, *Social Stratification: Class, Race and Gender in Sociological Perspective*, Philadelphia: Westview Press. Pp.926-936.

Suggested Readings:

Béteille, A. (1965), *Caste, Class and Power*: Berkeley. The University of California.

Bourdieu, Pierre. (1984), *Distinction: A Social Critique of the Judgement of Taste*. Cambridge, Mass.: Harvard University.

Dumont, L. (1980) *Homo Hierarchicus: the caste system and its implications*. Chicago: University of Chicago Press.

Mills, C Wright. (1956) *The Power Elite*. New York: Oxford University Press.

Quigley, D. (1993). *The Interpretation of caste*. New Delhi: Oxford University Press.

Sharma, B. D. (1989) *The Web of Poverty*. Shillong: North-east university Press.

Subramanian, Ajantha. (2019) *The Caste of Merit: Engineering Education in India*, Cambridge: Harvard.

Tilly, Charles. (1998) *Durable Inequality*. Berkeley, CA: University of California Press.

Veblen, Thorstein. (1973) *The Theory of the Leisure Class*. Boston: Houghton Mifflin Company.

Wilkinson, Richard and Kate Pickett. (2011), *The spirit level: Why greater equality makes Societies Stronger*. New York: Bloomsbury Press.

Wright, Erik Olin. (2005). *Approaches to Class Analysis*. Cambridge: Cambridge University Press.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 06: Families and Intimacies

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------------------|----------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DSC 06 Families and Intimacies | 4 | 3 | 1 | 0 | 12th Pass | Nil |

Course Learning Objectives:

1. This course seeks to sociologically examine the worlds of family, intimacy and marriage in their diverse forms while understanding changes in its structures and experiences of it.
2. The course will equip students with a critical understanding of basic concepts and sociological explanations of the way in which socially embedded relationships of affect in the family and intimate relationships intersect with economies of power, work, and control over resources in contemporary societies.

Course Learning Outcomes:

Students will be able to:

1. *Examine* the institutions of family and marriage as pivotal social institutions of intimacy from a sociological and socio-anthropological perspective.
2. *Discuss* historical and socio-cultural perspectives on the understanding of marriage, family and intimacy.
3. *Problematised* universality and *outline* and *observe* the structural and experiential realities of marriage and family.
4. *Identify* the variations in family structures and experiences using ethnographic accounts from different socio-cultural contexts.
5. *Describe* the critical implications of family change as they are related to social policy and legal issues.

Outline Syllabus of DSC-06:

Unit 1: An Invitation to Families & Intimacies (20 Hours)

This unit familiarises students with the basic sociological concepts of marriage and family which are regarded as pivotal institutions of intimacy for all societies. It also explains the historical changes that these institutions have undergone.

Unit 2: Familial Worlds (20 Hours)

The unit examines different familial worlds with an emphasis on kinship, gender, body and demography in India and other parts of the world.

Unit 3: Marriage & Intimacies (20 Hours)

In this Unit the focus is on exploring the ways in which marriage and family have been comprehended in contemporary societies. It also focuses on the impact of technology on family and intimacy.

Practical component (if any) - NIL

Essential/Recommended Readings:

Unit 1. An Invitation to Families & Intimacies

Becker, G. S. (1991). *A Treatise on the Family*. Cambridge: Harvard University Press, 342-349.

Gough, K E. (1968). Is the Family Universal: The Nayar Case, in Norman W. Bill and Ezra F. Vogel (ed). *A Modern Introduction to the Family*, New York: The Free Press, 80-96.

Uberoi, P. (2003). The Family in India: Beyond the Nuclear Versus Joint Debate, in Veena Das(ed.). *The Oxford Companion to Sociology and Social Anthropology*, Delhi: Oxford University Press, 1061-1092.

Renate B. (1982). The Family: A View from a Room of Her Own, in Barrie Thorne and Marilyn Yalom eds. *Rethinking the Family: Some Feminist Questions*, Boston: North-western University Press, 225 – 235.

Jeffery, R., & Jeffery, P. (1997). Population, gender and politics: Demographic change in rural north India (Vol. 3). Cambridge University Press. Chapter 4. Women's Agency and Fertility. Pp-117-164.

Unit 2. Familial Worlds

Shah, A. M. (2014). *The Writings of A. M. Shah: The Household and Family in India*. Hyderabad: Orient Blackswan, 286-328.

Dube, L. (1997). *Women and Kinship: Comparative Perspectives on Gender in South and South-East Asia*. Tokyo: United Nations University Press, 34-48.

Lamb, S. (2000). *White Saris and Sweet Mangoes: Aging, Gender, and Body in North India*. Berkley: University of California Press, 115-143.

Reddy, G. (2006). The bonds of love: companionate marriage and the desire for intimacy among Hijras in Hyderabad, India. *Modern loves: the anthropology of romantic courtship and companionate marriage*, 174-193.2.5.

Hochschild, A. (1989.) *The Second Shift*: New York: Penguin, 11-33.

Unit 3. Intimacies & Marriage 67 pages

Jamieson, L. (2011). Intimacy as a concept: Explaining Social Change in the Context of Globalization or another form of ethnocentrism? *Sociological Research Online*, 16(4), 151-163.

Leach, E. R. (1955). 199. Polyandry, Inheritance and the Definition of Marriage. *Man*, 55, 182-186

Palriwala, R and R. Kaur. (2014). Introduction: Marriage in South Asia in Stacey, J. (2011). *Unhitched: Love, Marriage, and Family Values from West Hollywood to Western China*. New York: New York University Press, 122-151.

Kaur, R., & Dhanda, P. (2014). Surfing for spouses: Marriage websites and the 'New' Indian Marriage. *Marrying in South Asia: Shifting Concepts, Changing Practices in a Globalising World*, 271-292.

Suggested Readings

Charsley, Katharine. 2005, "Unhappy husbands: Masculinity and migration in transnational Pakistani marriages." *Journal of the Royal Anthropological Institute* 11, no. 1, Pp 85-105.

Cherlin, Andrew J. "The Deinstitutionalization of American Marriage." *Journal of Marriage and the Family* 66, Pp 848-861.

Chowdhry, P., 1998, 'Enforcing Cultural Codes: Gender and Violence in Northern India', in M. E. John and J. Nair (eds.), *A Question of Silence: The Sexual Economies of Modern India*, New Delhi: Kali for Women, Pp. 332-67.

Lambert, Helen. 2000. 'Sentiment and substance in North Indian forms of relatedness', in *Cultures of Relatedness*, edited by Janet Carsten, Cambridge: Cambridge University Press. Pp73-89.

Palriwala, Rajni. 1999. "Negotiating Patriliney: Intra-household Consumption and Authority in Rajasthan (India)", in Rajni Palriwala and Carla Risseuw (eds.), *Shifting Circles of Support: Contextualising kinship and gender relations in South Asia and Sub-Saharan, Africa*. Delhi: Sage Publications, Pp.190-220.

Parry Jonathan. 2001. *Ankalu's Errant Wife: Sex, Marriage and Industry in Contemporary Chhattisgarh*, *Modern Asian Studies*, Vol. 35, No. 4, Pp. 783-820.

Reddy, Gayatri. 2005. *With Respect to Sex: Negotiating Hijra Identity in South India*. Chicago: University of Chicago Press. Pp142-185

Roseneil, Sasha, and Shelley Budgeon. 2004. "Cultures of intimacy and care beyond 'the family': Personal life and social change in the early 21st century." *Current Sociology* 52, no. 2 Pp 135-159.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category II

BA (Prog.) with Sociology as Major

DISCIPLINE SPECIFIC CORE COURSE – 03: Sociology of India

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------------------|----------------|--|-----------------|----------------------------|-----------------------------|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DSC 03 Sociology of India | 4 | 3 | 1 | 0 | 12th Pass | Nil |

Course Learning Objective:

1. To provide an outline of the institutions and processes of Indian society.
2. To initiate students into viewing Indian society through a sociological lens.
3. To enable students to understand important social structures of Indian society.

Course Learning Outcomes: Students will be able to:

1. *Recognize* the bases of plurality of Indian society.
2. *Outline* the concepts of caste, tribe, class, village, and religion.
3. *Debate* the basis of order and dynamics of social change in India.

Outline Syllabus of DSC-03:

Unit I. Introducing India (08 Hours)

Unit II. India as a Plural Society (08 Hours)

Unit III. Social Institutions, Processes and Change (44 Hours)

- a. Caste
- b. Tribe
- c. Class
- d. Village
- e. Religion

Practical component (if any) - NIL

Essential/Recommended Readings:

Unit I. Introducing India

Stern, Robert W. 2003. *Changing India*. Cambridge: Cambridge University Press. Pp. 16-31.

Unit II. India as a Plural Society.

Mason, P. 1967. "Unity and Diversity: An Introductory Review" in Philip Mason(ed.) *India and Ceylon: Unity and Diversity*. London: Oxford University Press, Introduction. Pp. 1-29

Unit III. Social Institutions, Processes, and Change.

a. Caste

Ambedkar, B.R. 1977. "Castes in India: Their Mechanism, Genesis and Development," Jullundhur, Bhim Patrika. Pp 2-32.

Srinivas, M.N., 1956, "A Note on Sanskritization and Westernization", *The Far Eastern Quarterly*, Volume 15, No. 4, pp 481-496.

b. Tribe

Xaxa, V. Tribes in India, in Veena Das ed. *The Oxford India Companion to Sociology and Social Anthropology* Vol I. New Delhi: Oxford University Press, 2003. Pp.373 – 408.

c. Class

Dhanagare, D.N., 1991, "The Model of Agrarian Classes in India", in Dipankar Gupta(ed.), *Social Stratification*. Delhi: Oxford University Press, pp. 271-275.

Deshpande, S. 2003. "The Centrality of Middle Class" in *Contemporary India: A Sociological View*, Viking Bombay. Pp. 125-150.

d. Village

Desai, A. R. 1978, *Rural Sociology*, 5e. Bombay: Popular Prakashan. Pp.10-16

Srinivas, M.N and Shah, A.M. 1960. "The Myth of Self Sufficiency of the Indian Village", in *The Economic Weekly*, Vol. 12, No.37, (10 Sep. 1960), Pp. 1375-1378.

Jodhka, S. S. 2002. Nation and Village: Images of Rural India in Gandhi, Nehru and Ambedkar", in *Economic and Political Weekly* Vol. 37, No. 32 (Aug. 10-16, 2002), pp. 3343-3353.

e. Religion

Madan, T.N. 2003. "Plurality and Pluralism", *The Oxford India Companion to Sociology and Social Anthropology*, Vol I. New Delhi: Oxford University Press, 2003. Pp.775-801.

4. Issues and Challenges in Contemporary India.

Kumar, Radha. 1999. From Chipko to Sati: The Contemporary Women's Movement", in Nivedita Menon (ed.) *Gender and Politics in India*. Delhi: Oxford University Press, pp. 342-369.

Weiner, Myron. Migration, in, Veena Das. Ed. 2006. *Oxford Hand Book of Indian Sociology*, Delhi: OUP. pp. 156-171.

Suggested Readings:

Ahmad, I. 1983. "Modernization and Social Change among Muslims in India," Delhi, Manohar.

Ambedkar, B. R. 2007. *Annihilation of Caste* New Delhi : Critical Quest.

Gupta, D. (ed) (1991). *Social Stratification*. Delhi. Oxford University Press.

Dumont, L. 1997, *Religion, Politics, and History in India*, Paris: Mouton, Chapter 5. Pp. 89-110.

Eck, D. 2012. *India: A Sacred Geography*, New York: Harmony Books, Chapter 2, What is India? Pp. 42-105

Haimendorf, C.V.F. 1967."The Position of Tribal Population in India", in Philip Mason (ed.), *India and Ceylon: Unity and Diversity*, New York: Oxford University Press, Chapter 9.

Madan, V. (ed.) 2002. *The Village in India*. Delhi: Oxford University Press; Introduction

Nehru, J.N. 1946. *The Discovery of India*. Calcutta, Jawaharlal Nehru Memorial Fund.

Oommen, T.K. 2019. "Religious pluralism and Linguistics diversity", in T. K. Oommen and C.N. Venugopal (eds), *Sociology*, Lucknow: EBC Publishing. Pp. 262-296.

Roy Burman, B.K., 2002. "Challenges and Responses in Tribal India" in M.S.A. Rao (ed) *Social Movements in India* Delhi: Manohar .

Shah, Ghanshyam (2001). *Dalit Identity and Politics*. Delhi: Sage Publications, Chapter 1 and chapter 7.

Singh, Y. (1986). *Modernization of Indian Tradition*, Delhi: Rawat Publication.

Thorner, D. (1992). "Agrarian Structure" in Dipankar Gupta (ed.), *Social Stratification in India*, New Delhi: Oxford University Press, pp. 261-270.

Xaxa, V. (1999). "The Transformation of Tribes in India: Terms of Discourse", *Economic and Political Weekly*, 34 (24), pp. 1519-1524.

Zelliot, E. (2004). "Caste in Contemporary India" in Robin Rinehart (Ed). *Contemporary Hinduism: Ritual, culture, and practice*, California: ABC-CLIO. Pp. 243-271.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 04: Religion and Society

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------------------|----------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DSC 04 Religion and Society | 4 | 3 | 1 | 0 | 12th Pass | Nil |

Course Learning Objectives:

The course introduces students to a sociological understanding of religion including beliefs, practices, and religious organisations. The three key components of this course are - sociological approaches to the understanding of religion; manifestations of religion in diverse forms and practices; and a focus on contemporary religious practices. The objective of the course is to offer an empirical and comparative view of religion and its role in society.

Course Learning Outcomes:

1. Understanding religion from a cultural, social, symbolic and comparative perspective.
2. Understanding religion as a socially constituted reality.
3. Familiarity with some of the contemporary issues in the sociology of religion.
4. A sociological understanding of the diversity of religious life.

Outline Syllabus of DSC-04:

Unit I. Introduction to Sociology of Religion (24 Hours)

- a. Meaning and Scope
- b. Sacred and Profane
- c. Religion and Rationalization
- d. Religion as a cultural system

Unit II. Myth, Body, and Rituals as elements of Religion (24 Hours)

- a. Ritual
- b. Body
- c. Myth

Unit III. Contemporary Issues in Religion (12 Hours)

- a. Religion and Media
- b. Secularism

Practical component (if any) - NIL

Essential/Recommended Readings:

Unit I. Introduction to Sociology of Religion:

a. Meaning and Scope

Béteille, A. 2002. *Sociology: Essays on Approach and Method*. OUP: New Delhi, Pp 134-150.

Berger, P. 1967. *The Sacred Canopy*. Garden City: New York, Pp175- 186.

b. Sacred and Profane

Durkheim, E. 2001. *The Elementary Forms of the Religious Life*. Carol Cosman (trans). Oxford: Oxford University Press, Pp 25-46; 87-100; 153-182.

c. Religion and Rationalization

Weber, Max. 1905. *The Protestant Ethic and the Spirit of Capitalism*, New York: Free Press, Pp 102-125

d. Religion as a Cultural System

Geertz, C. 2008. Religion as a Cultural System. In Michael Lambek (ed.) *A Reader in the Anthropology of Religion*. Blackwell Publishing Limited. Pp.57-76

Unit II. Myth, Ritual and the Body

Fuller, C.J. 2004. *The Camphor Flame: Popular Hinduism and Society in India*. (Revised ed.) Princeton University Press. Pp. 204-223

Hertz, Robert. 1973 (1909). "The Pre-eminence of the Right Hand." In *Right and Left: Essays on Dual Symbolic Classification*, edited by R. Needham. Chicago: University of Chicago Press, Pp. 3-10, 13-14, 16-17, 19-21.

Uberoi, J.P.S. 1997 'The Five Symbols of Sikhism', in T.N Madan (ed) *Religions in India*. Delhi: OUP, Pp 320-332.

Pangborn, Cyrus R. 1991. Parsi Zoroastrian Myth and Ritual: Some Problems of their Relevance for Death and Dying. In T.N. Madan Ed. *Religion in India* OUP, India. Pp. 415-430

Ostor, Akos. 1991. Cyclical Time: Durgapuja in Bengal: Concepts, Actions, Objects. In T.N. Madan Ed. *Religion in India* OUP, India. Pp. 176-198

Srinivas, M. N. 1952. *Religion and Society among the Coorgs of South India*. Clarendon: Oxford, Pp100-122.

Unit III. Contemporary Issues in Religion

Stolow, Jeremy. 2010. "Religion, Media, and Globalization" in Turner (Eds) *The New Blackwell companion to Sociology of Religion*. Wiley-Blackwell Pp 544-562

Madan, T.N. 1991. 'Secularism in its Place' in T. N. Madan, T.N. (ed.) *Religion in India*. New Delhi: OUP, Pp 394 -413.

Suggested Readings:

Asad, T. 2008. The Construction of Religion as an Anthropological Category. In Michael Lambek (ed.) *A Reader in the Anthropology of Religion*. Blackwell Publishing Limited. Pp. 110-126

A. Babb and Susan S. Wadley (ed.) 1998. *Media and the Transformation of Religion in South Asia*. Philadelphia: University of Pennsylvania Press. Pp.139-166.

Eck, D. 1996. *Darsan: Seeing the Divine Image in India*. Columbia University Press. NY.

Ortner, S.B. 2008. On key Symbols. In Michael Lambek (ed.) *A Reader in the Anthropology of Religion*. Blackwell Publishing Limited. Pp.151-159.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category III

BA (Prog.) with Sociology as Non-Major

DISCIPLINE SPECIFIC CORE COURSE – 03: Sociology of India

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------------------|----------------|--|-----------------|----------------------------|-----------------------------|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DSC 03 Sociology of India | 4 | 3 | 1 | 0 | 12th Pass | Should have Done DSC (MDS) 01 |

Course Learning Objective:

1. This paper aims to provide an outline of the institutions and processes of Indian society.
2. The central objective is to initiate students into studying Indian society through a sociological lens.
3. The students will be able to identify key social structures of Indian society.

Course Learning Outcomes:

Students will be able to:

1. *Recognize* the bases of plurality of Indian society.
2. *Explain* the concepts of caste, tribe, class, village, and religion.
3. *Examine* the dynamics of social change in India.

Outline Syllabus of DSC-03:

Unit I. Introducing India (08 Hours)

Unit II. India as a Plural Society (08 Hours)

Unit III. Social Institutions, Processes and Change (44 Hours)

- a. Caste
- b. Tribe
- c. Class
- d. Village
- e. Religion

Practical component (if any) - NIL

Essential/Recommended Readings:

Unit I. Introducing India (Weeks 1-2)

Stern, Robert W. 2003. *Changing India*. Cambridge: Cambridge University Press. Pp. 16-31.

Unit II. India as a Plural Society. (Week 3)

Mason, P. 1967. "Unity and Diversity: An Introductory Review" in Philip Mason(ed.) *India and Ceylon: Unity and Diversity*. London: Oxford University Press, Introduction. Pp. 1-29

Unit III. Social Institutions, Processes, and Change. (Weeks 4-12)

a. Caste

Ambedkar, B.R. 1977. "Castes in India: Their Mechanism, Genesis and Development," *Jullundhur, Bhim Patrika*. Pp 2-32.

Srinivas, M.N., 1956, "A Note on Sanskritization and Westernization", *The Far Eastern Quarterly*, Volume 15, No. 4, pp 481-496.

b. Tribe

Xaxa, V. Tribes in India, in Veena Das ed. *The Oxford India Companion to Sociology and Social Anthropology* Vol I. New Delhi: Oxford University Press, 2003. Pp.373 – 408.

c. Class

Dhanagare, D.N., 1991, "The Model of Agrarian Classes in India", in Dipankar Gupta(ed.), *Social Stratification*. Delhi: Oxford University Press, pp. 271-275.

Deshpande, S. 2003. "The Centrality of Middle Class" in *Contemporary India: A Sociological View*, Viking Bombay. Pp. 125-150.

d. Village

Desai, A. R. 1978, *Rural Sociology*, 5e. Bombay: Popular Prakashan. Pp.10-16

Srinivas, M.N and Shah, A.M. 1960. "The Myth of Self Sufficiency of the Indian Village", in *The Economic Weekly*, Vol. 12, No.37, (10 Sep. 1960), Pp. 1375-1378.

Jodhka, S. S. 2002. Nation and Village: Images of Rural India in Gandhi, Nehru and Ambedkar", in *Economic and Political Weekly* Vol. 37, No. 32 (Aug. 10-16, 2002), pp. 3343-3353.

e. Religion

Madan, T.N. 2003. "Plurality and Pluralism", *The Oxford India Companion to Sociology and Social Anthropology*, Vol I. New Delhi: Oxford University Press, 2003. Pp.775-801.

4. Issues and Challenges in Contemporary India. (Weeks 13-14)

Kumar, Radha. 1999. From Chipko to Sati: The Contemporary Women's Movement", in Nivedita Menon (ed.) *Gender and Politics in India*. Delhi: Oxford University Press, pp. 342-369.

Weiner, Myron. Migration, in, Veena Das. Ed. 2006. *Oxford Hand Book of Indian Sociology*, Delhi: OUP. pp. 156-171.

Suggested Readings:

Ahmad, I. 1983. "Modernization and Social Change among Muslims in India," Delhi, Manohar.

Ambedkar, B. R. 2007. *Annihilation of Caste* New Delhi : Critical Quest.

Gupta, D. (ed) (1991). *Social Stratification*. Delhi. Oxford University Press.

Dumont, L. 1997, *Religion, Politics, and History in India*, Paris: Mouton, Chapter 5. Pp. 89-110.

Eck, D. 2012. *India: A Sacred Geography*, New York: Harmony Books, Chapter 2, What is India? Pp. 42-105

Haimendorf, C.V.F. 1967."The Position of Tribal Population in India", in Philip Mason (ed.), *India and Ceylon: Unity and Diversity*, New York: Oxford University Press, Chapter 9.

Madan, V. (ed.) 2002. *The Village in India*. Delhi: Oxford University Press; Introduction

Nehru, J.N. 1946. *The Discovery of India*. Culcutta, Jawaharlal Nehru Memorial Fund.

Oommen, T.K. 2019. "Religious pluralism and Linguistics diversity", in T. K. Oommen and C.N. Venugopal (eds), *Sociology*, Lucknow: EBC Publishing. Pp. 262-296.

Roy Burman, B.K., 2002. "Challenges and Responses in Tribal India" in M.S.A. Rao (ed) *Social Movements in India* Delhi: Manohar .

Shah, Ghanshyam (2001). *Dalit Identity and Politics*. Delhi: Sage Publications, Chapter 1 and chapter 7.

Singh, Y. (1986). *Modernization of Indian Tradition*, Delhi: Rawat Publication.

Thorner, D. (1992). "Agrarian Structure" in Dipankar Gupta (ed.), *Social Stratification in India*, New Delhi: Oxford University Press, pp. 261-270.

Xaxa, V. (1999). "The Transformation of Tribes in India: Terms of Discourse", *Economic and Political Weekly*, 34 (24), pp. 1519-1524.

Zelliot, E. (2004). "Caste in Contemporary India" in Robin Rinehart (Ed). *Contemporary Hinduism: Ritual, culture, and practice*, California: ABC-CLIO. Pp. 243-271.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

CATEGORY-IV

COMMON POOL OF GENERIC ELECTIVES (GE) OFFERED BY DEPARTMENT OF SOCIOLOGY

GENERIC ELECTIVES (GE-04): Gender, Power and Violence

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|----------|-----------------------------------|----------|---------------------|-----------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GE 04 Gender, Power and Violence | 4 | 3 | 1 | Nil | 12th Pass | Nil |

Course Learning Objective:

1. To examine the varied expressions and ramifications of gendered violence in a variety of contexts.
2. To understand and analyse gender violence as both routine and spectacular, and structural, symbolic and situated.
3. To explain how gender is socially constructed, and increase awareness of the presence of gender violence on multiple bodies in varied locations and contexts.
4. To identify and analyze social movements and everyday forms of resistance against gender violence.

Course Learning Outcomes:

Students will be able to:

1. *Establish* the connections between the social construction of gender across cultures and the forms and experiences of gender violence.
2. *Describe* and *debate* different theoretical perspectives on the genesis and manifestation of gender violence across societies and cultures and its personal, social, cultural, political and economic consequences.
3. *Analyze* the significance of public discourse in general and the role of the state and public policy in addressing and curbing gender violence.
4. *Debate* individual and collective struggles and strategies used to resist gender violence.

Syllabus of GE 04:

Unit I. Conceptual Frameworks for understanding Gender and Violence (24 Hours)

- a. Deconstructing Gender and Gendered Violence**
- b. Embodiments of Violence: Multiplicities & Responses**

Unit II. Intersectional Debates (24 Hours)

- a. Power & Violence: Individuals & Community**
- b. Nation-States, (In) Security & Sexual Violence**
- c. Invisibilized Vulnerabilities**

Unit III. Legal Discourses on Gender Violence: Local and Global Experiences (12 Hours)

Practical component (if any) - NIL

Essential/Recommended Readings:

Unit I. Conceptual Frameworks for understanding Gender and Violence: (Weeks-1-6)

a. Deconstructing Gender and Gendered Violence

Boyle Karen. (2019). 'What's in a Name? Theorizing the inter-relationships of gender and violence'. *Feminist Theory* 2019. Vol 20(1) 19-36

Merry, Sally Engle. (2009). 'Introduction' in *Gender Violence: Cultural Perspective*. Wiley-Blackwell. Chap. 1.

Gwen Hunnicutt. (2009), 'Varieties of Patriarchy and Violence against Women: Resurrecting "Patriarchy" as a Theoretical Tool' in *Violence against Women*. Volume 15 (5) May, Pp 553-573.

b. Embodiments of Violence: Multiplicities & Responses

Desai, Manali. (2016). 'Gendered Violence and India's Body Politic' in *New Left Review* 99 pp 67-83

Anthias, Floya (2014). 'The Intersections of Class, Gender, Sexuality and 'Race': The Political Economy of Gendered Violence' in *International Journal of Politics, Culture, and Society*, Vol. 27, No. 2 pp. 153-171.

Unit II. Exploring intersectional debates: (Weeks 7-12)

a. Power & Violence: Individuals & Community

Sujatha, D. (2014), 'Redefining Domestic Violence: Experiences of Dalit Women' in *Economic and Political Weekly*, Vol. 49, No. 47 pp. 19-22

Durfee, Alesha. (2011). "I'm Not a Victim, She's an Abuser": Masculinity, Victimization, and Protection Orders." in *Gender & Society* 25 (3): 316–34.

Loy, Pamela Hewitt, and Lea P. Stewart. (1984), 'The Extent and Effects of the Sexual Harassment of Working Women'. *Sociological Focus* 17.1 : 31-43.

b. Nation-States, (In) Security & Sexual Violence

Gaikwad, Namrata. (2009). 'Revolting bodies, hysterical state: women protesting the Armed Forces Special Powers Act (1958)' in *Contemporary South Asia*. Vol. 17, No. 3, September 2009, 299–311.

Henry, Nicola. (2016). 'Theorizing Wartime Rape: Deconstructing Gender, Sexuality, and Violence' in *Gender and Society*, Vol. 30, No. 1, pp. 44-56.

c. Invisibilized Vulnerabilities

Sumit Dutta, Shamshad Khan & Robert Lorway (2019). 'Following the divine: an ethnographic study of structural violence among transgender Jogappas in South India' in *Culture, Health & Sexuality*. 21(11), 1240–1256.

Mantilla, Karla. (2013). 'Gender trolling: Misogyny Adapts to New Media' in *Feminist Studies* Vol 39. No. 2. pp 563-570.

Otto, Dianne. (2019). 'Gender Violence and Human Rights' in Laura J Shepherd edited *Handbook on Gender and Violence*, Pp. 357-376.

Agnes, Flavia. (2016). 'Muslim Women's Rights and Media Coverage'. *Economic and Political Weekly*, Vol. 51, No. 22. pp. 13-16.

Audio Visual Materials: Recommended for screening and Tutorial discussion

A Girl in the River: The Price for Forgiveness (Pakistan): Dir. Sharmeen Obaid Chinoy: 40 mins

A Pinch of Skin (India): Dir. Priya Goswami: 28 mins

Kony 2012 (Uganda): Dir. Jason Russell: 30 mins

Sri Lanka's Killing Fields: Dir. Callum Macrae: 49 mins

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-05): Sociology of Intimate Life

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|----------|-----------------------------------|----------|---------------------|-----------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GE 05 Sociology of Intimate Life | 4 | 3 | 1 | Nil | 12th Pass | Nil |

Course Learning Objectives:

1. To introduce students to some of the processes that shape intimate life in contemporary societies.
2. To explore the concept of intimacy and map the historical transformations this phenomenon has undergone.
3. To chart the configuration of intimacy in our times in multiple dimensions such as institutions, gender, sexuality, love and care.
4. To initiate discussion about ideals of equality and compassion in intimate relations.

Course Learning Outcomes: Students will be able to:

1. *Outline* sociological conceptions of Intimacy.
2. *Describe* the historical transformation of intimate relations and their present status.
3. *Appreciate* the significance of intimate relationships in weaving and sustaining the social fabric.
4. *Apply* this understanding of the interconnections between the public and private realms into policy making.

Syllabus of GE 05:

Unit I Intimacy: An Introduction (16 Hours)

Unit II Themes in Sociology of Intimacy (44 Hours)

- a. Institutions and Intimacies
- b. Gender, Sexuality and Intimacy
- c. Intimacy and Love
- d. Intimacy and Care

e. Intimacy and Democracy

Practical component (if any) - NIL

Essential/Recommended Readings:

Unit I. Intimacy: An Introduction

Jamieson, Lynn. (1998). Introduction, Chapters 1 & 2. In *Intimacy: Personal Relationships in Modern Societies*. (pp. 1-42). Polity Press.

Unit II. Themes in Sociology of Intimacy

a. Institutions and Intimacies:

Coontz, Stephanie. (2013). The Radical Idea of Marrying for Love (pp. 163-173). In David M. Newman. (Ed.) *Sociology: Readings Exploring the Architecture of Everyday Life*. Sage Publications.

Cherlin, Andrew J. (2004). The Deinstitutionalization of American Marriage. *Journal of Marriage and the Family* 66: 848-861.

b. Gender, Sexuality and Intimacy

Katz, Jonathan. (1990). The Invention of Heterosexuality. *Socialist Review* 20 January - March, 7-34.

Stacey, Judith. (2011). Introduction & Chapters 4. In *Unhitched: Love, Marriage, and Family Values from West Hollywood to Western China*. New York University Press.

Weston, Kath. (1998). Made to Order: Family Formation and the Rhetoric of Choice. In *Long Slow Burn: Sexuality and Social Science* (pp. 83-94). Routledge.

Raheja, Gloria Goodwin, and Ann Grodzins Gold. (1996). Sexuality, Fertility, and Erotic Imagination in Rajasthani Women's Songs. In *Listen To the Heron's Words: Reimagining Gender and Kinship in North India* (pp. 30 – 72). Oxford University Press.

c. Intimacy and Love

Beck, Ulrich and Elisabeth Beck-Gernsheim. (2010). The Normal Chaos of Love (pp. 181-188). In Anthony Giddens and Philip W. Sutton (Ed). *Sociology: Introductory Readings*. Polity.

Hooks, bell. (2015). Living to Love. *Sisters of the Yam: Black Women and the Self-Recovery*. (pp. 97-111). Routledge.

d. Intimacy and Care

Lamb, Sarah. (2000). White Saris and Sweet Mangoes: Aging, Gender, and Body in North India (pp. 115-143). University of California Press.

Hochschild, Arlie Russell. (2003). *The Commercialization of Intimate Life: Notes from Home and Work* (pp. 185-197). University of California Press.

e. Intimacy and Democracy

Jamieson, Lynn. (1998). Introduction & Chapter 6. The Couple: Intimate and Equal? In *Intimacy: Personal Relationships in Modern Societies* (pp. 136-157). Polity.

Giddens, Anthony. (1992). *The Transformation of Intimacy: Sexuality, Love and Eroticism in Modern Societies* (pp. 184-203). Polity Press.

Suggested Readings:

Beck, Ulrich and Elisabeth Beck-Gernsheim.(2010). The Normal Chaos of Love (pp. 181-188). In Anthony Giddens and Philip W. Sutton (Ed). *Sociology: Introductory Readings*. Polity.

Goodison, Lucy.(1983). Really Being in Love Means Wanting to Live in A Different World (pp. 48-66). In Cartledge, Sue, and Joanna Ryan (ed.). *Sex & Love: New Thoughts on Old Contradictions*. Women's Press.

Chase, Susan E. & Mary F. Rogers. (2004). Mothers and Children over the life course. In *Mothers and Children: Feminist Analysis and Personal Narratives*. (pp. 203-233). Rutgers University Press.

Kimmel, Michael. et. al. (Eds.). *The Gendered Society Reader* (pp. 121-132). Oxford University Press.

Lynn Jamieson and Gabb, Jacqui. (2008). Conceptualisations of Intimacy. In *Researching Intimacy in Families* (pp. 64-96). Palgrave.

Coontz, Stephanie.(1993). *The Way We Never Were American Families and The Nostalgia Trap*. Basic Books.

Trawick, Margaret.(1996). The Ideology of Love. Notes on Love in a Tamil Family (pp. 89 – 116). Oxford University Press.

Vatuk, Sylvia. (1990). To be a Burden on Others: Dependency Anxiety among the Elderly in India (pp. 64 – 88). In Lynch, Owen M. (Ed.) *Divine Passions: The Social Construction of Emotion in India* . Oxford University Press.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-06): Invitation to Sociological Theory

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|----------|-----------------------------------|----------|---------------------|-----------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GE 06 Invitation to Sociological Theory | 4 | 3 | 1 | Nil | 12th Pass | Nil |

Course Learning Objectives:

1. To familiarize students with fundamental sociological perspectives.
2. To enable students to analyse social reality on the basis of these perspectives.
3. To help students apply sociological theories to their lifeworld.

Course Learning Outcomes:

Students will be able to:

1. *Analyze* the multiple dimensions of social reality.
2. *Compare* and *contrast* different sociological perspective on these processes..
3. *Develop* a critical orientation while observing and reviewing social realities.
4. *Apply* various sociological theories to social contexts and thereby assessing the causes and consequences of various social phenomena

Syllabus of GE 06:

Unit 1. Understanding Sociological Theory (08 Hours)

Unit 2. Functionalism (16 Hours)

Unit 3. Conflict Theory (08 Hours)

Unit 4. Interpretive Sociology (08 Hours)

Unit 5. Interactionism (10 Hours)

Unit 6. Feminist Sociology (10 Hours)

Practical component (if any) - NIL

Essential/Recommended Readings:

Unit 1. Understanding Sociological Theory

Willis, Evan. 1996. *The Sociological Quest: An Introduction to the Study of Social Life*. New Jersey: Rutgers University Press. Chapter 7, Theory and Method. Pp. 107-132.

Unit 2. Functionalism

Wallace, Ruth A. and Alison Wolf. 2006. *Contemporary Sociological Theory: Expanding the Classical Tradition*, Sixth Edition, New Delhi: Prentice-Hall of India. Chapter 2, Functionalism. Pp. 15-57.

Cohen, Percy S. 1968. *Modern Social Theory*, Sixth Edition, London: Heinemann. Chapter 3, Functionalism or the 'Holistic' Approach. Pp. 34-68.

Unit 3. Conflict Theory

Turner, Jonathan H. 1987. *The Structure of Sociological Theory*, Fourth Edition, New York: Rawat Publications, Chapter 6, The Origin of Conflict and Critical Theorizing. Pp. 129-150.

Unit 4. Interpretive Sociology

Freund, Julien. 1969. *The Sociology of Max Weber*, New York: Vintage Books. Chapter 3, The Concept of Interpretive Sociology. Pp. 87-132.

Unit 5. Interactionism

Cuff, E. C., W. W. Sharrock, and D. W. Francis. 2006. **Perspectives in Sociology**, Fifth Edition, London: Routledge, Chapter 6, Symbolic Interactionism. Pp. 98-125.

Unit 6. Feminist Sociology

Abbott, Pamela, Clair Wallace, and Melissa Tyler. 2005. *An Introduction to Sociology: Feminist Perspectives*, Third Edition, London: Routledge, Chapter 2, Feminist Sociological Theory. Pp. 16-56.

Suggested Readings:

Blumer, Herbert. 2002 'Symbolic Interactionism' from Craig Calhoun (ed.) *Contemporary Sociological Theory*. Oxford: Blackwell. Chapter 4, Pp. 66 -77.

Dillon, Michele. 2014. *Introduction to Sociological Theory: Theorists, Concepts, and Their Applicability to the Twenty-First Century*, Second Edition, West Sussex: Wiley Blackwell, Chapter 3, Max Weber. Pp. 121-153.

Dillon, Michele. 2014. *Introduction to Sociological Theory: Theorists, Concepts, and Their Applicability to the Twenty-First Century*, Second Edition, West Sussex: Wiley Blackwell, Chapter 10, Feminist Theories. Pp. 327-367.

Durkheim, Emile. 1982. *The Rules of Sociological Method*, New York: Free Press. Chapter 1, What is a Social Fact? Pp. 50-59.

Geetha, V. 2002. *Gender*, Calcutta: Stree, Introduction. Pp. 01-10.

Giddens, Anthony. 2009. *Sociology*, Sixth Edition, Polity Press. Cambridge. Chapter 7, Social Interaction and Everyday Life. Pp. 247-279

Lindsey, Linda L. 2021. *Gender: Sociological Perspective*, Seventh Edition, London: Routledge, Chapter 1, The Sociology of Gender: Theoretical Perspectives and Feminist Frameworks. Pp. 03-37.

Marx, Karl and Fredrick Engels. 1948. *The Manifesto of the Communist Party*. New York: International Publishers. Pp. 03-48.

Radcliffe-Brown, A. R., 1976, *Structure and Function in Primitive Society*, New York: Free Press, Chapter 9, On the Concept of Function in Social Science. Pp. 178-187; Chapter 10, On Social Structure. Pp. 188-204.

Ritzer, George. 2011. *Sociological Theory*, Eighth Edition, New York: McGraw Hill, Chapter 10, Symbolic Interactionism. Pp. 351-390.

Weber, Max. 1978. *Economy and Society: An outline of Interpretive Sociology*, Vol. 1, University of California Press, Basic Concepts. Pp.04-26

Winch, Peter. 1990. *The Idea of A Social Science and its Relation to Philosophy*, London: Routledge. Chapter 2, The Nature of Meaningful Behaviour, Meaningful Behaviour. Pp. 45-51; Chapter 4, The Mind and Society, Verstehen and Causal Explanation, Meaningful Action and Social Action. Pp. 111-120.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DEPARTMENT OF HISTORY

Category I

BA (Hons.) History

DISCIPLINE SPECIFIC CORE COURSE -1 (DSC-1) – : History of India – II: c.300 to 750 CE

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|-----------------------|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| History of India – II c.300 CE - 750 CE DSC 1 | 4 | 3 | 1 | 0 | 12 th Pass | Should have studied History of India -I (From the beginning to fourth century BCE) |

Learning Objectives

The Learning Objectives of this course are as follows:

This course is about the early historical and the early medieval periods of Indian history. It explores the transition from the early historical to the early medieval phase highlighting major changes that shaped the character of Indian civilization. The course tries to delineate the important developments in the arena of economy, society, religion and culture. The purpose of this course is to familiarise students with the ways in which historians work with sources of various kinds and reconstruct our past.

Learning outcomes

After completing this course, the students will be able to

- Discuss the ways in which historians have questioned the characterization of the Mauryan state.
- Delineate changes in agriculture, technology, craft-production, urban development, trade and use of currency.
- Analyse critically the changes in the varna/caste systems and the changing nature of gen-der relations and property rights.
- Write and undertake projects related to religious developments, art, architecture, and forms of patronage.

SYLLABUS OF DSC-1

Unit I: Development of Political Structures (c. 4th century BCE to c. 300 CE) (12 Hours)

1. The Mauryan empire; the nature of dhamma
2. Post-Mauryan polities with special reference to the Kushanas and the Satavahanas
3. Tamilakam

Unit II: Economy and society (c. 4th century BCE to c. 300 CE) (16 Hours)

1. Expansion of agrarian economy and production relations
2. Urban growth: north India, central India, the Deccan and south India; craft production; trade interactions across the Indian sub-continent and beyond
3. Social stratification: varna; jati; untouchability; gender; marriage and property relations

Unit III: Polity, Economy and Society (c. 4th century to 750 CE) (16 Hours)

1. The nature of polities
2. Agrarian developments, land grants and peasantry
3. Urban patterns; trade and currency
4. Society: the proliferation of jatis: changing norms of marriage and inheritance

Unit IV: Religion and Cultural developments (c. 4th century BCE – 750 CE) (16 Hours)

1. Theistic Traditions
2. Art and architecture; forms of patronage (Sculptures, Stupas, Rock Cut Caves, and Temples)

Practical component (if any) - NIL

Essential/recommended readings

Unit I. This unit would enable students to trace the history of changing political developments from the Mauryan to post-Mauryan states.

- Allchin, F. R. (et al.) (1995). *The Archaeology of Early Historic South Asia: The Emergence of Cities and States*. Cambridge: Cambridge University Press. (Chapter 10).
- Karashima, N. (ed.) (2000). *A Concise History of South India: Issues and Interpretations*. New Delhi: Oxford University Press. (Chapter 2).
- Patrick Olivelle. (2012). 'Asoka's Inscriptions as Text and Ideology' by in *Reimagining Asoka Memory and History*, (ed.) Patrick Olivelle, Janice Leoshko, and Himanshu Prabha Ray, pp. 158-183.
- Sharma, R.S. (1996). *Aspects of Political Ideas and Institutions in Ancient India*. Delhi: Motilal Banarsidas. (Chapters XVIII, XIX, XXIII) (Also available in Hindi).
- Singh, Upinder. (2008). *A History of Ancient and Early Medieval India: From the Stone Age to the 12th Century*. Delhi: Pearson Longman. (Chapters 6, 7 and 8) (Also available in Hindi).
- Thapar, Romila. (2012). *Asoka and the Decline of the Mauryas*. Delhi: Oxford University Press. (Also available in Hindi).
- *Early India: From the Origins to AD 1300*. Delhi: Penguin. (Also available in Hindi).

Unit II. This unit will apprise students of the socio-economic developments with particular attention to agrarian relations and production as well as varna, jati, gender relations.

- Chakravarti, Ranabir. (2016). *Exploring Early India up to c. AD 1300*, Delhi: Primus, 3rd edition. (Chapter 5). (Also available in Hindi).
- Chakravarti, Uma. (2018). *Gendering Caste: Through a Feminist Lens*, SAGE Publications Pvt Ltd, 1st edition, (Chapter 3 and 4).
- Champakalakshmi, R. (1996). *Trade, Ideology and Urbanization: South India 300BC to AD 1300*. Delhi: Oxford University Press, pp 14-36.
- Jaiswal, Suvira. (1998). *Caste: Origin, Function and Dimensions of Change*, Delhi: Manohar. (Chapter 2.) (Also available in Hindi).
- Jha, Vivekanand. (1997). Caste, 'Untouchability and Social Justice: Early North Indian Perspective'. *Social Scientist*, 25, pp. 19-30.
- Ray, H.P. (1986). *Monastery and Guild: Commerce under the Satavahanas*. Delhi: Oxford University Press.

- Sahu, B. P. (ed). (1997). Land system and Rural society in Early India, Delhi: Manohar. (Introduction.).
- Shah, Shalini (2012). The Making of Womanhood: Gender Relations in The Mahabharata, Delhi: Manohar. (Chapters 2 and 4). (Also available in Hindi,
- Granthshilpi, 2016).
- Singh, Upinder. (2008). A History of Ancient and Early Medieval India: From the Stone Age to the 12th Century. Delhi: Pearson Longman. (Chapters 6 and 8). (Also available in Hindi).

Unit III. This unit introduces students to the varied perspectives with regard to the nature of politics, agrarian expansion as well as social and urban processes.

- Chakravarti, Ranabir. (2016). Exploring Early India up to c. AD 1300, Delhi: Primus, 3rd edition. (Chapter 6 and 7). (Also available in Hindi).
- Chattopadhyaya, B. D. (1994). The Making of Early Medieval India. Delhi: Ox-ford University Press. (Introduction.)
- Roy, Kumkum. (2010). 'Gender Relations during the First Millennium, An Overview', in The Power of Gender & the Gender of Power: Explorations in
- Early Indian History. Delhi: Oxford University Press. (Chapter 10).
- Sharma, R. S. (1990). Sudras in Ancient India: A Social History of the Lower
- Order Down to circa. A. D. 600. Delhi: Motilal Banarsidas. (Chapters 7 and 8.)
- (Also available in Hindi).
- (1980). Indian Feudalism. Madras: Macmillan. (Chapter 1.) (Also available in Hindi).
- Singh, Upinder. (2008). A History of Ancient and Early Medieval India: From the Stone Age to the 12th Century. Delhi: Pearson Longman. (Chapters 9 and 10.) (Also available in Hindi).

Unit IV. This unit traces the religious and cultural developments in the period of study with regard to Puranic Hinduism. It also aims at familiarising students with developments in the fields of art, architecture and changing forms of patronage.

- Brockington, J.L. (1997). The Sacred Thread: A Short History of Hinduism. Delhi: Ox-ford University Press, 2nd edition.
- Huntington, S. (1985). The Art of Ancient India: Buddhist, Hindu, Jain. New Delhi: Weather Hill.
- Miller, B.S. (1992). The Powers of Art: Patronage in Indian Culture. Delhi: Ox-ford University Press.
- Nath, Vijay, (2001). 'From 'Brahmanism' to 'Hinduism': Negotiating the Myth of the Great Tradition', Social Scientist, Vol. 29, pp. 19-50.
- Shrimali, K. M. (2017). Prachin Bhartiya Dharmon ka Itihas. Delhi: Granth Shilpi.
- Singh, Upinder. (2008). A History of Ancient and Early Medieval India: From the Stone Age to the 12th Century. Delhi: Pearson Longman. (Chapters 7, 8, 9 & 10) (Also available in Hindi).

Suggestive readings

- Agrawal, V.S. (2004). Studies in Indian Art, Varanasi: Vishwavidyalaya Prakashan.
- Alcock, Susan E. (et. al.) (2001). Empires: Perspectives from Archaeology and History, Cambridge: Cambridge University Press. (Chapter 6, pp. 155- 178).
- Basham, A.L. (1954). The Wonder that was India: A survey of the history and culture of the Indian subcontinent before the coming of the Muslims. Calcutta: Rupa.

- Bhattacharji, Sukumari. (1970). *The Indian Theogony*, Cambridge University Press.
- Chakrabarti, Kunal. (2001) *Religious Process: The Puranas and the Making of a Region-al Tradition*. New Delhi: Oxford University Press.
- Chakrabarti, Kunal & Sinha, Kanad. (2019). *State, Power and Legitimacy the Gup-ta Kingdom*, New Delhi: Primus.
- Chattopadhyaya, B.D. (2003). *Studying Early India: Archaeology, Texts, and Historical Issues*. Delhi: Permanent Black. (Chapter 3.)
- Desai, D. (2013). *Art and Icon: Essays on Early Indian Art*. Delhi: Aryan Books International.
- Dehejia, V. (2005). *Discourse In Early Buddhist Art: Visual Narratives of India*, New Delhi: Munshiram Manoharlal Publishers Pvt. Ltd. 5th edition.
- Dhar, Parul P. (ed.). (2006). *Indian Art: Changing Perspectives*. Delhi: D. K. Printworld P Ltd. and National Museum. (Introduction).
- Flood, Gavin. (2003). *The Blackwell Companion to Hinduism*, Blackwell Publishing Ltd.
- Gethin, Rupert. (1998). *The Foundations of Buddhism*. Oxford: Oxford University Press.
- Gurukkal, Rajan. (2010). *Social Formations of Early South India*. Delhi: Oxford University Press. (Chapters 6 and 7).
- Gupta, S.P. and Asthana, Shashi Prabha. (2004). *Elements of Indian art*, Delhi: DK Printworld, 2nd edition. (Chapter 1 and 2).
- Habib, Irfan and Faiz Habib. (2012). *Atlas of Ancient Indian History*. Delhi: Oxford University Press.
- Harle, J. C. (1986). *The Art and Architecture of the Indian Subcontinent*, New York: Viking Penguin.
- Jaini, P. (1979). *The Jaina Path of Purification*. Berkeley: University of California Press.
- Jaiswal, Suvira. (1981). *The Origin and Development of Vaisnavism: Vaisnavism from 200 BC to AD 500*. Delhi: Munshiram Manoharlal Publishers Pvt. Ltd. (Chapters 3, 6 7, and Conclusion) (Also available in Hindi).
- Jha, D.N. (2020). *Ancient India in Historical Outline*, 4th Revised Edition, New Delhi: Manohar Publishers & Distributors. (Chapter 7 and 8.) (Also available in Hindi).
- Jha, D.N. (ed.) (2003). *The Feudal Order: State, Society and Ideology in Early Medieval India*. New Delhi: Manohar Publishers and Distributors.
- Kosambi, D. D. (1956). *An Introduction to the Study of Indian History*. Bombay: Popular Prakashan. (Also available in Hindi).
- Lahiri, Nayanjot. (2015). *Ashoka in Ancient India*. Delhi: Permanent Black.
- Majumdar, R.C. (1970). *The Classical Age*. Bombay: Bharatiya Vidya Bhavan (3rd edition). (Also available in Hindi).
- Mitter, Partha. (2011). *Indian Art*, Delhi: Oxford University Press.
- Mukherjee, B.N. (1989). *Rise and Fall of the Kushana Empire*. Calcutta: Firma K.L. Mukhopadhyay.
- Olivelle, P. (ed.) (2006). *Between the Empires: Society in India 300 BCE to 400 CE*. New York: Oxford University Press.
- Olivelle, P., J. Leoshko and H.P. Ray. (eds.) (2012). *Reimagining Asoka: Memory and History*. New Delhi: Oxford University Press.
- Pandey, G. C. (1990). *Bauddha Dharma ke Vikas ka Itihas*. Lucknow: Uttar Pradesh Hindi Sansthan, 3rd edition.
- Pollock, Sheldon. (2007). *The Language of the Gods in the World of Men: Sanskrit, Culture, and Power in Premodern India*, Delhi: Permanent Black.

- Raychaudhuri, H.C. 1996. Political History of Ancient India (With a Commentary by B.N. Mukherjee). New Delhi: Oxford University Press.
- Ray, H.P. (1994). The Winds of Change: Buddhism and the Maritime Links of Early South Asia. Delhi: Oxford University Press.
- Roy, Kumkum. (ed.) (2001). Women in Early Indian Societies. Delhi: Manohar. (Introduction and pp. 113-122.)
- Sahu, B. P. (2015). Society and Culture in Post-Mauryan India: c. 200 BC- AD 300. Delhi: Tulika.
- Sharma, R.S. (1996). Aspects of Political Ideas and Institutions in Ancient India, Delhi: Motilal Banarsidas. (Chapters XXI and XXIII (III) (Also available in Hindi)
- --- (1987). Urban Decay in India c.300- c.1000. Delhi: Munshiram Manohar-lal. (Also available in Hindi).
- Shrimali, K.M. (2007). The Age of Iron and the Religious Revolution. Delhi: Tulika.
- ---1991 'Cash nexus on western Coast C 850-1250: A Study of the Shilaharas' in AK Jha's Ed. Coinage, Trade and Economy, 3rd International Colloquium of the Indian Institute of Research in Numismatic Studies, Nasik, pp 178-93.
- Shrimali, K. M ed (1988). Essays in Indian Art, Religion and Society, (Indian History Congress Golden Jubilee Year Publication Ser. Vol 1). Delhi: Munshiram Manoharlal Publishers.
- Singh, Upinder. (2016). The Idea of Ancient India: Essays on Religion, Politics, and Archaeology. Delhi: Sage.
- --- (2011) Rethinking Early Medieval India: A Reader. Edited by Delhi: Oxford University. (Introduction)
- Thapar, Romila. (1998). Recent Perspectives of Early Indian History. Bombay: Popular Prakashan.
- --- (1987). Mauryas Revisited. Kolkata: K. P. Bagchi. (Also available in Hindi).

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC-2): Social Formations and Cultural Patterns of the Medieval World – II

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code DSC 2 | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|-----------------------|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Social Formations and Cultural Patterns of the Medieval World – II | 4 | 3 | 1 | 0 | 12 th Pass | Should have studied Social Formations and Cultural Patterns of the Ancient World – I |

Learning Objectives

The Course seeks to develop a historical understanding of the major developments in some parts of the Ancient and Medieval world. These include the process of colonisation undertaken by the Greek city-states (polis) and by Rome and the far-reaching political experiments under-taken here. The Course provides a scope for understanding the subject of slavery in its varied dimensions in the Ancient world and this in turn prepares the students to understand historically the concepts of freedom and bondage as also the larger process of ordering and reordering of society through coercion, consent and revolts. We discuss the Medieval world in the Course by analysing the nature of European ‘feudal’ society and economy of the 8th to the 14th centuries. As different sections of society forged newer military and economic ties, the medieval institutions, particularly the Church, played an important role in the confirmation of these ties. The European social world was shaped into an intricate structure comprising powerful institutions like monarchy and the Church. The Course provides a scope to understand the medieval economy of Western Europe, particularly through its agrarian dimensions and relatively newer labour systems like serfdom. And finally, the Course allows an undergraduate student to reflect on questions related to the emergence and spread of Islam. An enquiry into the role of Islam in the transformation of a tribal identity to a Caliphal State in West Asia from the 7th to 9th centuries deepens the understanding of the long-term historical processes.

Learning outcomes

Upon completion of this course the student shall be able to:

- Identify the main historical developments in Ancient Greece and Rome.
- Gain an understanding of the restructuring of state and society from tribe-based polities to
- those based on territorial identity and citizenship.
- Trace the emergence and institutionalisation of social hierarchies and marginalisation of dissent.
- Explain the trends in the medieval economy.
- Analyse the rise of Islam and the move towards state formation in West Asia.

- Understand the role of religion and other cultural practices in community organisation.

SYLLABUS OF DSC- 2

Unit 1: Ancient Greece and Rome: (20 Hours)

1. Evolution of the 'polis' and changing political formations in Ancient Greece: Athens
2. and Sparta.
3. Rome from the Republic to Principate (c. 500 BCE- 200 CE)
 - a. Conflict of the Orders: Imperial expansion and social tensions in the Republic
4. Slavery in Ancient Greece and Rome
5. Crisis of the Roman Empire

Unit II: Feudal societies in medieval Europe (8th – 14 centuries) (20 Hours)

1. The emergence of Feudal states: Church, State and Society
2. Growth of the Medieval economy- Patterns and Processes: 8th - 11th centuries
3. Transition in the feudal economy from 11th – 14th centuries– (i) Agriculture: changes in serfdom and seigneurie (ii) Growth of towns and trade and their impact (iii) Onset of 'feudal crisis' in 13th and 14th centuries[S1]

Unit III: Early Islamic Societies in West Asia: Transition from tribe to state (20 Hours)

1. Pre-Islamic tribal society in Arabia and Rise of Islam
2. State formation: The Caliphate – Rashidun, Umayyads and early Abbasids (c.632 CE to c. 800CE)

Practical component (if any) - NIL

Essential/recommended readings

1. **Unit 1:** This Unit will be disaggregated and taught in sequence, first Greece then Rome. In the context of Greece, it will provide an understanding of the changing cultural, social, economic and political trends in Ancient Greece. It will then focus on Roman military expansion and its impact on social conflict, institutionalisation of slavery, and the crisis of the Roman Empire.
 - Anderson, P. (1988). Passages from Antiquity to Feudalism. London and New York: Verso, (Greece) Part One/I/ Chapters 1, 2, pp. 18-44; (Rome) Part One/I/ Chapters 1, 4 (pp. 18-28 and 53-103).
 - Finley, M.I. (1963/1991). The Ancient Greeks, London: Penguin (1991 reprint), Chapters 1-4, pp.15-94.
 - Finley, M.I. (1973). "Masters and Slaves," in M.I. Finley, The Ancient Economy. Berkeley and Los Angeles: University of California Press, pp. 62-94.
 - Green, P. (1973). A Concise History of Ancient Greece to the close of Classical era, London: Thames and Hudson Ltd., Chapters 1-5, pp. 9-172.
 - Scarre, C. and B. Fagan. (2008). Ancient Civilisations. New Jersey: Pearson, (on Greece) Chapters 9, 10, pp. 223-277; (on Rome) Chapter 11, pp. 278-303.
 - Bradley, K. (1994). Slavery and Society at Rome, Cambridge: Cambridge University Press, Chapter 2, pp. 10-30.
 - Brunt, P.A. (1966). "The Roman Mob," Past and Present, No. 35, Dec. 1966, pp. 3-27
 - Hopkins, K. (1978). Conquerors and Slaves. Cambridge: Cambridge University Press, 1978, Chapter 2, pp. 99-132.

- Joshel, S. R. (2010). Slavery in the Roman World, Cambridge: Cambridge University Press, Chapters 1, 2 and 5, pp.18-76 and 161-214.
- फ़ारूकी,अ. (2015). पाचीन और मधकालीन सामार् जक संरचनाएँऔर संस्कृ तयाँ, र् िली: मानक पकाशन.
- कोरोर्वकन, फोर्िोर. (2019). पाचीन र् वश ईतहास का र् परचय, Medha Publishing House.

Unit II: This Unit will provide a detailed understanding of European feudalism and shifts in medieval society and economy.

- Anderson, P. (1988). Passages from Antiquity to Feudalism. London and New York: Verso, Part One/II/ Chapters 1, 2, 3 (pp. 107-142), Part Two/I/Chapters 1, 4 (pp. 147-153, 182-196).
- Bloch M. (1973). “The Seigneurie down to the crisis of the fourteenth and fifteenth centuries”, Chapter 3 in Marc Bloch, French Rural History: An Essay on its Basic Characteristics. Berkeley: University of California, pp. 64-101.
- Cipolla, C. (Ed.) (1972). The Fontana Economic History of Europe Volume I, The Middle Ages, Collins/Fontana Books, Chapter 2, pp. 71-98; Chapter 4, pp. 143-174; Chapter 5, pp. 175-220.
- Duby, G. (1978). The Early Growth of the European Economy: Warriors and Peasants from the Seventh to the Twelfth century, Cornell: Cornell University Press, 1978, Chapter 6, pp. 157-180.
- Georges Duby, (1977). “Lineage, Nobility and Knighthood: the Macconnais in the twelfth century – a revision”, “Youth in Aristocratic Society”, in Chivalrous Society, trans. Cynthia Postan. Berkeley: University of California Press, pp. 59-80, 112-122
- Hilton, R.H. (1976). “Introduction” in R.H. Hilton, Peasants, Knights and Heretics: Studies in Medieval English Social History. Cambridge: Cambridge University Press, pp. 1-10.
- IGNOU Study Material in Hindi, MAH, पाचीन और मध्युगीन समाज, MHI-01 बॉक 6, ‘सामंतवाि’ यर्ू नट
- 20, 21, 22, 23. (website: www.egyankosh.ac.in) <http://www.egyankosh.ac.in/handle/123456789/44611>
- Le Goff, J. (2000). “Introduction” and “Medieval Western Europe” in History of Humanity: Scientific and Cultural Development, Volume IV, From the Seventh to the Sixteenth Century, UNESCO, pp. 207-220.
- Merrington, J. (1978) “Town and Country in the Transition to Capitalism”, in R.H. Hilton (Ed.), The Transition from Feudalism to Capitalism. London: Verso, 1978, Aakar, Delhi, 2006.
- फ़ारूकी,अ. (2015). पाचीन और मधकालीन सामार् जक संरचनाएँऔर संस्कृ तयाँ, . र् िली: मानक पकाशन.
- बलोक, म. (2002). ‘सामंती समाज’, भाग-1,नई: गंर्थशली

Unit III: This Unit will enable students to engage with the question of emergence and spread of Islam and its impact on the shaping of political authority in West Asia.

1. Berkey, J. (2002). The Formation of Islam. Religion and Society in the Near East, 600– 1800.

2. Cambridge: Cambridge University Press, Chapters 5-12, pp.55-123.
3. Bosworth, C. E. (2000). "The Formation of Early Islamic Polity and Society: General Characteristics" in *History of Humanity: Scientific and Cultural Development, Volume IV, From the Seventh to the Sixteenth Century*, UNESCO, pp. 271-273.
4. Crone, P. (1999). "The Rise of Islam in the World." in Francis Robinson and Ira M. Lapidus (Ed.), *The Cambridge Illustrated History of the Islamic World*, Cambridge: Cambridge University Press, pp. 2-31.
5. Duri, A.A. (2000). "The Rise of Islam," in *History of Humanity: Scientific and Cultural Development, Volume IV, From the Seventh to the Sixteenth Century*, UNESCO, pp. 264- 267.
6. Lapidus, I.M. (1988/2002). *A History of Islamic Societies*, Cambridge: Cambridge University Press (2002edn.), Chapters 1-5, pp. 10-77.
7. इजीर् नयर, A. A. (2018). *इसाम का जन और र् वकास. र् िली:राजकमल पकाशन*
8. फ़ारुकी,अ. (2015). *पाचीन और मधकालीन सामार् जक संरचनाएँऔर संसृ र् तयाँ, र् िली: मानक पकाशन.*

Suggestive readings (if any)

- Bloch, M. (1961). *Feudal Society Vol. I*, Chicago: University of Chicago Press.
- Bloch, M. (1966). "The Rise of Dependent Cultivation and Seigniorial Institutions." in
- M.M. Postan (Ed.), *The Cambridge Economic History of Europe, Volume 1*. Cambridge: Cambridge University Press.
- Boardman, J., J. Griffin, O. Murray (Eds.) (2001). *The Oxford History of Greece and the Hellenistic World*. Oxford: Oxford University Press.
- Brunt, P.A. (1971). *Social Conflicts in the Roman Republic*. London: Chatto and Windus.
- Dobb, M. (1950) *Studies in the Development of Capitalism*, London: Routledge and Kegan Paul.
- Donner, F.M. (2010). *Muhammad and the Believers at the Origins of Islam*. Harvard: Harvard University Press.
- Donner, F.M. ed. (2016). *The Expansion of the Early Islamic State*, London and New York: Routledge.
- Duby, G. (1978). *The Early Growth of the European Economy: Warriors and Peasants from the Seventh to the Twelfth century*. Cornell: Cornell University Press.
- Ehrenberg, V. (1990). *From Solon to Socrates: Greek History and Civilisation during the 5th and the 6th centuries BC*, London: Routledge, Chapters 1-4, and 6-7, pp. 1-97, 154-265.
- Finley, M.I. (1980). *Ancient Slavery Modern Ideology*. London: Chatto and Windus.
- Finley, M.I. (1983). *Politics in the Ancient World*. Cambridge: Cambridge University Press.
- Hilton, R. (1973). *Bond Men Made Free: Medieval Peasant Movements and the English Rising of 1381*. London: Routledge.
- Hodgson, M.G.S. (1974). *The Venture of Islam, Volume 1: The Classical Age of Islam*, Chicago: University of Chicago Press, pp. 101-314; and pp. 444-472.
- Kumar, R. (2018). *Ancient and Medieval World: From Evolution of Humans to the Crisis of Feudalism*, New Delhi: Sage.

- Le Goff, J. (1992) *Medieval Civilisation, 400-1500*, (translated by Julia Barrow), Oxford UK & Cambridge USA: Blackwell.
- Matthews, J. (2006) "Roman Law and Roman History" in D. S. Potter (Ed.), *A Companion to the Roman Empire*, USA, UK, Australia: Blackwell Publishing, pp. 477-491.
- Potter, D. S. (Ed.), (2006). *A Companion to the Roman Empire*, USA, UK, Australia: Blackwell Publishing.
- Serjeant, R.B. (1990). "Meccan Trade and the Rise of Islam: Misconceptions and flawed polemics," *Journal of the American Oriental Society*, Vol. 110, No. 3 (Jul-Sep., 1990), pp. 472-486.
- Temin, P. (2004), "The Labor Market of the Early Roman Empire," *Journal of Interdisciplinary History*, Vol.34, No. 4, pp. 513-538.
- Watt, W.M. (1970/2000). "Muhammad" in P.M. Holt, A.K.S. Lambton, B. Lewis (Eds.), *The Cambridge History of Islam, Volume IA*, Cambridge: Cambridge University Press, Part I, Chapter 2, pp. 30-56.
- Wood, E. M. (1988/2015), *Peasant-Citizen and Slave: The Foundations of Athenian Democracy*, London, New York: Verso
- कोरोवकन, फोर्ो. (2019). *पाचीन र् वश ईतहास का र् परचय*, Medha Publishing House.
- गोयल, S. R. (2011). *र् वश की पाचीन सभताएँ, बनारस: र् वर्शविलय पकाशन*.
- राय, U.N. (2017). *र् वश सभता का ईतहास. र् िली: राजकमल पकाशन*

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE– 3 (DSC-3): History of the USA: Reconstruction to New Age Politics

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code DSC 3 | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|-----------------------------|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| History of the USA: Reconstruction to New Age Politics | 4 | 3 | 1 | 0 | 12th Pass | Should have studied History of the USA: Independence to Civil War |

Learning Objectives

The course attempts to understand the changing political culture of the USA in the aftermath of the Civil War. The focus is not only to delineate the changes brought in during the phase of Reconstruction followed by the growth and expansion of industrialization and urbanization process with its inherent contradictions and complexities that had an impact on the gender roles giving way to the Feminist Movement and assisted in the mobilization of the African-Americans gravitating towards the beginnings of the Civil Rights Movement. The course links the consolidation of American capitalism with the crystallization of American imperialism and its eventual emergence as a global power.

Learning outcomes

Upon the completion of this course the student shall be able to:

- Explain the reasons for the implementation of ‘Radical’ Reconstruction and the causes for its limited success
- Analyze the growth of capitalism in the USA
- Discern the history of Populist and Progressive Movements
- Describe the nature of the Women’s Liberation Movement and its changing contours from the nineteenth to twentieth centuries
- Trace the significance of the African-American Movement and how it eventually assisted in the emergence of Civil Rights Movement under Martin Luther King Jr.

SYLLABUS OF DSC-3

Unit I: Reconstruction (12 Hours)

1. The Makings of Radical Reconstruction; Rise of New Social Groups in the South, Carpetbaggers, Scalawags, Ku Klux Klan and Free Blacks

Unit II: The Gilded Age - Economic, Social Divide and Reform (16 Hours)

1. Growth of Capitalism – Big Business; Competition, Consolidation, Monopolism
2. The Populist Challenge: Agrarian Crisis and Discontent

3. The Politics of Progressivism: Movement, Manifestations under Theodore Roosevelt and Woodrow Wilson

Unit III: Gender Roles and the Rise of African-American Movement (16 Hours)

1. Cult of Womanhood in the nineteenth century: The White (Case study of Lowell Textile Mill Women Workers), Black and Indigenous Women
2. The Emergence of Black Leadership: Booker T. Washington; W.E.B. DuBois, NAACP
3. The Rise of the Civil Rights Movement: Martin Luther King Jr.

Unit IV: USA in the World Politics (16 Hours)

1. Imperialistic Ambition and Power: The Spanish-American War; Role of USA in East Asia and Latin America
2. USA in the First and Second World Wars

Practical component (if any) - NIL

Essential/recommended readings

Unit I: The Unit examines the reasons for the Radical Congressmen taking over the Reconstruction process and how the establishment of radical governments in the Southern states led to the rise of new social groups and the resultant consequences thereof.

- Boyer, P.S., H. Sitkoff et al. The Enduring Vision: A History of the American People. Vol. II. 5th edn. Massachusetts: Houghton Mifflin Company, 2003.
- Foner, E. Reconstruction: America's Unfinished Revolution, 1863-1877. New York: Harper Perennial, 2002.
- Foner, E. 'The New View of Reconstruction'. American Heritage, Vol. 34, Issue 6, October-November 1983.

Unit II: This Unit delves into the three most important aspects of American history. The rise of Big Businesses their methods and techniques to capture and monopolize markets and the impact these sweeping economic changes had on American society eventually led to the rise of two most significant movements, the Populist movement at the agrarian level and the Progressive movement at the urban and industrial level.

- Hicks, J.D. The Populist Revolt: A History of the Farmers' Alliance and the Peoples Party. Connecticut: Greenwood Press, 1981.
- Boyer, P.S., H. Sitkoff et al. The Enduring Vision: A History of the American People. Vol. II. 5th edn. Massachusetts: Houghton Mifflin Company, 2003.
- Foner, E. Give Me Liberty! An American History. Vol. II. New York: W.W. Norton & Co. 2nd edn. 2007.
- Grob, G.N. and G.A. Billias. Interpretations of American History: Patterns and Perspectives. Vol. II. New York: The Free Press, 2000.
- Mann, A. The Progressive Era: Liberal Renaissance or Liberal Failure. New York: Holt, Rinehart & Winston, 1963. (Peter Smith Publication, Online Open Library, 2016).
- McMath, R. & E. Foner (ed.). American Populism: A Social History, 1877-1898. New York: Hill & Wang, 1993.

Unit III: This Unit takes into account the accepted patriarchal notions of being an 'accepted' woman in 19th century America and how they were established and resisted by the White,

Indigenous and Black women. The unit also explores the roles of two important leaders in the emergence of the African-American movement and reasons for the rise of Civil Rights Movement with the major role played by Martin Luther King Jr.

- Dublin, T. *Women at Work: The Transformation of Work and Community in Lowell, Massachusetts, 1826-1890*. New York: Columbia University Press, 1993.
- Dublin, T. 'Women, Work and Protest in the Early Lowell Mills: The Oppressive Hand of Avarice Would Enslave Us'. *Labour History*, Vol. 16, No. 1, Winter 1975.
- Foner, E. *Americas Black Past: A Reader in Afro-American History*. New York: Harper Collins, 1970.
- Higginbotham, E.B. 'African-American Women's History and the Metalanguage of Race'. *Signs*, Vol. 17, No. 2. Winter 1992.
- Kerber, Linda & J. Sherron De Hart, *Women's America: Refocusing the Past*. 8th edn. New York: Oxford University Press, 2016.
- Welter, B. 'The Cult of True Womanhood, 1820-1860'. *American Quarterly*, Vol. 18, No. 2, 1966. (Articles in *Journal of Women's History*. Vol. 14, No. 1, Spring 2002 to debate Barbara Welter's Article).
- White, J. *Black Leadership in America, 1895-1968*. *Studies in Modern History*. London & New York: Longman, 2nd edn, 1990 (Digitized in 2008).

Unit IV: In this Unit importance is given to the understanding of the U.S. into global politics with its own brand of imperialism and its eventual role in the two World Wars

- Boyer, P.S., H. Sitkoff et al. *The Enduring Vision: A History of the American People*. Vol. II. 5th edn. Massachusetts: Houghton Mifflin Company, 2003.
- Carnes, M.C. & J.A. Garraty. *The American Nation, A History of the United States*. 12th edn. New York: Pearson Longman, 2006.
- Datar K. *America Ka Itihas*. University of Delhi: Directorate of Hindi Medium Implementation Board, 1997.
- Foner, E. *Give Me Liberty! An American History*. Vol. II. New York: W.W. Norton & Co. 2nd edn. 2007.
- Grob, G.N. and G.A. Billias. *Interpretations of American History: Patterns and Perspectives*. Vol. II. New York: The Free Press, 2000.

Suggested Readings:

- Bailyn, B., D. Wood, J.L. Thomas et.al. *The Great Republic, A History of the American People*, Massachusetts: D.C. Heath and Company, 2000.
- Boyer, P.S., H. Sitkoff et al. *The Enduring Vision: A History of the American People*. Vol. II. 5th edn. Massachusetts: Houghton Mifflin Company, 2003.
- Carnes, M.C. & J.A. Garraty. *The American Nation, A History of the United States*. 12th edn. New York: Pearson Longman, 2006.
- Datar K. *America Ka Itihas*. University of Delhi: Directorate of Hindi Medium Implementation Board, 1997.
- Faragher, J.M., M.J. Buhle et al. *Out of Many: A History of the American People*. Vol. II. New Jersey: Prentice Hall, 1995.
- Foner, E. *Give Me Liberty! An American History*. Vol. II. New York: W.W. Norton & Co. 2nd edn. 2007.
- Grob, G.N. and G.A. Billias. *Interpretations of American History: Patterns and Perspectives*. Vol. II. New York: The Free Press, 2000.

- Zinn, H. A People's History of the United States, 1492-Present. New York: Harper Collins, 2003.

Few Selected Films

- 'King' (story of Dr. Martin Luther King Jr.) Directed by Abby Mann, 1979.
- 'The Long Walk Home' (two women black and white in 1955 Montgomery, Alabama Bus Boycott) Directed by Richard Pearce, 1990.
- 'Boycott' (African-American boycott of the buses during the Civil Rights Movement) Directed by Clark Johnson, 2001.
- 'The Rosa Parks Story' (a seamstress story in 1955 bus boycott), TV Movie, 2002.
- 'Separate but Equal' (American court case that destroyed legal validity of racial segregation), 1991.
- 'The Colour Purple' (story of a young African-American girl and the problems faced by African-American women during early twentieth century) Directed and Co-produced by Steven Spielberg, 1985.
- 'Selma' (based on 1965 Selma to Montgomery voting rights marches) Directed by Ava DuVernay and Produced by Christian Colson & others, 2014.
- 'Frida' (based on the professional and private life of surrealist Mexican painter Frida Kahlo) Directed by Julie Taymor and produced by Sarah Green & others, 2002.
- 'Lowell Mill Girls' by Colleen G. Casey, YouTube, December 7, 2010.
- 'The Lowell Mill Girls (Student Film) by Laureen Meyering, YouTube, December 23, 2011.
- 'And That's How We did in the Mill'- Women in the Lowell Textile Mills, Historymemoryculture.org, YouTube, September 2, 2016.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category II

BA(Prog.) with History as Major

DISCIPLINE SPECIFIC CORE COURSE (DSC-1): History of India, 300 CE to 1200 CE

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code DSc 1 | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-------------------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| History of India, 300 CE to 1200 CE | 4 | 3 | 1 | 0 | 12 th Pass | Should have studied History of India from earliest times up to 300 CE |

Learning Objectives

This course broadly covers period from late historic centuries to the early medieval times. Considered as a watershed, Gupta period marked the beginnings of some significant historical changes that left their imprint on the coming centuries. The aim of this course is to analyze these changes in terms of their spatial context and chronological framework that led to the transition towards the early medieval period.

Learning outcomes

On successful completion of this Course, the students will be able to:

- Develop an understanding of the ever fluid political scenario of the period identified in this paper, with special focus on regional polities.
- Identify the historical importance of the accelerated practice of land grants issued by ruling houses.
- Delineate changes in the realm of economy, society and culture with emphasis on newer forms of art and architecture.
- Contextualize the evolution and growth of regional styles of temple architecture and the evolving role of these temples as centers of socio-economic and political activities.

SYLLABUS OF DSC-1

Unit I: Survey of the Sources. (8 Hours)

Unit II: The Guptas and the Vakatakas: Administration, economy, society and cultural development. (12 Hours)

Unit III: Towards Early Medieval: changes in post - Gupta period with special reference to Vardhanas, Pallavas and Chalukyas. (12 Hours)

Unit IV: Rashtrakutas, Palas and Pratiharas: tripartite struggle for supremacy. (8 Hours)

Unit V: Emergence of Rajput states in Northern India: Socio - economic foundations. (12 Hours)

Unit VI: The Cholas: State and administration, economy and culture. (8 Hours)

Practical component (if any) - NIL

Essential/recommended readings

Unit-I: This Unit introduces the student to the varied sources used for writing history of ancient India from c. 300 CE onwards and their interpretations.

- Sharma, R.S. (1995). "An Analysis of Land grants and their Value for Economic History" in Perspectives in Social and Economic History of Early India. New Delhi: Munshiram Manoharlal. (Chapter 18)
- शर्मा, आर. एस. (2000). प्रारम्भिक भारत का आतथाक सामाजिक और इततहास. तिल्ली : तहन्दी माध्यम कार्ान्वर् तनि शालर्, तिल्ली तवश्वतवद्यालर्. (अध्यार् 18)
- Singh, Upinder. (2013). A History of Ancient and Early Medieval India: From the Stone Age to the 12th century. New Delhi: Pearson. (Chapter 1)
- तसंह, उतपंरि. (2016). प्राचीन एवं पूवा मध्यकालीन भारत का इततहास: पाषाण काल से 12वीं शताब्दी तक. नई तिल्ली. तपर्सन. (अध्यार् 1)

Unit II: This Unit shall introduce students to the evolving state formation, administrative framework, social structure, economy and cultural life of two contemporary and vast empires that emerged in the third century CE.

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- चक्रवती, रणबीर. (2012) भारतीर् इततहास. आतिकाक. नई तिल्ली. ओररएं टल ब्लैकस्वेन. (अध्यार् 6)
- Jha, D. N. (2004). Early India: A Concise History. Delhi: Manohar. (Chapter 8)
- Sharma, R.S. (2015). Aspects of Political Ideas and Institutions in Ancient India. Delhi: Motilal Banarasidas. (Chapters 20, 21)
- शर्मा, आर. एस. (2000). प्राचीन भारत में रािनीततक तवचार एवं संस्थाएं . तिल्ली: रािकमल प्रकाशन.
- िूसरा संस्कारण. (अध्यार् 20, 21)

Unit III: This Unit shall provide an overview of important political developments between the 8th to 10th centuries CE. It will introduce students to the evolving state formation and socio-economic transformations that are debated by historians and used to distinguish the early medieval period in the Indian subcontinent.

- Chattopadhyaya, B. D. (1994). The Making of Early Medieval India. New Delhi: Oxford University Press. (Chapter 1)
- Devahuti, D. (1999). Harsha: A Political Study. New Delhi: Oxford University Press, third edition. (All Chapters)
- Harle, J.C. (1994). The Art & Architecture of the Indian Subcontinent. PLACE: Yale University Press. (Chapter 20)

- Jha, D. N. (2004). Early India: A Concise History. Delhi: Manohar. (Chapter 9)
- Karashima, Noborou (ed.). (2014). A Concise History of South India. New Delhi: Oxford University Press. (Chapter 3)
- Sharma, R. S. (2001). Early Medieval Indian Society: A Study in Feudalization. Delhi: Orient Longman. (Chapter 1, 3 and 6)
- शर्मा, आर. एस. पूवा मध्यकालीन भारत का सामंती समाधि और संस्कृति तत्. नई दिल्ली: राक्षिमल प्रकाशन. (अध्याय 1, 3 and 6)
- Sharma, R.S. (2005). India's Ancient Past. New Delhi: Oxford University Press. (Chapters 27 and 31)
- शर्मा, आर. एस. (2016). प्रारम्भिक भारत का पररचर. नई दिल्ली. ओरररं टल ब्लैकस्वेन. पुनमुद्रन. (अध्याय 27 और 31)
- Romila Thapar (ed.), Recent Perspectives of Early Indian History. Bombay: Popular Prakshan. (Chapters 6-8)

Unit IV: This Unit shall introduce students to the evolving process of state formation and political struggle for supremacy in post-Gupta polities.

- Chakravarti, Ranabir. (2010). Exploring Early India Up to C. AD 1300. New Delhi: MacMillan. (Chapter 7)
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- झा. डी. एन. एवं के. एम. श्रीमाली. (2000) प्राचीन भारत का इततहास. दिल्ली : तहन्दी माध्यम कार्ाान्वर् तनिशालर्, दिल्ली तवश्वतवद्यालर्. पुनमुद्रन. (अध्याय 13)
- Mazumdar, R. C. (1952). Ancient India. Delhi: Motilal Banarsidas, (Book III Chapter 5)
- मिर्मिर , आर. सी. (2019) प्राचीन भारत, मोतीलाल बनारसीसि (खंड III अध्याय 5)
- Thapar, Romila. (2002). Early India from the Origins to AD 1300. New Delhi: Penguin. (Chapter 12)
- थापर, रोतमला. (2008). पूवाकालीन भारत : प्रारि से 1300 ई.तक. दिल्ली: तहन्दी माध्यम कार्ाान्वर् तनिशालर्, दिल्ली तवश्वतवद्यालर्. (अध्याय 12)

Unit V: This Unit shall introduce students to the nature of evolving Rajput polity, their social structure and accompanying economic developments.

- Chattopadhyaya, B. D. (1994). The Making of Early Medieval India. New Delhi: Oxford University Press. (Chapter 3).
- झा. डी. एन. एवं के. एम. श्रीमाली. (2000) प्राचीन भारत का इततहास. दिल्ली : तहन्दी माध्यम कार्ाान्वर् तनिशालर्, दिल्ली तवश्वतवद्यालर्. पुनमुद्रन. (अध्याय 13)
- Singh, Vipul. (2009). Interpreting Medieval India, Vol. I. New Delhi: Macmillan. (Chapter 3)

Unit VI: This Unit presents another important case study of state formation in the medieval period in southern reaches of the Indian subcontinent. The nature of evolving Chola polity, social structure, economy and cultural developments shall be discussed.

- Karashima, Noborou (Ed.). (2014). A Concise History of South India. New Delhi: Oxford University Press. (Chapter 4)
- Singh, Upinder. (2013). A History of Ancient and Early Medieval India: From the Stone Age to the 12th century. New Delhi: Pearson. (Chapter 10)
- तसंह, उत्तपंरि. (2016). प्राचीन एवं पूवा मध्यकालीन भारत का इततहास: पाषाण काल से 12वीं शताब्दी तक. नई तिल्ली. तपरसन. (अध्यार् 10)
- Thapar, Romila. (2002). Early India from the Origins to AD 1300. New Delhi: Penguin. (Chapter 11)
- थापर, रेतमला. (2008). पूवाकालीन भारत : प्रारि से 1300 ई.तक. तिल्ली: तहन्दी माध्यम कार्ान्वर् तनिशालर्, तिल्ली तवश्वतवद्यालर्. (अध्यार् 11)

Suggestive readings

- Basham, A. L. (1991). The Origins and Development of Classical Hinduism. Delhi: Oxford University Press.
- Chakrabarti, Ranabir. (2007). Trade and Traders in Early India. New Delhi: Manohar.
- Champakalakshmi, R. (2010). Trade, Ideology and Urbanisation: South India 300 BC-AD 1300. New Delhi: Oxford University Press.
- Dutt, Sukumar. (1988). Buddhist Monks and Monasteries in India: Their History and Their Contribution to Indian Culture. Delhi: Motilal Banarasidas.
- Goyal, S.R. (1986). Harsha and Buddhism. Meerut: Kusumanjali Prakashan, 1986.
- Huntington, Susan. (1985). The Art of Ancient India: Buddhist, Hindu, Jain. New York: Weatherhill.
- Kulke, Hermann (Ed.). (1997). "Introduction". in The State in India 1000- 1700. New Delhi: Oxford University Press. (Oxford in India Readings: themes in Indian History Series).
- Mazumdar, R. C. (1964). History and Culture of the Indian People, Vol. IV, Age of Imperial Kanauj. Bombay: Bhartiya Vidya Bhawan, second edition.
- Stein, Burton. (1980). Peasant, State and Society in Medieval South India. Delhi: Oxford University Press, 1980.
- Subbarayalu, Y. (1982). "The Chola State." Studies in History vol. 4 no.2, pp.265-306.
- Veluthat, Kesavan. (2012). The Political Structure of South India. Delhi: Orient Longman. (second revised edition).

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

(DSC-2): Medieval Societies: Global Perspectives

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code DSC 2 | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|----------------|--|-----------------|----------------------------|-----------------------------|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| MEDIEVAL SOCIETIES: GLOBAL PERSPECTIVES | 4 | 3 | 1 | 0 | 12th Pass | Should have studied Ancient Societies |

Learning Objectives

1. The objective of the course is to enable the students to have a comprehensive understanding of evolution and establishment of medieval civilization with special focus on polity, society, economy, religion and culture during medieval times. The attempt would be to study feudalism in medieval European context. The endeavor would be to trace the trajectory of origin, development and crisis of feudalism. Alongside, the course intends to acquaint the learners about the rise and spread of Islam during medieval era along with the forms of cultural pattern that shaped the popular Islamic practices like tassawuf. In addition to that, students would also be exposed to medieval China particularly with Sung, Mongols and Ming dynasties. The focus is just not on dynastic changes but also the dynamism in administrative machinery, political ideology, economy, culture and China's external relations in the period under survey. The technology of China gave way to spectacular growth in wealth, commerce, agricultural surplus, trade and monetization which finally led to cultural efflorescence.

Learning outcomes

After completion of the course the student shall be able to –

- Identify the medieval societies in global context especially focussing on Europe, Central Asia, India and China with clarity in.
- Analyse the rise of Islam and move towards state formation in west Asia.
- Understand the role of religion and other cultural practices in community organisation.
- What was medieval China and the science and civilization there.
- Finally the technological growth that led to cultural efflorescence during the later period. (Ming period)

COURSE CONTENT

UNIT I.

MEDIEVAL WORLD (20 Hours)

- (a) Understanding Feudalism: European and Indian
- (b) Church and nobility; Peasants and state
- (c) Feudal relationships and socio-economic changes: growth of trade and emergence of urban centres; feudal crisis
- (d) Cultural Patterns: Crystallization of hierarchies; medieval life and thought

Readings

1. Bloch, Marc, Feudal Society Volume I (Asha jyoti Booksellers & Publishers, First Indian Edition, 2006) Chapter 4 & 5, Part II; Chapter 11 & 12, Chapter 18 & 19
2. Bloch, Marc, Feudal Society Volume II (Ashajyoti Booksellers & Publishers, First Indian Edition, 2006) Chapter 23, Chapter 26
3. Sinha ,Arvind, Europe in Transition from Feudalism to Industrialization Manohar Publishers and Distributors, 2010
4. Le Goff, Jacques, 'Introduction: Medieval Man' in The Medieval World, edited by Jacques Le Goff, Translated by Lydia G.C. Cochrane, Parkgate Books, London, 1990
5. Anderson, P. (1988). *Passages from Antiquity to Feudalism*. London and New York: Verso, Part One/II/ Chapters 1, 2, 3 (pp. 107-142), Part Two/I/Chapters 1, 4 (pp. 147-153, 182-196).
6. Cipolla, C. (Ed.) (1972). *The Fontana Economic History of Europe Volume I, The Middle Ages*, Collins/Fontana Books, Chapter 2, pp. 71-98; Chapter 4, pp. 143-174; Chapter 5, pp.175-220.
7. Duby, G. (1978). *The Early Growth of the European Economy: Warriors and Peasants from the Seventh to the Twelfth century*, Cornell: Cornell University Press, 1978, Chapter 6, pp.157-180.

Georges Duby, (1977). "Lineage, Nobility and Knighthood: the Macconnais in the twelfth century – a revision", "Youth in Aristocratic Society", in *Chivalrous Society*, trans. Cynthia Postan. Berkeley: University of California Press, pp. 59-80, 112-122

Hilton, R.H. (1976). "Introduction" in R.H. Hilton, *Peasants, Knights and Heretics: Studies in Medieval English Social History*. Cambridge: Cambridge University Press, pp. 1-10.

IGNOU Study Material in Hindi, MAH, प्राचीन और मध्ययुगीन समाज, MHI-01 ब्लॉक 6, 'सामंतवाद', यूनिट 20, 21, 22, 23. (website: www.egyankosh.ac.in)
<http://www.egyankosh.ac.in/handle/123456789/44611>

Le Goff, J. (2000). "Introduction" and "Medieval Western Europe" in *History of Humanity: Scientific and Cultural Development, Volume IV, From the Seventh to the Sixteenth Century*, UNESCO, pp. 207-220.

Merrington, J. (1978) "Town and Country in the Transition to Capitalism", in R.H. Hilton (Ed.), *The Transition from Feudalism to Capitalism*. London: Verso, 1978, Aakar, Delhi, 2006.

Sharma, R. S. (2001). *Early Medieval Indian Society – A Study in Feudalization*, Delhi: Orient Longman.

R.S. Sharma (1984), “How feudal was Indian Feudalism?” *Social Scientist*, Vol. 12, No. 2, pp. 16-41.

Harban Mukhia (1997), “Was There Feudalism in Indian History?” *Feudalism* in *Burton Stein ed., The State in India 1000-1700*, New Delhi: Oxford University Press, pp. 86-133.

फ़ारूकी, A. (2015). प्राचीन और मध्यकालीन सामाजिक संरचनाएँ और संस्कृतियाँ, दिल्ली: मानक प्रकाशन. ब्लॉक, M. (2002). ‘सामंती समाज’, भाग-1, ग्रंथिशिल्पी

UNIT II. Genesis Of A New Social Order And Islamic Culture (20 Hours)

- (a) Pre-Islamic tribal society in Arabia; formation of ummah
- (b) The Caliphates – Rashidun, Ummayyads and early Abbasids (c. 632 CE to c. 800 CE)
- (c) Cultural Patterns: Adab, Akhlaq, Sufism

1. Chase F. Robinson ed., *The Cambridge History of Islam, Vol I. The Formation of the Islamic World Sixth to Eleventh Centuries*, Cambridge University Press, Chapter 4 “Pre Islamic Arabia”, pp. 153-170; Chapter 5, “The Rise of Islam, 600-705”, pp. 173-225, “Conclusion: From Formative Islam to Classical Islam”, pp. 683-695.
2. Berkey, J. (2002). *The Formation of Islam. Religion and Society in the Near East, 600–1800*. Cambridge: Cambridge University Press, Chapters 5-12, pp.55-123.
3. Bosworth, C. E. (2000). “The Formation of Early Islamic Polity and Society: General Characteristics” in *History of Humanity: Scientific and Cultural Development, Volume IV, From the Seventh to the Sixteenth Century*, UNESCO, pp. 271-273.
4. Marshall G.S. Hodgson, *The Venture of Islam: Concise and History in a World Civilization, Vol. I- The Classical Age of Islam*, University of Chicago Press, 1974, Chapter “The Absolutism in Flower, 750-813”, pp. 280-314; Chapter “Adab: The Bloom of Arabic Literary Culture, c. 813-945”, pp. 444-472.
5. Crone, P. (1999). “The Rise of Islam in the World.” in Francis Robinson and Ira M. Lapidus (Ed.), *The Cambridge Illustrated History of the Islamic World*, Cambridge: Cambridge University Press, pp. 2-31.
6. Duri, A.A. (2000). “The Rise of Islam,” in *History of Humanity: Scientific and Cultural Development, Volume IV, From the Seventh to the Sixteenth Century*, UNESCO, pp. 264-267.
7. Lapidus, I.M. (1988/2002). *A History of Islamic Societies*, Cambridge: Cambridge University Press (2002edn.), Chapters 1-5, pp. 10-77.
8. इंजीनियर, A. A. (2018). इस्लाम का जन्म और विकास. दिल्ली: राजकमल प्रकाशन
9. फ़ारूकी, A. (2015). प्राचीन और मध्यकालीन सामाजिक संरचनाएँ और संस्कृतियाँ, दिल्ली: मानक प्रकाशन.

UNIT III.

MEDIEVAL CHINA (20 Hours)

- (a) Dynastic change (Tang, Song, Mongols and Ming Period), Confucianism and Changing State Ideology, Administrative Machinery.
- (b) Agriculture and Trade, Technological Growth, Cultural efflorescence (Ming period)

Essential Readings:

1. E.O Reischauer and John King Fairbank (eds.). (1958) East Asia: The Great Tradition (Vol I).
2. Joseph Needham, (1954). Science and Civilization in China Vol 1.
3. History of Humanity Volume IV, From the Seventh to the Sixteenth Century (UNESCO series) Routledge 1994, Chapter 27, PP. 421-446.

Suggested Readings:

1. Jian Bozan, Shao Xunzheng and Hu Hua (eds.), A Concise History of China. Foreign Languages Press, China Publications Centre, 1981
2. Kenneth Scott Latourette, The Chinese: Their History and Culture. MacMillan Publishing Company, 1964

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category III

B.A. (Prog.) with History as non-Major or Minor discipline

DISCIPLINE SPECIFIC CORE COURSE (DSC-1): History of India, 300 CE to 1200 CE

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-------------------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| History of India, 300 CE to 1200 CE | 4 | 3 | 1 | 0 | 12 th Pass | Should have studied History of India from earliest times up to 300 CE |

Learning Objectives

This course broadly covers period from late historic centuries to the early medieval times. Considered as a watershed, Gupta period marked the beginnings of some significant historical changes that left their imprint on the coming centuries. The aim of this course is to analyse these changes in terms of their spatial context and chronological framework that led to the transition towards the early medieval period.

Learning outcomes

On successful completion of this Course, the students will be able to:

- Develop an understanding of the ever fluid political scenario of the period identified in this paper, with special focus on regional polities.
- Identify the historical importance of the accelerated practice of land grants issued by ruling houses.
- Delineate changes in the realm of economy, society and culture with emphasis on newer forms of art and architecture.
- Contextualize the evolution and growth of regional styles of temple architecture and the evolving role of these temples as centers of socio-economic and political activities.

SYLLABUS OF DSC-1

Unit I: Survey of the Sources. (8 Hours)

Unit II: The Guptas and the Vakatakas: Administration, economy, society and cultural development. (12 Hours)

Unit III: Towards Early Medieval: changes in post - Gupta period with special reference to Vardhanas, Pallavas and Chalukyas. (12 Hours)

Unit IV: Rashtrakutas, Palas and Pratiharas: tripartite struggle for supremacy. (8 Hours)

Unit V: Emergence of Rajput states in Northern India: Socio - economic foundations. (12 Hours)

Unit VI: The Cholas: State and administration, economy and culture. (8 Hours)

Practical component (if any) - NIL

Essential/recommended readings

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- शर्मा, आर. एस. (2000). प्रारम्भिक भारत का आतथाक सामाजिक और इतिहास. दिल्ली : तहन्दी माध्यम कार्ांन्वर् तनि शालर्, दिल्ली तवश्वतवद्यालर्. (अध्यार् 18)
- Singh, Upinder. (2013). A History of Ancient and Early Medieval India: From the Stone Age to the 12th century. New Delhi: Pearson. (Chapter 1)
- तसंह, उत्तपंरि. (2016). प्राचीन एवं पूवा मध्यकालीन भारत का इतिहास: पाषाण काल से 12वीं शताब्दी तक. नई दिल्ली. तर्परसन. (अध्यार् 1)

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- Chakravarti, Ranabir. (2010). Exploring Early India Up to C. AD 1300. New Delhi: Macmillan. (Chapter 6)
- चक्रवर्ती, रणबीर. (2012) भारतीर् इतिहास. आतिकांल. नई दिल्ली. ओररएं टल ब्लैकस्वेन. (अध्यार् 6)
- Jha, D. N. (2004). Early India: A Concise History. Delhi: Manohar. (Chapter 8)
- Sharma, R.S. (2015). Aspects of Political Ideas and Institutions in Ancient India. Delhi: Motilal Banarasidas. (Chapters 20, 21)
- शर्मा, आर. एस. (2000). प्राचीन भारत में रािनीततक तवचार एवं संस्थाएं . दिल्ली: रािकमल प्रकाशन.
- िूसरा संस्कारण. (अध्यार् 20, 21)

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- Devahuti, D. (1999). Harsha: A Political Study. New Delhi: Oxford University Press, third edition. (All Chapters)
- Harle, J.C. (1994). The Art & Architecture of the Indian Subcontinent. PLACE: Yale University Press. (Chapter 20)
- Jha, D. N. (2004). Early India: A Concise History. Delhi: Manohar. (Chapter 9)
- Karashima, Noborou (ed.). (2014). A Concise History of South India. New Delhi: Oxford University Press. (Chapter 3)

- Sharma, R. S. (2001). Early Medieval Indian Society: A Study in Feudalization. Delhi: Orient Longman. (Chapter 1, 3 and 6)
- शर्मा, आर. एस. (2001). प्राचीन भारतीय समाज और संस्कृति. नई दिल्ली: रॉकमिल प्रकाशन. (अध्याय 1, 3 and 6)
- Sharma, R.S. (2005). India's Ancient Past. New Delhi: Oxford University Press. (Chapters 27 and 31)
- शर्मा, आर. एस. (2016). प्रारम्भिक भारत का परचम. नई दिल्ली. ओरिएंटल ब्लैकस्वेन. पुनर्मुद्रण. (अध्याय 27 और 31)
- Romila Thapar (ed.), Recent Perspectives of Early Indian History. Bombay: Popular Prakshan. (Chapters 6-8)

Unit IV: This Unit shall introduce students to the evolving process of state formation and political struggle for supremacy in post-Gupta polities.

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- चक्रवर्ती, रणबीर. (2010) भारतीय इतिहास. आतिका. नई दिल्ली. ओरिएंटल ब्लैकस्वेन. (अध्याय 7)
- झा. डी. एन. एवं के. एम. श्रीमाली. (2000) प्राचीन भारत का इतिहास. दिल्ली : तहन्दी माध्यम कार्गान्वर्तनशाला, दिल्ली तवश्वतवद्याल. पुनर्मुद्रण. (अध्याय 13)
- Mazumdar, R. C. (1952). Ancient India. Delhi: Motilal Banarsidas, (Book III Chapter 5)
- मिर्मिर, आर. सी. (2019) प्राचीन भारत, मोतीलाल बनारसीदास (खंड III अध्याय 5)
- Thapar, Romila. (2002). Early India from the Origins to AD 1300. New Delhi: Penguin. (Chapter 12)
- थापर, रोतमला. (2008). प्राचीन भारत : प्रारंभ से 1300 ई. तक. दिल्ली: तहन्दी माध्यम कार्गान्वर्तनशाला, दिल्ली तवश्वतवद्याल. (अध्याय 12)

Unit V: This Unit shall introduce students to the nature of evolving Rajput polity, their social structure and accompanying economic developments.

- Chattopadhyaya, B. D. (1994). The Making of Early Medieval India. New Delhi: Oxford University Press. (Chapter 3).
- झा. डी. एन. एवं के. एम. श्रीमाली. (2000) प्राचीन भारत का इतिहास. दिल्ली : तहन्दी माध्यम कार्गान्वर्तनशाला, दिल्ली तवश्वतवद्याल. पुनर्मुद्रण. (अध्याय 13)
- Singh, Vipul. (2009). Interpreting Medieval India, Vol. I. New Delhi: Macmillan. (Chapter 3)

Unit VI: This Unit presents another important case study of state formation in the medieval period in southern reaches of the Indian subcontinent. The nature of evolving Chola polity, social structure, economy and cultural developments shall be discussed.

- Karashima, Noborou (Ed.). (2014). A Concise History of South India. New Delhi: Oxford University Press. (Chapter 4)
- Singh, Upinder. (2013). A History of Ancient and Early Medieval India: From the Stone Age to the 12th century. New Delhi: Pearson. (Chapter 10)

- तसंह, उत्तपंरि. (2016). प्राचीन एवं पूवा मध्यकालीन भारत का इततहास: पाषाण काल से 12वीं शताब्दी तक. नई तिल्ली. तपरसन. (अध्यार् 10)
- Thapar, Romila. (2002). Early India from the Origins to AD 1300. New Delhi: Penguin. (Chapter 11)
- थापर, रेतमला. (2008). पूवाकालीन भारत : प्रारि से 1300 ई.तक. तिल्ली: तहन्दी माध्यम कार्ान्वर् तनिशालर्, तिल्ली तवश्वतवद्यालर्. (अध्यार् 11)

Suggestive readings

- Basham, A. L. (1991). The Origins and Development of Classical Hinduism. Delhi: Oxford University Press.
- Chakrabarti, Ranabir. (2007). Trade and Traders in Early India. New Delhi: Manohar.
- Champakalakshmi, R. (2010). Trade, Ideology and Urbanisation: South India 300 BC-AD 1300. New Delhi: Oxford University Press.
- Dutt, Sukumar. (1988). Buddhist Monks and Monasteries in India: Their History and Their Contribution to Indian Culture. Delhi: Motilal Banarasidas.
- Goyal, S.R. (1986). Harsha and Buddhism. Meerut: Kusumanjali Prakashan, 1986.
- Huntington, Susan. (1985). The Art of Ancient India: Buddhist, Hindu, Jain. New York: Weatherhill.
- Kulke, Hermann (Ed.). (1997). "Introduction". in The State in India 1000- 1700. New Delhi: Oxford University Press. (Oxford in India Readings: themes in Indian History Series).
- Mazumdar, R. C. (1964). History and Culture of the Indian People, Vol. IV, Age of Imperial Kanauj. Bombay: Bhartiya Vidya Bhawan, second edition.
- Stein, Burton. (1980). Peasant, State and Society in Medieval South India. Delhi: Oxford University Press, 1980.
- Subbarayalu, Y. (1982). "The Chola State." Studies in History vol. 4 no.2, pp.265-306.
- Veluthat, Kesavan. (2012). The Political Structure of South India. Delhi: Orient Longman. (second revised edition).

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category-IV

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES OFFERED BY DEPARTMENT OF HISTORY

GENERIC ELECTIVES (GE-1): Delhi through the Ages: From Colonial to Contemporary Times

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|---------|-----------------------------------|----------|---------------------|-----------------------|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Delhi through the Ages: From Colonial to Contemporary Times | 4 | 3 | 1 | 0 | 12 th Pass | Should have studied Delhi through the Ages: The Making of its Early Modern History |

Learning Objectives

This course examines the physical and social transformation of Delhi from colonial to contemporary times. Focusing on the echoes of political developments on urban form and social experience, it aims to explore the historical antecedents of some of the capital's contemporary dilemmas.

Learning outcomes

Upon completion of this course the student shall be able to:

- Analyse the political developments and their legacy for the shaping of the city.
- Discern the importance of 'local' social, ecological and cultural processes that shape and reshape the city
- Explain the historical roots of the problems of sustainable urbanization with regard to Delhi.

SYLLABUS OF GE-1

Unit I: Delhi in the 19th Century - Mughal Court, Company Raj, 1857 and its Aftermath (16 Hours)

Unit II: Building New Delhi - Imperial Ideology and Urban Morphology (12 Hours)

Unit III: Delhi in 1947- Partition and its Aftermath (16 Hours)

Unit IV: Making of Contemporary Delhi – Spaces, Politics and Socialites (16 Hours)

Essential Readings

Unit I. This unit should familiarise students with the city in light of the colonial past and the present. It will also help them locate the political developments for shaping of the city. The unit examine political developments and their legacy during 1857 and how the rebellion in Delhi influenced its evolution.

- Gupta, Narayani. (1999). *Delhi between the Empires: 1803-1931*. Delhi: OUP, pp. 1-20
- Farooqui, Amar. (2013). *Zafar and the Raj: Anglo-Mughal Delhi, 1800-1850*, Delhi: Primus Books, pp.106-133, (chap. 6: “The Palace and the City”)
- Farooqui, Mahmod. (2006). *Ghadar. Sarai Reader*, 2006, pp. 254-270
- C. M. Naim. (2004). ‘Ghalib’s Delhi: A Shamelessly Revisionist Look at Two Popular Metaphors,’ in *Urdu Texts and Contexts: The Selected Essays of C. M. Naim*, Delhi: Permanent Black, pp. 250-279.
- Gail Minault. (2003). “Master Ramchandra of Delhi College: Teacher, Journalist, and Cultural Intermediary,” *Annual of Urdu Studies*, Vol. 18, pp. 95-104
- --- ; (1999). *Delhi between the Empires: 1803-1931*. Delhi: Oxford University Press, pp. 20-31, 50-66
- Lahiri, Nayanjot. (2003). “Commemorating and Remembering 1857: The Revolt in Delhi and its Afterlife,’ *World Archaeology*, vol. 35, no.1, pp. 35-60 .
- Dalrymple, William, (2006). *The Last Mughal: The Fall of a Dynasty*, Delhi: Penguin/Viking, pp. 193-229, 346-392. (Chap 6 “The Day of Ruin and Riot” and Chap. 10 “To Shoot Every Soul”.
- Verma, Pavan K. (2008). *Ghalib: The Man*, the Times, Penguin India.

Unit II. This segment enquires into the historical antecedents of some of the capital’s contemporary issues. The section should apprise the students of the historical roots of the problems of sustainable urbanization with regard to Delhi.

- Metcalf, Thomas. (1989). *Imperial Visions*. Delhi: Oxford University Press, pp. 211-239, (Ch. 7 ‘New Delhi: The Beginning of the End’).
- Johnson, David A. (2015). *New Delhi: The Last Imperial City*. Basingstoke: Palgrave 2015. (Chap. 8, “Land Acquisition, Landlessness and the Building of New Delhi”).
- Johnson, David. A (2008). *A British Empire for the Twentieth century: The inauguration of New Delhi, 1931*. *Urban History* 35, 3, Cambridge University Press, U.K.
- Mann, Michael. (2007). “Delhi's Belly: On the Management of Water, Sewage and Excreta in a Changing Urban Environment during the Nineteenth Century,” *Studies in History*, Vol. 23:1, pp. 1-30
- Liddle, Swapna (2017). *Chandni Chowk: The Mughal City of Old Delhi*, Speaking Tree Publications, Pvt. LTD. pp. 25-121.

Unit III. This section explores and reflects Delhi during and post-Partition. It examines physical and social transformation of Delhi from the colonial to the contemporary times.

- Pandey, Gyan. (2001). *Remembering Partition*, Cambridge: Cambridge University Press. (Chapter 6: Folding the National into the Local: Delhi 1947-1948, pp. 121-151)
- Datta, V N. (1986). “Punjabi Refugees and the Urban Development of Greater Delhi,’ in Robert Frykenberg(ed), *Delhi Through the Ages: Essays in Urban History Culture and Society*. Delhi: OUP, pp 442-462.

- Kaur, Ravinder (2008). Narrative absence: An 'Untouchable' account of Partition Migration. In *Contribution to Indian Sociology* (no.) 42, 2: Sage Publications, pp. 281-306.
- Tan, Tai Yong and Gyanesh Kudaisya. (2000). *The Aftermath of Partition in South Asia*. New York: Routledge, pp 193-200, (Chap. 7, "Capitol Landscapes")

Unit IV. The unit examines and locate 'local' social, ecological and cultural processes that shape and reshape the city.

- Emma. Tarlo. (2000). "Welcome to History: A Resettlement Colony in the Making," in Veronique Dupont et al ed. *Delhi: Urban Spaces and Human Destinies*. Delhi: Manohar, pp. 75-94
- Soni, Anita. (2000). "Urban Conquest of Outer Delhi: Beneficiaries, Intermediaries and Victims", in Veronique Dupont et al (Ed.). *Delhi: Urban Spaces and Human Destinies*, Delhi: Manohar, pp. 75-94
- Ghosh, Amitav. (1985)., 'The Ghosts of Mrs Gandhi,' *The New Yorker*, (Available online: <https://www.amitavghosh.com/essays/ghost.html>)
- Beg, Mirza Farhatullah. (2012). *Bahadur Shah and the Festival of Flower-Sellers*, tr., Mohammed Zakir, Hyderabad: Orient Blackswan.
- Basu, Aparna. (1986). "The Foundations and Early History of Delhi University," in Robert Frykenberg ed, *Delhi Through the Ages: Essays in Urban History Culture and Society*, Delhi: Oxford University Press, pp 401-430
- Gupta, Narayani. (1994). 'From Kingsway to Rajpath-the Democratization of Lutyens' New Delhi,' in C. Asher and T.R. Metcalf, eds. *Perceptions of South Asia's Visual Past*. Delhi: Oxford University Press
- Sharma, Ravikant. (2016). "Architecture of intellectual sociality: Tea and coffeehouses in post-colonial Delhi," *City, Culture and Society*, vol.7, 275-28

Suggestive readings

- Farooqui, Mahmood. (2013). *Besieged: Voices from Delhi, 1857*. Delhi: Penguin. (Dateline pp. xix-xxvii; In the Name of the Sarkar, pp 407-432.)
- Mann, Michael and Samiksha Sehrawat. (2009). "A City with a View: The Afforestation of the Delhi Ridge, 1883-1913", *Modern Asian Studies*, Vol. 43, No. 2, pp. 543-570
- Mann, Michael. (2005). 'Turbulent Delhi: Religious Strife, Social Tension and Political Conflicts, 1803-1857,' *South Asia: Journal of South Asian Studies*, vol.28, no.1, pp. 5-34
- Pilar, Maria Guerrieri, (2017). 'The Megacity of Delhi: Colonies, Hybridisation and Old New Paradigms,' in *Rethinking, Reinterpreting and Restructuring Composite Cities* edited by GülsünSağlam, Meltem Aksoy, Fatima Erkök, Cambridge: Cambridge Scholars Publishing, pp. 18-33
- Russell, Ralph. (1998). "Ghalib: A Self Portrait", in Ralph Russell, *Ghalib: The Poet and His Age*. Delhi: OUP. Also available at: http://www.columbia.edu/itc/mealac/pritchett/00ghalib/texts/txt_ralphrussell_1972.pdf
- Vazira, Fazila Yacoobali Zamindar. (2007). *The Long Partition and the Making of South Asia: Refugees, Boundaries, Histories*. New York: Columbia University Press. (Chapter I: Muslim Exodus from Delhi.)

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-2): History and Culture: Representations in Texts, Objects and Performance Histories

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|----------|-----------------------------------|----------|---------------------|-----------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| History and Culture: Representations in Texts, Objects and Performance Histories | 4 | 3 | 1 | 0 | 12th Pass | NIL |

Learning Objectives

This course aims to explore culture through its intangible and tangible attributes that are discussed in four themes including traditions of kingship and courtly culture; inter-cultural perceptions of 'other' religious communities and gender; performing ritual devotions through recitation of songs and processions; and exploring performance of narrative traditions using inanimate objects like, masks, puppets and cloth/paper scrolls. The themes are representations from oral and manuscript cultures from India. Specialized essays have been attached to every theme with the purpose of explaining the meaning, form, and context of these representations from the past. The readings represent ethnic and spatial (across geographical space and time) range and draw on diverse methodologies.

Further, this module seeks to explore the continuity of cultural patterns, iconic representations, and styles of performance into our present times. For example, the iconic raja (king) of the premodern times continues to perform royal ritual and sacrificial ceremonies, into contemporary times when India is a republic. The court jester of the past lingers on into the present as represented by Hajari Bhand. The complex nature of inter-cultural discourse between the Hindus and Muslims continues into the present and we know that neither community represents monolithic form. What shall we make of these multifaceted representations? How do performative traditions evolve over time? In absence of kingly patrons who will patronize the bhand, temple priest, picture showman with his scrolls? What kind of changes have evolved in the narrative traditions? The pedagogy of interdisciplinary approach is thus inbuilt into the structure of this course. Readings and audio-visual material have been knitted into themes to encourage active participation and discussion in the classroom. It will be impossible to claim any 'com-prehensive' treatment of India's culture over the duration of one semester. We may, however, be introduced to some significant vignettes of the whole.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Identify complex nature of kingship in medieval times through the case study of Krishnadevaraya of Vijayanagara.

- Understand the nature of interaction between the two dominant communities in the past. The paradigm of ‘clash of civilizations’ appears to be an exaggerated view.
- Appreciate the complex nature of religious communities in the past, when neither the Hindu nor Muslims represented monolithic identities.
- Read the intricate nature of interactions between men and women and the fact that identities were differently expressed than in the colonial times.
- Understand how culture is communicated through narrative strategies and performative acts.
- Appreciate that textuality and performativity are not binary opposites and are mutually interactive.
- Develop analytical skills that are necessary for students of literature, sociology, anthropology, religion, psychology, political science and South Asian studies.

SYLLABUS OF GE-2

| | |
|---|------------|
| Unit I: Kings, bhands & politicians | (16 Hours) |
| Unit II: Perceiving cultures & Negotiating identities | (16 Hours) |
| Unit III: Performing Devotion: Rituals, songs & processions | (16 Hours) |
| Unit IV: Storytelling with objects: Masks, puppets & scrolls | (12 Hours) |

Practical component (if any) - NIL

Essential/recommended readings

Unit I: Kingship is identified as a key component of India’s civilizational ethos. In the years following Indian Independence, kingdoms were dissolved, but this did not provoke the disappearance of kings: royal rituals continued to be celebrated as members of the royal families became politicians; and court jesters linger on as buffoons.

- David Dean Shulman, *The King and the Clown in South Indian Myth & Poetry*, Princeton University Press, 1985, Excerpt from Chapter 4, “The Kingdom of Clowns: Brahmins, Jesters & Magicians”, Princeton: Princeton University Press, 1985, pp. 152-213, available in Meenakshi Khanna, ed., *The Cultural History of Medieval India*, New Delhi: Social Science Press, 2012 (2007), pp. 3-24.
- डेवड िीन शलु मन, "मसखरों का राज्य: ब्राह्मण, मसखरेऔर जािगरू ", मध्यकालीन भारत का सांस्कृ ततक इततहास, संपावित, मीनाक्षी
- खन्ना, अनुर् ाि उमाशंकर शमाा' ऋर्व', नयी विल्ली: ओररण्टल ब्लैकसर्् ान, 2007, पष्ठ 3-25.
- John Emigh and Ulrike Emigh, “Hajari Bhand of Rajasthan: A Joker in the Deck”, in *The Drama Review: TDR*, Vol. 30, No. 1 (Spring, 1986), pp. 101-130.

Unit II: This rubric draws on four essays based on multilingual textual sources such as inscriptions, poetic texts, chronicles and travellers accounts composed during 8th to 19th centuries. The scholars have problematised issues relating to cultural perceptions and identities of religion and gender. Contrary to popular view that an encounter between the Hindus and Muslims perpetuated clashes, the authors of these essays present a complex understanding of identities that were not perceived as monolithic. These readings will clarify the methodological approaches used by historians to unravel narratives from the past in the quest for explaining the present.

- Brajadulal Chattopadhyaya, “Images of Raiders and Rulers” in B. D. Chattopadhyaya, ed., *Representing the Other: Sanskrit Sources and the Muslims, Eighth to Fourteenth Century*, New Delhi: Manohar, 1998, pp. 101-125
- बज्रु लाल चट्टोपाध्याय, “आक्रामकों और शासकों की छवियाँ”, *मध्यकालीन भारत का सांस्कृतिक इतिहास*, संपादित, मीनाक्षी खन्ना,
- अनुराग उमाशंकर शर्मा ‘ऋतु’, नयी दिल्ली: ओरिएण्टल ब्लैकस्पाइन, 2007, पृष्ठ 107-133
- R. M. Eaton “Multiple Lenses: Differing Perspectives of Fifteenth Century Calicut”, R. M. Eaton ed., *Essays on Islam and Indian History*, New Delhi: OUP, 2002, pp. 76-93
- Carla Petievich, “Gender politics and the Urdu ghazal: Exploratory observations on Rekhta versus Rekhti”, in *The Indian Economic & Social History Review*, vol. 38(3), 223–248
- कालापेवतएवच, “वलंग की राजनीति तथा डिग्रेजल : रेखता बनाम रखती का खोजपरक अलोकन “, *मध्यकालीन भारत का*
- सांस्कृतिक इतिहास, संपादित, मीनाक्षी खन्ना, अनुराग उमाशंकर शर्मा ‘ऋतु’, नयी दिल्ली: ओरिएण्टल ब्लैकस्पाइन, 2007,
- पृष्ठ 154-184
- Jenny Nilsson, “The Sense of a Lady’: An Exploration of Transvestite Roles in Kathakali and their Relation to Keralan Gender Constructions”, in *The Cambridge Journal of Anthropology*, Vol. 24, No. 3 (2004), pp. 1-40

Unit III. The acts of devotion, whether these are observed in private spaces or in public sphere, formulate expressions of religious identities. Many rituals, like the recitation of songs dedicated to Siva or and the procession of icons in the temple at Madurai; lamentation over the martyrdom of Husain and parading of the replica of his tomb shrine during Muharram, developed during medieval times. Political patronage was necessary for such devotional acts in the past as well as in the present.

- R. Champakalakshmi, “Patikam Pātuvār: Ritual Singing as a Means of Communication in Early Medieval South India”, *Studies in History*, 10(2) (1994), pp. 199–215
- राधा चंपकलक्ष्मी, “पाटीकम्पटुआर : आरवर्भक मध्यकालीन विवक्षण र भारत में संरिति-माध्यम के रूप में धावमाक गायन”, *मध्यकालीन*
- भारत का सांस्कृतिक इतिहास, संपादित, मीनाक्षी खन्ना, अनुराग उमाशंकर शर्मा ‘ऋतु’, नयी दिल्ली: ओरिएण्टल ब्लैकस्पाइन, 2007, पृष्ठ 50-75
- Khalsa, Niranjan Kaur. “Renegotiating Orthopraxy in the Presence of The Bani Guru.” *Sikh Formations* 10, no. 3 (2014): 313–34
- J.R.I. Cole, *Roots of North Indian Shi’ism in Iran and Iraq: Religion and State in Awadh, 1722-1859*, Berkley: University of California Press, 1988, Chapter 4, “Popular Shi’ism”, pp. 92-119.
- जे. आर. आई. कोल “लोकप्रचवलत वशया धमा”, *मध्यकालीन भारत का सांस्कृतिक इतिहास*, संपादित, मीनाक्षी खन्ना, अनुराग
- उमाशंकर शर्मा ‘ऋतु’, नयी दिल्ली: ओरिएण्टल ब्लैकस्पाइन, 2007, पृष्ठ 76-104.

- Selva J. Raj, “Public display, communal devotion: Procession at a South Indian Catholic festival”, in Jacobsen, K.A. (Ed.) *South Asian Religions on Display: Religious Processions in South Asia and in the Diaspora* (1st ed.), Routledge, pp. 77-91

Unit IV. In the three narrative traditions discussed in this rubric the human agency (Purusha) exists in specific kind of relation with inanimate objects used in performance. These objects have meanings embedded in the social and political contexts of various cultural traditions and express processes by which notions of ‘self’/ ‘selves’ are constructed & reconstructed.

a) Masks:

- Vishalakshi Nigam Chandra and Veronica Chishi, “Tradition of Story Telling in India through Masks” in *Akhyani Celebration of Masks, Puppets and Picture Showmen Traditions of India*, New Delhi: IGNCA, 2010, pp. 28-33.
- John Emigh, "Crisis and Contestation in the Pahlada Nataka of Ganjam", in Hermann Kulke, ed., *Imaging Orissa*, Prafulla Publication, 2013.

b) Puppets:

- Dhurjati Sarma and Ahanthem Homen Singh, “Storytelling and Puppet Traditions of India” in *Akhyani Celebration of Masks, Puppets and Picture Showmen Traditions of India*, New Delhi: IGNCA, 2010, pp. 34-41.
- Niels Roed Sorensen, “Tolu Bommalu Kattu: Shadow Theater Re: Andhra Pradesh”, *Journal of South Asian Literature*, Vol. 10, No. 2/4, THEATRE IN INDIA (Winter, Spring, Summer 1975), pp. 1-19.
- For illustrations <https://www.sahapedia.org/tag/shadow-puppetry>

c) Scrolls:

- Jyotindra Jain, “Indian Picture Showmen: Tradition and Transformation” in *Akhyani Celebration of Masks, Puppets and Picture Showmen Traditions of India*, New Delhi: IGNCA, 2010, pp. 14-27.
- Elizabeth Wickett, “The epic of Pabuji ki par in performance”, *World Oral Literature Project. Voices of Vanishing Worlds, Occasional Paper 3*, Cambridge: University of Cambridge, 2010, pp. 1-27.
- Short documentary https://www.youtube.com/watch?v=f4EiAdeKi_E

Suggestive readings -

- Bradford Clark, “Putul Yatra: A Celebration of Indian Puppetry”, in *Asian Theatre Journal*, Vol. 22, No. 2 (Autumn, 2005), pp. 334-347.
- Erika Fischer-Lichte, “Culture as Performance” *Modern Austrian Literature*, Vol. 42, No. 3, Special Issue: Performance (2009), pp. 1-10.
- James G. Lochtefeld, “The Construction of the Kumbha Mela”, in *South Asian Popular Culture*, 2004, Vol. 2:2, PP. 103-126.5
- John D. Smith, *The Epic of Pābūjī. A study, transcription and translation, second revised edition available electronically at* <http://bombay.indology.info/pabuji/statement.html>
- Karan Singh, “Structural Peripheries and Ideological Underpinnings: Performative Narration in Par of Pabuji”, in *Dialogue: A Journal Devoted to Literary Appreciation*, Vol. XII, No. 1, June 2016, pp. 35-45.
- Karine Schomer, “The "Ālhā" Epic in Contemporary Performance”, *The World of Music* Vol. 32, No. 2, India (1990), pp. 58-80.

- Kathy Foley & Dadi Pudumjee, “India” in World Encyclopedia of Puppetry Arts called “WEPA” or “EMAM” for Encyclopédie Mondiale des Arts de la Marionnette, a project of International Unima
- Available in English <https://wepa.unima.org/en/india/>
- Available in Hindi at <https://wepa.unima.org/en/india/>
- Marc Katz, Banaras Muharram and the Coals of Karbala. Written, produced, and narrated by Marc J. Katz. DVD, color, 70 minutes; 2004.
- Meenakshi Khanna, Cultural History of Medieval India, Introduction, New Delhi: Social Science Press, 2007, pp. ix-xxxiv.
- “र वमू का”, मध्यकालीन भारत का सांस्कृतिक इतिहास, संपादित, मीनाक्षी खन्ना, अनुराग उमाशंकर शर्मा 'ऋषि', नयी दिल्ली:
- ओरिएण्टल ब्लैकस् साइन्स, 2007, पृष्ठ ix-xxxiv.
- Pabitra Sarkar, “Jatra: The Popular Traditional Theatre of Bengal”, in Journal of South
- Asian Literature, Vol. 10, No. 2/4, THEATRE IN INDIA (Winter, Spring, Summer 1975), pp. 87-107.
- Regula Burckhardt Qureshi, “Sufism and the Globalization of Sacred Music.” In Philip V.
- Bohlman edited, The Cambridge History of World Music, 584–605. The Cambridge
- History of Music. Cambridge: Cambridge University Press, 2013.
- Richard. M. Eaton, “The Articulation of Islamic Space in the Medieval Deccan”, reprinted in Cultural History of Medieval India, ed., Meenakshi Khanna, New Delhi: Social Science Press, 2007, pp. 126-141.
- ररचडाईटन, “मध्यकालीन विष्णु मंदिरावमक स्थान की अवस्था”, मध्यकालीन भारत का सांस्कृतिक इतिहास, संपादित, मीनाक्षी
- खन्ना, अनुराग उमाशंकर शर्मा 'ऋषि', नयी दिल्ली: ओरिएण्टल ब्लैकस् साइन्स, 2007, पृष्ठ 134-151.
- Sreekala Sivasankaran, “Akhyani: Masks, Puppets and Picture Showmen Traditions of India - An Introduction” in Akhyani Celebration of Masks, Puppets and Picture Showmen Traditions of India, New Delhi: IGNCA, 2010, pp. 8-11.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-3): Indian Society: A Historical Perspective

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Indian Society: A Historical Perspective | 4 | 3 | 1 | 0 | 12 th Pass | NIL |

Learning Objectives

Indian society has witnessed the evolution of a composite culture with coming together of multiple traditions after negotiating existing differences in the society, which persist even today. This course uses a socio-historical perspective to trace the processes of continuity and change through which various social categories have emerged and got entrenched, even while the society itself evolved and remained fluid. The first unit uses a variety of primary and secondary texts intends to explore key issues in ancient Indian social history such as varna, jati, class, caste, gender, marriage relations, different types of social and religious thinking and varied cultural experiences. During the medieval period, with the expansion of agrarian societies there was formation and proliferation of castes which had sub-regional specificities and variations. There is a need to take cognizance of the fact that there was considerable economic, social and occupational mobility at both individual and group level. The medieval period also saw conforming and conflicting trends in the religious sphere which manifested itself through the various branches and schools, like the Bhakti cults. After the advent of colonial rule, the national movement witnessed various alternative tendencies which many a times ran counter to the nationalist agenda which gave the national movement its own distinctive identity. The persisting search for uniformity is problematised in the face of existing differences that existed at various levels of the society and also highlight the contestation between forces of exclusion and inclusion. This course makes a conscious attempt to convey historical processes through which various 'categories' have emerged and thereby emphasize the fluid character of categorization. The goal is to focus on moments of convergence and divergences in society and how a composite, multi-layered, complex society emerged after negotiating differences in the society, some of which even persists today.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Develop a critical understanding of the historical context of institutions like varna, jati, caste, kinship and marriage relations and early religious thought.
- Examine the complex relations between different social groups beginning from the hunter gatherers to the medieval trading and artisan communities.
- Understand the inherent politics and contradictions in the religious milieu of the medieval period.
- Outline various alternative currents in subaltern voices.
- Have a better understanding of the contemporary issues and challenges in the society

SYLLABUS OF GE-3

Unit I: Varna and jati; kinship and marriage; socio-religious ideologies in Early Traditions: (12 Hours)

1. Varna and jati in Vedic and Brahmanical traditions.

2. Forms of Kinship and regional variations; Marriage, family and households in early traditions,
3. Buddhism and Jainism.

Unit II: Social and occupational categories (some case studies from earliest times to 1700 CE): (16 Hours)

1. Early Hunter gatherers and Pastoral communities,
2. Tribal and Peasant communities,
3. Traders, Crafts persons and artisan communities.

Unit III: Social and Religious Movements (Case studies from 1000 -1800 CE): (16 Hours)

1. Devotional movements and social change

Unit IV: Contemporary society and its challenges: (some case studies) (16 Hours)

1. Subaltern voices and Social movements,
2. Environmental and Urban movement,
3. Gender and social imbalance
4. Plurality and Cultural diversities.

Practical component (if any) - NIL

Essential/recommended readings

Unit I: The unit traces the historical context of social institutions like varna, jati, caste, kinship and marriage relations and explores the social context of Vedic, Brahmanical, Buddhist, Jain and Shramanic thought in early India.

- Frits Staal, *Discovering the Vedas, Origins, Mantras, Rituals, Insights*, Part III and IV, Penguin, 2017, pp.47-63
- S. Jaiswal, *Introduction. Caste, Origin, Function and Dimensions of change*, Delhi: Manohar, 2000, Introduction
- Trautmann, Thomas R. *Dravidian Kinship*, (Cambridge Studies in Social and Cultural Anthropology, Series Number 36) Cambridge University Press, 1982 (Ch-1,4)
- Peter Harvey, *Buddha in his Indian context in an Introduction to Buddhism*, Cambridge University Press, 2017, pp.8-31.
- Paul Dunda, *The Jains*, Psychology Press, 2002, Introduction

Unit II: In this unit an attempt is made at exploration of the variegated societies that existed in the ancient, the lives of hunter- gatherers, pastoralist, peasants and tribal communities from earliest times. It also tracks the formation of authoritarian regimes and with the emergence of pan-regional market economics, there emerged various occupational categories with their unique identities and culture. The idea is to emphasize fluidity and reflect mobility in caste system which would be the key to understanding processes of change and continuity.

- S. Ratnagar, 2004 *The Other Indians, Essays on Pastoralists and Prehistoric Tribal People*, New Delhi: Three Essays Collective, 2004. (Ch-1,2)
- Olivelle, P. *Showbiz in Ancient India, Data from the Arthashastra*, In Osmund Bopeararchi and Ghosh ed, *Early Indian History and Beyond*, Primus Books, 2019, pp.56-65.
- I.H.Siddiqui, *Social Mobility in the Delhi Sultanat* in Irfan Habib (ed.) *Medieval India 1: Researches in the History of India, 1200-1750*, pp. 24-48.
- Carla Sinopoli, *The Political Economy of Craft Production* Cambridge University Press 2003 (Chapter 6,7).

- Chetan Singh, Forests and Pastoralists and Agrarian Society in Mughal India. In D.Arnold and R.Gujarat (ed.) Nature, Culture, Imperialism, OUP, 1995.pp. 21-48.

Unit III: This unit discusses the role of devotional movement in challenging the Brahmanical superiority which played a catalytic role in social change.

- Ray, Niharranjan, “Socio- Religious Movements of Protest in Medieval India: Synopotal View” PIHC 36(1975), pp.LXIII-LXIX.
- David N. Lorenzen, “Dissent in Kabir and the Kabir Panth” in Vijaya Ramaswamy (ed.) Devotion and Dissent in Indian History, Foundation Books, 2014. pp.169-187.
- Richard M.Eaton, The Sufis of Bijapur,1300-1700- Social Roles of Sufis in Medieval Deccan, Princeton University Press, 2015. Chapter-5
- Philip Constable,” Setting on the School Verandah: The Ideology and Practice of Untouchable Educational Protest in Late nineteenth century in Western India, The Indian Economic and Social History Review, Oct-Dec,2000 pp.383- 419.

Unit IV: This unit explores how encounters with the colonial state led to many social and political contestations in the Indian subcontinent. These alternative tendencies came to be represented by various subaltern, environmental and gender related movements. Subaltern voices and Social movement, Environmental and Urban movement, Gender and social imbalance, Plurality and Cultural diversities.

- Susan Bayly, The New Cambridge History of India, Caste, Society and Politics in India from 18th.C to the Modern Age, Cambridge University Press, 1999 ch-5 and 6.
- Somen Chakraborty: A Critique of Social Movements in India: Experiences of Chipko, Uttarakhand, and Fishworkers' Movement, Indian Social Institute, 1999.
- Yogendra Singh, “Social Transformation of the Indian Society in Yogendra Singh (ed.) Social Change in India: Crisis and Resilience; New Delhi, pp.41-61.
- K.S.Singh,” The People of India : Diversities and Affinities”, pp. 88-100 and ”Pluralism, Synthesis, Unity in Diversities,, Diversities in Unity” in K.S.Singh (ed.) Diversity, Identity and Linkages, Explorations in Historical Ethnography.
- Richard Fox, “Varna Schemes and Ideological Integration in Indian Society”, Comparative studies in Society and History, Vol. 11,1969, pp.27-44.

Suggestive readings

- Roy, Kumkum 1994, Marriage as communication: An exploration of norms and narratives in Early India, Studies in History, 10 2, n.s pp 183-19
- Aloka Parashar- Sen, 2004 Introduction in Subordinate and Marginal Groups in Early India, Oxford University Press, p.1-82.
- Brian Smith, Classifying the Universe, The Ancient Indian Varna System and the Origins of Caste, OUP,1994, Introduction
- Suraj Bhan Bhardwaj – Migration, Mobility and Memories Meos in the process of peasantization and Islamisation in the medieval Period. In Vijaya Ramaswamy (ed) Migrations in Medieval and Early Colonial India., Routledge, 2016.
- Eleanor Zelliot and Rohini Mokashi – Punekar – Untouchable Saints -An Indian Phenomenon, Manohar ,2005 Chapter19- Bhakti voices on Untouchability.
- Lindsey Harlan,”Perfection and Devotion: Sati Tradition in Rajasthan” in John Stratton Hawley (ed) Sati- The blessing and the Curse- The Burning of Wives in India,1994.

- Gail Omvedt, Understanding Caste: From Buddha to Ambedkar and Beyond, Orient Blackswan, 2011.
- S.C.Dubey, Indian Society, NBT, 2001.
- Indian Society Historical Probing, In memory of D.D.Kosambi, Indian Council Of Historical Research, 1974, pp.175-189, 337-349.
- I.H.Siddiqui- Delhi Sultanate : Urbanization and Social change, Viva Books, 2009
- Vijaya Ramaswamy (ed.) Devotion and Dissent in Indian History, Foundation Books, 2014
- Chakravarti, Uma- Understanding Caste in Gendering caste Through a Feminist lens, Calcutta: Stree. Pp.6-23 .
- Raj Mohan Gandhi, The Good Boat Man, Penguin Books, 2018.
- Rajiv Bhargava, "Political Responses to Religious Diversity in Ancient and Modern India", Studies in History, Vol.1, 2013, pp. 21-41.
- Thomas Metcalf, "The Ordering of Difference" in Sumit Sarkar (ed.) Caste in Modern India, pp.88-112.
- Das Veena, Dipankar Gupta, Paricia Oberoi(eds.), Tradition, Pluralism and Identity : In Honour of T.N.Madan, Sage Publications, New Delhi, 1999.
- Hulas Singh "Social Questioning" in Hulas Singh, Rise of Reason :Intellectual History of 19th C. Maharashtra, Routledge, Delhi, 2015, pp. 88-168.

Hindi Readings:

- G.S Ghurye, जाति, वंश और व्यवसाय: समाज-संरचना के प्राणात्मक ग्रन्थ, राधिका एंड डी सेंस,
- सुतम सरकार, आधुनिक काल: भारत 1880 से 1950, राधिका प्रकाशन, 2020
- Gail Omvedt, Jati ke samajha: महात्मा बुद्ध से बाबासाहेब अम्बेडकर, ओरिएंटल ब्लैकस्वान, 2018.
- Gail Omvedt, भारत में बौद्ध धर्म: ब्राह्मणवादी और जातिवाद को चुनौती, से, 2018.
- N.R.Farooqi, सूफिवाद की छ महत्वपूर्ण लेख, ओरिएंटल ब्लैकस्वान,
- Shahabuddin Iraqi ,मध्यकालीन भारत में मुस्लिम आंदोलन। चौखम्बा सुरभारती प्रकाशन, 2012
- Pandey, G. C. (1990). बौद्ध धर्म के विकास का इतिहास (बौद्ध धर्म के विकास का इतिहास)। लखनऊ: उत्तर प्रेश तहसील संस्थान। (तीसरा संस्करण)
- .त मश्र, एस. सी. (2014.) 'मुगल पूर्व भारत में सामाजिक तगतीलता', मध्यकालीन भारत, अंक - (सं.) इरफान हबीब, त िल्ली: राधिका प्रकाशन, पृ.सं. 51-58.
- बहुगुणा, आर.पी. (2009). मध्यकालीन भारत में तमि और सूफी आंदोलन, त िल्ली: गंतथशल्पी.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-4): Understanding Indian Heritage

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code GE-4 | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-------------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Understanding Indian Heritage | 4 | 3 | 1 | 0 | 12 th Pass | NIL |

Learning Objectives

The aim of this paper is to make students familiar with the concept of heritage and its numerous forms. It will develop the contested character of heritage and why it needs to be conserved. More importantly the paper highlights how both tangible and intangible heritage needs to be accessed. Issues of loot and repatriation and heritage preservation and conservation in turn point out how heritage and culture often becomes tropes to status claims of a country, a nation, a society and a region in front of the international world community. Matters of selective preservation and conservation can be addressed. It seeks to familiarize students with the evolution of heritage legislation and how 'measures from above are not always arbitrary. In some cases they have been a reaction to demands from below. The paper hence would be of particular value to students who are interested in heritage by also highlighting the national significance (international and domestic) raising public consciousness and sensitivity to heritage preservation.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Explain the complex character of heritage.
- Analyse the historical processes which result in the making of heritage.
- Describe the significance of cultural diversity in the creation of heritage.
- Discuss the issues of ownership and legislation to prevent 'loss' of heritage.
- Assess initiative of government bodies and NGO's to conserve and preserve heritage given the prioritization of development as well as in 'conflict' ridden zones/spaces.
- Discuss the importance of heritage for the country, the communities, region and society at large.

SYLLABUS OF GE-3

Unit I: Defining Heritage: (12 Hours)

MEANING of antiquity'; 'archaeological site'; 'tangible and intangible heritage'; "art treasure". Regional case studies of intangible heritage—dances, music, dance drama, oral stories, theatre, folk performances etc—can be given to make the concept more clear.

Unit II: Issues of Loot and Repatriation: Heritage, Ownership and Legislation: (16 Hours)

1. Conventions and Acts—International and National.
2. Antiquity smuggling and repatriation.

Unit III: Heritage Preservation and Conservation: (16 Hours)

1. Development, conflict (specific case study of UNESCO site Nizamuddin Basti or any such space where both tangible and intangible heritage merge; Muziris heritage project etc).
2. Heritage related Government departments, museums and regulatory bodies.
3. Conservation initiatives.

Unit IV: Heritage Interpretation: (16 Hours)

1. Heritage, Modernity and memory.
2. Participatory Heritage, Exhibitions, Heritage walks etc.
3. Digitizing Heritage
4. Management tools for interpretive projects

Practical component (if any) - NIL

Essential/recommended readings

Unit I: The unit will introduce the meanings of heritage associated politics. For a better understanding students will be encouraged to engage with terms like the meaning of antiquity, archaeological site, tangible heritage, intangible heritage and art treasure. The challenges posed in conservation of intangible heritage: case studies of food culture (Old Delhi, Lucknow, Hyderabad, Calicut, Calcutta or any UNESCO heritage site in India) or folk theatre or art (madhubani, Gond etc) can be taken up.

- Charters and Conventions available on UNESCO and ASI websites. (www.unesco.org ; www.asi.nic.in)
- Keynote address by Bouchenaki, Mounir . ‘The Interdependency of the Tangible and Intangible Cultural Heritage.’ ICOMOS 14th General Assembly and Scientific Symposium
- Lahiri, N. (2012), Marshalling the Past—Ancient Indian and its Modern Histories. Ranikhet: Permanent Black (Chapter 4 and 5
- Lowenthal, D. (2010). Possessed by the Past: the Heritage Crusade and the Spoils of History. Cambridge: Cambridge University Press.
- <https://www.lifestyleasia.com/ind/culture/events/durga-puja-unescos-intangible-cultural-heritage-list/>

Unit II: The unit will look into issues of loot, smuggling, illegal sale of artefacts. It also looks at repatriation of such artifacts for which many international and national laws are formulated and put into effect.

- Acts on Unesco website (<https://legislative.gov.in/sites/default/files/A1972-52.pdf> ; https://en.unesco.org/sites/default/files/inde_act52_1972_enorof.pdf ;
- Mankodi, Kirit L. ‘The Case of the Contraband Cargo or, Atru’s Amorous Couple.’ in Temple Architecture and Imagery of South and Southeast Asia, Prasadaniidhi: Papers presented to Professor M A Dhaky, edited by Parul Pandya Dhar and Gerd JR Mevissen, Delhi: Aryan Books International, pp. 369-379.
- Richard Davis, “Indian Art Objects as Loot.” The Journal of Asian Studies, 23 March 2011
- Vijay Kumar, The Idol Thief. Juggernaut

Unit III: The unit will discuss the efforts at heritage preservation by various organizations both Govt funded organizations and NGO’s.

- Biswas, S.S. (1999). Protecting the Cultural Heritage (National Legislation and International Conventions). New Delhi, INTACH.
- Layton, R.P Stone and J. Thomas (2001). Destruction and Conservation of Cultural Property. London: Routledge.

Unit IV: The unit will highlight the use of new techniques and technology in making heritage a 'lived' experience for a wider audience. It hence explores heritage interpretation, management and how people become participants in giving new meanings to both tangible and intangible heritage.

- Anupama Malik, Santanu Chaudhury, Vijay Chandru, Sharda Srinivasan (eds.), Digital Hampi: Preserving Indian Cultural Heritage.
- Howard, Peter (2003). Heritage: Management, Interpretation, Identity. Bloomsbury Publications, United Kingdom.
- Patrick Daly and Tim Winter (ed.), Routledge Handbook of Heritage in Asia. Chapters 1 and 18 (pp 1-36, 283-294).

Suggestive readings

- Himanshu Prabha Ray and Manoj Kumar (eds.) 2014. Indian World Heritage Sites in Con-text. Aryan Books, New Delhi.
- King, Victor T. (ed.) ,2015. UNESCO in Southeast Asia: World Heritage Sites in Comparative Perspective. NIAS Press, Copenhagen.
- Kulkarni, Subhash. 2016. Heritage of India, MRM Publication.
- Shikha Jain, Vinay Sheel Oberoi, 2021. Incredible Treasures: UNESCO World Heritage sites of India, Mapin Publishing, Ahmedabad
- Singh, Upinder, 2021. Idea of Ancient India: Essays on Religion, Politics and Archaeology. Sage Publications, India.
- World Heritage Sites, 8th Edition by UNESCO

Hindi Readings:

- प्रतमलागुप्ता (2016).भारतके तवश्वप्रतसद्दधरोहरस्थल, प्रभातप्रकाशन, नईतिल्ली ।
- रे खाफोगट (2021).भारतके तवशिवास्मरक, पाठकपम्भब्लसरएं डतडस्टीब्युटसानईतिल्ली ।
- अमरतसंह (2012). भारतकीसांस्कृ ततकतवरासत, नेहापम्भब्लसरएं डतडस्टीब्युटसा, शाहिरा ।
- रमास्याल, तवश्वतवख्यातभारतीर्कलाऔरसांस्कृ ततऔरतवरासत । ग्लोबलतविनपम्भब्लससा, नईतिल्ली ।
- तपर्ािशीऔझा (2021). पर्ाटनऔरसांस्कृ ततकतवरासत, तहमांशुपम्भब्लके शन्स, िरर्ागंि ।
- मधुअग्रवालवसीपीअग्रवाल (2019)। सांस्कृ ततकपर्ाटनसेधरोहरकासंरक्षणएवंसंवधान, तहमांशुपम्भब्लके शन्स, िरर्ागंि ।

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

37. Amendment to Appendix -II-A to the Ordinance V (2-A) of the Ordinances of the University vide EC Resolution 38-1-1 dated 08.12.2022 regarding Syllabi of 2nd Semester of Skill Enhancement Courses (SECs)

Add the following:

**Skill Enhancement Courses (SECs)
Under
UGCF-2022
Listed under Appendix-II-A to the Ordinance V (2-A) of the Ordinances of the
University
(with effect from Academic Year 2022-23)**

A student who pursues any undergraduate programme in the University and its Colleges is offered a pool of Skill Enhancement Courses. A list of such courses as passed by the Executive Council in its meeting dated 08.12.2022 is as below:

| Sl.No. | Course Title | Total Credits:2 |
|---------------|---|------------------------|
| 1. | Apiculture | |
| 2. | Bioinoculants for Agriculture and Sustainable Development | |
| 3. | Early Child Care and Education Settings | |
| 4. | Healthy and Sustainable Food Choices | |
| 5. | Image Styling | |
| 6. | Content development and Media for Children | |
| 7. | Small Scale Catering | |
| 8. | Radiation Safety | |
| 9. | Chemistry Lab Operations and Safety Measures | |
| 10. | Chemistry of Cosmetics and Hygiene Products | |
| 11. | Basic Analytical Techniques | |
| 12. | Essential Food Nutrients | |
| 13. | Forensic Chemistry | |
| 14. | Green Methods in Chemistry | |

15. Lab Testing and Quality Assurance
16. Chemistry of Food Flavors and Colourants
17. PCB Designing and Fabrication
18. Electronic Product Testing
19. Culinary Science
20. Chocolate Crafts
21. Pasta and Patisserie Technology
22. Frozen Dessert Technology
23. Indian Snack Industry
24. Dairy Processing
25. Fruits and Vegetable Processing
26. Food Waste and By-Product Utilisation
27. Minimal Food Processing
28. Working with People
29. Life Skill Education
30. Participatory Learning and Action
31. Programme Media
32. Environmental impact and Risk Assessment
33. Sustainably Reporting
34. Environmental Auditing
35. Document Preparation & Presentation Software
36. Innovation and Entrepreneurship
37. IT Skills and Data Analysis – I
38. IT Skills and Data Analysis- II
39. R Programming for Business Analytics
40. Yoga in Practice
41. Floriculture
42. Mushroom Culture and Technology-I
43. Hydroponic and Aeroponic Farming
44. Viewing and Capturing Diversity in Nature
45. Plant Aromatics and Perfumery

46. Nursery Gardening and Landscaping
47. Horticulture
48. Mushroom Culture and Technology – II
49. Biofertilizers
50. Organic Farming
51. Green Belt Development for Smart Cities
52. Big Data Analytics-I
53. Big Data Analytics-II
54. Social Media Marketing
55. Design Thinking
56. Aquaculture Entrepreneurship
57. Bio-floc Technology
58. Fish Breeding and Larviculture
59. Formulation of Fish Feed
60. Ornamental Fish Culture: Opportunity and Scope
61. Pearl Culture
62. Sericulture-I: Mulberry Silkworm Rearing
63. Sericulture-II: Eri Silkworm Rearing
64. Sericulture-III: Silk Technology
65. Sericulture-IV: Application of Sericulture in Therapeutic and Cosmetic Industry

Apiculture

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Apiculture | 2 | 0 | 0 | 2 | Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To help the student to become familiar with the significance of beekeeping as an economically viable industry.
- To help the student to understand the different species of honeybees, their biology, behaviour and role in pollination.
- To train the students to learn the techniques of honey bee rearing, optimization of techniques based on climate and geographical regions, and various measures to be taken to maximize the benefits.
- To understand the significance of beekeeping in the diversification of agriculture for the rural communities to increase their income and create employment opportunities and at the same time to develop entrepreneurial skills required for self-employment in the beekeeping sector.

Learning Outcomes

After studying this course, the students will be able to:

- Comprehend the various species of honey bees in India, their social organization and its importance.
- Appreciate the opportunities and employment in apiculture – in public, private and government sector.
- Gain thorough knowledge about the techniques involved in bee keeping and honey production.
- Make various products and by-products obtained from beekeeping sector and their importance.
- Develop entrepreneurial skills necessary for self-employment in beekeeping sector.
- Enhance collaborative learning and communication skills through practical sessions, teamwork, group discussions, assignments and projects.

Skill development and job opportunities

- After completion of this course students would obtain the training in collection, identification, and various ways/aspects of bee rearing.
- The students can also take a job as an apiary worker, often called a beekeeper, manage colonies of honeybees for the production of honey as well as pollination services.
- The course would also provide a basic training to enable the students to construct hives and replace combs.
- Enhance entrepreneurial skills by collecting and packaging hive products including honey, beeswax and pollen.
- Make decisions on yards, treatment, splits, honey harvesting and all other beekeeping decisions.

- Identify and report hive health concerns.

SYLLABUS (Practical)

Unit 1: Biology of Bees

16 hours

Historical background of apiculture, classification and biology of honey bees, Social organization of bee colony, behavioral patterns (bee dance, swarming).

Practical Exercises:

1. Study of the life history of honey bees: *Apis cerana indica*, *Apis mellifera*, *Apis dorsata*, *Apis florea*, *Melipona* sp. from specimen/ photographs - Egg, larva, pupa, adult (queen, drone, worker).
2. Study of morphological structures of honey bees through permanent slides/photographs—mouthparts, antenna, wings, sting apparatus and temporary mount of legs (antenna cleaner, mid leg, pollen basket).
3. Study of natural beehive and identification of queen cells, drone cells and brood.

Unit 2: Rearing of Bees

18 hours

Artificial Bee rearing (Apiary), Beehives – Newton and Langstroth; Bee Pasturage; Selection of bee species for apiculture – *Apis cerana indica*, *Apis mellifera*; Bee keeping equipment methods of extraction of honey (Indigenous and Modern) & processing; Apiary management - Honey flow period and lean period, effects of pollutants on honeybees.

Practical Exercises:

1. Distinguishing characters of workers of three bee species.
2. Importance of site selection for bee keeping.
3. Study of an artificial hive (Langstroth/Newton), its various parts and beekeeping equipment: draw diagrams of bee boxes proportionate to the body size and measure the body length and wing size.
4. Preparation of mount of pollen grains from flowers.

Unit 3: Diseases and Enemies

10 hours

Bee diseases control and preventive measures: enemies of bees and their control.

Practical Exercises:

1. Diagnosis of honeybee diseases: Protozoan diseases, Bacterial diseases, Viral diseases (one each)- symptoms, nature of damage and control.
2. Identification of honeybee enemies: Predators-Insects and non-insects.

Unit 4: Bee Economy

8 hours

Products of apiculture industry (Honey, Bees Wax, Propolis, Royal jelly, Pollen etc.) and their uses; Modern methods in employing artificial Beehives for cross pollination in horticultural gardens-stationary and migratory bee keeping.

Practical Exercises:

1. Video demonstration of wax extraction and preparation of comb foundation sheets.
2. Analysis of honey – purity, physical and biochemical parameters (any two constituents).
3. Study of bee pasturage – visit to fields/gardens/orchards for studying the bee activity (role in pollination, nectar collection, videography of honeybee activity) and preparation of herbarium of nectar and pollen yielding flowering plants (floral mapping).

Unit 5: Entrepreneurship in Apiculture

8 hours

Bee keeping industries – Recent advancements, employment opportunities, economics in small and large-scale beekeeping, scope for women entrepreneurs in beekeeping sector, study of development

programs and organizations involved in beekeeping in India.

Exercise:

1. Visit to an apiary/honey processing unit/institute and submission of a report.

Essential/Recommended readings

Singh, S. (1962). Beekeeping in India, Indian Council of Agricultural Research, New Delhi.

Mishra, R.C. (1995). Honeybees and their management in India. Indian Council of Agricultural Research, New Delhi.

Prost, P. J. (1962). Apiculture. Oxford and IBH, New Delhi.

Rahman, A. (2017). Beekeeping in India. Indian Council of Agricultural Research, New Delhi.

Gupta, J.K. (2016). Apiculture, Indian Council of Agricultural Research, New Delhi.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

BIOINOCULANTS FOR AGRICULTURE AND SUSTAINABLE DEVELOPMENT

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|----------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| BIOINOCULANTS FOR AGRICULTURE AND SUSTAINABLE DEVELOPMENT | 2 | 0 | 0 | 2 | Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To make students aware of the role of microorganisms in sustainable development and remediation.
- To develop their own biofertilizers and other kinds of bio-inoculants for use in agriculture and environment.
- Skill development in initiating a bioinoculant-based low cost startup.

Learning outcomes

After studying this course, the students will be:

- Able to identify the role of microbes in sustainable development and how microbes can be used in remediation of damaged environments.
- Skilled in isolating microorganisms from a variety of different sites. Will learn Selection, purification and preservation of useful cultures.
- Skilled in formulating bioinoculants and test its efficacy.

SYLLABUS

Practical

Unit 1

20 hours

Introduction and scope of bioinoculants: Biofertilizers: success story – biofertilizer production under ICAR - How Biofertilizers for Corn Went Commercial. Biopesticides: success story of using biopesticides for nematode management in horticultural crops. Bioinoculants as a solution to the problem of parali (stubble) burning: case study of “PUSA Decomposer”. Bioinoculants for reforestation. Bioinoculants for the reclamation of waste lands having alkaline, acidic, heavy metal-contaminated soils. Bioinoculants for clearance of oil spills. Mycorrhizal inoculants. Some important commercially available bioinoculants.

Unit 2**28 hours**

Isolation of microorganisms for the preparation of bioinoculants: Isolation of phosphate solubilizers, free-living nitrogen fixers, heavy metal-accumulating microbes, alkalophiles, acidophiles from suitable soil samples. Observation of colony morphology and microscopic structure of selected microbes and preservation of these cultures in slants and glycerol stocks.

Unit 3**12 hours**

Formulation of bioinoculant using selected microbes (student group project): Culturing of selected microbes from those isolated, and formulating them into a bioinoculant. Preparation of workflow for evaluating efficacy in potted plants and in fields, for determining shelf life, and stability.

Essential/Recommended readings

1. Microbiology: A Lab Manual by J. G. Cappuccino and C. T. Welson. 12th edition.
2. Pearson. 2020.
3. Bio-inoculants as prospective inputs for achieving sustainability: Indian Story by C. Gupta et al. Economic Affairs. Vol. 65, No. 1, pp. 31-41. 2020.
4. Bioinoculants for bioremediation applications and disease resistance: Innovative Perspectives by T. Chaudhary and P. Shukla. Indian J Microbiol. 59 (2): 129–136. 2019.
5. Remediation of metalliferous soils through the heavy metal resistant plant growth promoting bacteria: paradigms and prospects by M. Ahemad. Arabian Journal of Chemistry, 12 (7);1365-1377. 2019.
6. Laboratory manual of Microbiology and Biotechnology by K.R. Aneja. 2nd edition. Scientific International Pvt. Ltd., Delhi. 2018.
7. Online resource: <https://www.jaivikkheti.in/DMS/Waste-Decomposer%20Book-Eng.pdf>
8. Online resource: <https://www.iihr.res.in/success-story-using-biopesticides-nematode-management-horticultural-crops>.
9. Biofertilizer Production under ICAR All India Network Project on Soil Biodiversity Biofertilizers DOI: 10.13140/RG.2.2.26840.42244
10. Online resource: <https://blog.teamtrade.cz/the-story-of-how-biofertilizers-for-corn-went-commercial-part-one/>
11. Online resource: https://en.wikipedia.org/wiki/Microbial_inoculant

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Early Child Care and Education Settings

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Early Child Care and Education Settings | 2 | 0 | 0 | 2 | Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand the significance of early childhood years and the importance of ECCE
- To understand developmental milestones and delays in development
- To plan, organize and create care facilities and developmentally appropriate material for infants and young children.
- To be acquainted with the ECCE centre, its daily routine, requirements, functioning and evaluation of the programme.
- To trace the progression of children in early childhood setting

Learning outcomes

After studying this course, the student will be able to:

- Explain the significance of early childhood development and ECCE
- Become familiar with developmental milestones and learn to assess children in early years.
- Understand, plan and organize care activities for young children
- Prepare activities and aids for fostering development in the early years
- Learn about evaluation of an ECCE programme

SYLLABUS

Unit 1: Importance of early years and significance of ECCE

20 hours

The unit will help to develop an understanding on the concept and importance of ECCE

- Meaning and objectives of ECCE and importance of early years

- Norms and developmental milestones of infants and young children
- Observations, developmental checklists and developmental delays
- Nurturing care framework and early childcare practices
- Review of existing ECCE programmes and policies in India

Unit 2: Developmentally appropriate activities for young children 20 hours

The unit will focus on ways to promote development during early years through play and exploratory activities.

- Care and stimulation activities for infants and young children
- Plan and prepare multi-sensory materials and activities to promote development across domains: Physical motor, socio-emotional, cognitive and language development
- Use of music, dance, drama, storytelling, puppetry, rhymes/poems and art and craft
- Importance of- Indoor and outdoor activities; individual and group activities; free play and guided play; circle time
- Activities for school readiness

Unit 3: Components of ECCE Programme 20 hours

The unit will focus on the understanding of infrastructure, materials and equipment, curriculum development and assessing the development of children.

- Daily routines in child care and preschool centres
- Creating safe spaces for children: Organizing indoor and outdoor material and equipment
- Understanding the ECCE curriculum: Developing daily, weekly and monthly plans
- Assessing children's development across domains
- Indicators of a quality ECCE centre

Essential/Recommended Readings

- ECCE National Curriculum Framework-
https://wcd.nic.in/sites/default/files/national_ecce_curr_framework_final_03022014%20%282%29.pdf
- Managing Children's Programmes: Some Perspectives. Indira Gandhi National Open University DECE Study Material. <http://www.ignouhelp.in/ignou-dece-study-material/>
- Morrison, G. S. (2018). Early Childhood Education Today. Pearson
- National Education Policy 2020-
education.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf
- Organizing a Child Care Centre. Indira Gandhi National Open University DECE Study Material
- Soni, R. (2015). Theme Based Early Childhood Care and Education Programme: A Resource Book. National Council of Educational Research and Training.
- Swaminathan, M. (1998). The First Five Years. Sage Publications

Suggestive Readings

- Aggarwal, J. C. (2007). Early Childhood Care and Education: Principles and Practices.

Shipra: New Delhi.

- Arni, K. and Wolf G. (1999). Child Art with Everyday Materials. TARA Publishing.
- Mohanty, J. Mohanty, B. (1996). Early childhood care and Education. Deep and Deep Publication, New Delhi.
- Morrison, G. S. (2003). Fundamentals of early childhood education. Merrill/Prentice Hall:
- Play Activities for Preschoolers – 1 and 2. Indira Gandhi National Open University DECE Study Material
- Virginia Singh, A. (1995). Playing to Learn: A training manual for Early Childhood Education. M. S. Swaminathan Research Foundation.

Note: Learners are advised to use the latest edition of readings

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Healthy and Sustainable Food Choices

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title& Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Healthy and Sustainable Food Choices | 2 | 0 | 0 | 2 | Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To identify healthier food options
- To understand portion control for foods
- To demonstrate skill for preparing healthy and nutritious dishes
- To link sustainability with healthy food choices

Learning Outcomes

After studying this course, the student will be able to:

- Select and prepare healthier food options
- Relate the influence of food environment on food choices
- Comprehend the importance of sustainable food choices

SYLLABUS

Unit 1: Healthy food choices

12 hours

Identification of healthy and unhealthy foods and Understanding the immediate food environment

- Food labels and basics of nutrient profiling models to classify foods as HFSS
- Nutrient profiling of commonly consumed food items
- Exploring the food environment by mapping the food outlets and food available near home and college

Unit 2: Food portion sizes and related factors

12 hours

Understanding food portion sizes and its relation to nutrient density

- The concept of portion/serving sizes and portion control
- Estimation of energy and nutrient density of selected food products using nutrient composition database

Unit 3: Basics of food preparation

20 hours

Planning and preparation of healthy and nutritious dishes

- Planning and preparation of the following:
 - Snacks
 - Soups and Salads
 - Desserts
 - Meal combinations

Unit 4: Sustainability and healthy food

16 hours

Linking the concept of healthy eating with sustainability

- Identification of nutritious food sources which have minimal impact on the environment
- Case study on understanding food supply chain and carbon footprints of any commonly consumed foods

Essential/Recommended readings

- Chadha R and Mathur P (2015). Nutrition - A Lifecycle Approach. New Delhi: Orient Blackswan Pvt Ltd.
- Longvah T, Ananthan R, Bhaskarachary K and Venkaiah K (2017). Indian Food Composition Tables. National Institute of Nutrition, Indian Council of Medical Research, Department of Health Research, Ministry of Health and Family Welfare, Government of India, Hyderabad.
- Khanna K, Gupta S, Seth R, Mahna R, Rekhi T (2004). The Art and Science of Cooking: A Practical Manual, Revised Edition. New Delhi: Elite Publishing House Pvt Ltd.
- Raina U, Kashyap S, Narula V, Thomas S, Suvira, Vir S, Chopra S (2010). Basic Food Preparation: A Complete Manual, Fourth Edition. Hyderabad: Orient Black Swan.

Suggestive readings

- HLPE. 2017. Nutrition and food systems. A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, Rome. <https://www.fao.org/3/i7846e/i7846e.pdf>
- Agarwal P and Mathur P (2021). Eat Right - A Food Systems Approach . New Delhi: Food Future Foundation
- NIN-ICMR. Food Based Dietary Guidelines for Indians

Note: Learners are advised to use the latest edition of readings.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Image Styling

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------|---------|-----------------------------------|----------|------------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Image Styling | 2 | 0 | 0 | 2 | Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To strengthen the student's hands on experience in using different tools of improving the visual and non-visual appearance
- To train the students with technical and professional ways of understanding wardrobe needs and their development
- To develop skills in understanding fashion trends for planning personal shopping .

Learning Outcomes

After studying this course the student will be able to:

- Demonstrate the practical ways to strengthen physical image based on body type, face shape and personal style analysis.
- Understand the effect of elements and principles of design on visual appearance.
- Explain the fashion trends of apparel and accessories.
- Identify wardrobe elements and the processes of planning and organization.
- Plan personal shopping of apparel and accessories based on physical traits, personal style and budget.

SYLLABUS

Practical

Unit 1: Physical traits and analysis

16 hours

Learning the first step in styling by developing skills to analyze individual characteristics such as body type, proportions, face shapes etc.

Subtopics:

- Body types
- Body proportion
- Face shapes
- Personal colour analysis

Unit 2: Application of elements and principles of design for image styling **16 hours**

Understanding the basics of design by learning about the various elements and principles of design, their role in the success of a design, and their importance in personal styling.

Subtopics:

- Effects of design elements and principles on clothing and visual appearance
- Effect of garment components on visual appearance

Unit 3: Wardrobe planning **12 hours**

Learning the skills of wardrobe planning, analysis and management as per apparel and accessory needs.

Subtopics:

- Wardrobe analysis
- Wardrobe essentials
- Organization and categorization of wardrobe
- Elements of a basic wardrobe
- Optimising wardrobe and budgeting

Unit 4: The business of styling **16 hours**

Understand the working of styling business. Developing the art of styling. Analyzing the present market trends.

Subtopics:

- Dress vs Style
- Analysis of trends of apparels and accessories
- Survey of apparel and accessory stores/ brands with respect to style, size and price.
- Types of stylists: Freelance stylists, Celebrity stylists, Editorial stylists
- Marketing your business
- Forms and Contracts

Essential Readings

- Constantine, S. & Woodall, T. *The Body Shape Bible: Forget Your Size Discover Your Shape Transform Yourself*, published by Weidenfeld & Nicolson (1877), ASIN: B01K14NWB8
- Funder, D.C. 2001, *The Personality Puzzle (2nd ed)*, New York: W.W. Norton
- Phares, J.E. 1991, *Introduction to Personality (3rd ed)*, New York: Harper Collins
- Rasband, J. *Wardrobe Strategies for Women*, published by Fairchild Books; Student edition (September 18, 2001), ISBN-10: 1563672596

Suggested Readings

- Baumgartner, J. *You are What You Wear*, Da Capo Press (2012)
- Mc Call, *Sewing in Color*, Hamlyn Publishing Group 11th edition (1975)
- Romano, C. *Plan your Wardrobe*, New Holland Publishers (1998)
- Vega, L. *The Image of Success*, American Management Association (2010)

Note: Learners are advised to use the latest edition of readings.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Content Development and Media for Children

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|------------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Content development and Media for Children | 2 | 0 | 0 | 2 | Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To explore and review current trends in media and content for children
- To plan developmentally appropriate media and content for children
- To create culturally appropriate content for learning

Learning Outcomes

After studying this course, the student will be able to:

- Identify forms of content and media available for children
- Understand the impact of content and media on thoughts, attitudes and values of children
- Create age-appropriate content and media for children

SYLLABUS

Unit 1: Content for children: Relationship and interaction

20 hours

This unit will cover the different forms of content available to children and will create a linkage between children, content and context

- Exploring different forms of content for children (exposure to history and folk forms)
- Children's usage and significance of print, audio visual content
- Review and analysis of available content for children
- Enabling parents/caregivers to be able to use content appropriately with children

Unit 2: Media for Children

20 hours

This unit will discuss the different forms of media available to children in the contemporary context and also focus on advances in media technology

- Different media forms available for children

- Children's use and significance of media forms
- Assessing the portrayal of children in media; assessing the quality of Print, App or TV program, website, film
- Media literacy for children, parents and caregivers

Unit 3: Developing content and media for children

20 hours

This unit will enable students in developing content and media for children.

- Scripting for children: content and structure; Literature for and by children; Writing stories/poems for children (significance of humour, wonder, logic)
- Music/ Dance/Theatre/puppetry as sources for content development and dissemination
- Creating age-appropriate content for:
 - Developmental and domain specific needs
 - Children activity box/ Preschool Kit
 - Interactive Mobile applications/Digital content

Essential readings

- Condry, J. (1989). *The Psychology of Television*. Lawrence Erlbaum, Associates, Inc.
- Daniel, A.K. (2012). *Storytelling across the Primary Curriculum*. London: Routledge.
- Engel, S. (1999). *The Stories Children Tell: Making Sense of the Narratives of Childhood*. USA: W.H.. Freeman and Company.
- Honig, A. (1983). *Television and young children*. Young children 38(4).
- Joshi, P. & Shukla, S. (2019). *Child development and education in the twenty-first century*. Singapore: Springer International.
- Livingstone, S. (2002). *Young People and New Media*. New Delhi: Sage
- Prakash, S. & Mathur, P. (2000). *Children and TV*. NCERT,
- Real, M. R. (1996). *Exploring Media Culture*. New Delhi: Sage
- Singer D.G. & Jerome L. (2012). *Handbook of Children and Media*. California: Sage.

Suggestive Readings:

- Calvert, S.L. & Wilson, B.J. (2008). *The Handbook of Children, media and Development*. United Kingdom: Blackwell Publishing.
- Jordan, A.B. & Romer, D. (2014). *Media and the Well-Being of Children and Adolescents*. New York: Oxford University Press.

Note: Learners are advised to use the latest edition of readings.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Small Scale Catering

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title& Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Small Scale Catering | 2 | 0 | 0 | 2 | Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To comprehend fundamentals of menu planning through management of resources in a food service establishment.
- To develop insight for recipe standardization and to apply acquired skills in menu planning and quantity food production.
- To use knowledge of preliminary steps for starting a small-scale catering unit.

Learning Outcomes

After studying this course, the student will be able to:

- Comprehend fundamentals of menu planning through management of resources in a food service establishment.
- Develop insight for recipe standardization.
- Apply acquired skills in menu planning and quantity food production
- Use the knowledge of preliminary steps for starting a small-scale catering unit.

SYLLABUS

Unit 1: Introduction to Food Service

12 hours

Kinds of food service establishments, kinds of food service outlets

- Market survey of various food products raw and processed in different kinds of markets.
- Survey of a nearby small-scale catering unit

Unit 2: Food Production

32 hours

- Menu planning: Importance of menu, factors affecting menu planning, types of menus, menu planning for different kinds of food service units, features of good menu card
- Basics of food purchase, receiving and storage
- Quantity food production: standardization of recipes, quantity food preparation techniques, recipe adjustments and portion control
- Hygiene and Sanitation

- Planning menus within specified budget for the following:
- Menu for a birthday party/ nursery school.
 - Packed tiffin lunch for MNC employees.
 - Cyclic menu for catering breakfast, lunch and dinner for PG/ hostel girls.

- ☐ Evaluation of menu card
- ☐ Visit to a small-scale catering unit
- ☐ Use of computers in inventory and billing
- ☐ Standardization of a recipe
- ☐ Scaling up of recipe for large number of customers (75)
- ☐ Food stall/ event catering
- ☐ Demonstration of specific dishes for entrepreneurial set up
- ☐ Use of checklist to assess implementation of good hygiene and sanitation practices in a small-scale catering unit

Unit 3: Planning of a Food Service Unit

16 hours

- Preliminary planning: survey of types of units, identifying clientele, menu, operations and delivery
- Planning the set up:
 - Identifying resources (money, manpower, time, facilities, equipment, utilities, types of kitchen areas, flow of work and work area relationship), types of services and delivery system, business registration
 - Basics of Finance (Components of cost and factors affecting them, determining the selling price)
- Market survey/visit for equipment
- Development of a business plan

Essential/Recommended Readings

- Desai V. (2011) The Dynamics of Entrepreneurial Development and Management, Himalaya Publishing House Pvt. Ltd., Mumbai.
- Mohini, S. (2005) Institution Food Management New Age International Publishers.
- West, B.B.& Wood, L. (1988) Food Service in Institutions 6th Edition Revised By Hargar FV, Shuggart SG, &Palgne Palacio June, Macmillan Publishing Company New York.

Suggested Readings

- Knight, J.B. & Kotschevar, L.H. (2000) Quantity Food Production Planning & Management 3rd edition John Wiley & Sons.
- Payne-Palacio, J. & Theis, M. (2011) Foodservice Management: Principles and Practice 12th edition.
- Taneja, S. & Gupta, S. L. Entrepreneur Development- New Venture Creation. GalgotiaPublishing Company

Note: Learners are advised to use the latest edition of readings.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

RADIATION SAFETY

| Course Title and Code | Credits | Credit distribution of the course | | | Eligibility Criteria | Pre-requisite of the course |
|-----------------------|---------|-----------------------------------|----------|-----------|--|-----------------------------|
| | | Lecture | Tutorial | Practical | | |
| Radiation Safety | 2 | 1 | 0 | 1 | Class XII pass with Physics and Mathematics as main subjects | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To focus on the applications of nuclear techniques and radiation protection.
- To not only enhance the skills towards the basic understanding of the radiation but also provide the knowledge about the protective measures against radiation exposure.
- To impart all the skills required by a radiation safety officer or any job dealing with radiation such as X-ray operators, jobs dealing with nuclear medicine: chemotherapists, operators of PET, MRI, CT scan, gamma camera etc.

Learning Outcomes:

After studying this course, the student will be able to:

- Understand and use the applications of nuclear techniques and radiation protection to guard against nuclear radiation hazards.
- Understand and use the units of radiations and their safety limits, the devices to detect and measure radiation.
- Understand and use radiation safety management, biological effects of ionizing radiation, operational limits and basics of radiation hazards evaluation and control, radiation protection standards,
- Use the devices which apply radiations in medical sciences, such as X - r a y, MRI, PET, CT-scan with the required safety measures.

SYLLABUS

THEORY COMPONENT

Unit 1:

6 hours

Radiation and its interaction with matter: Basic idea of different types of radiation electromagnetic (X-ray, gamma rays, cosmic rays etc.), nuclear radiation and their origin.

Nuclear Radiation: Basic idea of Alpha, Beta, Gamma neutron radiation and their sources (sealed and unsealed sources).

Interaction of Charged Particles (including alpha particles): Heavy charged particles (e.g. accelerated ions) - Beth-Bloch Formula, Scaling laws, Mass Stopping Power, Range, Straggling.

Interaction of Beta Particles: Collision and Radiation loss (Bremsstrahlung).

Interaction of Photons: Linear and Mass Attenuation Coefficients.

Interaction of Neutrons: Collision, slowing down and Moderation.

Unit 2:**4 hours**

Radiation detection and monitoring devices: Basic concepts and working principle of gas detectors, Scintillation Detectors, Solid State Detectors and Neutron Detectors, Thermo- luminescent Dosimetry.

Radiation Quantities and Units: Basic idea of different units of activity, KERMA, exposure, absorbed dose, equivalent dose, effective dose, collective equivalent dose, annual limit of intake (ALI) and derived air concentration (DAC).

Unit 3:**2 hours**

Radiation Units, dosage and safety management: Basic idea of different units of activity, KERMA, exposure, absorbed dose, equivalent dose, effective dose, collective equivalent dose, annual limit of intake (ALI) and Derived air concentration (DAC).

Radiation safety management: Biological effects of ionizing radiation, Operational limits and basics of radiation hazards, its evaluation and control: radiation protection standards.

Unit 4:**3 hours**

Application of radiation as a technique: Application in medical science (e.g., basic principles of X-rays, MRI, PET, CT scan, Projection Imaging Gamma Camera, Radiation therapy), Archaeology, Art, Crime detection, Mining and oil. Industrial Uses: Tracing, Gauging, Material Modification, Sterilization, Food preservation.

PRACTICAL**30 hours**

Minimum five experiments need to be performed from the following, graphs to be plotted using any graphical plotting software

- 1) Estimate the energy loss of different projectiles/ions in Water and carbon, using SRIM/TRIM etc. simulation software, (different projectiles/ions to be used by different students).
- 2) Simulation study (using SRIM/TRIM or any other software) of radiation depth in materials (Carbon, Silver, Gold, Lead) using H as projectile/ion.
- 3) Comparison of interaction of projectiles with $Z_P = 1$ to 92 (where Z_P is atomic number of projectile/ion) in a given medium (Mylar, Carbon, Water) using simulation software (SRIM etc).
- 4) SRIM/TRIM based experiments to study ion-matter interaction of heavy projectiles on heavy atoms. The range of investigations will be $Z_P = 6$ to 92 on $Z_A = 16$ to 92 (where Z_P and Z_A are atomic numbers of projectile and atoms respectively). Draw and infer appropriate Bragg Curves.
- 5) Calculation of absorption/transmission of X-rays, γ -rays through Mylar, Be, C, Al, Fe and $Z_A = 47$ to 92 (where Z_A is atomic number of atoms to be investigated as targets) using XCOM, NIST (<https://physics.nist.gov/PhysRefData/Xcom/html/xcom1.html>).
- 6) Study the background radiation in different places and identify the source material from gamma ray energy spectrum. (Gamma ray energies are available in the website <http://www.nndc.bnl.gov/nudat2/>).
- 7) Study the background radiation levels using Radiation meter.
- 8) Study of characteristics of GM tube and determination of operating voltage and plateau length using background radiation as source (without commercial source).
- 9) Study of counting statistics using background radiation using GM counter.
- 10) Study of radiation in various materials (e.g. KSO₄ etc.). Investigation of possible radiation in different routine materials by operating GM counter at operating voltage.
- 11) Study of absorption of beta particles in Aluminum using GM counter.
- 12) Measurement of gamma ray attenuation co-efficient of aluminium using GM counter.
- 13) Estimation of half thickness for aluminium using GM Counter.

Essential Readings:

- Basic ideas and concepts in Nuclear Physics: An introductory approach by K Heyde, third edition, IOP Publication, 1999.
- Nuclear Physics by S N Ghoshal, First edition, S. Chand Publication, 2010.
- Nuclear Physics: Principles and Applications by J Lilley, Wiley Publication, 2006.
- Fundamental Physics of Radiology by W J Meredith and B Massey, John Wright and Sons, UK, 1989.
- An Introduction to Radiation Protection by A Martin and S A Harbisor, John Willey and Sons, Inc. New York, 1981.

Suggestive Readings:

- Radiation detection and measurement by G F Knoll, 4th Edition, Wiley Publications, 2010.
- Techniques for Nuclear and Particle Physics experiments by W R Leo, Springer, 1994.
- Thermoluminescence dosimetry by A F Mcknlly, Bristol, Adam Hilger (Medical Physics Hand book 5
- Medical Radiation Physics by W R Hendee, Year book Medical Publishers, Inc., London, 1981.
- Physics and Engineering of Radiation Detection by S N Ahmed, Academic Press Elsevier, 2007.
- IAEA Publications: (a) General safety requirements Part 1, No. GSR Part 1 (2010), Part 3 No. GSR Part 3 (Interim) (2010); (b) Safety Standards Series No. RS-G-1.5 (2002), RS-G-1.9 (2005), Safety Series No. 120 (1996); (c) Safety Guide GS-G-2.1 (2007).

References (for Laboratory Work):

- Schaum's Outline of Modern Physics, McGraw-Hill, 1999.
- Schaum's Outline of College Physics, by E. Hecht, 11th edition, McGraw Hill, 2009.
- Modern Physics by K Sivaprasath and R Murugesan, S Chand Publication, 2010.
- AERB Safety Guide (Guide No. AERB/RF-RS/SG-1), Security of radioactive sources in radiation facilities, 2011
- AERB Safety Standard No. AERB/SS/3 (Rev. 1), Testing and Classification of sealed Radioactivity Sources., 2007.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Chemistry Lab Standard Operations and Safety Measures

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|-------------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Chemistry Lab Operations and Safety Measures | 2 | 0 | 0 | 2 | XII th Pass with Science | NIL |

Learning Objectives

- To cultivate efficient working skills among the students to work in a chemistry laboratory
- To create a trained workforce which can responsibly learn imbibe and explore verticals on structured knowledge safely.
- To make students aware of different chemicals and their properties being used in the chemistry laboratory.

Learning outcomes

After studying this course, the student will be:

- Able to design and implement safe working practices in chemistry laboratory.
- Able to safely handle different glass apparatus
- Able to handle the chemicals and equipment safely and properly.
- Able to design working protocols related to various methods and instruments in chemistry laboratory.

SYLLABUS

Practicals/ Hands-on Training:

(60 hours)

Part A: Safety Measures

- 1) Design an illustrative chart exhibiting creativity at transaction of Do's and Don'ts instructions for working in a chemistry laboratory.
- 2) i. Carry out Classification and labeling of the given set of chemicals based upon Globally Harmonized System.
ii. Carry out detailed survey of the Chemical Abstract Service (CAS) Registry Number and identify the given set of CAS RN and explain the different sections of CAS RN.
- 3) Carry out preparation of the indicative MSDS (Material Safety Data Sheet) of given set of chemicals as per Standard MSDS format.
- 4) Design an illustrative chart exhibiting creativity at transaction of Common Safety Symbols along with its description. Associate appropriate safety symbol with each of the given set of chemicals.

- 5) Draw and elucidate the National Fire Protection Association Hazard Labels.
- 6) i. Identify and enlist the Incompatible Chemicals from a given set of chemicals available in the laboratory.
ii. Carry out investigations on Labeling and storage of Chemical in laboratory.
- 7) i. On the basis of MSDS analysis, identify the required storage conditions for the given set of chemicals.
ii. Describe procedure for the storage, maintenance and handling of compressed gas cylinders.
iii. Explore guidelines for the Storage of shelf chemicals and reagents.
- 8) i. Carry out a brief review of common pathways by which working Chemicals can enter the Body.
ii. Carry out a detailed study of the Limits of Exposure of given Chemicals.
- 9) i. Classify the Hazard based on storage, handling, and disposal of chemicals.
ii. Identification and describe handling protocols for Substances with Greater Hazardous Nature.
- 10) Carry out detailed investigations on procedural protocols for safe Disposal of Chemicals.
- 11) i. Carry out study on recommended Safety and Emergency Equipment essential for the safe practices in a Chemistry Laboratory.
ii. Study the guidelines in the Event of a Chemical Accident or Spill.
- 12) i. Write detailed description on Fire Safety in the laboratory.
ii. Carry out investigations of the data regarding Institute Safety Policies: Safety Audits / Inspections.

Part B: Chemistry Lab Standard Operations

- 1) Carry out exploration on Holding, Handling and use of Common Laboratory Apparatus as per given list of laboratory apparatus (Appendix A).
- 2) Carry out investigations of various types of apparatus in labs based on material they are made of such as Pyrex Glass (borosilicate Glass) Apparatus, Fused Silica Apparatus: Corning Vycor Glass, Porcelain apparatus, Plastic Apparatus, Metal Apparatus.
- 3) Understanding the protocol of Cleaning and drying and polishing of Glassware apparatus.
- 4) Carry out detailed investigations on Identification, diagrammatic representation, set up of Apparatus assemblies and details exploration on operational procedural protocols for glassware apparatus with Interchangeable ground glass joints: Typical Assemblies.
- 5) i. Carry out calibration of Volumetric/ Graduated Glassware Apparatus along with description on Temperature Standards.
ii. Carry out Calibration of thermometers.
- 6) i. Carry out exploration and investigations of working protocol for various heating equipment in laboratory: Burners, Hot Plates, Electrical Heating Mantles, Electric Oven,

- Microwave Oven, Muffle Furnace, Infrared lamps, Crucible and Beaker Tongs and Emersion heaters.
- ii. Carry out exploration and investigations of working protocol for various Stirring apparatus in laboratory: Stirring rods; Policeman, Boiling rods, Use of Mechanical agitation-Magnetic Stirrer and Mechanical Shaker.
 - iii. Carefully analyze the Glass, Cork and Rubber Stoppers and investigate their preparation and appropriate applications.
- 7) i. Carry out detailed investigations of Heating and Cooling Bath, and determine their working ranges and working protocols.
 - ii. Explore and differentiate between different forms of water for Laboratory Use: Distilled (Grade I to III), De-ionized and tap water, and carry out conductance measurement /other analytical investigations for the differentiation purpose.
- 8) i. Differentiate among Various types of Filter Paper and explore their applications.
 - ii. Preparation of a fluted filter paper and its advantages.
 - iii. Classification of reagents as AR/ GR grade.
- 9) i. Care and Use of Analytical Balance: Mass and Weight, Two-Pan Balance and Electronic Balance.
 - ii. Carry out Calibration of weighing balances and accuracy in measurement.
- 10) Introduction to Chromatographic adsorption: Paper and Thin Layer Chromatography. Preparation of Thin Layer Chromatography (TLC) Plates.
- 11) i. Use of melting point apparatus. Experimental determination of the melting point using various methods.
 - ii. Experimental determination of the boiling point using various methods.
- 12) To Purify given organic solvents.
- 13) i. Hand on training for working with typical assemblies of apparatus for distillation and refluxing.
 - ii. Assessment of Fire hazards attending the distillation of inflammable solvents.
- 14) i. Purification of given solid organic compounds by crystallisation method.
 - ii. Recrystallization of given non-volatile organic solids and outline the Difficulties encountered in recrystallization process.
- 15) Removal of traces of colouring matter and use of decolourising carbon.
- 16) i. Carry out exploration and investigations of working and working protocol for Filtration Apparatus: Filtration with suction.
 - ii. Explore and imbibe knowledge about types of Vacuum Pump; Water and Oil Pump and their applications.
- 17) Investigate Conventions for Drying of the recrystallized material.
- 18) i. Introduction to Gas absorption traps and their importance.
 - ii. Recrystallization in an atmosphere of inert gas.

- 19) i. Performing Evaporation of the solvent in the laboratory.
 - ii. Preparation of anhydrous liquids or solutions of organic compounds in organic solvents.
- 20) i. Various procedures for the precipitation and washing of the precipitates.
 - ii. Application of various methods and instruments for drying of solid organic compounds.
- 21) i. Incineration of Filter paper with precipitate.
 - ii. Differentiate between various types of centrifugation methods, principle, uses and application of centrifugation method.
 - iii. Calculation of yields for different chemical processes.
- 22) In-depth Understanding and Preparation of Chemical Laboratory Reagents.
- 23) Explore methodologies of Preparation and Storage of Standard Solutions.

Important Instruction Note on working approach:

A minimum of 5 exercises from Part A and 10 exercises from Part B is required to be discussed/performed/investigate. Moreover, exercises related to MSDS, CASRN safety symbols identification is required to be performed mandatorily.

Mandatory exercises:

Part A Exercise No.: 2, 3, 4, 5 and 9

Part B Exercise No.: 1 to 10.

The exercises mentioned above will be performed by the student strictly in accordance with the instructions received and only under the supervision of the teacher concerned.

Essential Readings:

1. Skoog D.A., West D.M., Holler F.J., Stanley R.C., **Fundamentals of analytical chemistry**, 9th Edition, Cengage Learning.
2. Mendham, J.; Denney, R.C.; Barnes, J.D.; Thomas, M.J.K. (2007), **Vogel's Quantitative Chemical Analysis**, 6th Edition, Prentice Hall.
3. Furniss, B. S; Hannaford, A. J.; Smith, Peter W. G.; Tatchell, A. R; **Vogel's Text Book of Practical Organic Chemistry**, 5th Edition, Longman Scientific and Technical, Longman Group Ltd.
4. Garland, C. W.; Nibler, J. W.; Shoemaker, D. P. (2003), **Experiments in Physical Chemistry**, 8th Edition, McGraw-Hill, New York.
5. <https://iupac.org/>
6. <https://edu.rsc.org/resources/practical/experiments>

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Chemistry of Cosmetics and Hygiene Products

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|-------------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Chemistry of Cosmetics and Hygiene Products | 2 | 0 | 0 | 2 | XII th Pass with Science | NIL |

Learning Objectives

- To introduce the concept of cosmetics in terms of chemistry and their formulation.
- To make students understand the role of each ingredients in the preparation of the cosmetic products.
- To give an idea about the role of herbal ingredients in the making of any cosmetic product.

Learning Outcomes

After studying this course, the student will:

- Be familiar with the basic principles of various cosmetic formulations
- Be aware of different ingredients and their roles in cosmetic products.
- Appreciate the role of herbal ingredients in various cosmetic products
- Use safe, economic and body-friendly cosmetics
- Prepare new innovative formulations to achieve the aimed efficacies and effects

SYLLABUS

Practicals/Hands-on-training

60 hours

1. Definition, History and Classification of cosmetic & cosmeceutical products.

Skin Care Products: Basic structure and function of skin. Principles of formulation of skin care products. Role of herbs in Skin Care: Aloe and turmeric. General Ingredients and preparation of

(a) Preparation of Talcum powder (chemical based and herbal)

(b) Face cream/ vanishing cream/ cold cream/ suntan cream/lather shaving cream (any two)

(c) Body lotion

2. Hair Care Products: Basic structure of hair and classification of hair. Principles of formulation of Hair care products. Types of shampoo and conditioners. Role of herbs in Hair care: Henna and amla. Role of primary and secondary surfactants in shampoo. General Ingredients and preparation of

(a) Shampoo (chemical based and herbal)

(b) Conditioners

3. Hand Care and hygiene Products: Principles of formulation of hand sanitizers and hand wash. General Ingredients and preparation of:

(a) Hand wash

(b) Hand sanitizer

4. Nail preparation: Structure of nail, Nail lacquers, Nail polish remover. General Ingredients and preparation of:

(a) Nail polish and nail polish remover

5. Personal hygiene products: Total fatty matter, alkali content and pH of soaps. Bathing soap and toilet soap. Antiperspirants and deodorants. General Ingredients and preparation of

(a) Soaps

(b) Cream Soaps

6. Oral hygiene products: Common problem associated with teeth and gums. Role of herbs in oral care: Neem and clove. Principles of formulation of Oral hygiene products. Flavours and essential oils. General Ingredients and preparation of

(a) Tooth powder (chemical based and herbal)

(b) Tooth paste

Essential Readings

- Barel, A.O.; Paye, M.; Maibach, H.I. (2014), **Handbook of Cosmetic Science and Technology**, CRC Press.
- Garud, A.; Sharma, P.K.; Garud, N. (2012), **Text Book of Cosmetics**, Pragati Prakashan.
- Gupta, P.K.; Gupta, S.K. (2011), **Pharmaceutics and Cosmetics**, Pragati Prakashan
- Butler, H. (2000), **Poucher's Perfumes, Cosmetic and Soap**, Springer

Suggestive Readings:

- Flick, E.W. (1990), **Cosmetic and toiletry formulations**, Noyes Publications / William Andrew Publishing.
- Natural Ingredients for Cosmetics; EU Survey 2005
- Formulation Guide for cosmetics; The Nisshin OilliO Group, Ltd.

- Functional Ingredients & Formulated Products for Cosmetics & Pharmaceuticals; NOF Corporation

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Basic Analytical Techniques

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------|---------|-----------------------------------|----------|------------------------|-------------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Analytical Techniques | 2 | 0 | 0 | 2 | XII th Pass with Science | NIL |

Learning Objectives

- To make students aware of the importance and the concepts of chemical analysis of water and soil samples collected from different sources
- To make them learn few techniques like chromatography, analytical techniques and instrumentation techniques, for example: spectrophotometry and flame photometry.

Learning Outcomes

After studying this course, the student will be able to:

- Handle analytical data
- Determine the pH and conductance of soil samples, which can be useful in agriculture sector
- Do quantitative analysis of metal ions in water samples
- Separate ions using chromatographic techniques
- Estimate macronutrients using Flame photometry.

SYLLABUS

Practical:

60 hours

1. Determination of pH of soil samples collected from college nursery, sports ground and the soil collected from Yamuna River Bank.
2. Determination of conductance of soil samples collected from college nursery and sports ground.
3. Determination of pH of different types of aerated drinks and fruit juices.
4. Estimation of Calcium and Magnesium ions as Calcium carbonate (total hardness) by complexometric titration.
5. Determination of pH, acidity, and alkalinity of water samples collected from different water body/supply sources like Yamuna water, MCD supply water, Groundwater, water samples collected from water sewage treatment plants (Delhi /NCR).
6. Determination of dissolved oxygen (DO) of a water sample collected from different sources (at least two sources).
7. Determination of BOD of water sample collected from different water sources.

8. Paper chromatographic separation (*ascending and circular both*) of the mixture of metal ion (Ni^{2+} and Co^{2+}) and (Cu^{2+} and Cd^{2+}).
9. To study the use of phenolphthalein in trap cases.
10. Estimation of macro-nutrients: Potassium, calcium and magnesium in soil samples by flame photometry.
11. Spectrophotometric determination of Iron in vitamin / dietary tablets / different solutions of iron.
12. Spectrophotometric identification and determination of caffeine and benzoic acid in soft drink.
13. Spectrophotometric determination of cadmium and chromium in the given water sample.
14. Determination of ion exchange capacity of anion / cation exchange resin (using batch procedure if use of column is not feasible).
15. Visit STP plants and different chemical industries.

Essential Readings:

- Svehla, G. (1996), **Vogel's Qualitative Inorganic Analysis**, Prentice Hall.
- Mendham, J.; Denney, R.C.; Barnes, J.D.; Thomas, M.J.K. (2007), **Vogel's Quantitative Chemical Analysis**, 6th Edition, Prentice Hall.
- De, A. K. (2021), **Environmental Chemistry**, 10th edition. New Age International Pvt. Ltd.

Note: Learners are advised to use the latest edition of readings.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Essential Food Nutrients

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------------|----------|-----------------------------------|----------|---------------------|---|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Essential Food Nutrients | 2 | 1 | 0 | 1 | XIIth Pass with Science | NIL |

Learning Objectives

- To develop a basic understanding of the components of food, their source, properties and interactions as well as changes that occur during processing, storage, and utilization

Learning Outcomes

After studying this course, the student will be able to:

- Account for chemistry of foods: composition of food, role of each component
- Recognize some of the reactions and changes in individual food components which occur during processing, handling and storage

SYLLABUS

Theory:

Unit 1: Carbohydrates

3 hours

Introduction, sources, functions, deficiencies, Structures of monosaccharides and disaccharides: glucose, fructose, galactose; lactose, maltose, sucrose, maltitol, concept of reducing and non-reducing sugars; role of carbohydrates as sweeteners in food; lactose intolerance, galactosemia, dental plaque, overview of carbohydrate metabolism.

Unit 2: Lipids

5 hours

Introduction, sources, functions, deficiencies, classification (fatty acids, phospholipids, fats & oils, waxes), common fatty acids present in oils and fats, Omega- 3,6,9 fatty acids, trans fats, chemical properties: iodine value, saponification value, effect of frying on fats, changes in fats and oils-rancidity, lipolysis, flavor reversion, auto-oxidation and its prevention.

Unit 3: Proteins

5 hours

Introduction, sources, functions, deficiencies, protein structure (primary, secondary and tertiary), physico-chemical & functional properties of proteins, food proteins: animal and plant proteins.

Unit 4: Vitamins & Minerals

2 hours

Vitamins: Introduction, classification: fat-soluble vitamins & water-soluble vitamins.

Minerals: Introduction, classification: macrominerals (Ca, P, Mg) & microminerals (Se, Fe, I, Co, Zn, Cu, Se, Cr).

Role of vitamins and minerals in food chemistry.

Practicals/Hands-on Training

30 hours

1. Determination of moisture in food products by hot air oven-drying method.
2. Colorimetric determination of iron in vitamin/dietary tablets.
3. Estimation of Vitamin C in a given solution/lemon juice/chillies by 2, 6 Dichlorophenol indophenol method.
4. Estimation of total soluble sugar content by ferricyanide method (volumetric analysis).
5. Determination of saponification value of the given fat/oil.
6. Determination of iodine value of the given fat/oil.
7. Qualitative tests for proteins and carbohydrates.
8. Qualitative Estimation of cholesterol by Liebermann Burchard method.

Essential Readings:

Theory:

- deMan, J.M., Finley, J.W., Hurst, W.J., Lee, C.Y. (2018), **Principles of Food Chemistry**, 4th Edition, Springer.
- Msagati, T.A.M. (2013), **Chemistry of Food Additives and Preservatives**, Wiley-Blackwell.
- Fennema, O.R. (2017), **Food Chemistry**, 5th Edition, CRC Press.
- Attokaran, M. (2017), **Natural Food Flavors and Colorants**, 2nd Ed., Wiley-Blackwell.
- Potter, N.N., Hotchkiss, J.H, (1995) **Food Science**, 5th Ed., Chapman & Hall.
- Brannen, D., Davidsin, P.M., Salminen, T. Thorngate III, J.H. (2002), **Food Additives**, 2nd Edition, CRC Press.
- Coultate, T. (2016), **Food: The Chemistry of its Components**, 6thEdn., Royal Society of Chemistry.
- Belitz, H. D.; Grosch, W. (2009), **Food Chemistry**, Springer.
- Course: FOOD CHEMISTRY (iasri.res.in)

Practicals:

- Ranganna, S. (2017). **Handbook of analysis and quality control for fruits and vegetable products**, 2ndEdn., McGraw Hill Education
- Sawhney, S.K., Singh, R. (2001), **Introductory Practical Biochemistry**, Narosa Publishing House

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Forensic Chemistry

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------|---------|-----------------------------------|----------|---------------------|-------------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Forensic Chemistry | 2 | 1 | 0 | 1 | XII th Pass with Science | NIL |

Learning Objectives

- To introduce students to this fascinating branch of science and familiarize them with important concepts like fingerprints, explosives/arson, drugs and their detection.

Learning outcomes

After studying this course, the student will be able to:

- Describe latent fingerprints, various methods of detection of latent fingerprints, explosive analysis in forensic science, collection and preservation of evidence from crime scene etc

SYLLABUS

Theory:

Unit 1: History of Development of Forensic Science in India

2 hours

Definitions, Scope and Need of forensic science, Ethics in forensic science, History of forensic science, Basic principles of forensic science, Organizational structure of forensic science laboratories, Different branches in forensic science

Unit 2: Fingerprints

5 hours

Definition, History of fingerprint identification, Fingerprint as forensic evidence, Visible Finger marks, Latent Finger marks, ten-digit classification, Methods of Development of latent fingerprints using conventional methods–Powdering (Black and grey, fluorescent and magnetic), Methods of development of latent fingerprint using chemical method (iodine fuming, silver nitrate, Ninhydrin, Vacuum metal deposition), Automated Fingerprint identification system (AFIS), Poroscopy and Edgescopy

Unit 3: Forensic Chemistry

8 hours

Scope & significance of Forensic Chemistry, Types of cases/exhibits received for analysis. Trap Cases: Collection, and Preliminary analysis of evidence in trap cases.

Alcoholic Beverages: Types of alcohols, country made liquor, illicit liquor, denatured spirits, Indian made foreign alcoholic and non-alcoholic beverages.

Dyes: Scope & Significance of dyes in crime investigation, analysis of ink by TLC and UV visible spectrophotometry. Petroleum products and their adulterations: Chemical composition of various

fractions of Petroleum Products, Analysis of petrol, kerosene, diesel.

Fire/Arson and Explosives Fire: Introduction to Fire & Arson, origin of fire, Chemistry of Fire, Fire tetrahedron, Firefighting operations, preservation of fire scene, collection of evidences, Seat of fire, cause of fire, motives, Analysis of fire debris, Case studies related to fire and Arson. Explosive and Explosion: Scope & significance of explosive analysis in forensic science, Types of explosives, deflagration and detonation, explosive trains, collection, preservation and forwarding of exhibits, preliminary analysis of explosives. Dos and Don'ts. Case studies related to explosives.

Drugs of abuse: Classification, including designer drugs. Ill effects of drugs of abuse, Preliminary and confirmatory tests.

Practicals/ Hands-on Training

30 hours

1. Development of fingerprint through conventional powder method.
2. Development of fingerprint through chemical methods.
3. To check the alcohol presence in different liquor.
4. Phenolphthalein test for trap cases.
5. Identification of Handwriting Individual Characteristics.
6. Study of Disguise in handwriting.
7. TLC of amino acids

Essential/recommended readings

- Saferstein, R. (1990) Criminalistics, Prentice Hall, New York.
- Basic Principles of Forensic Chemistry by JaVed I. Khan • Thomas J. Kennedy Donnell R. Christian, Jr.
- Fundamentals of FINGERPRINT ANALYSIS Hillary Moses Daluz
- Clarke's Analysis of Drugs and Poisons 3rd Ed.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Green Methods in Chemistry

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------------|----------|-----------------------------------|----------|---------------------|---|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Green Methods in Chemistry | 2 | 0 | 0 | 2 | XIIth Pass with Science | NIL |

Learning Objectives:

The learning objectives of this course are as follows:

- To create awareness about the chemistry that is good for human health and the environment.
- To provide thorough knowledge of the green chemistry principles, and new remediation technologies for the cleaning up of hazardous substances.
- To develop basic skills to be able to design, develop and run chemical processes in a sustainable way.

Learning Outcomes:

After studying this course, the student will be able to:

- Design and develop materials/ processes that reduce the use and generation of hazardous substances in industry.
- Describe how injudicious use of chemicals can have an adverse/potentially damaging effect on humans and the environment.
- Propose ideas for innovative approaches to environmental and societal challenges.
- Critically analyse the existing traditional chemical pathways/processes and creatively think about bringing environmentally benign reformations in these protocols.
- Convert biomass into valuable chemicals through green technologies.

SYLLABUS

Practicals/Hands-on Training

60 hours

1. Definition and Importance of green chemistry. Introduction to the prevention of waste/ by products and waste/ pollution prevention hierarchy. Provide the scheme for the traditional as well as green method for the synthesis of ibuprofen and ask students to compare the amount and hazards of waste generated in both the processes.
2. Principle and calculation of atom economy. Use of molecular model kit to stimulate the reaction

to investigate how the atom economy can illustrate Green Chemistry.

Preparation of propene by two methods can be studied

(I) Hoffman elimination

(II) Dehydration of propanol

The other types of reactions, like addition, elimination, substitution and rearrangement should also be studied for the calculation of atom economy

3. Prevention/ minimization of hazardous/ toxic products reducing toxicity. Risk = (function) hazard x exposure.

(a) Nitration of salicylic acid using green method $\text{Ca}(\text{NO}_3)_2$

(b) Preparation and characterization of nanoparticles of gold using tea leaves/silver nanoparticles using plant extracts.

(c) Preparation of dibenzalacetone by cross aldol condensation reaction using base catalysed green method

(d) Acetylation of primary aromatic amine using the green method.

4. Use of Green solvents and comparison of greenness of solvents:

(a) Explain about supercritical fluids with special reference to carbon dioxide. Extraction of D-limonene from orange peel using liquid CO_2 prepared from dry ice

(b) Introduction to water as a solvent for chemical reactions. preparation of Manganese (III) acetylacetonate using green method

(c) Advantages and application of solventless processes in organic reactions.

(i) Benzil- Benzilic acid rearrangement in solid State under solvent-free Condition.

(ii) Mechanochemical solvent free, solid–solid synthesis of azomethine using *p*- toluidine and *o*-vanillin/*p*-vanillin

5. Energy requirements for reactions – alternative sources of energy: use of microwaves and photochemical energy.

(a) Photoreduction of benzophenone to benzopinacol in the presence of sunlight.

(b) Microwave assisted ammonium formate-mediated Knoevenagel reaction: *p*-anisaldehyde, ethyl cyanoacetate, ammonium formate.

6. Selection of renewable starting material rather than depleting, Illustrate with few examples such as biodiesel and polymers from renewable resources (such as green plastic). Preparation of biodiesel from waste cooking oil and characterization.

7. Importance of using catalytic reagents in preference to stoichiometric reagents; catalysis and green chemistry, comparison of heterogeneous and homogeneous catalysis, biocatalysis, asymmetric catalysis and photocatalysis.

(a) Benzoin condensation using Thiamine Hydrochloride as a catalyst instead of cyanide

(b) Rearrangement of diazoamino benzene to *p*-aminoazo benzene using K10 montmorillonite clay

8. Students should be asked to prepare a presentation/project based on any of the following topics:

- Bhopal Gas Tragedy and safer route to carbaryl synthesis
- Flixiborough accident and safer route to cyclohexanol
- Use of Surfactants for SC-CO₂ for precision cleaning and dry cleaning of garments replacing PERC.
- A brief study of Green Chemistry Challenge Awards (Introduction, award categories and study about five last recent awards)
- Healthier Fats and oils by Green Chemistry: Enzymatic Interesterification for production of No Trans-Fats and Oils.
- Synthesis of anti-tuberculosis drug Paramycin from waste water stream
- Syntheses of vitamin D₃ using photochemical energy
- Greener Manufacturing of Sitagliptin Enabled by an Evolved Transaminase
- Microwave assisted solvent free synthesis of aspirin
- Synthesis of 6-Aminopenicillanic Acid (6-APA) from penicillin G using biocatalyst.

Essential Readings:

Theory:

- Anastas, P.T., Warner, J.C. (2014), Green Chemistry, Theory and Practice, Oxford University Press.
- Lancaster, M. (2016), Green Chemistry: An Introductory Text, 3rd Ed., RSC Publishing.
- Cann, M.C., Connely, M. E. (2000), Real-World cases in Green Chemistry, American Chemical Society, Washington.
- Matlack, A.S. (2010), Introduction to Green Chemistry, 2nd Ed., CRC Press.
- Alhuwalia, V.K.; Kidwai, M.R. (2012), New Trends in Green chemistry, Kluwer Academic Publishers, Springer.
- Sidhwani, I.T; Sharma, R.K. (2020), An Introductory Text on Green Chemistry, Wiley India Pvt Ltd.
- [Etzkorn](#), F. A . (2019), Green Chemistry: Principles and Case Studies, Royal Society of Chemistry.

Practicals:

- Kirchoff, M., Ryan, M.A. (2002), **Greener approaches to undergraduate chemistry experiment**, American Chemical Society, Washington DC.
- Sharma, R.K., Sidhwani, I.T., Chaudhari, M.K. (2013), **Green Chemistry Experiments: A monograph**, I.K. International Publishing House Pvt Ltd. New Delhi.
- Pavia, D.L., Lamponam, G.H., Kriz, G.S.W. (2006), **Introduction to organic Laboratory Technique- A Microscale approach**, 4th Edition, Brooks-Cole Laboratory Series for Organic chemistry.
- Sidhwani, I.T. ; Saini, G.; Chowdhury, S. **Wealth from Waste: A green method to produce biodiesel from waste cooking oil and generation of useful products from**

waste further generated. University of Delhi, Journal of Undergraduate Research and Innovation, Volume 1, Issue 1, February 2015, ISSN: 2395-2334.

- Sharma, R. K., Gulati, S., Mehta, S. (2012), **Preparation of Gold Nanoparticles Using Tea: A Green Chemistry Experiment**, Journal of Chemical Education, 89 (10), 1316-1318.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Lab Testing and Quality Assurance

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------------|---------|-----------------------------------|----------|---------------------|-------------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Lab Testing and Quality Assurance | 2 | 1 | 0 | 1 | XII th Pass with Science | NIL |

Learning Objectives:

The objective of this course is :

- To introduce the concept of quality check and quality control in chemical industries.

Learning Outcomes:

By the end of the course, the students will be able to:

- Describe role of quality control chemist
- Discuss and demonstrate analytical and separation techniques
- Carry out sample preparation
- Illustrate fundamentals of quality check
- Describe and use safety procedures

SYLLABUS

Unit 1: Introduction

2 hours

Industry and sub-sectors, standards for manufacturing in life-sciences, drug regulatory agencies, role of quality control chemist, quality management systems

Unit 2: Modern Analytical methods and separation techniques

5 hours

Gravimetric methods, volumetric methods, electroanalytical methods, spectroscopic methods, chromatographic techniques

Unit 3: Sample preparation

2 hours

Basics of sample preparation, preservation and storage, standards and guidelines for sample handling, good storage practices

Unit 4: Quality check**6 hours**

Overview, productivity concept, statistical analysis of laboratory data, measurements, calibrations, validation, reference standards and materials, requirements of a calibration lab, fundamentals of advanced QC approaches, Trouble shooting in QC, documentation, audit/ process related query, Quality certifications, Government regulations in industries like pharmaceuticals, food supplements, cosmetics.

Practicals/Hands-on-Training**30 hours**

1. Calibration of glassware
2. Weighing of samples, accuracy of measurements
3. Preparation of TLC plates and separation of amino acids
4. Working protocols of various laboratory instruments-oven, pH-meter, conductivity meter, water baths, muffle furnace, spectrophotometer.
5. Calibration of instruments like colourimeter, pH-meter, conductivity meter, spectrophotometer using reference standards or reference materials.

Suggested exercise: Visit some industries to study the validation of simple procedures.

Essential readings:

- Skoog D.A., West D.M., Holler, F.J., Crouch S.R., **Fundamentals of Analytical Chemistry**, 9th Edition, Cengage learning.
- **Quality control chemist participant manual** prepared by LSSSDC in collaboration with NSDC India.
- iso.org

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Chemistry of Food Flavors and Colourants

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|-------------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Chemistry of Food Flavors and Colourants | 2 | 1 | 0 | 1 | XII th Pass with Science | NIL |

Learning Objectives:

The learning objectives of this course are as follows:

- To provide introduction to quality attributes of food such as appearance and flavour.
- To impart an understanding of the chemistry of the flavour as well as colour constituents of foods.

Learning Outcomes:

By the end of the course, the students will be able to:

- Describe mechanisms of flavor perception
- Demonstrate various mechanisms of flavor formation
- Discuss the chemical dimension of flavour.
- Recognize off-flavor defects in foods and strategies to control it.

SYLLABUS

Unit 1: Flavors

9 hours

Introduction and importance of flavors in food.

Taste & Odour: Structure and physiology of taste organs- tongue, papillae, taste buds, salivary glands, Mechanism of taste and odour perception

Basic Types of taste : Salty, Sweet, Bitter, Sour, Umami taste, Chemical dimensions of basic tastes (sweet, salt, sour, bitter and umami), odour and other sensations (like astringency, coolness, pungency/pungency), Non-nutritive and nutritive sweeteners (including structures of aspartame, saccharin, sucralose, Stevioside), Molecular Theory of Sweetness, Taste Inhibition and enhancement, Chemical dimension of Flavors (peppers, peppermint, coriander, cinnamon, onion), Chemistry of food flavorings: Maillard browning, enzymic browning reactions, caramelisation browning, Off-Flavour in Food (Rancidity in Fats/Oils, Non Enzymic Browning), Control of enzymic browning (acidulants, chelating agents, heat treatment etc)

Unit 2: Food Colours

6 hours

Introduction, importance, classification: Natural food colourants (Anthocyanins, Carotenoids, Chlorophyll), Examples of Pigments in common food (turmeric, tomato, carrot, orange); Nature-identical colourants (β -Carotene, Canthaxanthin and Riboflavin); Artificial/synthetic colourants: Azo dyes (e.g. amaranth dye, tatzazine, citrous red); Quinoline (e.g. quinoline yellow); Phthalein (e.g. erythrosine); Triarylmethanes and indigoid (e.g. indigo carmine), FD&C Dyes and Lakes.

Practicals/Hands-on-Training

30 hours

1. Determination of the taste threshold for the different sensations – sweet, salty, sour.
2. Extraction of limonene from orange peels using supercritical carbon dioxide.
3. Quantitative determination of food dyes in powdered drink mixes by spectrophotometric method.
4. Extraction and separation of pigments present in spinach by Thin Layer Chromatography (TLC).
5. Experiment to demonstrate the enzymic browning and its prevention.
6. Determination of rancidity of edible oils by Kriess Test.
7. Estimation of carotenoids in sample by colorimetric method.

Essential readings:

Theory:

- DeMan, J.M., Finley, J.W., Hurst, W.J., Lee, C.Y. (2018), **Principles of Food Chemistry**, 4th Edition, Springer.
- Msagati, T.A.M. (2013), **Chemistry of Food Additives and Preservatives**, Wiley-Blackwell.
- Fennema, O.R. (2017), **Food Chemistry**, 5th Edition, CRC Press.
- Attokaran, M. (2017), **Natural Food Flavors and Colorants**, 2nd Ed., Wiley-Blackwell.
- Potter, N.N., Hotchkiss, J.H. (1995) **Food Science**, 5th Ed., Chapman & Hall.
- Brannen, D., Davidsin, P.M., Salminen, T. Thorngate III, J.H. (2002), **Food Additives**, 2nd Edition, CRC Press.
- Coultate, T. (2016), **Food: The Chemistry of its Components**, 6th Edn., Royal Society of Chemistry.
- Belitz, H. D.; Grosch, W. (2009), **Food Chemistry**, Springer.
- Course: FOOD CHEMISTRY (iasri.res.in)

Practicals:

- Ranganna, S. (2017). **Handbook of analysis and quality control for fruits and vegetable products**, 2nd Edn., McGraw Hill Education
- Sawhney, S.K., Singh, R. (2001), **Introductory Practical Biochemistry**, Narosa Publishing House

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

PCB Designing and Fabrication

CREDIT DISTRIBUTION, ELIGIBILITY AND PREREQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------------------|----------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| PCB Designing and Fabrication | 2 | 0 | 0 | 2 | Class XII | NIL |

Learning Objectives

The Learning Objectives of the course are as follows:

- To give a comprehensive understanding and hands-on exposure to the various processes, industrial tools, protocols, and design specifics which are involved in PCB Designing
- To enable the students to design an electronic printed circuit board for a specific application using industry-standard software after going through the complete procedural steps of developing circuit schematic, board files, image transferring, assembly, soldering, and testing.

Learning Outcomes

After Studying this course, the student will be able to:

- Identify the various types of devices/components that may be mounted on PCB
- Understand the PCB layout techniques for optimized component density and power saving.
- Perform design and printing of PCB with the help of various image transfer and soldering techniques
- Understand the current trends and scope of the PCB industry

Syllabus

Practical

Unit 1: PCB Fundamentals

12 hours

PCB Advantages, components of PCB, Electronic components, Microprocessors and Microcontrollers, IC's, Surface Mount Devices (SMD). Classification of PCB - single, double, multilayer, and flexible boards, Manufacturing of PCB, PCB standards.

Unit 2 : Schematic & Layout Design

16 hours

Schematic diagram, General, Mechanical, and Electrical design considerations, Placing and Mounting of components, Conductor spacing, routing guidelines, heat sinks and package density, Net list, creating components for a library, Tracks, Pads, Vias, power plane, grounding.

Unit 3: PCB Design Processes

20 hours

Design automation, Design Rule Checking; Exporting Drill and Gerber Files; Drills; Footprints and Libraries Adding and Editing Pins, copper-clad laminates materials of copper-clad laminates, properties of laminates (electrical & physical), types of laminates, soldering

techniques. Film master preparation, Image transfer, photo printing, Screen Printing, Plating techniques, Etching techniques, Mechanical Machining operations, Lead cutting and Soldering Techniques, Testing, and quality controls.

Unit 4 : PCB Technology

12 hours

Introduction of PCB prototyping machines, Schematic Entry, PCB Parts creation, Auto Routing, Post Design, Brief overview of various models available, Recent Trends, and environmental concerns in the PCB industry.

Exercises

PCB Designing, Fabrication, Component Mounting and Testing using Standard Procedures (Hardware)

A. Analog Electronic Circuits

1. Verification of Thevenin theorem
2. Designing of RC Low Pass Filter and High Pass Filter circuits
3. To study current-Voltage characteristics of a p-n junction diode (forward bias and reverse bias)
4. Designing of Centre tapped full wave rectifier – without and with shunt capacitance filter.
5. Simple circuit to glow an LED
6. Design, fabrication, and testing of a 9 V power supply with Zener regulator
7. Design and study of voltage divider biasing.
8. Designing of a CE based amplifier of given gain

B. Digital Electronic Circuits

1. To verify and design AND, OR, NOT and XOR using NAND gates
2. Design a Half adder and Full Adder
3. Design a Half Subtractor and Full Subtractor

PCB Design Softwares recommended

- KiCAD (Open Source Electronics Design Automation Suite) <https://www.kicad.org/>
- EasyEDA (Online PCB Design Tool) <https://easyeda.com/>
- PADS - Siemens EDA (PCB Design Software) <https://eda.sw.siemens.com/en-US/pcb/pads/>
- Any other similar PCB designing software

Essential/recommended readings

- Printed Circuit Board – Design & Technology, Walter C. Bosshart, Tata McGraw Hill, 2008.
- Printed Circuit Board –Design, Fabrication, Assembly & Testing, R.S. Khandpur, First Edition, Tata McGraw-Hill Education Pvt. Ltd., 2005.
- Printed Circuit Board Design Using Autocad, Chris Schroeder, Newnes Publisher, 1998.
- Printed Circuits Handbook, Clyde F. Coombs, Jr, Happy T. Holden, Sixth Edition, Publisher: McGraw-Hill Education, 2016.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Electronic Product Testing

CREDIT DISTRIBUTION, ELIGIBILITY AND PREREQUISITES OF THE COURSE

| Course title& Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------------|----------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Electronic Product Testing | 2 | 0 | 0 | 2 | Class XII | NIL |

Course Learning Objectives

The Learning Objectives of the course are as follows:

- To enable students for testing of various electronic and electrical components and instruments such as diode, transistor, transformer, switches, fuses, cables, CRO, multimeters, voltmeter, ammeters etc.
- To give an insight upon the SMD and its soldering and de-soldering, EDS.
- To help students to have insight knowledge of SMPS, UPS and batteries along with maintenance of consumer electronics gadgets like computers, Audio Amplifiers, Induction Top, Solar Panel etc.
- To enhance their capabilities of assembling, fault diagnosis and rectification in a systematic way. To enrich students about reliability and quality control standards of equipment.

Course Learning Outcomes

After studying this course, the student will be able to:

- Test different types of electronic and electrical components and instruments.
- Practice soldering and de-soldering processes with correct methods.
- Testing of SMPS, UPS, Inverters and batteries.
- Identify faults in consumer electronics gadgets such as audio amplifiers, computers, Induction top, Microwave, solar panel.

Syllabus Practical

Unit 1 : Introduction

16 hours

Overview of Basic Measuring Instruments: CROs, Multimeter, Power supplies, LCR meter, Signal Generator and Power Analyzer.

Testing of various Devices: a) Semiconductor Devices: Single and Two junction Devices, Thyristor b) Electrical Devices: Transformers, relays, switches and fuses, cables and connectors, Batteries, Idea about ICs, PCBs, Sensors.

Unit II : Soldering and Power Sources

16 hours

Basics of soldering: Soldering tools and materials (solder, flux), Types of soldering irons (Wattage, temperature, Tips), Soldering/ disordering station. Concept of ESD (Electrostatic discharge). The SMD (surface mounted Devices) and its soldering and de-soldering

Basics of SMPS (Switch Mode Power Supply), UPS (Uninterrupted power supply), batteries and Inverters along with their block diagram and Pin configuration of some important ICs used in it. Touch current and touch voltage.

Unit III : Appliance Testing and Computer Assembling

12 hours

Testing of Induction cook Top, microwave, Solar panel; Installation and Requirements, stand alone and Grid connected PV system.

Basics of computer assembling and testing. Brief description about its specifications and costing Factors.

Unit IV : Reliability and Quality Standards

16 hours

Concept of Reliability: Scope, objectives and factors influencing equipment effectiveness, Acceptance Testing, Type Testing , Safety Testing, Identification of legends, symbols, color codes, Safety, safety standards, safety certificates (CE, UL and VDE), General awareness of quality standards, quality management systems & documentation, Idea of ISO 17025, ISO 9001, Calibration and Uncertainty of measurements, Effect of environmental testing(refer to IEC60068-1 for guidance), Awareness on disposal of Electronic waste

Exercises

1. An overview of testing of basic electronic / electrical components (BNC cable, switches and fuses, Capacitors, Inductors, Transformers, Relays, diodes, transistor, Thyristor, IC, Potentiometer etc.); Design a curve tracer on CRO for component testing.
2. Control the intensity and color of bi-Color LED with the help of POT, SPDT switch and 9V battery.
3. Soldering and De-soldering processes; SMD
4. Safety testing of SMPS (Applicable Standard: IS 14886).
 - a. Safety Testing (Earth Leakage current Test, Dielectric Test, Short Circuit Protection)
 - b. Performance Testing (Line Regulation, Load Regulation for a variation of Load Min to Max load and vice versa, Efficiency at nominal input and rated load)
5. Tubular Batteries (Applicable standard: IS 1651) Test for Capacity, Test for voltage during discharge
6. Personal Computer (Applicable Standard: IS 14896)
 - a. Safety Testing (Earth Leakage current Test, Dielectric Test) Performance Testing (Microprocessor used,
 - b. RAM expansion Capacity, Clock Rate and RAM Capacity, Effect of Power Supply variations)
7. Inverter (Applicable Standard: IS 13314)
 - a. Visual Inspection, High Voltage Test, Insulation Resistance Test, No –Load Test, Output Test

8. UPS (Applicable Standard: IEC 62040-3)
 - a. Steady State Input Voltage Tolerance, Output-Normal Mode – No Load, Output-Normal Mode – Full Load, Output-Stored Energy Mode – No Load, Output- Stored Energy Mode – Full Load, Output-Normal Mode – Over Load, Output-Stored Energy Mode – Over Load Output-Normal Mode – Short Circuit, Output- Stored Energy Mode – Short Circuit, Efficiency and Input Power factor
9. Audio Amplifier (Applicable Standard: IEC 60065)
 - a. Audio frequency response at various power levels, Response to various inputs sources like DVD player, IPOD, CD player, etc., audio output power, Power Consumption, Voltage range
10. Solar Panel system: Testing and Efficiency

Suggested Readings

- Nutan Kala Joshi and Swati Nagpal, Basic Electronics with Simulations and Experiments, Khanna Publishers (2021)
- Jestine Yong, Testing Electronic Components (2007)
- Mark de Vinck, Make Getting Started with Soldering; A Hands-on Guide to Making Electrical and Mechanical Connections, Maker Media (2017)
- Mike Judd and Keith Brindley, Soldering in Electronics Assembly, Second Edition, Elsevier (1999)
- Jestine Yong, Troubleshooting Repairing Switch Mode Power Supplies (1995)
- David Griffith, Uninterruptible Power Supplies, CRC Press (1989)
- Thomas Reddy, Lindens Handbook of Batteries, 4th Edition, McGraw Hill
- Kevin Wilson, Essentials Computer Hardware; The Illustrated Guide to Understanding Computer Hardware, Elluminet Press (2018)
- N.S. Reddy, PC Hardware Maintenance and Troubleshooting, NEO Publishing House (2016)
- Handbook of Induction Heating Second Edition Valery Rudnev, Don Loveless, Raymond L. Cook, CRC Press Taylor & Francis Group (2017)
- R. G. Gupta, Audio and Video systems, Tata McGraw Hill (2004)
- A.R. Jha, Solar Cell Technology and Applications, CRC Press (2009)
- Statistical Applications in Process Control (Quality and Reliability), J. Bert Keats, Douglas C. Montgomery, CRC Press (1996)
- Reliability and Quality Management , Ankitsandilya (Author), R.C.Mishra , New Age International Private Limited. (2009)
- E-Waste Management Challenges and Opportunities in India, Varsha Bhaga Ganguly, Routledge India (2021)

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

CULINARY SCIENCE

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course Title & Code | Credits | Credit Distribution of the Course | | | Eligibility Criteria | Pre-requisite of the Course (if any) |
|-------------------------|----------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Culinary Science | 2 | 1 | 0 | 1 | Class XII | NIL |

Learning Objectives:

Culinary science skill paper is about the cuisine arts of food preparation, cooking, and presentation of food. Students will be equipped with knowledge of various tools and equipments used for cooking, different cooking techniques, working in establishments such as restaurants and relatively large institutions such as hotels and hospitals, standardized cooking practices and recipes.

The learning objectives of the course are:

- To develop cuisine arts of food preparation, cooking, and presentation of food.
- The practical exercises aim to provide hands-on training to develop the skill of various cooking techniques and knowledge about various tools and equipment used for cooking

Learning Outcomes

After studying this course, the student will be able to:

- Develop different cooking and presentation skills.
- Get hands-on training to develop the skill to prepare Indian traditional and nutritious recipes.
- Develop the ability to work in establishments such as restaurants, food courts, kiosks, fast food centers large institutions such as hotels and hospitals.

SKILL DEVELOPMENT AND JOB OPPORTUNITIES':

Employment Opportunities:

- Apprentice in Small Catering units/ Kiosk/ Restaurant
- Food Supplier
- Food Storekeeper
- Food Stylist / Designer

SYLLABUS

Credits: 2

Total lectures (45): 45 Hours/ 15 weeks

Theory: 30%, Credit – 1 (Lectures – 15)

Practical/ Field work/ Hands on learning: 70%, Credit – 1 (Lectures – 30)

Unit 1: Basic Culinary Concepts**(8 hours)**

Description: This unit is an introductory unit about the culinary science and basic food ingredients, importance of hygiene to serve safe food.

Subtopics:

- Culinary Terms
- Basic Safety and Hygiene
- Basic food ingredients
- Recipe Evaluation: Sensory evaluation scales

Unit 2: Kitchen Techniques and Technology**(7 hours)**

Description: This unit is about methods of cooking, storage and organizing the storage and imparting knowledge about various kitchen equipment and accessories.

Subtopics:

- Methods: Moist heat, Dry heat, Frying, Microwave Cooking
- Basic Equipment: Gas stove/Cooking range, Refrigerator, Oven, Microwave, Electrical Blenders, Air Fryer
- Kitchen Aids: Cooking Equipment, Measuring Equipment, Baking Equipment, Assorted Knives, Assorted tools, Service Equipment.
- Storage and organization of work area

PRACTICALS**30 hours**

1. General Instructions: Working in Food Lab/ Kitchen, Weight of edible portion, Temperature, Abbreviations used in recipes **(2 hours)**
2. Basic Indian Gravies: White, Makhani, Salan, Red gravies, Kadi **(2 hours)**
3. Beverages: Tea, Coffee, Cold Coffee, Smoothies, Milk Shakes, Fruit Punch, Iced Tea, Panna, Mojito. **(2 hours)**
4. Indian Breads: Chapatti, Paratha, Naan, Kulcha, Bhatura, Bedmi Puri, Sandwich (open, grilled, rolled), Puranpoli, Kathi roll. **(2 hours)**
5. Indian Rice Cooking: Boiled, Curd, Tomato, Lemon, Fried, Pulao, Tamarind, Biryani, Poha **(2 hours)**
6. Soups: Stock, Clear soups, Cream soups **(2 hours)**
7. Salads and Salad cuts/ craft: Coleslaw, Quinoa salad, Corn & Walnut, Exotic seeds salad, Salad vegetable cuts and crafts **(2 hours)**
8. Vegetables Preparations: Dry veg, Koftas, Stuffed veg, Baked veg preparations. **(2 hours)**
9. Indian Dry Snacks with Dips: Dhokla, Idli, Uttapam, Kachori, Khandvi, Chilla, Dumplings, (Momos/Dim sums/ wontons) **(4 hours)**
10. Indian Savory Snacks: Assorted Pakoras, Dahi Bhalla, Cutlets, Samosa, Tikki, Paneer Tikka **(4 hours)**
11. Traditional Deserts 1: Halwa, Kulfi, Kheer, Gulab Jamun **(2 hours)**
12. Traditional Deserts 2: Rasmali, Ladoo, Burfi, Jalebi, Gujia, Rasgulla **(2 hours)**
13. Baking: Tea cake, Muffins **(2 hours)**

ESSENTIAL READINGS

- Raina, U., Kashyap, S., Narula, V., Thomas, S., Suvira, Vir, S., & Chopra, S. (2005). Basic Food Preparation – A Complete Manual. Delhi: Orient Longman.
- Khanna, K., Gupta, S., Seth, R., Mahana, R., & Rekhi, T. (2004). The Art and Science of Cooking. Delhi: Phoenix Publishing House Private Limited.
- Arora, K. (2011). New Delhi: Theory of Cooking. Frank Bros & Co.

SUGGESTED READINGS:

- Kumar, B. (2021). Theory of Culinary Arts. Rudra Publications
- Sethi, P. & Lakra, P. (2015). Aahar Vigyan, Poshan Evam Suraksha. Delhi: Elite Publishing House Pvt. Ltd.
- Suri, S. & Malhotra, A. (2014). Food Science Nutrition and Safety. Delhi: Pearson India Ltd.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

CHOCOLATE CRAFTS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course Title & Code | Credits | Credit Distribution of the Course | | | Eligibility Criteria | Pre-requisite of the Course (if any) |
|-------------------------|----------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Chocolate Crafts | 2 | 1 | 0 | 1 | Class XII | NIL |

LEARNING OBJECTIVES:

This Skill Enhancement Course enables student to understand the basic principles, hygiene and precautions of chocolate cookery. The emphasis of this will be to develop the skill required for preparation of various chocolates and its packaging and marketing.

The learning objectives of the course are:

- To learn the skill to craft different types of chocolates
- To learn the basic principles, hygiene and precautions of chocolate crafting and entrepreneurship in chocolate industry.

LEARNING OUTCOMES

After studying this course, the student will be able to:

- Have the understanding of different chocolates and acquire the skill to handle them.
- Develop the abilities and showcase skills for preparation of molded, center filled, free hand cluster, chocolate accessories, garnishes and ancillary chocolate recipes
- Get acquainted with techniques of packaging, costing and marketing of chocolates.
- Gain knowledge and skill to start small scale chocolate enterprise

SKILL DEVELOPMENT AND JOB OPPORTUNITIES':

Employment Opportunities:

- Apprentice in Small Catering units/ Kiosk/ Restaurant
- Entrepreneurship in chocolate industry
- Food Stylist / Designer

SYLLABUS

Credits: 2

Total lectures (45): 45 Hours/ 15 weeks

Theory: 30%, Credit – 1 (Lectures – 15)

Practical/ Field work/ Hands on learning: 70%, Credit – 1 (Lectures – 30)

THEORY

Unit 1: Introduction to Chocolates

(7 hours)

Description: The focus of this unit is on chocolates, various aspects of chocolate processing and learning the precautions to make good chocolates.

Subtopics:

- Chocolates: history and types of compound and couverture chocolates.
- Processing of cocoa bean to manufacture chocolate liquor, cocoa butter, cocoa powder, chocolate and chocolate chips.
- Precautions and hygiene practices while handling chocolate.

Unit 2: Applications of Chocolates

(8 hours)

Description: The focus of this unit is on using the chocolates to make different products, understanding and rectifying the faults.

Subtopics:

- Molded, center filled, free hand clusters, garnishes and accessories.
- Recipe development, costing and packaging of chocolates.
- Faults in chocolates like sugar bloom and fat bloom, their reasons and correction. temperature and moisture control while handling chocolate.

PRACTICALS

1. Introduction to different kinds of chocolates: Compound and Couverture; their sensory analysis and mouth feel. **(2 hours)**
2. Market survey of Indian and Internationally made chocolates with respect to label reading (ingredients). **(2 hours)**
3. Equipment's (molds, scrapers, piping bags, nozzles, cooking thermometers, microwave, double boiler) and precautions to be used in handling chocolate. **(2 hours)**
4. Making molded compound chocolate. **(2 hours)**
5. Variations of molded chocolates. **(2 hours)**
6. Making center filled chocolate. **(2 hours)**
7. Variations of center filled chocolate **(2 hours)**
8. Making free hand chocolate clusters. **(2 hours)**
9. Making chocolate accessories and garnish. **(4 hours)**
10. Ancillary chocolate recipes like chocolate sauce, ganache and hand **(2 hours)**

rolled truffles.

- | | |
|--|-----------|
| 11. Tempering of couverture chocolate. | (2 hours) |
| 12. Packaging and labeling of chocolates. | (2 hours) |
| 13. Visit to chocolate factory or chocolate exhibition and sale trial. | (4 hours) |

ESSENTIAL READINGS

- Afoakwa E.O. (2013). Chocolate Science and Technology, Wiley India Pvt Ltd, 978-8126545735.
- Beckett S.T. (2018). The Science of Chocolate, Royal Society of Chemistry, 978-1788012355.
- Minifie B.W. (1999). Chocolate, Cocoa and Confectionary, Aspen Publication. 978-0834213012.
- Manay, S. & Shadaksharaswamy, M. (2020). Foods: Facts and Principles, New Age Publishers. 978-8122422153.
- Panda, H. (2012). Technology of Confectionery, Chocolates, Toffee, Candy, Chewing & Bubble Gums, Lollipop and Jelly Products with Formulations, Engineers India Research Institute publisher. 978-9380772165.

SUGGESTED READINGS:

- Hodge N. (2018). The Art and Craft of Chocolate, Quarry Books, 978-1631594663.
- Perry S. (2008). Deep Dark Chocolate, Chronicle Books. 978-0811860895.
- Panda, H. (2017). Start Your Own Confectionery and Chocolate Products with Manufacturing and Formulations Hand Book, Bio-Green Books publisher. 978-9380772844.
- Greweling, P.P. (2012). Chocolates and Confections: Formula, Theory, and Technique for the Artisan Confectioner, The Culinary Institute of America (CIA), Wiley; 2nd edition, 978-0470424414.
- Shaffer, K. (2019). Chocolate for Beginners: Techniques and Recipes for Making Chocolate Candy, Confections, Cakes and More, Rockridge Press Publishers, 978-1641528887.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

PASTA AND PATISSERIE TECHNOLOGY

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course Title & Code | Credits | Credit Distribution of the Course | | | Eligibility Criteria | Pre-requisite of the Course (if any) |
|---------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Pasta And Patisserie Technology | 2 | 1 | 0 | 1 | Class XII | NIL |

Learning Objectives

This Skill Enhancement Course is about developing an understanding and skill about the types, role of ingredients, processing/production, innovations, sensory attributes and quality assessment of Pasta and Patisserie. The student can also study SEC on Bakery Enterprise, Food Business and Cafeteria Management to enhance scope of work opportunities.

The learning objectives of the course are:

- To provide students with basic knowledge of pasta technology.
- To familiarize students with patisserie technology/ skill.

Learning Outcomes

After studying this course, the student will be able to:

- Develop understanding of the pasta and patisserie technology.
- Acquire skill to prepare different pasta and patisserie.
- Work in specialized pasta and patisserie outlets such as restaurants, food courts, kiosks, fast food centers as well as in large institutions such as hotels, hospitals and food processing units.

SKILL DEVELOPMENT AND JOB OPPORTUNITIES’:

Employment Opportunities:

- Apprentice in Small Catering units/ Kiosk/ Restaurant
- Entrepreneurship in pasta and patisserie technology
- Food Stylist / Designer for pasta and patisserie

SYLLABUS

Credits: 2

Total lectures (45): 45 Hours/ 15 weeks

Theory: 30%, Credit – 1 (Lectures – 15)

Practical/Field work/Hands on learning: 70%, Credit – 1 (Lectures – 30)

THEORY

Unit 1: Introduction to Pasta

(7 hours)

Description: This unit will include history of pasta , types of pasta, pasta making tools and equipment and understanding different sauces for preparing pasta dishes

Subtopics:

- History and types of pasta: packaged and handmade.
- Types: names and shapes of pasta.
- Tools and equipment commonly used for manufacturing pasta and preparing pasta dishes.
- Different types of sauces used for preparing pasta dishes: Tomato sauce, Béchamel, Bolognese, pesto and aglio olio.

Unit 2: Introduction to Patisserie

(8 hours)

Description: This unit is about different types of Patisserie like short crust pastry, choux pastry, puff pastry, sponge cake, shortened travel cakes, cheese cakes, cookies, brownies and biscotti.

Subtopics:

- Short crust Pastry: Tarts and Pies
- Choux Pastry: Eclairs, Profiteroles.
- Puff Pastry: Patties, French Hearts, Vol au vents.
- Sponge cake and its decoration techniques.
- Shortened travel cakes and its variations.
- Cheesecakes with different toppings.
- Cookies, Brownies and Biscotti.

PRACTICALS

30 hours

1. Market survey of Packaged Pasta and patisserie. **(2 hours)**
2. Orientation and handling of the tools and equipment used in Pasta making (mechanical pasta roller and cutter, rolling pins, serrated knives, ravioli cutters, drying rack and drying trays, stock pots, pans). **(2 hours)**
3. Making the Pasta dough, shaping Pasta (Fettuccine, Farfalle, Macaroni, Noodles, Spaghetti, Vermicelli), drying and storage. **(4 hours)**
4. Making Stuffed Pasta: Ravioli with fillings like spinach and Ricotta Cheese; herbed cream cheese. **(2 hours)**
5. Making Sauces: Tomato, Bechamel, Pesto and preparing Pasta dishes with them. **(2 hours)**

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|--|-----------|
| 6. Making Baked Pasta: Mac n cheese and Lasagna. | (2 hours) |
| 7. Preparation of short crust pastry: Tarts or Pies | (2 hours) |
| 8. Preparation of Choux pastry: Eclairs or Profiteroles. | (2 hours) |
| 9. Preparation of Puff pastry: Patties/ Vol au vents/ French Hearts | (4 hours) |
| 10. Preparation of cakes (sponge cake/shortened cake) and their variations/decoration with whipped cream frosting. | (4 hours) |
| 11. Preparation of Cheesecake with fruit compote topping. | (2 hours) |
| 12. Preparations of Brownies or biscotti | (2 hours) |

ESSENTIAL READINGS:

- Karr, N. (2016). Handmade Pasta Workshop & Cookbook: Recipes, Tips & Tricks for Making Pasta by Hand, with Perfectly Paired Sauces. US : Page Street Publishing .<https://amzn.eu/d/6skTmuM>(ISBN 10-1624143229, ISBN 13-978-1624143229)
- Donnelly, K. (2021). The Artisan Pasta Cookbook: The Step by Step Guide with Flavorful Recipes for Mastering Handmade Pasta, Noodles, Gnocchi and Risotto at Home. Oksana Aliksandrova . <https://amzn.eu/d/dFir9Zx>(ISBN 10-195460503X , 13-978-1954605039)
- Juillet, C. (1998). Classic Patisserie: An A-Z handbook. CBS publishers and distributors pvt. Ltd. <https://amzn.eu/d/5RC7hja>(ISBN 10-075063815X, ISBN 13-978-0750638159)
- Rippington, N. Baker, C. Burke, M (2013). Professional Patisserie: For Levels 2, 3 and Professional Chefs. Hodder Education; UK <https://amzn.eu/d/352HVZy>
(ISBN-10: 1444196448, ISBN-13: 978-1444196443)

SUGGESTED READINGS:

- Dubey, S. C. (2016). Basic Baking - Science and Craft. Delhi: Society of Indian Bakers.
- Dubey, S. C. (2009). Bakery Vigyan. Delhi: Society of Indian Bakers
- Ketrapaul, N., Grewal, R.B., & Jood, S. (2005). Bakery Science and Cereal Technology. Delhi: Daya Publishing House.
- Edward, W. P. (2007). The Science of Bakery Products. Cambridge: RSC Publishing.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

FROZEN DESSERT TECHNOLOGY

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course Title & Code | Credits | Credit Distribution of the Course | | | Eligibility Criteria | Pre-requisite of the Course (if any) |
|----------------------------------|----------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Frozen Dessert Technology | 2 | 1 | 0 | 1 | Class XII | NIL |

LEARNING OBJECTIVES

This course will help learners be equipped with the skills of developing, packaging, innovating and marketing of frozen desserts like ice creams, sorbets, ice popsicles, yoghurts, traditional *kulfi*, etc. During the past decade, the frozen food industry has grown, with an array of innovations in ice-creams, frozen yogurt, gelato and traditional desserts such as *shrikhand*. There is vast scope for the development of lower-fat, reduced-sugar products which may lead to increased sales. This course will equip the students with knowledge and skills necessary to work in the frozen food industry.

The learning objectives of the course are:

- To learn basic concepts on processing, distribution and storage of frozen desserts
- To develop the skill of preparing various types of frozen desserts

LEARNING OUTCOMES

After studying this course, the student will be able to:

- Prepare/ process/pack/handle/sell different types of frozen desserts
- Work in frozen food industry or start own business – manufacturing, distribution and retail.

SKILL DEVELOPMENT AND JOB OPPORTUNITIES’:

Employment Opportunities:

- Apprentice, supervisor, processor in frozen food manufacturing units/ distribution and retail outlets
- Entrepreneurship in frozen food industry
- Food Stylist / Designer for frozen desserts

SYLLABUS

Credits: 2

Total lectures (45): 45 Hours/ 15 weeks

Theory: 30%, Credit – 1 (Lectures – 15)

Practical/Field work/Hands on learning: 70%, Credit – 1 (Lectures – 30)

THEORY

Unit 1: Food Freezing

(7 hours)

Description: This unit will give an introduction to the concept of frozen foods/industry, their properties. It will also include the various equipments, freezing systems/methods which can be used to process, store and maintain cold chain during distribution.

Subtopics:

- Background, description and properties of frozen foods
- Freezing time
- Equipment and Freezing systems (direct and indirect contact)
- Act, regulations and standards

Unit 2: Frozen Desserts

(8 hours)

Description: This unit will focus on salient types of frozen desserts; both milk based as well as water based. It will include the composition, physical properties, processing, storage, freezing, common defects, packaging.

Subtopics:

Subtopics:

- Definitions and important terminology
- Ice-cream – composition, physical properties, processing, storage, freezing, common defects, packaging
- Ice based sherbets, sorbets, ice candies, popsicles
- Other frozen desserts – frozen yogurt, *shrikhnad*, mellorine, parevine, ice-cream sandwiches
- Future trends (novelties)

PRACTICALS

1. Market survey of frozen desserts and accessories and basics of working in food lab. **(2 hours)**
2. Preparation, packaging, labeling and sensory evaluation of vanilla ice cream **(4 hours)**
3. Preparation, packaging, labeling and sensory evaluation of any fruit based ice cream (mango, strawberry, pineapple etc.) **(4 hours)**
4. Preparation, packaging, labeling and sensory evaluation of Kulfi or nuts and fruit ice cream **(4 hours)**
5. Preparation, packaging, labeling and sensory evaluation of ice cream with egg or gelato or frozen custard **(4 hours)**
6. Preparation, packaging, labeling and sensory evaluation of ice cream sandwich or novelties **(4 hours)**
7. Preparation, packaging, labeling and sensory evaluation of ice-lolly/ popsicles/ ice-candies **(4 hours)**
8. Preparation, packaging, labeling and sensory evaluation of *Shrikhand* or frozen yogurt **(4 hours)**

ESSENTIAL READINGS

- Raina, U., Kashyap, S., Narula, V., Thomas, S., Suvira, Vir, S., & Chopra, S. (2005). Basic Food Preparation – A Complete Manual. Delhi: OrientLongman.
- Khanna, K., Gupta, S., Seth, R., Mahana, R., & Rekhi, T. (2004). The Art and Science of Cooking. Delhi: Phoenix Publishing House Private Limited.
- Migoya, MJ. (2008). Frozen Desserts. First Edition. John Wiley and Sons Inc.
- Food Safety and Standards Authority of India (FSSAI). (2011). Food Safety and Standards (Food Products Standards and Food Additives) Regulations, 2011. Compendium on Food Additives Regulations. Elite Publishers. Pgs. 877.
- Food Safety and Standards Authority of India (FSSAI). (2019). FSSAI regulations on frozen desserts. Website: https://www.fssai.gov.in/upload/media/FSSAI_News_Ice_FNB_22_05_2019.pdf.

SUGGESTED READINGS:

- Clarke, C. (2004). The Science of Ice Cream. The Royal Society of Chemists.
- De, S. (2001). Outlines of Dairy Technology. First Edition. Oxford Publishing House.
- Francis, F.J. (2010). Encyclopedia of Food Science and Technology. Volume 2. Second Edition. John Wiley & Sons.
- Goff, H.D. & Hartel, R.W. (2008). Ice Cream. Seventh Edition. Springer.
- Himadri, P. (2010). Handbook on Frozen Food Processing and Freeze Drying Technology. First Edition. Engineers India Research Institute.
- Jana, A., Pinto, S. & Moorthy, P.R.S. (2016). Ice Cream and Frozen Desserts. AgriMoon.com Publishing. Website: <https://www.agrimoon.com/wp-content/uploads/Ice-cream-Frozen-Dessrt.pdf>.
- Rorer, S.T. (2005). Ice Creams, Water Ices, Frozen Puddings Together with Refreshments for All Social Affairs. First Edition. Project Gutenberg. Website: <https://www.gutenberg.org/ebooks/8501>.
- Stogo, M. (2018). Ice Cream and Frozen Desserts: A Commercial Guide to Production and Marketing. John Wiley & Sons.
- Tharp, B.W. & Young, L.S. (2012). Tharp and Young on Ice Cream: An Encyclopedic Guide to Ice Cream Science and Technology. First Edition. DESTech Publications Inc.
- Weinstein, B. (2010). The Ultimate Ice Cream Book. First Edition. Perfect Bound Publishing House. Website: <https://www.pdfdrive.com/the-ultimate-ice-cream-book-over-500-ice-creams-sorbets-granitas-drinks-and-more-e184459836.html>.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

INDIAN SNACK INDUSTRY

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course Title & Code | Credits | Credit Distribution of the Course | | | Eligibility Criteria | Pre-requisite of the Course (if any) |
|------------------------------|----------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Indian Snack Industry | 2 | 1 | 0 | 1 | Class XII | NIL |

LEARNING OBJECTIVES

With changing lifestyles and rising income levels, the processed Indian Snack industry has grown exponentially in recent years due to a massive upsurge in the demand for snack (ready to eat/ ready to cook) products in India. This course will equip our students with knowledge and skills necessary to work in the snack industry, contribute to the growth and after gaining some experience start-up their own micro/macro enterprises.

The learning objectives of the course are:

- To provide students with the basic knowledge of Indian snack industry.
- To familiarize students with different types of Indian snacks.

LEARNING OUTCOMES

After Studying this course, the student will be able to

- Describe various aspects of Indian snacks industry and regional snacks.
- Identify various types of snacks and their processing
- Prepare traditional, regional and healthy snacks.

SKILL DEVELOPMENT AND JOB OPPORTUNITIES':

Employment Opportunities:

- Apprentice in Small Catering units/ Kiosk/ Restaurant
- Start-up of micro/macro enterprises
- Able to set up home based/ small scale food catering units
- Work in Cloud Kitchen
- Food Stylist / Designer

SYLLABUS

Credits: 2

Total lectures (45): 45 Hours/ 15 weeks

Theory: 30%, Credit – 1 (Lectures – 15)

Practical/ Field work/ Hands on learning: 70%, Credit – 1 (Lectures – 30)

THEORY

Unit 1: Indian Snack Industry Current Scenario**(6 hours)**

Description: This unit is an introductory unit about what is a snack food, the history and current trends of snacks industry and regional snacks of India.

Subtopics:

- Definition and history of snack foods in India.
- Current scenario of Indian snack industry.
- Indian regional snacks and their salient features.

Unit 2: Processing of Snacks**(9 hours)**

Description: This unit is about different types of Indian snacks and common packaging materials and techniques used in snack industry.

Subtopics:

- Packed Snacks of India: Classification of packaged snacks, common packaging materials and techniques
- Ready to cook (RTC) snacks, Instant snacks, Freshly prepared snacks, Extruded snacks.
- Usage of oils for frying and various seasonings
- Healthy snacks preparations (innovations in snack preparation)
- FSSAI License and regulations

PRACTICALS**30 hours**

1. Weights, Measures and Food hygiene practices **(2 hours)**
2. Basic cooking terminologies and techniques of preparation **(2 hours)**
3. Pakoras/ fritters: Assorted pakoras, Bondas and its variations **(2 hours)**
4. Cutlets and Tikkis – Mixed Veg cutlets, Sago cutlets, Aloo tikki, Vegetable tikki, **(2 hours)**
5. Dough snacks: Kachori, Samosa, Spring rolls, Mathri, Kathi rolls, Pani puri **(4 hours)**
6. Vadas: Dahi vada, Masala vadas, Medu vada and accompaniments **(2 hours)**
7. Dips (Accompaniments): Mint chutney, Imli chutney, coconut chutney, Salsa sauce, Hummus, Hung curd dips, Guacamole etc. **(4 hours)**
8. Marinates: Curd marinates, Green marinates, Pickled marinate etc. **(2 hours)**
9. Tikkas and Kababs: Paneer tikka, Soya chaaps, Seekh kabab, Hara kabab **(2 hours)**

- | | |
|---|-----------|
| 10. Healthy snacks 1: Sprouts, Cheela, Roasted snacks, Bhel, Fruit chat | (2 hours) |
| 11. Healthy Snacks 2: Fermented snacks (Idli (variations), Dhokla) | (2 hours) |
| 12. Extruded snacks: Bhujia, Chakli, Fafda, Gathiya | (2 hours) |
| 13. Packaging materials and techniques of packaging snacks | (2 hours) |

ESSENTIAL READINGS:

- Raina, U., Kashyap, S., Narula,V., Thomas, S., Suvira, Vir, S., & Chopra, S. (2005). Basic Food Preparation – A Complete Manual. Delhi: OrientLongman.
- Khanna, K., Gupta, S., Seth, R., Mahana, R., &Rekhi, T. (2004). The Art and Science of Cooking. Delhi: Phoenix Publishing House PrivateLimited.

SUGGESTED READINGS:

- Kumar, B. (2021). Theory of Culinary Arts Delhi: RudraPublications
- Arora, K. (2011).Theory of Cooking. New Delhi Frank Bros &Co.
- Lusas E.W., Rooney, L.W. (2002). Snack Food Processing: Delhi, CRC Press LLC.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

DAIRY PROCESSING

Credit Distribution, Eligibility and Pre-Requisites of The Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (If any) |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Dairy Processing | 2 | 0 | 0 | 2 | XII (PCM/PCB) | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To study the processing of milk products

Learning Outcomes

After studying this course, the student will be able to:

- Gain skills in dairy product development and hands-on training for the processing of different milk products.
- Establish a food industry/start up based on their learnings in the subject.
- Start providing 3rd party manufacturing to premier dairy-based industries.
- Work in any dairy based industry.

Syllabus

Practical Exercises:

60 hours

The learners are required to perform the following:

- Processing of Flavoured milk
- Preparation of Dahi
- Preparation of Ghee
- Preparation of milk based traditional Indian sweet
- Preparation of Ice cream
- Preparation of milk based instant mix
- Preparation of whey based drink
- Milk based new product development
- How to plan a startup, budgeting, marketing / case study/ entrepreneur (anyone of the above)
- Regulations, Licensing and registration of a startup

Essential/recommended readings

- De, Sukumar. (2007). Outlines of dairy technology. Oxford University Press.
- Webb B.H. & Alford (2005). Fundamentals of dairy chemistry. CBS Publisher
- P.F. Fox, T. Uniacke-Lowe and J.A.O' Mahony (2005). Dairy Science and Technology. Taylor & Francis.
- P. Walstra, Jan T.M. Wouters and Tom J. Geurts (2015). Dairy chemistry and Biochemistry. Springer

Note: Learners are advised to use the latest edition of readings.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Skill progression

India is indisputably the largest milk producer in the world. Overall, dairy industry in India engages about 80 million households in rural area. The course 'Skills in Dairy Processing' provides valuable skills to the candidates required to be in a dairy industry. The course is planned to provide a hands-on training experience to the students in relevance to the dairy product preparation and setting up an enterprise. The other courses like Technology of Milk and milk products, Food Quality Management, Agri-business management, Sensory science, Food standards and regulations in the upcoming semesters will provide a deeper insight to the subject and will help students to improve their skill set.

FRUITS & VEGETABLE PROCESSING

Credit Distribution, Eligibility and Pre-Requisites of The Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (If any) |
|--|----------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Fruits and Vegetable Processing | 2 | 0 | 0 | 2 | XII (PCM/PCB) | NIL |

Learning Objectives

- To provide hands-on training to students for the entire process of selection, preparation, packaging, & presentation of variety of fruits & vegetable products.
- To impart skills of scale-up production of fruits & vegetable products & by products for setting their own enterprise.

Learning Outcomes

After studying this course, the student will be able to:

- Create variety of value-added products of consumer's choice & need.
- Enhance the level of processing, level of value addition, share in global food trade & employability.

Skill Development and Job Opportunities: Justification

The food processing sector is one of the largest sectors in India in terms of production, growth, consumption, and export. However, there exists a definite lack in processing and storage infrastructure and skilled manpower, which are essential to reducing the waste and enhancing the value addition and shelf life of the farm products. The government has ambitious plans to increase the level of processing, value addition and share in global food trade. This will have a spike in the requirement for qualified and trained fruits & vegetable processing professionals. The main objective of having this paper is to impart knowledge of processing various value added fruits & vegetable products which is ultimately used to enhance the employability of any candidate studying the paper including food technology graduates.

Syllabus

Practical

60 hours

Practicals based on different processing/ preservation techniques.

1. Preparation of canned fruits /vegetables
2. Preparation of chips from potato/bittergourd/apples etc.
3. In bottle pasteurization of fruit juices, nectars, purees etc.
4. Preparation of fruit squashes

5. Preparation of fruit cordials
6. Preparation of fruit jams/jellies
7. Preparation of fruit nectars
8. Preparation of mango/chilli/ lime pickle
9. Preparation of Tomato puree & product
10. How to plan a startup, budgeting, marketing / case study/ entrepreneur (anyone of the above)
11. To study the Regulation, Licensing & registration of particular

Essential Readings

- Girdharilal., Siddappaa, G.S and Tandon, G.L.(2009). Preservation of fruits & vegetables. ICAR, New Delhi.
- Thompson, A.K., (2003). Fruits and vegetables; Harvesting, handling and storage. Blackwell Publishing.

Suggested Readings:

- Crusess, W.B. (2004). Commercial Unit and Vegetable Products. W.V. Special Indian Edition. Agrobios India.
- Manay, S. and Shadaksharaswami, M. (2004). Foods: Facts and Principles. New Age Publishers.
- Ranganna S.(2007). Handbook of analysis and quality control for fruits and vegetable products. Tata Mc Graw-Hill publishing company limited, Second edition.
- Srivastava, R.P. and Kumar, S. (2006). Fruits and Vegetables Preservation- Principles and Practices. 3rd Ed. International Book Distributing Co.
- Somogyi, L.P., Ramaswamy, H.S. and Hui, Y.H. (1996). Biology, Principles and Applications. Volume 1. Technomic Publishing Company, Inc.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Food Waste and By-product Utilisation

Credit Distribution, Eligibility and Pre-Requisites of The Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (If any) |
|---------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Food Waste and By-product Utilisation | 2 | 0 | 0 | 2 | XII (PCM/PCB) | NIL |

Learning Objectives

Environment sustainability is a key area of interest to government, scientist, environmentalist, researchers, and students. The present course is designed to address the issues of food waste and further their utilization into value added products. It's a multidisciplinary subject which can be taken by students of varied background. The objectives of the course are as follow:

- To improve students' understanding of basic food industry waste and by-product.
- To provide students an opportunity in understanding the significance of treating and utilizing food waste and by-products.
- To study effluent treatment plant.
- The practicals provide hands-on training in different type of food waste and by-products, further their utilization.
- After completion of course students can apply for courses specific to any category of food waste and further specialize in it.

Eligibility: Being interdisciplinary in its nature and scope, the course will be equally engaging and beneficial for students of all subject streams.

Learning Outcomes

After Studying this course, the student will be able to:

- Identify waste produced from different sectors of the food industry.
- Utilise waste from the food industry.
- Understand waste water treatment.

Skill Development and Job Opportunities:

- Students are eligible to handle the processing and operations at effluent treatment plant running in food and chemical-based industries.
- Students can provide consultancy to waste industries.
- Students can also start with hands-on training to students and industrialist on handling and utilizing the waste from industries.
- Students can work with Ministry of Agriculture to devise ways of utilizing the food waste.

- Students can start his/her own start-up by providing waste water treatment services to food industries.
- The course will provide basic training enabling students to apply to advanced food waste management courses.

Syllabus

Practical

60 hours

1. Identification of waste from agriculture and food processing (Dairy/ Meat/ Fruits Vegetables / Alcoholic beverages/ cereals)
2. Study and layout of waste water treatment system (ETP)
3. Identification of co-products from F&V industry, estimation and utilization to develop value added products (pectin, banana fibre, lycopene from tomato waste, watermelon/ pumpkin rind).
4. Identification of waste from animal industry and utilisation to develop value added products (gelatin, egg shell).
5. Identification of various co-products from dairy industry, estimation and utilization to develop value added products (utilisation of ghee residue, buttermilk beverage, whey).
6. Identification of co-products from cereal industry, estimation and utilization to develop value added products (cereal husk, wheat fibre).
7. Determination of physico-chemical properties of wastewater.
8. Production of alcohol/ acetic acid from waste material.

Essential readings

- Marriott, N. G., Gravani, R. B., & Schilling, M. W. (2006). Principles of food sanitation(Vol. 22). New York: Springer.
- Sadasivam, A, & Manickam, A. (2021). Biochemical Methods. New Age InternationalPublishers.
- Green, J. H., & Kramer, A. (1979). Food Processing. Waste Management. Avi PublishingCompany, 629.
- Herzka, A. and Booth, R.G. Food Industry and Trade: Recycling Waste. Applied SciencePublishers, 1981.
- Tegge, G., Green, J. H., and A. Kramer. Food Processing Waste Management; AVIPublishing, 1979

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Paper and Skill Progression

The paper provides understanding a huge untapped sector if food wastage. This waste across globe is an environment concern. Students will be able to deeper understanding to the huge market of food wastage from industries. The course is designed to provide exclusive hands on training to students so that they can contribute the same to industries in search of food waste management.

MINIMAL FOOD PROCESSING

Credit Distribution, Eligibility and Pre-Requisites of The Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (If any) |
|-------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Minimal Food Processing | 2 | 1 | 0 | 1 | XII (PCM/PCB) | NIL |

Learning Objectives

- To provide the best combination of health, nutrition and convenience based on minimal food processing
- To impart skills in food processing for extending the shelf life with minimal processing that results in minimum changes to sensory characteristics and nutritional qualities, yet imparting convenience to the consumer.
- To make students aware of the various novel technologies being developed and used for minimal processing across the world.

Learning Outcomes

After studying this course, the student will be able to:

- Have skills and knowledge of methods of preservation by minimal processing of food.
- Do minimal processing of different food samples.

Job/Employment Opportunities:

- Students can establish his/her start-up specialized in minimal food processing of foods.
- Students can help in Research and Development in food industries to explore various novel technologies for minimal processing.
- Students can either collaborate or join with any Food Industry and help in developing various thermal and non-thermal techniques in food processing.

Syllabus

THEORY

Total Lecture (Nos): 15 Hours

Unit 1: Basic minimal processing

(8 Hours)

Introduction and importance of minimal processing, Preparation and pre-treatments, Minimal processing of foods by thermal, refrigeration and freezing methods, MAP (Modified Atmosphere Packaging) and CAP (Controlled Atmosphere Packaging). Physiological responses and biochemical changes during minimal processing of fruits and vegetables, Meat, Fish, poultry and Dairy products. Role of minimal processing in economic creation.

Unit 2: Advanced technologies in minimal processing of foods**(7 Hours)**

Principle and applications of; irradiation, pulsed electric field processing, high pressure processing, pulsed light, ultrasound, ohmic heating, sous vide.

PRACTICALS**(30 Hours)**

1. To study basic hygiene and sanitation requirements for minimal processing
2. Preparation and pre-treatment method for minimal processing of fruits and vegetables.
3. Minimal processing of Meat products.
4. Minimal Processing of fish and Poultry.
5. Minimal processing by Vacuum/ MAP/CAP/ edible coating.
6. Minimal Processing of Dairy Products.
7. To study the shelf life and quality characteristics of minimally processed foods available in the market
8. To study the effect of packaging material on shelf life of different minimally processed foods.
9. To determine the cost of minimally processed food.

Essential Readings:

- Fellows, P. J. (2009). Food processing technology: principles and practice. Elsevier
- Rahman, M. S. (Ed.). (2007). *Handbook of food preservation*. CRC press.
- Tewari, G., & Juneja, V. (Eds.). (2008). *Advances in thermal and non-thermal food preservation*. John Wiley & Sons.

Suggestive Readings:

- Barbosa-Canovas, G. V., Tapia, M. S., & Cano, M. P. (Eds.). (2004). *Novel food processing technologies*. CRC press.
- Bansal, V., Siddiqui, M. W., & Rahman, M. S. (2015). Minimally processed foods: overview. *Minimally processed foods*, 1-15.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

WORKING WITH PEOPLE

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------------|----------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| WORKING WITH PEOPLE | 2 | 1 | 0 | 1 | Class XII | NIL |

Learning Objectives

The learning objectives of this course are as follows:

- To inculcate values in strengthening knowledge and skills in field work practice learning
- To develop aptitude and attitude to work in the field
- To enhance skills of self-awareness, self-development, goal setting and time management

Learning outcomes

At the end of the semester the students will be able to

- Develop a practical understanding of using different skills while working with individuals and groups
- Develop skills and competencies to work effectively in field settings
- Acquire understanding about self, goal setting, networking, and communication

SYLLABUS

Course Content

| | |
|---|-----------------------|
| Unit I: Developing Personal and Professional Self | (No. of hours) |
| Unit Description: This unit will provide a conceptual understanding of Self-awareness and sensitivity. The students will learn about goal setting, time management and ethics in social work practice. | 3 |
| Subtopics: | |
| <ul style="list-style-type: none"> ● Understanding personal self and professional self. | |

| | |
|--|--|
| <ul style="list-style-type: none"> ● Professional Ethics: Responsibility, accountability, loyalty, commitment, cultural sensitivity and competence. ● Goal setting and time management | |
| Unit II: Planning for Field Work Practice Unit Description: This unit will introduce the students to strategic learning plans required for field work, thematic modules for different target groups and importance of rapport building and communication while working in community. | (No. of hours) 4 Weeks: IV-VII |
| Subtopics: <ul style="list-style-type: none"> ● Preparation of Field work learning plans and strategies. ● Rapport building, initiating dialogues and sustaining communication. ● Thematic learning modules for targeted populations: Children, adolescent, youth and elderly. | |
| Unit III: Documentation in Field Work Unit Description: This unit will focus on documentation and maintaining records while working with individuals, groups and communities. The students will also learn to develop community profile. | (No. of hours) 4 Weeks: VIII-XI |
| Subtopics: <ul style="list-style-type: none"> ● Case records ● Group work records ● Community profile | |
| Unit IV: Application of Skills and Techniques Unit Description: This unit will introduce various skills and techniques required in understanding self and mobilising support. | (No. of hours) 4 Weeks: XII-XV |
| Subtopics: <ul style="list-style-type: none"> ● Understanding Self: Johari Window ● Strength and Weakness- SWOT Analysis ● Mobilising Community Support: Networking, Advocacy and Public Relation | |

Practical component (if any) – Unit III & IV application based

(30 hours)

Essential readings

- Datar,S. et al. (2010). Skill Training for Social Workers: A Manual. New Delhi: Sage Publications
- Kumar, S. (2002).Methods for Community Participation: A Complete Guide for Practitioners. London: ITDG Publishing.
- Nair,R., Juvya,S., & Nadkarni,V. (2020). Field Instructions in Social Work Education, The Indian Experience. Routledge India.
- Subhedar, I. S. (2001). Field Work Training in Social Work. New Delhi: Rawat Publications.

- Trevithik, P. (2000). Social Work Skills: A Practice Handbook. Buckingham, Philadelphia: Open University Press.
- Verma, R.B.S. & Singh, A.P. (2013). Standard Manual for Field Work Practicum in Social Work. Lucknow: New Royal Book Company.

Suggested readings

- NAPSWI. (2016). NAPSWI's Code of Ethics for Professional Social Workers in India. New Delhi: National Association of Professional Social Workers in India

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

LIFE SKILL EDUCATION

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------|----------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| LIFE SKILL EDUCATION | 2 | 1 | 0 | 1 | Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To impart life skills education in field work practice
- To strengthen life skills for career building, critical thinking, attitudinal base for innovate leadership
- To learn the application of life skills in diverse field work settings

Learning outcomes

At the end of the semester the students will be able to

- Focus on development of values in strengthening knowledge and life skills, bringing high quality standards in field work practice-learning
- Understand the strength-based life skill development, team work, innovate leadership, design thinking and career building skills
- Develop universal human values while utilizing life skills in field work

SYLLABUS

| | |
|---|--|
| Unit I: Life Skills Introduction Unit Description: To introduce students to the basic concepts of life skill management. | (No. of hours) 3 Weeks: I-III |
|---|--|

| | |
|---|--|
| <i>Subtopics:</i> <ul style="list-style-type: none"> ● Basic Life Skills: Concept, Components and Significance ● Life Skills Development: National Perspective ● Universal Human Values – Love, Compassion, Truth, Non-violence, Peace, Gratitude, Patience and Tolerance | |
| Unit II: Basic Life Skills Unit Description: To learn the set of essential life skills that can lead to high employability and good work culture. | (No. of hours) 4 Weeks: IV-VII |
| <i>Subtopics:</i> <ul style="list-style-type: none"> ● Team Work Skills: Social Etiquettes, Democratic Decision, and Collaboration ● Innovative Leadership: Initiative taking, Time Management, Capacity building, Life Coaching ● Career Building Skills: Exploring Career Opportunities, Mentoring, Resume Preparation, facing Interview & Group Discussion, Presentation Skills, Creating social media profile | |
| Unit III: Significant Life skills and Techniques Unit Description: To understand potential changes that can be brought about by employing essential life skills | (No. of hours) 4 Weeks: VIII-XI |
| <i>Subtopics:</i> <ul style="list-style-type: none"> ● Developing Strategies for enhancing Life Skills ● Life Skills (Cognitive based): Critical Thinking, Knowledge construction, Evaluating reasoning, Solution Focused Thinking, ● Life Skills (Behavioural Based): Ethics, Integrity, Problem Solving, Decision making | |
| Unit IV: Application of life skills in Field Work Unit Description: To learn the application of essential life skills in diverse settings through case studies about interventions | (No. of hours) 4 Weeks: XII-XV |
| <i>Subtopics:</i> Developing specific life skills intervention plan for <ul style="list-style-type: none"> ● Stress Management and Coping strategies ● Simulation exercises: Brainstorming, Role plays for Team building ● Case Management | |

Practical component (if any) – Unit III & IV application based

(30 hours)

Essential readings

- Bandyopadhyay and Subrahmanian (2008), Gender Equity in Education: A Review of Trends and Factors

- Brinkman, F. J. (2016). Environment, Religion and Culture in the Context of the 2030 Agenda for Sustainable Development, (April).
- Brown, T. (2012). Change by Design. Harper Business
- Care, E., Kim, H., Anderson, K., & Gustafsson-Wright, E. (2017). Skills for a Changing World: National
- Census of India. (2011), Registrar General of India
- Clarke, D., Bundy, D., Lee, S., Maier, C., Mckee, N., Becker, A., Paris, F. (n.d.). Skills for Health Skills-based health education including life skills: An important component of a Child-Friendly/Health-
- Dewan S, Sarkar U (2017) From education to employability: Preparing South Asian Youth for the world of work, UNICEF ROSA
- International Youth Foundation. (2014). Strengthening life skills for youth : A practical guide to quality programming.
- Kwauk C & Braga. (2017) Life skills education is more than teaching skills, Brookings institution Washington DC
- LIFESKILLS EDUCATION. (n.d.). Retrieved from, http://www.cbse.nic.in/cce/life_skills_cce.pdf
- Perspectives and the Global Movement. Retrieved from <https://www.brookings.edu/wp-content/uploads/2017/03/global-20170324-skills-for-a-changing-world.pdf>

Suggested readings

- Martin, R. (2007). How Successful Leaders Think. Harvard Business Review, 85(6): 60.
- Govt. of India. (2014 & 2016) Educational Statistics at a glance, MHRD,
- Murphy-Graham (2012), Opening Minds, Improving Lives: Education and Women's Empowerment in Honduras
- Sen Madhucchanda (2010), An Introduction to Critical Thinking, Pearson, Delhi
- South, T., Life, A., & Forum, E. (2005). Life Skills-Based Education in South Asia.
- Street, C. (2012). Global Life Skills Education Evaluation, (February).
- WHO (1997). Life Skills Education for Children and Adolescents in Schools. Geneva: WHO.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

PARTICIPATORY LEARNING AND ACTION

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|----------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| PARTICIPATORY LEARNING AND ACTION | 2 | 1 | 0 | 1 | Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand the basic principles and process of using Participatory Learning in field work settings
- To learn various techniques of Participatory Learning for working in rural and urban communities
- To learn the skills involved in application of participatory learning techniques

Learning outcomes

At the end of the semester the students will be able to

- Identify the situations where participatory learning techniques can be applied
- Demonstrate the process of various techniques and skills of participatory learning in field setting
- Analyse PLA data and reflect the same in report writing

SYLLABUS

Course Content

| | |
|--|-----------------------|
| Unit I: Introduction to Participatory Learning and Action | (No. of hours) |
| Unit Description: This unit introduces the students to the concept of | 4 |

| | |
|---|---|
| Participatory Learning and Action (PLA). The students will also learn the advantages of PLA and its use over other similar techniques. | Weeks: I-IV |
| Subtopics: <ul style="list-style-type: none"> ● Participatory learning Action (PLA): Meaning, origin and principles ● Participatory learning: Basic rules and phases ● Preparations for PLA | |
| Unit II: PLA : Tools and Techniques Unit description: This unit aims to familiarize students with various tools and techniques of PLA which can be applied in community setting. | (No. of hours) 4 Weeks: V-VIII |
| Subtopics: <ul style="list-style-type: none"> ● PLA techniques I: Community mapping (social & resource mapping), ● PLA Techniques II: livelihood analysis, Venn(chapati) diagram, Time line analysis, Vector scoring, (preference ranking, issue prioritization, wealth ranking), Calendars (Seasonal calendar, Daily routine diagram), Transect walk ● Roles and responsibilities of PLA teams | |
| Unit III: Practical Application of Participatory Learning techniques Unit Description: The students will be engaged in hands on learning for practical application of PLA techniques through workshops and group exercises. | (No. of hours) 3 Weeks: IX-XI |
| Subtopics: <ul style="list-style-type: none"> ● Project work: Community Mapping, ● Project work: Need assessment (Calender/Seasonal Analysis/Transect Walk/Vector scoring) ● Project work: Resource identification & Utilization | |
| Unit IV: Analysis of data through PLA Techniques Unit description: The students will learn to analyse the information collected through PLA tools. | (No. of hours) 4 Weeks: XII-XV |
| Subtopics: <ul style="list-style-type: none"> ● Use of PLA for research and community action ● Processing, analysis and interpretation of data generated through participatory learning tools ● Report writing: Tips and techniques | |

Practical component (if any) – Unit III & IV application based

(30 hours)

Essential readings

- Chambers, R (1983) Rural Development: Putting the last first. Longman inc., USA, 1983.

- Chambers, R (2008). *Revolutions in Development Inquiry*. Institute of Development Studies, 2008, Earthscan, London.
- Mikkelsen, B (1995). *Methods for Development Work and Research: A guide for practitioners*. London, Sage.
- N. Narayansamy (2009): *Participatory Rural Appraisal-Principles, Methods and Application*, first edition. Gandhigram Rural University, Tamil Nadu, India
- Ramesh, R (2020): *Participatory Rural Appraisal :PRA Application in Rural Development Planning*. National Institute of Rural Development and Panchayati Raj Ministry of Rural Development, Government of India.
- Slocum, R; Wichhart, D; Rocheleau, D and Thomas-Slayter, B (eds.) (1995). *Power, Process and Participation – Tools for change*. London, IT Publications

Suggested readings

- Jules N. Pretty, Irene Guijt, Ian Scoones, & John Thompson (1995): *A Trainer's Guide for Participatory learning and Action*. International Institute for Environment and Development, London.
- Gosling, L and Edwards, M (2003). *Toolkits: A practical guide to assessment, monitoring, review and evaluation*. Second edition. Save the Children, UK
- The Leprosy Mission Trust India TLMTI (2015): *Participatory Learning Approach Training Manual*, New Delhi.
- Mukherjee, N. (1993): *Participatory rural appraisal: Methodology and applications (Studies in rural participation)*. Concept publications, India.
- Mascarenhas, J (1991): *Participatory Rural Appraisal and Participatory Learning methods: recent experiences from Myrada and South India*, RRA Notes, Issue 13, pp.26–32, IIED, London.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

PROGRAMME MEDIA

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-Hospital Front Office Operations I requisite of the course (if any) |
|------------------------|----------|-----------------------------------|----------|---------------------|----------------------|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| PROGRAMME MEDIA | 2 | 1 | 0 | 1 | Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand the concept of programme media and its importance in field work practice
- To learn about various types of programme media and their effective use in field work
- To learn to demonstrate creative ideas and tools in field settings

Learning outcomes

At the end of the semester the students will be able to

- Learn the concept of programme media in social work
- Develop various programme media tools to be used in field settings
- Demonstrate the skills essential for using programme media in the field work

SYLLABUS

| | |
|--|---|
| Unit I: Understanding Programme Media Unit Description: This unit will give an opportunity to the students to understand the concept of programme media in social work. | (No. of hours) 4 Weeks: I-IV |
| Subtopics: <ul style="list-style-type: none"> • Programme media: Concept, characteristics, purpose and significance • Communication in programme media | |

| | |
|---|---|
| <ul style="list-style-type: none"> • Role of programme media: propaganda and public opinion | |
| Unit II: Mediums and Methods of Programme Media Unit Description: Student will learn different types of programme media to be used for diagnostic, problem-solving and therapeutic purposes. | (No. of hours) 4 Weeks: V-VIII |
| Subtopics: <ul style="list-style-type: none"> • Types of programme media: Talk, public meeting & hearing, group discussion, press conference, movement, advertisement, campaign, storytelling and entertainment/games • Information and digital literacy: Concept, importance and components • People's participation in programme: Film screening, discussion and review | |
| Unit III: Handmade Creations and Creative Writings in Social Work Unit Description: This unit will give an opportunity to the students to learn various handmade creations and creative writings of programme media to interact with client groups. | (No. of hours) 3 Weeks: IX-XI |
| Subtopics: <ul style="list-style-type: none"> • Handmade creations: Collage, poster making, wall paintings • Creative writings: short story writing, slogans writing and preparing brochures, hand-outs & pamphlets, FAQs • IEC materials: Flip chart, flash cards, flyers, leaflets, banners, hoardings and standee | |
| Unit IV: Programme Media for Masses Unit Description: The students will be engaged in various learning activities related to application of programme media in field settings. | (No. of hours) 4 Weeks: XII-XV |
| Subtopics: <ul style="list-style-type: none"> • Tools preparation: Puppet shows & folk songs, • Performing arts: street plays, drama & theatre &, mime, skit and role plays • Significance of digital media: TV, community radio broadcast and various social media platforms | |

Practical component (if any) – Unit III & IV application based

(30 hours)

Essential readings

- Balwant, G. (1991). Folk Theatre in India. Bombay: Rupa & Co.
- Chen, H. T. (2005). Practical Programme Evaluation: Assessing and Improving Planning, Implementation and Effectiveness. California: Sage Publication.
- Cortright, R. & Hinds, G. (1959). Creative Discussion. New York: The Macmillian Company.
- Dev, M. P. (2009). Creative Writing: A Beginner's Manual. New Delhi: Pearson Longman.
- Mathur, D. (2003). AASHAA, Short Stories by Indian Women, Odyssey II. London: Indian Bookshelf and New Delhi: Star Publishing.
- Menon, M. & Gandhi, V.P. (1997.) Media and Communications - Vol. I. (New Information Order). New Delhi: Kanishka Publishers/Distributors.

Suggested readings

- National School of Drama. (2006). Nukkad Natak Rachnaaur Prastuti. Delhi: NSD.
- Mohan, K. & Banerji, M. (1990). Developing Communication Skills. Pilani: Birla Institute of Technology and Science.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

ENVIRONMENTAL IMPACT AND RISK ASSESSMENT

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|-----------|-----------------------------------|----------|---------------------|-------------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| ENVIRONMENTAL IMPACT AND RISK ASSESSMENT | 02 | 0 | 0 | 02 | Class XII with Science | NIL |

Learning Objectives

- To gain insights into the concepts of environmental impact assessment (EIA) and its relevance for sustainable development
- To acquire knowledge of the socio-ecological and economic perspectives of any developmental project.
- To evaluate methodologies to conduct and analyze EIA acceptable per prevalent regulations

Learning outcomes

The Learning Outcomes of this course are as follows.

After studying the course, the students will be able to:

- Conduct EIA of any developmental project and analyze its environmental and other implications
- Serve as consultant to different agencies working on EIA and a developmental plan
- Evolve strategies to ensure development and conservation hand-in-hand
- Formulate sustainable development strategies for any development plan varying in scale
- Identify and classify different development projects based on their sales and impacts on the environment

SYLLABUS: ENVIRONMENTAL IMPACT AND RISK ASSESSMENT

Practicals/Hands-on Exercises (02 Credits: 60 hours)

1. Based on the given project details, classify them as Category A and Category B1 and B2 projects.
2. Prepare the scope of any recent developmental project of Category A which received Environmental Clearance.

3. To prepare a questionnaire and compilation of primary data to study the scope of the project based on public participation.
4. Identify the impacts due to a Mining Project using the checklist method.
5. Based on the impacts identified in Activity 4, formulate mitigating measures for the project.
6. Determine the impacts due to a large-scale hydropower project in a given state using the matrix method and geo-spatial data,
7. Prepare an environmental management plan for a mining project.
8. To conduct a public hearing for any project and prepare a draft for the process.
9. Prepare a brief life cycle assessment of a smartphone.
10. Prepare a brief EIA report of a River Valley Project.

Teaching learning interface for practical skills

To impart training on technical and analytical skills related to the course objectives, a wide range of learning methods will be used, including (a) laboratory practicals; (b) field-work exercises; (c) customized exercises based on available data; (d) survey analyses; and (e) developing case studies; (f) demonstration and critical analyses; and (h) experiential learning individually and collectively.

Prospective Sectors:

As per the Ministry of Environment, Forests, & Climate Change (MoEF&CC), Govt. of India, ~30 sectors require EIA for Environmental Clearance before any project activity. Some of them include Mining, Oil and gas exploration, development & production, River valley, hydel, drainage and irrigation projects, thermal Power plants, Nuclear power projects, Coal washeries, Mineral, Metallurgical industries, Cement plants, Petroleum industry, Coke oven plants, Asbestos milling, Chlor-alkali industry, Soda ash Industry, Chemical fertilizers, Pesticides industry, Synthetic organic chemicals industry, Distilleries, Integrated paint industry, Pulp & paper industry, Induction/arc furnaces, Air ports, All ship breaking yards, Industrial estates, Common hazardous waste treatment, storage and disposal facilities, Highways, railways, transport terminals, mass rapid transport systems, Building and large construction projects, Townships, and area development projects.

Essential/recommended readings

- EIA 2020. Ministry of Environment, Forest and Climate Change, Draft Environment Impact Assessment Notification, 2020, <http://environmentclearance.nic.in/writereaddata/om/6998FGGHOI_Gaztte_EIA2020_Comments.pdf>.
- Glasson, J. and Therivel, R., 2013. Introduction to Environmental Impact Assessment. Routledge.
- MacKinnon, A.J., Duinker, P.N. and Walker, T.R., 2018. The Application of Science in Environmental Impact Assessment. Routledge.
- Mareddy, A.R. (2017) Environmental Impact Assessment Theory and Practices, Butterworth Heinemann.

Suggested readings

- Judith, P. 1999. Handbook of Environmental Impact Assessment. Blackwell Science.
- Lawrence, D.P., 2013. Impact assessment: practical solutions to recurrent problems and contemporary challenges. John Wiley & Sons.
- Marriott, B. 1997. Environmental Impact Assessment: A Practical Guide. McGraw-Hill, New York, USA.
- Petts, J. (1999). Handbook of Environmental Impact Assessment. Vol. 1, Blackwell Science.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

SUSTAINABILITY REPORTING

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------------------|-----------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| SUSTAINABILITY REPORTING | 02 | 0 | 0 | 02 | Class XII | NIL |

Learning Objectives

- To gain insights into the step-by-step process of writing a sustainability report using internationally acceptable standards.
- To evolve a holistic view of sustainability and understand the carrying capacity of ecosystems for human needs.
- To acquire skills to address sustainability challenges in a global context.
- To evaluate industrial/organizational processes/programmes based on the interconnections among economic, environmental, and social activities

Learning outcomes

The Learning Outcomes of this course are as follows.

After studying the course, the students will be able to:

- Develop a multi-disciplinary and holistic perspective of sustainability and identify key factors determining sustainability and associated benefits
- Write sustainability reports using universal, sector, and topic standards
- Explain sustainability challenges and effective methods to communicate it to different stakeholders
- Apply sustainability concepts, and GRI Standards for sustainable industries
- Serve as environmental consultants to different industries
- Advise governments on sustainable environmental policies

SYLLABUS: SUSTAINABILITY REPORTING

Practicals/Hands-on Exercises (02 Credits: 60 hours)

1. Investigate the framework for sustainability reporting outlined by global reporting initiatives (GRI)
2. Analyse universal, sector, and topic standards given by GRI

3. Develop sustainability reporting of your institute
4. Examine and report the sustainability of your residential society or residential area around your College
5. Compare and contrast sustainability reporting of the market in your neighbourhood and the selected mining industry
6. Visit a thermal power plant in and around your city and write its sustainability report
7. Using appropriate standards, evaluate the sustainability of a Cement Factory in your city
8. Field survey of a waste treatment facility in your city, assess their sustainability and give recommendations if required.
9. Analyze the potential and limitations of certified tools and software recommended by the GRI for sustainability reporting
10. Examine and evaluate sustainability reports available on different sectors and topics worldwide and give appropriate recommendations, if any.

Teaching learning interface for practical skills

To impart training on technical and analytical skills related to the course objectives, a wide range of learning methods will be used, including (a) laboratory practicals; (b) field-work exercises; (c) customized exercises based on available data; (d) survey analyses; and (e) developing case studies; (f) demonstration and critical analyses; and (h) experiential learning individually and collectively.

Prospective Sectors:

All Multi-National Companies, (b) Environmental and Sustainability Consultancies, (c) Environmental NGOs, (d) World Bank, and (e) UNDP

Essential/recommended readings

- Bini, L. and Bellucci, M., 2020. Integrated Sustainability Reporting: Linking Environmental and Social Information to Value Creation Processes. Springer.
- A Short-Introduction to GRI Standards.
<https://www.globalreporting.org/media/wtafl4tw/a-short-introduction-to-the-gri-standards.pdf>
- Evaluating National Policies on Corporate Sustainability Reporting
<https://wedocs.unep.org/handle/20.500.11822/9435>
- Gutterman, A.S., 2021. Sustainability Reporting and Communications. Business Expert Press.
- Sustainability Reporting in the Financial Sector: A Governmental Approach
<https://wedocs.unep.org/handle/20.500.11822/17375>
- United Nations Environment Program (UNEP), 2015. Raising the bar: Advancing environmental disclosure in sustainability reporting.

Suggested readings

- Greiling, D., Traxler, A.A. and Stötzer, S., 2015. Sustainability reporting in the Austrian, German and Swiss public sector. International Journal of Public Sector Management.
- <https://www.globalreporting.org/reporting-support/reporting-tools/certified-software-and-tools/>

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

ENVIRONMENTAL AUDITING

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| ENVIRONMENTAL AUDITING | 02 | 0 | 0 | 02 | Class XII | NIL |

Learning Objectives

- To gain an understanding of the fundamental principles and components of environmental auditing
- To train in conducting an environmental audit in any organization/ institution
- To implement critical thinking toward environmental problems and formulate local solutions for their mitigation

Learning outcomes

After studying the course, the students will be able to:

- Conduct an environmental audit in a scientific manner
- Recommend organizations to adopt specific sustainable strategies
- Serve as catalyst to evolve sense of ownership and responsibility among organizations/industries towards solving local environmental problems.
- Pursue environmental auditing for higher studies and a future career.

SYLLABUS: ENVIRONMENTAL AUDITING

Practicals/Hands-on Exercises (02 Credits: 60 hours)

1. Prepare a working plan (in the form of a flowchart/ graphical abstract) for the environmental audit of any organization/ institution focusing on pre-audit, on-site and post-audit objectives and activities
2. Prepare a brief profile of any selected organization/ institution (Area, land use, green cover, organizational setup, demography etc.) and discuss its environmental policy and the environmental management systems
3. Prepare an interpretive electricity consumption report of the organization/ institution over a five-year period (both actual or arbitrary data can be used).

4. Prepare an interpretive water consumption report of the organization/ institution over a five-year period (both actual or arbitrary data can be used). Also, identify the sources of wastewater discharge and its management, if any.
5. Survey the campus and prepare a list of the plant/ animal (or both) diversity, highlighting its importance and threats faced.
6. Prepare a monthly air quality level dataset nearest to the institution's location, extracting data from the National Air Quality Index (CPCB) website. Prepare a report on causes of variation and measures taken by an organization to improve air quality levels
7. Prepare a comprehensive assessment report of Solid Waste Management at the organization/ institution highlighting compliance to Solid Waste Management Rules, 2016.
8. Formulate a scientifically sound protocol for identifying and disposing of e-waste and hazardous waste at any organization based on E-waste (management) rules, 2016 and Hazardous waste (management) rules, 2016.
9. Examine various environment-related practices and activities of the organization/ institution that have impacted the neighbouring communities and prepare a social audit questionnaire for studying the impact.
10. Compile the data, results, and analysis of all previous practicals and prepare a detailed environmental audit report of your selected organization/ institution.

Teaching learning interface for practical skills

To impart training on technical and analytical skills related to the course objectives, a wide range of learning methods will be used, including (a) laboratory practicals; (b) field-work exercises; (c) customized exercises based on available data; (d) survey analyses; and (e) developing case studies; (f) demonstration and critical analyses; and (h) experiential learning individually and collectively.

Prospective Sectors:

- (a) Universities/Colleges, (b) Environmental Consultancies, (c) Environmental NGOs, and (d) Indian Audit & Revenue Departments

Essential/recommended readings

- Cahill, L.B (2017). Environmental Health and Safety Audits: A Compendium of Thoughts and Trends, 2nd Edition, Bernan Press.
- Council, N.C., Britain, G. and Unit, E.F., 2011. Handbook for Phase 1 Habitat Survey: A Technique for Environmental Audit. Nature Conservancy Council.
- Ho G, Anda, M., Brennan, J., 2015. Water Auditing and Water Conservation. IWA Publishing
- Pain, S.W., 2010. Safety, Health, and Environmental Auditing: A Practical Guide. CRC Press.
- Thuman, A., Niehus, T., Younger, W.J., 2012. Handbook of Energy Audits, 9th ed. Routledge, Taylor and Francis
- Van Guilder, C.V., 2014. Environmental Audits. Mercury Learning & Information.

Suggested readings

- Barton, H., and Bruder N., 1993. A Guide to Local Environmental Auditing. Routledge, Taylor and Francis

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

DOCUMENT PREPARATION & PRESENTATION SOFTWARE

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Document Preparation & Presentation Software | 2 | 0 | 0 | 2 | Class XII | NIL |

Learning Objectives:

- To develop proficiency in the use of document preparation software such as document LaTeX, LibreOffice.
- To make a presentation using LaTeX, LibreOffice.
- To serve as a tool for conveying/communicating one's ideas, views, and observations.

Learning Outcomes

On completion of the course, a student will be able to

- Create a text document using LaTeX using a standard template.
- Incorporate well-formatted mathematical equations, algorithms, figures, tables and references in a document.
- Use Zotero for reference management.
- Format text, including alignment, emphasis and fonts.
- Handle basic aspects of document structure, including sections, subsections, paragraphs, and bulleted and enumerated lists.
- Page set a document including header, footer, and page numbering.
- Make a presentation.

Syllabus

Practical

Unit 1: Introduction

(4 Hours)

1. Create a LaTeX/ LibreOffice document having several paragraphs, including comments in LaTeX.
2. Organize content into sections, including preface/abstract. Using the article and book class of LaTeX. Handling errors.

Unit 2: Styling Pages (6 Hours)

1. Loading and using packages, setting margins, header and footer, and page orientation.
2. Organizing the document into multiple columns

Unit 3: Formatting Content (10 Hours)

1. Formatting text (styles, size, alignment)
2. Adding colours to a block of text/ page
3. Adding ordered and unordered lists
4. Inserting mathematical expressions – subscripts, superscripts, fractions, binomials, aligning equations, operators, Greek and mathematical symbols, and mathematical fonts.

Unit 4: Tables and Figures (10 Hours)

1. Create basic tables
2. Adding different types of borders to a table
3. Merging rows and columns
4. Splitting tables across multiple pages.
5. Incorporating figures and subfigures, explore different properties like rotation and scaling.

Unit 5: Algorithms and Equations (12 hours)

1. Incorporating algorithms, body typesetting, organizing algorithms across multiple pages.
2. Incorporating equations, indentation, and captioning.

Unit 6: Referencing and Indexing (6 hours)

1. Insert captions, labels, and references
2. Incorporate cross-referencing (refer to sections, table, and images)
3. Incorporate a bibliography
4. Create a back index.

Unit 7: Making Presentations (12 hours)

1. Create a slideshow
2. Incorporate logo
3. Highlight important points
4. Create a title page
5. Make a table of contents
6. Incorporate special effects in a slideshow.

Exercises:

For the following figures, create LaTeX documents using concepts from above:

1.

Hello World!

Prof. Naveen Kumar

November 15, 2022

Hello World! Today I am learning L^AT_EX. L^AT_EX is a great program for writing math. I can write in line math such as $a^2 + b^2 = c^2$. I can also give equations their own space:

$$\gamma^2 + \theta^2 = \omega^2$$

2.

Integrals, Sums and Limits

Dr. Neeraj Kumar Sharma

1 Integrals

Integral $\int_a^b x^2 dx$ inside text.

The same integral on display:

$$\int_a^b x^2 dx$$

and multiple integrals:

$$\begin{aligned} &\iint_V \mu(u, v) du dv \\ &\iiint_V \mu(u, v, w) du dv dw \\ &\oint_V f(s) ds \end{aligned}$$

2 Sums and products

Sum $\sum_{n=1}^{\infty} 2^{-n} = 1$ inside text.

The same sum on display:

$$\sum_{n=1}^{\infty} 2^{-n} = 1$$

Product $\prod_{i=a}^b f(i)$ inside text.

The same product on display:

$$\prod_{i=a}^b f(i)$$

3 Limits

Limit $\lim_{x \rightarrow \infty} f(x)$ inside text.

The same limit on display:

$$\lim_{x \rightarrow \infty} f(x)$$

3.

Equations

Prof. Naveen Kumar¹, Dr. Neeraj Kumar Sharma², and Sakeena Shahid³

¹Department of Computer Science, University of Delhi

²Ram Lal Anand College, University of Delhi

³SGTB Khalsa College, University of Delhi

November 15, 2022

1 Maxwell's Equations

“Maxwell's equations” are named for James Clark Maxwell and are as follow:

$$\vec{\nabla} \cdot \vec{E} = \frac{\rho}{\epsilon_0} \quad \text{Gauss's Law} \quad (1)$$

$$\vec{\nabla} \cdot \vec{B} = 0 \quad \text{Gauss's Law for Magnetism} \quad (2)$$

$$\vec{\nabla} \times \vec{E} = -\frac{\partial \vec{B}}{\partial t} \quad \text{Faraday's Law of Induction} \quad (3)$$

$$\vec{\nabla} \times \vec{B} = \mu_0 \left(\epsilon_0 \frac{\partial \vec{E}}{\partial t} + \vec{J} \right) \quad \text{Ampere's Circuital Law} \quad (4)$$

Equations 1, 2, 3, and 4 are some of the most important in Physics.

2 Matrix Equations

$$\begin{pmatrix} a_{11} & a_{12} & \cdots & a_{1n} \\ a_{21} & a_{22} & \cdots & a_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ a_{n1} & a_{n2} & \cdots & a_{nn} \end{pmatrix} \begin{bmatrix} v_1 \\ v_2 \\ \vdots \\ v_n \end{bmatrix} = \begin{bmatrix} w_1 \\ w_2 \\ \vdots \\ w_n \end{bmatrix}$$

4.

List of mathematical functions:

- Trigonometric functions

- sine
- cosine
- tangent

- Special functions

- Beta function
- Gamma function
- Riemann zeta function

5. Add the following algorithm to the document.

Algorithm 1: Example code

Input: Your Input

Output: Your output

Data: Testing set x

```
1  $\sum_{i=1}^{\infty} := 0$                                      // this is a comment
  /* Now this is an if...else conditional loop          */
2 if Condition 1 then
3   | Do something                                     // this is another comment
4   | if sub-Condition then
5   |   | Do a lot
6 else if Condition 2 then
7   | Do Otherwise
  /* Now this is a for loop                             */
8   | for sequence do
9   |   | loop instructions
10 else
11   | Do the rest
  /* Now this is a While loop                           */
12 while Condition do
13   | Do something
```

6.

| | | |
|-----------------|-------|-------|
| col1 | col2 | col3 |
| Multiple row | cell2 | cell3 |
| | cell5 | cell6 |
| | cell8 | cell9 |

7.

| Country List | | |
|------------------------------|---------------------|-------------|
| Country Name or Area Name | ISO ALPHA 2 Code | ISO ALPHA 3 |
| Afghanistan | AF | AFG |
| Aland Islands | AX | ALA |
| Albania | AL | ALB |
| Algeria | DZ | DZA |
| American Samoa | AS | ASM |
| Andorra | AD | AND |
| Angola | AO | AGO |

8. Insert four sub-figures as given below, and add captions. Also, refer to these sub-figures in the text.

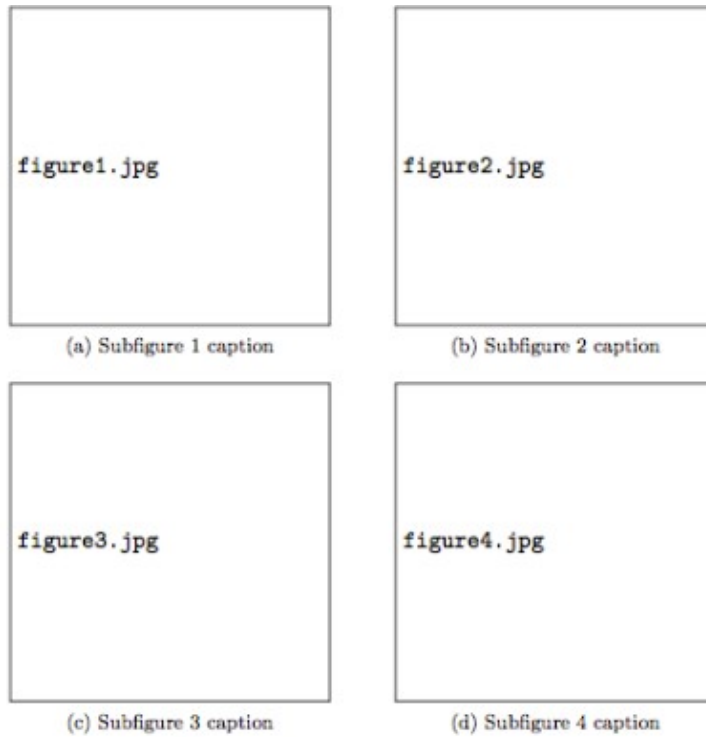


Figure 1: This is a figure containing several subfigures.

In the text, you can refer to subfigures of figure 1 as 1a, 1b, 1c and 1d and to the sub-index as (a), (b), (c) and (d).

9. Add a table of contents, a list of figures, and a list of tables in the document as given below.

Contents

| | |
|-------------------|---|
| Table of contents | 1 |
| 1 First Section | 2 |
| 2 Second Section | 2 |

List of Tables

| | |
|--------------------------|---|
| 1 Just a table | 2 |
|--------------------------|---|

List of Figures

| | |
|------------------------------|---|
| 1 This is an image | 2 |
|------------------------------|---|

10. Add a list of references in the document as given below and cite them in the text.

This document is an example of `natbib` package using in bibliography management. Three items are cited: *The L^AT_EX Companion* book [2], the Einstein journal paper Einstein [1], and the Donald Knuth's website [3]. The L^AT_EX related items are [2, 3].

References

- [1] A. Einstein. Zur Elektrodynamik bewegter Körper. (German) [On the electrodynamics of moving bodies]. *Annalen der Physik*, 322(10):891–921, 1905. doi: <http://dx.doi.org/10.1002/andp.19053221004>.
- [2] M. Goossens, F. Mittelbach, and A. Samarin. *The L^AT_EX Companion*. Addison-Wesley, Reading, Massachusetts, 1993.
- [3] D. Knuth. Knuth: Computers and typesetting. URL <http://www-cs-faculty.stanford.edu/~uno/abcde.html>.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Innovation and Entrepreneurship | 2 | 0 | 0 | 2 | Class XII | NIL |

Learning Objectives

The primary objectives of the course will be to:

- Encourage the process of creative thinking and innovation
- Build an entrepreneurial perspective to identify and tackle problems and explore new opportunities
- Gain insight into building business models and plans
- Identify tools and strategies that entrepreneurs may use for start-up, innovation and reinvention
- Understand how to go from an idea to product and scale it up for sustainability
- Develop skills to work in teams and build connections, collaborations and social networks .

Learning Outcomes

By the end of the course students should be able to:

- Identify and comprehend the concepts of creativity, innovation and invention in various contexts.
- Enrich their theoretical and conceptual foundations in entrepreneurship.
- Gain hands-on experience that shall empower them to identify business and social opportunities and venture in the entrepreneurial landscape.
- Prepare themselves to take informed decisions in establishing start-ups and ongoing innovation in organisations.

PEDAGOGY

While suitable concepts and theory will be utilized, the emphasis of the course will be on inquiry driven hands-on activities and experiential learning in a team setting. As this is essentially a group activity based course, the two lectures scheduled for each week shall be held together. The class to be split up ideally in groups of 5 – 7 students each, who will work

together for the rest of the semester on identifying a specific problem and by semester-end present a feasible innovative prototype capable of being funded as a start-up.

SYLLABUS

Unit I: Understanding Creativity

- Understanding the concept and process of creativity; students exploring within themselves the nature of the creative process; approaches to understanding creativity (Ref. B1)
- Differentiate between invention and innovation (Ref. OR1)
- Understanding entrepreneurial mindset and skills (creativity, decision making, risktaking behaviour, networking) and entrepreneurship in different contexts (eg. Social, Cooperative, Commercial, Public, Not for Profit organisations) (Ref. B1)
- Case studies of some successful innovations/start-ups – Different group can be given a different Case Study and the groups can have a discussion on same (Ref. Suggestive Case Studies A)

(15 practical hours)

Unit II: Ideation

- Identifying a specific problem through observation, contemplation, networking and research (Ref. B2)
- Generating ideas for problem solving using mind mapping, brainstorming, focus groups, idea generation tool kit (SCAMPER) (Ref. B1)
- Learning through failures of others – case studies of some ventures that could not sustain – Different group can be given a different Case Study and the groups can have a discussion on same (Ref. Suggestive Case Studies B)

(15 practical hours)

Unit III: Understanding the business

- Building a business plan using the lean canvas model (Ref. OR2)
- Understanding customers/stakeholders and evaluating the business plan through survey/questionnaire/interview/secondary research (Ref. B1 and B2)
- Designing, prototyping and iteration (Ref. B2)
- Networking and growth strategies (Ref. B3)
- Building and managing organisations (Ref. B3)
- Role of leadership and team based culture (Ref. B3 and OR4)

(20 practical hours)

Unit IV: Venturing Forth

- Financing the innovation: pitching and communicating the idea
- Sources of finance: crowdfunding, venture capital, equity funds, angel investing, borrowing (including government initiatives, bank and public funded schemes) (Ref. OR5 and OR6)
- Various forms of IPR (patent, copyright, trademark, geographical indication, industrial design) (Ref. OR7 and OR8)
- Setting and scaling up (Ref. B3)
- Entrepreneurial resilience and ongoing creativity (Ref. B1)

(10 practical hours)

Suggested Readings: Books

B1. The Innovator's DNA: Mastering the Five Skills of Disruptive Innovators, Jeff Dyer, Hal Gregersen, C.M. Christensen, Harvard Business Review Press, 2011

B2. Design Thinking: Business Innovation, Maurício Vianna, Ysmar Vianna, Isabel K. Adler, Brenda Lucena, Beatriz Russo, MJV Press, 1st Electronic Edition, 2011
(also available at https://cdn2.hubspot.net/hubfs/1701231/Documents/Design_Thinking_-_The_Book/Design_Thinking_The_Book.pdf)

B3. Contemporary Strategy Analysis: Text and Cases, Robert M Grant, Wiley, 9th Edition, 2016 (Chapter 6 and Chapter 9)

Online Resources

OR1. Discovery, Innovation and Invention
<https://www.laits.utexas.edu/~anorman/long/DII.html>

OR2. How to create your lean canvas
https://leancanvas_production.s3.amazonaws.com/cms/LeanCanvas.pdf

OR3. Organisational behaviour and human relations, Module 12, Creativity in decision making
<https://courses.lumenlearning.com/wm-organizationalbehavior/>

OR4. Organisational behaviour and human relations, Module 13, Leadership
<https://courses.lumenlearning.com/wm-organizationalbehavior/>

OR5. Sources of Funding Innovation and Entrepreneurship
https://www.wipo.int/edocs/pubdocs/en/wipo_pub_gii_2020-chapter4.pdf

OR6. Government Schemes for Startups
<https://www.startupindia.gov.in/content/sih/en/government-schemes.html>

OR7. Intellectual Property Rights in India
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/627956/IP-Rights-in-India.pdf

OR8. What is Intellectual Property? WIPO 2020 doi:10.34667/tind.42176
<https://www.wipo.int/publications/en/details.jsp?id=4528>

Suggestive Case Studies A

1. Amul
2. Goonj
3. Aravind Eye care systems
4. Apple
5. Pixar
6. ISRO
7. Khan Academy
8. Nyka
9. Swiggy

10. Sulabh International
11. OYO
12. Mumbai's Dabbawalas
13. Lijjat Papad
14. Jaipur Rugs
15. WOW! Momo
16. Biryani by Kilo

Suggestive Case Studies B

1. Nokia
2. Cafe Coffee Day
3. HMT watches
4. Atlas Cycles
5. Jet Airways
6. Kodak
7. Stayzilla
8. SKS Microfinance IPO
9. Satyam Computers
10. Groupon Inc.

Weekly Plan:

Week I: Understanding the concept and process of creativity; Approaches to understanding creativity; differentiate between invention and innovation.

Week II: Activity week - Students exploring within themselves the nature of the creative process in groups (eg. exploring the surroundings for possible problems and challenges that may have innovative solutions).

Week III: Understanding entrepreneurial mindset and skills (creativity, decision making, risk taking behaviour, networking) in different contexts through discussion of a case study (may select one case study from Suggestive Case Studies A).

Weeks IV - IX: Activity Weeks - The class to be split up ideally in groups of 5 – 7 students each, who will work together for the rest of the semester on identifying a specific problem and by semester-end present a feasible innovative prototype capable of being funded as a start-up.

Week IV: To begin with, each group shall identify a problem through observation, contemplation, brainstorming, networking and research.

Week V: Each group to generate ideas for solving their identified problem using mind mapping, focus groups, idea generation tool kit (SCAMPER).

Week VI: Each group to critically assess the feasibility of the proposed ideas by learning through the failures of others – case studies of some ventures that could not sustain (may use a case study from Suggestive Case Studies B).

Week VII: Each group to build a business plan using the lean canvas model and survey/questionnaire/interview/secondary research.

Week VIII: Each group to design and prototype their proposed business solution/model/product.

Week IX: The groups evaluate their proposed business plan/model using feedback from networking. Submission of formal business plan (written) by each group.

Week X: Formulating growth/scaling up strategies; building and managing organisations; role of leadership and team based culture, entrepreneurial resilience and ongoing creativity.

Week XI: Financing the innovation: pitching and communicating the idea. Sources of finance: crowdfunding, venture capital, equity funds, angel investing, borrowing (including government initiatives, bank and public funded schemes)

Week XII: Various forms of IPR (patent, copyright, trademark, geographical indication, industrial design)

Week XIII, XIV and XV: Activity weeks - Submission of final project report (written) and presentation (oral) by each group, Viva.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

IT Skills and Data Analysis - I

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------------|---------|-----------------------------------|----------|------------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| IT Skills and Data Analysis - I | 2 | 0 | 0 | 2 | Class XII | NIL |

Learning Objectives

The primary objectives of the course will be to:

- Familiarise the student with the quantitative skills required for representing and interpreting data for the purpose of decision making.
- Equip the student with some fundamental concepts, which play a critical role in understanding and visualizing real world data.
- Enable the student to analyze data and problem situations using relevant IT tools.

Learning Outcomes

By the end of the course students will be able to

- Represent and interpret data in tabular and graphical forms
- Understand and interpret the measures of central tendency and dispersion.
- Use IT tools such as spreadsheets to visualise and analyse data.

PEDAGOGY

Relevant concepts and theory will be introduced which will be supplemented by hands-on activities enabled by the use of spreadsheets. This is a two credit course and will comprise two lecture periods per week. As this is essentially an activity-based course, it will involve two consecutive lecture periods, once in a week.

SYLLABUS

Practical

Unit I : What is Statistics ? (24 hours)

This unit provides an introduction to the fundamentals of datasets, sources of data, frequency distributions and graphical representations of data. The aim is to give students a hands-on experience of initiating data analysis through a spreadsheet.

- Concept of datasets (Variables, Observations)
Reference 1, Chapter 2
- Different types of variables (Quantitative and Qualitative)
Reference 1, Chapter 2
- Distinction between primary and secondary sources of data
Reference 1, Chapter 2
- Basic idea of using questionnaire to collect primary data for analysis
Reference 2, Chapter 1 [Section 1.6]
- How to construct a questionnaire
Reference 1, Chapter 1
- Concept of frequency distribution: cumulative and relative frequencies
Reference 2, Chapter 2
- Introduction to spreadsheet
Reference 2, Chapter 2
 - Tabular and graphical presentation of data: data tables, frequency curve, histogram, bar graphs, pie charts (through the use of spreadsheets)
Reference 2, Chapter 2

Unit II: Measures of Central Tendency and Dispersion (36 hours)

The focus of this unit will be to familiarise the student with summary statistics to describe datasets. In particular, two important characteristics of data, viz., central tendency and dispersion, will be used to summarise datasets using a spreadsheet. The concept of the Normal distribution and its characteristics will be discussed to highlight its relevance in modelling real life phenomenon.

- Measures of central tendency: mean, median, mode
Reference 2, Chapter 3
- Examples of situations where it is appropriate to use the mean, median and mode as a measure of central tendency
Reference 2, Chapter 3
- Weighted mean
Reference 2, Chapter 3
- Measures of dispersion: range, variance, standard deviation
Reference 2, Chapter 3

- Quartiles, deciles and percentiles
Reference 2, Chapter 3
- Visualize the measures of central tendency and dispersion through frequency curve and histogram
Reference 2, Chapter 3
- Skewness and kurtosis
Reference 2, Chapter 3
- Normal curve and its basic properties : visual representation of population characteristics (height, weight, IQ etc.)
Reference 2, Chapter 5 [Section 5.6]

References (Readings and Resources)

1. Rowntree, D., Statistics without tears - A primer for non-mathematicians, Allyn and Bacon, 2018.
2. Levin, Rubin, Rastogi and Siddiqui, Statistics for Management, 7th Edn, 2014

Suggested Data Sources

The following data sets are suggested to carry out the activities

1. <https://data.worldbank.org/>
2. <https://www.statista.com/>
3. <https://data.gov.in/>
4. <https://censusindia.gov.in/>
5. <https://www.kaggle.com/>
6. <http://data.un.org/>

Weekly Plan

Weeks I and II: Students learn about the concept of datasets (Variables, Observations) ; Different type of Variables (Quantitative and Qualitative); Distinction between primary and secondary sources of data

Weeks III and IV: Basic idea of using questionnaire and how to construct a it; Concept of frequency distribution - cumulative and relative frequencies; Introduction to spreadsheet

Weeks V and VI: Tabular and graphical presentation of data: data tables, frequency curve, histogram, bar graphs, pie charts. Students to explore various representations on spreadsheet using datasets

Weeks VII and VIII: Introduction of Measures of Central Tendency: Mean, Median, Mode through appropriate examples explaining the use of each one of them in various situations. Understanding the concept of Weighted mean;

Weeks IX and X: Measures of dispersion: Range, Variance, Standard deviation; Visualizing the measures of central tendency and dispersion through frequency curve and histogram. Understanding Quartiles, deciles and percentiles numerically.

Weeks XI and XII: Representation of population characteristics using the basic properties of a Normal Curve, skewness and kurtosis.

Weeks XIII and XIV: Assignments based on Units 1 and 2 using spreadsheets to consolidate the learning of concepts covered.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

IT Skills and Data Analysis - II

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| IT Skills and Data Analysis - II | 2 | 0 | 0 | 2 | Class XII | IT Skills and Data Analysis - I |

Learning Objectives

The primary objectives of the course will be to

- Familiarise the student with the quantitative skills required for correlating the data for the purpose of decision making.
- Equip the student to visualise functions which play a critical role in understanding and visualizing real world data.
- Enable the student to analyze data and problem situations using relevant IT tools.

Learning Outcomes

By the end of the course students will be able to

- Establish relationships between variables using correlation and regression analysis.
- Visualize functions and differentiate between linear and nonlinear functions.
- Use IT tools such as spreadsheets to visualise and analyse data.

PEDAGOGY

Relevant concepts and theory will be introduced which will be supplemented by hands-on activities enabled by the use of spreadsheets. This is a two credit course and will comprise two lecture periods per week. As this is essentially an activity-based course, it will involve two consecutive lecture periods, once in a week.

SYLLABUS

Unit I: Functions and their graphical representations (16 hours)

This unit introduces the graphical visualisation of functions to understand the relationship between two variables.

- Definition and graphical representation of a function, vertical line test
Reference 3
- Polynomial functions: linear, quadratic and cubic functions
Reference 3
- Reciprocal, exponential and logarithmic functions
Reference 3
- Concept of slope of a function through graphical representation
Reference 3

Unit II: Relationship between Variables (28 hours)

Students will learn about scatter diagrams and correlation analysis as a means to describe the nature and strength of association between two variables. The concept of regression analysis will be introduced as a method for quantifying the relationship between two variables. Further, multiple linear regression will be discussed for situations where more than one independent variable is needed to estimate the dependent variable. The focus will be mainly on interpreting estimated regression coefficients.

- Scatter diagrams
Reference 2, Chapter 12
- Correlation analysis : measure and interpretation of correlation coefficient and coefficient of determination
Reference 2, Chapter 12
- Hypotheses, model specification and testing
Reference 2, Chapter 12
- Bi-variate regression analysis: method of least squares, curve of best fit as a model for prediction
Reference 2, Chapter 12
- Multiple Linear Regression
Reference 2, Chapter 13

Weeks 12 – 14: Project Presentations and Viva (16 hours)

References (Readings and Resources)

1. Rowntree, D., Statistics without tears - A primer for non-mathematicians, Allyn and Bacon, 2018.

2. Levin, Rubin, Rastogi and Siddiqui, Statistics for Management, 7th Edn, 2014
3. Boundless Algebra : <https://courses.lumenlearning.com/boundless-algebra/>

Suggested Data Sources

The following data sets are suggested to carry out the activities

1. <https://data.worldbank.org/>
2. <https://www.statista.com/>
3. <https://data.gov.in/>
4. <https://censusindia.gov.in/>
5. <https://www.kaggle.com/>
6. <http://data.un.org/>

Weekly Plan

Weeks I and II: Understanding the definition of a function; graphical representation of a function and vertical line test; visualising various kinds of functions (Linear, quadratic and cubic functions)

Weeks III and IV: Reciprocal, exponential and logarithmic functions; Interpreting and visualising the concept of slope of a function through graphical representations.

Weeks V and VI: Scatter Diagrams; Correlation analysis - measure and interpretation of correlation coefficient and coefficient of determination.

Weeks VII to IX: Hypotheses, model specification and testing; Understanding Bi-variate Regression analysis: Method of Least Squares; Curve of best fit as a model for prediction.

Weeks X and XI: Multiple Regression Analysis

Weeks XII to XIV: Project Presentations and Viva

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

R Programming for Business Analytics

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| R Programming for Business Analytics | 2 | 0 | 0 | 2 | XII pass | NIL |

Learning Objectives

- To introduce the basic concepts in R programming.
- To equip the students with the popular statistical programming language R.
- To familiarize the students with utility of 'R' for managerial decision making.

Learning outcomes

Upon successful completion of this course the student will be able to:

- Learn Syntax and Semantics of R Programming
- Understand the file system and data handling in R.
- Visualize and analyse the data using statistical methods.
- Apply best practice model design methodologies to real problems using R

SYLLABUS

Unit I: Introduction to R, Data Handling and Data Visualization (16 hours)

Introduction to R and familiarization of R Studio, Basic components in R Studio. R Syntax and programming, Understanding *tidyverse*, *tibble*, *dplyr*, *ggplot2*, *tidyr*, *purrr*, *readr*, *forcats*, *stringr* for tidying, manipulating and plotting data,

Unit II: Optimization Models using R (12 hours)

Linear Programming Models, Optimization models, understanding *optim()*,

Unit III: Machine Learning with R - Introduction to Supervised Learning

(16 hours)

Classification based on similarities with k-nearest neighbours, odds with logistic regression, maximizing separation with discriminant analysis, classifying with decision trees, regression with kNN, random forest, XGBoost, Understanding *mlr*, *classif.*, *regr.*

Unit IV: Machine Learning with R - Introduction to Unsupervised Learning (16 hours)

Dimension Reduction- Maximizing variance with Principal Component Analysis; k-mean cluster, understanding *cluster*. .

Essential/recommended readings

- Boehmke, B. & Brandon, G.(2020). Hands-on Machine Learning with R, CRC Press.
- Horton, N.J. & Kleinman, K.(2015) Using R & R Studio for Data Management, Statistical Analysis, and Graphics, CRC Press.
- Peng, R. D. (2016). *R programming for data science* (pp. 86-181). Victoria, BC, Canada: Leanpub.
- Lander, J. P. (2014). *R for everyone: Advanced analytics and graphics*. Pearson Education.
- Teetor, P. (2011). *R cookbook: Proven recipes for data analysis, statistics, and graphics*. " O'Reilly Media, Inc."
- Zhao, Y., & Cen, Y. (2013). *Data mining applications with R*. Academic Press.

Note: Learners are advised to use the latest edition of readings.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

YOGA IN PRACTICE

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-------------------------|----------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Yoga in Practice | 2 | 0 | 0 | 2 | Class XII Pass | NIL |

Total Credits: 02

Learning Objectives:

Students will be able to discern real significance of yogic operations from original sources and will be prone to practicing in their day to day life.

Learning Outcomes:

- (i) Student will form an understanding of the concept of yoga.
- (ii) Students will learn various aspects of the science of yoga.
- (iii) Theoretical and practical knowledge of Aasanas and pranayams to lead a balanced life.

SYLLABUS OF YOGA IN PRACTICE

Practical Unit: I

30 hours

- (i) Definition and types of yoga:

Karma yoga, Gyana yoga, Bhakti yoga, Laya yoga, Raja yoga, Hatha yoga, Mantra yoga,

Kundalini yoga. (योग एवं ४ांश – अध्याय -१)

- (ii) Ashtanga Yoga:

Yam- Ahinsa, Satya, Asteya, Brahmacharya, Aparigrah.

Niyam- Saucha, Santosha, Tapa, Swadhyaya, Ishwarpranidhana

Asan, Pranayam- (the types of Pranayama: Puraka, rechak & Kumbhaka), Pratyahara, Dharana, Dhyana & Samadhi etc.

- (iii) Shat Chakra,s:

Mooladhara, Swadhishtana, Manipur, Anahata, Vishudha, Aagya, Sahasrara- (Sahasradhara chakra). (योग एवं ४ांश – अध्याय – २-३)

Unit: II

30 hours

Asana,s and their advantage:-

(i) Asana in standing position:

Surya Namaskara, Tadasana, Padahastana, Garudasana, Natarajasana, Cakrasana.

(ii) Asana in sitting position:

Padmasana, Vajrasana, Siddhasana, Bhadrasana, Gomukhasana, Shashankasana, Mandukasana, Kukkutasana.

(iii) Asana in stomach side position:

Dhanurasana, Bhujangasana, Mayurasana, Marjarasana, Makarasana.

(iv) Asana in backbone side position:

Uttanapadasana, Naukasana, Sarvangasana, Sheershasana, Savasana etc.

(v) Practice of pranayama- Purak, Rechak and Kumbhaka. (योग एवं 4ाव - अाय - ३-४, ६)

Essential Readings:

1. योग दर्शन – महर्षि पतंजलि, टीकाकार-हरकृ ददास गोयका, गीता प्रेस, गोरखपुर, उत्तर प्रदेश,

४० वां पुनर्मुद्रण ।

2. योग एवं 4ाव - डॉ० विजय कुमार, चौखटा विभारती, वाराणसी, उत्तर प्रदेश, प्र० संरण - २०२१ ।

3. प्राणायाम रह4 - (वैयानिक तों के साथ) - 4ामी रामदेव, दिद प्रकाशन, दिद योग मर, पतंजलि योगपीठ ,

कनखल, हरार ।

4. योग साधना एवं योग चिकित्ा रह4- 4ामी रामदेव, दिद प्रकाशन, दिद योग मर, पतंजलि योगपीठ ,

कनखल, हरार ।

5. शतयुव पुष - 4ामी रामेराना सर4ती, आ प्रकाशन, कुं डे वालान, दिद-सं० २०६२ । (विदिक पुकालय, मुई)

Suggestive Readings:

1. योग चिरपी - 4ामी अै तान सर4ती, गुकुल वृावन वातक शोध संान, आसफ अली रोड, नई दिद-२००६ ।

2. ढायाम का मह - 4ामी ओमान सर4ती, हरयाणा साहिवा संान, गुकुल झर, हरयाणा - २००६ ।

3. आयुवदीय पउक चिकित्ा- आचार्य विहाधर शु4, भारतीय केीय चिकित्ा पषद्, नई दिद- 1

4. रोग और योग- 4ामी कमन सर4ती, योग पके शन, मुंगेर, बिहार, संरण- २०१३ ।

5. सूर्य योग विहा - राजीव जैन त्रिलोक, मंजुल पशिंग हाउस, भोपाल, म प्रदेश, संरण -

२००५ ।

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Floriculture

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course Title & Code | Credits | Credit Distribution Of The Course | | | Eligibility Criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Floriculture | 2 | 0 | 0 | 2 | Class XII | NIL |

Learning Objectives

- To acquaint students with the basic principles and importance of Floriculture.
- To teach students about flowering plants that can be grown in different seasons in Delhi-NCR.
- To make students aware about exotic flowering plants of ornamental value and their propagation in laboratories and greenhouses.
- To provide information about employment, business opportunities and other avenues in the Floriculture sector (Floriculturist).

Learning Outcomes

After completion of this course learners will be able to:

- identify and describe the ornamental flowering plants in Delhi-NCR.
- practice the methods of preparing soil and water, cultivation and propagation methods.
- design, prepare and apply appropriate combinations of plants and methods of cultivation for commercial setup.
- adapt to the job role of Floriculturist (employment/ entrepreneurship)

SYLLABUS

Practicals: 60 hours

1. Introduction to floriculture, tools and equipments. 4 hours
2. Study of diversity in shape, size, and colour of flowers (including basic botany, nomenclature, common name and general uses). 4 hours
3. Identification and preparation of an inventory of herbaceous flowering plants, climbers, shrubs, and trees around the campus. 4 hours
4. Study the various physico-chemical soil properties for understanding different soils/soil-types. 8 hours
5. Methods of preparation of floral beds, soil preparation, greenhouse design and

- | | |
|---------------------|---------|
| fumigation methods. | 8 hours |
|---------------------|---------|
6. Methods of seed sowing and raising flowering plants through seeds, bulbs and through vegetative methods in planters, containers and in outdoor environments. Role of light, plant growth regulators and nutrients in blooming and flowering. 8 hours
 7. Bacterial and fungal diseases and pests of ornamental flowers and their management. 4 hours
 8. Interior decoration methods, flower arrangements (Japanese, Western and Indian). 4 hours
 9. Harvesting, methods to increase the shelf life of flowers, post-harvest care and marketing platforms for the floriculture industry. 8 hours
 10. Field visit to nearby nursery/garden to understand basic aspects of Garden design. 4 hours
 11. Project Report on any five flowering plants that are grown commercially, their share in the global market, methods used for selling the products and importance of the floriculture industry in job creation. 4 hours

Essential Readings:

1. Randhawa, G.S., Mukhopadhyay, A. (1986). Floriculture in India. New York, NY: Allied Publishers.
2. Larson, R. A. (Ed.). (2012). Introduction to floriculture. Elsevier.

Suggestive Readings:

1. Pal, S. L. (2019). Role of plant growth regulators in floriculture: An overview. J. Pharmacogn. Phytochem, 8, 789-796.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Mushroom Culture and Technology I

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course Title & Code | Credits | Credit Distribution Of The Course | | | Eligibility Criteria | Pre-requisite of the course (if any) |
|-----------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Mushroom Culture and Technology I | 2 | 0 | 0 | 2 | Class XII | NIL |

Learning objectives

To make students aware about

- mushroom growing techniques.
- medicinal and nutritional value of mushrooms.

Learning Outcomes

After successful completion of the course, students will be able to:

- practice the techniques for cultivation of various edible mushrooms
- setup entrepreneurial small scale units for self-employment
- apply the skills as Mushroom Grower in large scale industries.

SYLLABUS

Practical**: 60 hours

** Specimens and examples studied may vary depending on seasonal factors and availability

1. To study the principle and operation of Autoclave, Incubator, Laminar Air Flow/ BSL 2 facility. 4 hours
2. To study edible mushrooms (*Agaricus*, *Pleurotus*, *Boletus*, *Lentinula*, *Calocybe*, *Volvariella*, *Morchella*). 4 hours
3. To study poisonous mushrooms (*Amanita*, *Cortinarius*, *Psilocybe*, *Coprinopsis*). 4 hours
4. To study medicinal mushrooms (*Ganoderma*, *Ophiocordyceps*, *Chaga*, *Hericium*).

- | | |
|--|---------|
| | 4 hours |
| 5. Preparation of various types of compost and media which can be used for cultivation of mushroom. | 4 hours |
| 6. To study the common fungal, bacterial, viral, and insect borne diseases of mushrooms (any 2 from each). | 4 hours |
| 7. To study the cultivation technique of <i>Agaricus</i> mushroom. | 4 hours |
| 8. To study the cultivation technique of <i>Pleurotus</i> mushroom. | 4 hours |
| 9. To study the cultivation technique of <i>Calocybe/ Volvariella</i> mushroom. | 4 hours |
| 10. To study the cultivation technique of <i>Ganoderma</i> mushroom. | 4 hours |
| 11. To study the nutritional value and market value of mushrooms, and post-harvest technologies like packaging and preservation. | 4 hours |
| 12. Various requirements for setting up a mushroom cultivation unit (“kuccha” or cemented house). | 4 hours |
| 13. Entrepreneurship in cultivation of mushrooms. | 4 hours |
| 14. Government policies related to the promotion of mushroom cultivation. | 4 hours |
| 15. Visit to an Institute or Center conducting mushroom cultivation (Report to be submitted). | 4 hours |

Essential Readings:

1. Bahl, N. (2015). Hand Book on Mushroom. Page no. 1-166. Oxford & IBH Publishing Company.
2. Russell, S. (2014). The Essential Guide To Cultivating Mushroom. Storey Publishing. North Adams, M.A. 01247.
3. Zied, D. C., Gimenez, A. P. (017) Edible and Medicinal Mushroom page no. 1-585. John Wiley & Sons Ltd. UK.
4. Chang, S.T., Miles, P.G. (2004) Mushrooms Cultivation, Nutritional Value, Medicinal effect and Environmental Impact, CRC Press.
5. Fletcher, J.T., Gaze, R.H. (2007). Mushroom Pest and Disease Control. CRC Press.
6. Ahlawat, O.P., Tewari , R.P. (2007) .Cultivation Technology Of Paddy Straw Mushroom (*Volvariella volvacea*). Pages 1-44 National Research Center for Mushroom (Indian Council of Agricultural Research) Chambaghat, Solan (HP).
7. Rai, R.D., Arumuganathan, Y. (2008). Post Harvest Technology of Mushrooms. National Research Center for Mushroom (Indian Council of Agricultural Research) Chambaghat, Solan (HP)

8. Singh, M., Vijay, B., Kamal, S., Wakchaure, G.C. (2011) . Mushrooms Cultivation, Marketing and Consumption., Publishers Directorate of Mushroom Research (ICAR) Chambaghat, Solan.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Hydroponic and Aeroponic Farming

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course Title & Code | Credits | Credit Distribution Of The Course | | | Eligibility Criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Hydroponic and Aeroponic Farming | 2 | 0 | 0 | 2 | Class XII | NIL |

Learning objectives:

- The objective of the course is to provide hands-on experience to students on various aspects of hydroponics and aeroponics.
- To make students self-reliant and employable by providing the necessary knowledge and experience to establish hydroponic and aeroponic systems.

Learning Outcomes:

After completing the course, learners will be able to:

- develop basic hydroponics and aeroponics facilities at any given location (pilot scale and/or industrial scale).
- devise and implement a strategy for marketing of the product.
- apply the knowledge to fulfill certification rules and various government policies.
- establish themselves as entrepreneurs (Hydroponic cultivator).

Syllabus

Practical:

1. Study of techniques used in hydroponics (Circulating methods such as Nutrient Film Technique (NFT), Deep Flow Technique (DFT), Dutch bucket; Non circulating methods such as Root dipping, Floating, Capillary action; Aeroponics such as root mist and fog feed techniques). 8 hours
2. Study of various instruments used in hydroponics (Pressure gauge, Filters, PVC Tanks, Venturi/Reciprocating Pump/Mixing tank, EC meter, pH meter, TDS meter, water pump, net cups, air pump, thermometer, lux meter, drip irrigation system. 8 hours

3. Construction of sustainable hydroponic and aeroponic units (including greenhouse facilities) 8 hours
4. Preparation of growth media for Hydroponics. 4 hours
5. Estimation of NPK, DO, TDS, pH of growth media. 4 hours
6. Study of suitable conditions for Hydroponics-quality, light intensity, photoperiod and temperature. 4 hours
7. Growing a leafy vegetable/fruity vegetable/medicinal herb /aromatic plant in Hydroponics /Aeroponic solution. 16 hours
8. Study of safety measures, certification standards and government policies. 4 hours
9. Visit to Hydroponic/Aquaculture/Aeroponic farm/Institute. 4 hours

Essential Readings:

1. Meier Schwarz. (1995). Soilless Culture Management. Advanced Series in Agricultural Sciences, vol 24. Springer, Berlin.
2. Hasan, M.; Sabir, N.; Singh, A.K.; Singh, M.C.; Patel, N.; Khanna, M.; Rai, T.; and Pragnya, P. (2018). Hydroponics Technology for Horticultural Crops, Tech. Bull. TB-ICN 188/2018. Publ. by I.A.R.I., New Delhi.
3. Misra, R.L., Misra S. (2017). Soilless Crop production. Daya Publishing House, Astral

Suggestive Readings:

1. Goddek, S., Joyce, A., Kotzen, B., Burnell, G.M. (2019). Aquaponics Food Production Systems. Springer, Cham.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Viewing and Capturing Diversity in Nature

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course Title & Code | Credits | Credit Distribution Of The Course | | | Eligibility Criteria | Pre-requisite of the course (if any) |
|--|----------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Viewing and Capturing Diversity in Nature | 2 | 0 | 0 | 2 | Class XII | NIL |

Learning objectives

- Understand fundamentals of digital cameras and smartphone photography technology.
- Develop a working knowledge of digital image analysis and processing.
- Understand the importance and use of Nature photography in business and as career goal.
- Enhance appreciation for the tremendous aesthetics inherent in nature.

Learning Outcomes

On successful completion of this course, a student will be able to:

- Describe and use the digital camera and smartphone camera functions and their applications
- employ different photographic equipment to enhance their photographic skills and create digital resources.
- discriminate between the photographic variables with reference to weather and season.
- employ the photographic skills in various professions and for entrepreneurship.

Syllabus

Practicals: 60 hours

1. To study the parts of a digital camera. 4 hours
2. To study the principle and working of digital camera/ smartphone camera. 4 hours
3. Working and handling of light microscopes (Dissection and Compound). 4 hours
4. Study of plant forms through microscopic lens (Single-celled, colonial forms, filamentous forms, multicellular and complex forms). 8 hours

5. To study techniques of capturing shots (using light and lenses effectively, macro and micro photography, wide angle and close-ups). 4 hours
6. Study of plant adaptations through photographs (Aquatic and desert plants). 4 hours
7. To capture and understand the Ecological Interactions. 8 hours
8. Identification of different plant life forms through online available tools/ search engines. 8 hours
9. Outdoor/ Campus Photography: Plants, Environment, Landscapes and Cityscape. 4 hours
10. Foldscope: The domestic microscope. Use the Foldscope to explore microscopic organisms in pond water. 4 hours
11. Project Work: To make a portfolio of diverse landscaping patterns/ selected themes through outdoor visits. 8 hours

Essential Readings:

1. Ang., T. (2008). Fundamentals of modern Photography. London, Mitchell.
2. Freeman Patterson “The Art of Seeing” by Key Porter Books.
3. Tim Fitzharris “Landscape Photography” Firefly Books.
4. Kelby, S. (2012). The digital photography book. Peachpit Press.
5. Langford, M., Fox, A., and Smith, R.S. (2013). Langford basic photography: the guide for serious photographers. Amsterdam: Focal Press/Elsevier.
6. Peterson, B. (2016). Understanding exposure: how to shoot great photographs with any camera. AmPhoto Books.

Suggestive readings:

1. Sharma P.D. (2008) Ecology and Environment. Rastogi Publishers.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Plant Aromatics and Perfumery

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course Title & Code | Credits | Credit Distribution Of The Course | | | Eligibility Criteria | Pre-requisite of the course (if any) |
|--------------------------------------|----------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Plant Aromatics and Perfumery | 2 | 0 | 0 | 2 | Class XII | NIL |

Learning objectives

- Provide the basic understanding of aromatic and medicinal plants including classification and methods of extracting essential oils.
- Practical demonstration of extraction and quality assessment of the product obtained.

Learning Outcomes

After completion of the course, learners will be able to:

- extract essential oils from a variety of plants and plant parts.
- develop strategy for promotion and marketing of the aromatic and essential oils.
- establish their own startup, become self-reliant and/or adapt to job roles in beauty and wellness sector.

Syllabus

Practicals: 60 hours

1. Classification of essential oils on the basis of chemical composition, aroma and extraction methods. 4 hours
2. Principles, processing and techniques of extraction of essential oils. 4 hours
3. Cultivation practices of the common aromatic crops (any five) - Rose, Lavender, Peppermint, Spearmint, Basil, Citronella, Vetiver, Palmrosa, Lemongrass. 8 hours

4. Extraction process of essential oil from fruit/ fruit peel by steam distillation (e.g. orange, lemon). 4 hours
5. Extraction of essential oil from bark by steam distillation (e.g. cinnamon). 4 hours
6. Extraction of essential oils from flower by steam distillation (e.g. clove, rose, jasmine, lavender, rosemary). 4 hours
7. Extraction of essential oil from leaves and stems by steam distillation (e.g. lemongrass, eucalyptus, citronella, bottlebrush). 4 hours
8. Extraction of essential oil from seeds by steam distillation (e.g. fennel, nutmeg). 4 hours
9. Extraction of essential oil from root (e.g. vetiver) and rhizome (e.g. ginger, curcuma) by steam distillation 4 hours
10. Determination of oil content in aromatic crop/material by Clevenger's method. 4 hours
11. Quality assessment of essential oils through *sensory evaluation* (odour, colour), physical tests (specific gravity, refractive index, optical rotation, solubility), chemical tests (determination of acid value, ester value). 8 hours
12. Demonstration/Illustration of Instruments and techniques quality assessment of Gas chromatography (GC) and Thin layer chromatography (TLC). 4 hours
13. Field Visit to essential oils and perfumery Institute/Industry. 4 hours

Essential Readings:

1. EIRI BOARD. (2008). Handbook of Essential Oils Manufacturing and Aromatic Plants 5/E edition, Engineers India Research Institute (India), New Delhi.
2. Kochhar, S.L. (2016). Economic Botany – A Comprehensive Study, 5th Edition. New Delhi, India: Cambridge University Press.

Suggestive Readings:

1. Başer, K.H.C., Buchbauer, G. (2020). Handbook of Essential Oils: Science, Technology, and Applications, 3rd edition, CRC Press.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi

Nursery, Gardening and Landscaping

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course Title & Code | Credits | Credit Distribution Of The Course | | | Eligibility Criteria | Pre-requisite of the course (if any) |
|------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Nursery, Gardening and Landscaping | 2 | 0 | 0 | 2 | Class XII | NIL |

Learning objectives

The program is aimed to teach students the basic knowledge required to develop entrepreneurship skills in the development of Nursery, Gardening and Landscaping. This course would train students to initiate a remunerative enterprise owing to a high demand of skilled professionals in this field.

Learning Outcomes

After completing this course, the learners will be able to:

- describe and differentiate between the types of gardens.
- practice different methods for propagation of plants.
- execute several nursery and gardening operations.
- assess growing conditions of different horticultural plants, their general requirements and understand their role in landscaping.

Syllabus

Practical: 60 hours

1. Methods of preparation of nursery beds and sowing of seeds. Media for propagation of plants in Nursery Beds, Pots and Mist chamber. 12 hours
2. Study and practice of different propagation methods viz., cutting, layering, division, grafting and budding. 4 hours
3. Introduction and practicing Bonsai training, pruning and wiring. 4 hours

4. Study of different types of gardens (indoor and outdoor) and key features of gardens (Paths & Avenues, Hedges & Edges, Lawn, Flowerbeds, Arches & Pergolas, Fencing, Water bodies, Rock garden). 8 hours
5. Methods for selection and enlisting of suitable plants for different locations and in different types of gardens. 4 hours
6. Identification of key horticultural plants, Herbs including different types of grasses – foliage and flowering, Shrubs including hedge plants - foliage and flowering, Avenue trees – foliage and flowering, Climbers, Lianas, Epiphytes, Creepers, Trailers, Aquatic plants, Succulents, Weeds. 8 hours
7. Study of important gardens of India (any five). 4 hours
8. Methods of Landscape designing of Residential areas and Public Gardens, Aquatic Garden, Rock Garden, Industrial gardens. 4 hours
9. Concept and Application of Computer aided Designing (CAD) for landscape designing/ Preparation of landscape designs for school and college using CAD technology. 8 hours
10. Demonstration of different composting methods for Biofertilizers. 4 hours

Essential Readings:

1. A handbook of Landscape: CPWD
2. Gopaldaswamiengar, K. S., Parthasarathy, G., Mukundan, P. (1991). Complete Gardening in India. India: Gopaldaswamy Parthasarathy, 'Srinivasa'.
3. Hartmann, H. T., Kester, D. E., Hartmann, H. T., Kester, D. E. (1975). Plant Propagation: Principles and Practices. India: Prentice-Hall.
4. Roy, R. K., Roy, R. K. (2013). Fundamentals of Garden Designing: A Colour Encyclopedia. India: New India Publishing Agency.
5. Littlepage, R., Littlepage, R. (2017). Fundamentals of Garden Design: An Introduction to Landscape Design. (n.p.): CreateSpace Independent Publishing Platform.

Suggestive reading:

1. Hodge, G., Hodge, G. (2014). Practical Botany for Gardeners: Over 3,000 Botanical Terms Explained and Explored. United Kingdom: University of Chicago Press.
2. The Royal Horticultural Society Gardening Manual. (2000). United Kingdom: Dorling Kindersley.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Horticulture

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course Title & Code | Credits | Credit Distribution Of The Course | | | Eligibility Criteria | Pre-requisite of the course (if any) |
|---------------------|----------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Horticulture | 2 | 0 | 0 | 2 | Class XII | NIL |

Learning objectives

- To acquaint students with the basic, principles, concepts and importance of Horticulture
- To train students in lawn designing, species selection for lawns, parks, home gardens and terrace gardens.
- To provide information about the employment and business opportunities and other avenues in the horticulture sector

Learning Outcomes

After completion of the course, learners will be able to:

- design gardens and learn the art of landscape design.
- describe and implement methods of preparing soil, cultivation and propagation for growing hedges, climbers, vegetables, and fruit yielding plants
- create and maintain nurseries, green houses and implement innovative practices in maintenance, harvesting and storage of horticultural produce.
- apply the skills for enhancing the job opportunities (Horticulturist) as well as self-employment.

Syllabus

Practical: 60 hours

1. Introduction to Horticulture; Garden tools and safety. 4 hours
2. Lawn making and lawn care: recognizing soils and drainage systems, types of grasses. 4 hours
3. Choosing the appropriate plants (species selection) for plantation in different seasons and locations (Outdoor, roof-top, balcony, rock gardens); Flowering annuals, herbaceous

- perennials, vines and climbers, ornamental trees, bulbous and foliage plants, cacti and succulents. 4 hours
4. Vegetable Garden: Sowing, raising seedlings, transplantation methods; choosing the right vegetables for the season. 4 hours
 5. Seed germination, viability tests and comparison of other parameters of seeds (stored from different years/different temperatures). 4 hours
 6. Weeding, manuring, and irrigation methods used in lawns, parks, and vegetable gardens. 4 hours
 7. Propagation and plant care: propagation by layering, cutting and other methods. 4 hours
 8. Pruning: pruning roses, shrubs, and trees. 4 hours
 9. Supporting plants: bamboos, strings, and enclosures. 4 hours
 10. Maintenance and care of lawns and gardens: understanding diseases caused by pests and pathogens; protecting garden plants from infections, treating the plants with organic and biopesticides. 4 hours
 11. Bonsais: Art and craft. 4 hours
 12. One week internship on field or in a company/organisation (Landscape Design) that shall be facilitated by the college and report to be submitted. 8 hours
 13. Methods and plantation approaches in various garden designs: Japanese, Mughal, Buddhist, English and Indian Gardens. 4 hours
 14. Enhancing beauty of a garden using flowering plants, Garden walls, Fencing, Steps, Hedge, Edging, Lawn, Flower beds, Borders, aquatic garden with flowers; Case studies: Some selected gardens of India. 4 hours

Essential Readings:

1. Edmondson, J.L., Cunningham, H., Densley Tingley, D.O. et al. (2020). The hidden potential of urban horticulture. *Nat Food* **1**, 155–159.
2. Musser E., Andres. (2005). *Fundamentals of Horticulture*. New Delhi, Delhi: McGraw Hill Book Co. 2.
3. Sandhu, M.K. (1989). *Plant Propagation*. Madras, Bangalore: Wile Eastern Ltd.
4. Bird, C. (Ed.). (2014). *The fundamentals of horticulture: Theory and practice*. Cambridge University Press.
5. *The Practical Gardener* (1994). Reader's Digest Special Volume.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Mushroom Culture and Technology-II

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course Title & Code | Credits | Credit Distribution Of The Course | | | Eligibility Criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Mushroom Culture and Technology-II | 2 | 0 | 0 | 2 | Class XII | NIL |

Cultivation of Button mushroom and King oyster mushroom

Prerequisites:

Compost preparation for button mushroom would start around October-November and further cultivation steps will take place from January. Compost and spawn should be prepared before going to the next step.

Learning objectives:

- To develop skills for growing button and king oyster mushroom

Learning Outcomes:

After completion of this course, the learner will be able to:

- prepare casing soil and apply over spawn-run compost bags.
- implement harvesting, packaging and marketing of produce as per FSSAI standards.

Syllabus

Practical**: 60 hours

** Specimens and examples studied may vary depending on seasonal factors and availability

1. To add and mix spawn of button mushroom to pre-prepared compost (Spawning). 4 hours
2. To set up ideal mushroom house for cultivation of button mushroom. 8 hours
3. To maintain ideal environmental conditions for spawn run. 4 hours
4. Preparation and sterilization of casing soil. 4 hours

5. To apply casing soil over the spawn run compost bags and incubating for case run. 4 hours
6. To maintain appropriate conditions for pin head formation and fruiting of button mushroom. 8 hours
7. Harvesting of first flush of button mushrooms. 4 hours
8. Post-harvest packaging and storage of button mushrooms. 4 hours
9. Maintaining the environmental conditions for the second flush of button mushroom. 4 hours
10. To prepare and sterilize substrate bags for cultivation of king oyster mushroom. 4 hours
11. To add the spawn of king oyster mushroom in the substrate bags under aseptic conditions and incubator under appropriate conditions. 4 hours
12. To induce fruiting of king oyster mushroom by scraping the mycelium from the edges and surface of spawn run bags. 4 hours
13. Harvesting, post-harvest packaging and storage of king oyster mushrooms. 4 hours

Essential Readings:

1. Aggarwal, A., Sharma, Y.P., Angra, E. (2021). A textbook on mushroom cultivation, Theory and Practices. Newrays Publishing House, 2021.
2. Tiwari, S.C. Kapoor, P. (2018). Mushroom Cultivation. Mittal Publications. ISBN - 978-8183249232.
3. Bahl, N. (2015). Hand Book on Mushroom. Page no. 1-166. Oxford & IBH Publishing Company. ISBN- 13:978-8120413993.
4. Russell, S. (2014). The Essential Guide To Cultivating Mushroom. Storey Publishing. North Adams, MA 01247 page no. 1-233. ISBN 978-1-61212-146-8.
5. Chang, S.T. Miles, P.G. (2004). Mushrooms Cultivation, Nutritional Value, Medicinal effect and Environmental Impact. Page no. 1-477, CRC Press.
6. Fletcher, J.T., Gaze, R.G. (2007). Mushroom Pest and Disease Control. CRC Press.
7. Rai, R.D., Arumuganathan, Y. (2008). Post harvest technology of mushrooms. Pages 1-72. National Research Center for Mushroom (Indian Council of Agricultural Research) Chambaghat, Solan-173 213 (HP)

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Biofertilizers

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course Title & Code | Credits | Credit Distribution Of The Course | | | Eligibility Criteria | Pre-requisite of the course (if any) |
|-----------------------|----------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Biofertilizers | 2 | 0 | 0 | 2 | Class XII | NIL |

Learning objectives:

To help the students understand:

- the concept of biofertilizers and develop the skills for handling microbial inoculants.
- the growth and multiplication conditions of useful microbes and their role in mineral cycling and nutrition to plants.
- various methods of decomposition of biodegradable waste and their conversion to compost.

Learning outcomes:

After completion of this course, the learners will be able to:

- describe the different methods of composting.
- assess quality of compost and its role in soil nutrition.
- apply methods of bio-control
- develop a composting unit for production of biofertilizers (generate employment)

Syllabus

Practical: 60 hours

1. Introduction to rhizobial symbiosis - Study of *Rhizobium* and its isolation from root nodules of leguminous plants by Gram staining method. 4 hours
2. Study of different bio-composting methods (microbes and earthworm). 8 hours
3. Compost quality assessment and its role in soil nutrition - Test for pH, NO³⁻, SO₄²⁻, Cl⁻ and organic matter of different composts. 8 hours

4. Introduction to Arbuscular mycorrhiza - Study of arbuscular mycorrhizal fungi from plant roots by staining methods. 4 hours
5. Isolation of arbuscular mycorrhizal spores from rhizosphere soil. 4 hours
6. Study structure of *Anabaena* and *Azolla* structure - Isolation of *Anabaena* from *Azolla* leaf. 4 hours
7. Study various biocontrol methods and their application Pheromone trap, *Trichoderma*, *Pseudomonas*, Neem etc. 4 hours
8. Projects on any one of the following topics: *Rhizobium* technology, AMF technology, Organic farming, Bio composting, Vermicomposting, *Azolla* culture etc. The design of the project should be such that it includes a continuous work of at least 6 weeks and a dissertation submission/ presentation/ CE - continuous evaluation. 24 hours

Essential Readings:

1. Kumaresan, V. (2005). *Biotechnology*. New Delhi, Delhi: Saras Publication.
2. Sathe, T.V. (2004). *Vermiculture and Organic Farming*. New Delhi, Delhi: Daya publishers.
3. Subha Rao, N.S. (2000). *Soil Microbiology*. New Delhi, Delhi: Oxford & IBH Publishers.
4. Khosla, R. (2017). *Biofertilizers and Biocontrol Agents for Organic Farming* Kojo Press.

Suggestive Readings:

1. Azotobacter - Isolation and characterization -- <https://youtu.be/1Z1VhgJ2h6U>
2. Rhizobium -- Identification and characterization - <https://youtu.be/jELlo-pMvc4>.
3. 3-Days Online Workshop On Arbuscular Mycorrhizal Fungi_ Biodiversity, Taxonomy and Propagation 19-2 (2022-01-20 at 02_27 GMT-8) – <https://youtu.be/LKzK4luSRc4>
4. Vayas, S.C, Vayas, S., Modi, H.A. (1998). *Bio-fertilizers and organic Farming*. Nadiad, Gujarat: Akta Prakashan.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Organic Farming

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course Title & Code | Credits | Credit Distribution Of The Course | | | Eligibility Criteria | Pre-requisite of the course (if any) |
|------------------------|----------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Organic Farming | 2 | 0 | 0 | 2 | Class XII | NIL |

Learning objectives:

- To create awareness among the students about organic farming and its importance in sustainable agriculture.
- To provide a skill set of Organic farming to students to help them become self-reliant.

Learning Outcomes:

After completion of this course the learners will be able to:

- practice organic farming along with application of indigenous knowledge.
- establish entrepreneurial ventures and generate employment (Organic Grower).
- evaluate the organic produce as per FSSAI standards (Government rules).

Syllabus

Practical: 60 hours

1. Study of Organic Farming as an integrated approach. 4 hours
2. Soil analysis-physical testing and assessment of soil types, weightment, water movement, soil conditioners, etc. 8 hours
3. Manure preparation and introduction to compost, composting and its value addition quality test. 4 hours
4. Study of Indigenous Technology Knowledge (ITK) for nutrient, insect, pest disease and weed management. 8 hours
5. Study of various agriculturally useful Biofertilizers. 4 hours
6. Biocontrol agents including Integrated Pest Management. 4 hours

7. Study of traditional organic input preparation/formulation of Biofertilizer, biopesticides, plant health promoters like *Panchgavya*, *Beejamrut* etc. 8 hours
8. Study of the system of organic certification and inspection. 4 hours
9. Branding of rural products, FSSAI, marketing, packaging and handling of organic produce. 4 hours
10. Current Government schemes related to organic farming. 4 hours
11. Visit organic farms to study the various components and their utilization. 8 hours

Essential Readings:

1. Dhama, A.K. (2014). Organic Farming for Sustainable Agriculture (2nd edition), Agrobios (India), Jodhpur.
2. Sharma, Arun K. (2013). A Handbook of Organic Farming, Agrobios (India), Jodhpur
3. Palaniappan, S.P. and Anandurai, K. (1999). Organic Farming – Theory and Practice. Scientific Pub. Jodhpur
4. Thapa, U and Tripathy, P. (2006). Organic Farming in India, Problems and prospects, Agritech, Publising Academy, Udaipur.
5. Jaivik Kheti Sahayak Pustika- National Centre for Organic and Natural Farming, Department of Agriculture & Farmers Welfare, GoI.

Suggestive Readings:

1. National Program for Organic Production-APEDA, Ministry of Commerce & Industry, GoI.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

Green Belt Development for Smart Cities

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course Title & Code | Credits | Credit Distribution Of The Course | | | Eligibility Criteria | Pre-requisite of the course (if any) |
|--|----------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Green Belt Development for Smart Cities | 2 | 0 | 0 | 2 | Class XII | NIL |

Learning objectives:

- To introduce students with one of the key green skill development programs under the Skill India mission by the Government of India.
- To acquaint students with various methods and techniques used in development of green infrastructure for smart cities

Learning Outcomes:

After completion of the course, students will be able to:

- measure factors (biotic and abiotic) contributing to sustainable, healthy environment.
- Assess, describe and use the appropriate plants for restoring polluted environment.
- use their skills enhancing for green infrastructure development (UN-SDG).

Syllabus

Practical:

1. Methods of vegetation sampling and calculation of importance value index 4 hours
2. Measuring Tree Basal Area, Height and Canopy Cover to estimate green cover of an area.
8 hours
3. Understanding of Instruments for measuring microclimatic variables viz., light, wind, temperature, humidity and precipitation 4 hours
4. Estimation of Total Carbon stock of an area. 8 hours
5. Understanding methods for selection of plants according to pollutant load of both air and water (includes field survey) 4 hours

6. Assessing air pollution tolerance of plant species using APTI (Air pollution tolerance index). 8 hours
7. Use Open Source Softwares for mapping the GPS points and generating a cover map. 4 hours
8. Measurement of Dissolved Oxygen (DO) from treated wastewater. 8 hours
9. Measurement of BOD and TDS from tank and treated pond. 8 hours
10. Determination of total dissolved and suspended solids in water. 4 hours

Essential Readings:

1. Bell, J. R., Wheater, C. P., Cook, P. A., Bell, J. R., Wheater, C. P., Cook, P. A. (2011). Practical Field Ecology: A Project Guide. United Kingdom: Wiley.
2. Singh J.S., Singh S.P. & Gupta S.R. · 2014. Ecology, Environmental Science & Conservation. (2014). India: S. Chand Pvt. Limited.
3. Measurements for Estimation of Carbon Stocks in Afforestation and Reforestation Project Activities under the Clean Development Mechanism, A field Manual UNFCCC.
4. Slingsby, D., Cook, C., Slingsby, D., Cook, C. (2016). Practical Ecology. United Kingdom: Macmillan Education UK.
5. Mukerji, K. G. (2013). Laboratory Manual of Food Microbiology. India: I.K. International Publishing House Pvt. Limited.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi.

BIG DATA ANALYTICS-I

Credit Distribution, Eligibility and Pre-Requisites of the Course

| Course title & Code | Credits | Credit Distribution of the Course | | | Eligibility Criteria | Pre-requisite of the course (if any) |
|----------------------|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Big Data Analytics-I | 2 | 1 | 0 | 1 | 12 th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand the Big Data platform and its uses.
- Provide an overview of Apache Hadoop.
- Provide HDFS concepts and Interfacing with HDFS.
- Provide an overview of Map Reduce Programming.

Learning Outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to identify Big Data and its Business Implications.
- After studying this course, students will be able to list the components of Hadoop and Hadoop Eco-Systems.
- After studying this course, students will be able to access and process data on distributed file system.
- After studying this course, students will be able to manage job execution in Hadoop environment.

Syllabus:

Unit-1: Understanding Big Data

2 hours

Data Storage and Analysis-The process of data analysis, Characteristics of Big Data, Big Data Analytics, Typical Analytical Architecture, Requirement for new analytical architecture, Challenges in Big Data Analytics – Need of big data frameworks

Unit-2: Foundations of Big Data Systems

4 hours

Getting started with Hadoop, Requirement of Hadoop Framework, Design principle of Hadoop –Comparison with other system, Understanding Hadoop Ecosystem: Hadoop Components – Hadoop 1 vs Hadoop 2

Unit-3: HDFS (Hadoop Distributed File System)

4 hours

The Design of HDFS, Hadoop Daemon's – HDFS Commands, HDFS Concepts,

Command Line Interface, Hadoop file system interfaces-Loading data into HDFS, read/write process to HDFS

Unit-4: Introduction to Parallel Programming with Map Reduce

5 hours

Map Reduce Programming: I/O formats, Map side join, Reduce Side Join, Secondary sorting, Pipelining Map Reduce jobs (Map Reduce Execution Pipeline)- Map, Shuffle and Sort, Reduce

Practical Exercises 30 hours

- Downloading and installing Hadoop.
- Understanding different Hadoop modes. Startup scripts, Configuration files.
- Hadoop Implementation of file management tasks, such as Adding files and directories, retrieving files and Deleting files.
- Run a basic word count Map reduce program to understand map reduce paradigm: To count words in a given file, to view the output file, and to calculate the execution time.
- Map Reduce Program to analyse time-temperature statistics and generate report with max/min temperature.

Essential/recommended readings

- Seema Acharya, Subhasini Chellappan, “Big Data Analytics” Wiley 2015.
- Tom White, “Hadoop: The Defective Guide”, O’Reilly, 4th Edition, 2015.
- Donald Miner, Adam Shook, “Map Reduce Design Pattern”, O’Reilly, 2012.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi

BIG DATA ANALYTICS-II

Credit Distribution, Eligibility and Pre-Requisites of the Course

| Course title & Code | Credits | Credit Distribution of the Course | | | Eligibility Criteria | Pre-requisite of the course (if any) |
|---------------------------|---------|-----------------------------------|----------|------------------------|-------------------------|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Big Data Analytics-II | 2 | 1 | 0 | 1 | 12 th Pass | Big Data Analytics-I |

Learning Objectives

The Learning Objectives of this course are as follows:

- Provide hands on Hadoop Eco System.
- Provide an overview of Apache Spark.
- To understand Machine Learning with Big Data.
- Provide an overview of GPU Computing.

Learning Outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to develop Big Data Solutions using Hadoop Eco System.
- After studying this course, students will be able to use Spark for the effective analysis of the Big Data.
- After studying this course, students will be able to use Machine Learning Techniques with Big Data.
- After studying this course, students will be able to use GPU Computing for parallel computations.

Syllabus:

Practical

Unit-1: Big Data Systems- The Advances

(3 hours)

Data flow, Data Ingest with Flume and Scoop and Hadoop archives, Hadoop I/O: Compression, Serialization, Avro and File-Based Data structures.

Unit-2: Introduction to Apache Spark

(3 hours)

Introduction, Architecture of Spark, Resilient Distributed Datasets, Spark Transformations, Writing Spark Application - Spark Programming in Scala, Python, R, Java - Application Execution

Unit-3: Machine Learning with Big Data

(3 hours)

Introduction to machine learning, Supervised vs Unsupervised learning, Cluster

analysis, understanding k means clustering, Implementation of k means clustering with Map Reduce.

Unit-4: Introduction to GPU Computing

(6 hours)

Introduction to GPU Computing, CUDA Programming Model, CUDA API, Simple Matrix, Multiplication in CUDA, CUDA Memory Model, Shared Memory Matrix Multiplication, Additional CUDA API Features.

Practical Exercises 30 hours

- Implementation of Matrix Multiplication with Hadoop Map Reduce.
- Implementation of K-means clustering using Map Reduce.
- To study and implement basic functions and commands in R/Python programming.
- To build Word cloud, a text mining method using R/Python for easy to understand and visualization than a table data.
- To implement clustering program using R/Python programming

Essential/recommended readings

- Seema Acharya, Subhasini Chellappan, “Big Data Analytics” Wiley 2015.
- Mike Frampton, “Mastering Apache Spark”, Packt Publishing, 2015.
- Tom White, “Hadoop: The Defective Guide”, O’Reilly, 4th Edition, 2015.
- Nick Pentreath, Machine Learning with Spark, Packt Publishing, 2015.
- Mohammed Guller, Big Data Analytics with Spark, Apress, 2015.
- Donald Miner, Adam Shook, “Map Reduce Design Pattern”, O’Reilly, 2012.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi

Social Media Marketing

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-------------------------------|----------|-----------------------------------|----------|---------------------|----------------------|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Social Media Marketing | 2 | 1 | 0 | 1 | Pass in XII | Pass in 'Digital Marketing' (SEC-Sem 1) |

Learning Objectives

- To provide basic knowledge of social media marketing concepts
- To enhance skills as social media marketer and start a career in social media marketing.

Learning Outcomes

After completion of the course, learners will be able to:

1. Evaluate the role of social media in marketing, advertising and public relations.
2. Assess the optimal use of various social media platforms for social media marketing.
3. Analyse the importance of social media for developing an effective marketing plan, and assess ways to measure its performance.
4. Describe practical skills required for creating and sharing content through online communities and social networks.
5. Demonstrate and appreciate social media ethics to use social media spaces effectively.

SYLLABUS:

Unit 1: Introduction to Social Media Marketing: (4 hours)

Social Media Marketing- Concept and Importance.

Social Media Platforms- Online communities and Forums; Blogs and Microblogs, Social Networks, other contemporary social media platforms: Goals, Role in Marketing and Use as listening tools. Trends in SMM. Social Media Influencers.

Unit 2: Social media marketing Plan and Performance Measurement: (6 hours)

SMM Plan- Setting Goals, Determining Strategies, Identifying Target Market, Selecting Tools, Selecting Platforms, Implementation: Measuring Effectiveness - Conversion rate, amplification rate, applause rate: on page and on post level.

Unit 3: Content Creation and Sharing using Case Campaigns: (5 hours)

Blogging, Streaming Video and Podcasting: Criteria and approach-70/20/10 with risk variants, 50-50 content, Brand Mnemonic, Brand story. Contextualising content creation. Social Media Ethics.

Practical Exercises: 30 hours

The learners are required to:

1. Discuss the importance of social media in marketing, advertising and public relations by analysing relevant case studies.

2. Examine the use of social media by your institution to improve alumni engagement.
3. Identify social media platforms for marketing a good, a service, an institution, an event and a person.
4. Promote any college event of your choice using social media. Measure the effectiveness of your campaign.
5. Create a blog/ vlog on any topic of your interest. Measure performance of your blog post.
6. Prepare a social media marketing plan for any product of your choice.
7. Prepare a calendar for scheduling various posts/campaigns via buffer or tweet deck. Find out the conversion rate, amplification rate, and the applause rate. Calculate the engagement rate and economic value/per visitor of the concerned campaigns.
8. Observe the engagement rate in twitter campaigns of your college and suggest improvements, if needed.
9. Assess the reviews/ratings, comments, likes, and dislikes of blog posts in the categories of health and nutrition, or yoga counselling, or family therapy.
10. Examine the twitter handles of Delhi Government or of Delhi University and find out how consistent they are in their reaction checks?
11. Design a social media plan for sensitising citizens for timely tax payments (Assuming that you are an honest tax-payer and feel that everyone should be like you).

Essengial Readings

- Ahuja V(2015).Digital Marketing.Oxford University Press.
- Blanchard, O. (2011). Social Media ROI: Managing and Measuring Social Media Efforts in Your Organization. United Kingdom: Pearson Education.
- Charlesworth, A. (2014). An Introduction to Social Media Marketing. United Kingdom: Taylor & Francis.
- Gupta, S. (2020). Digital Marketing. India: McGraw Hill Education (India) Private Limited.
- Johnson, S. (2020). Social Media Marketing: Secret Strategies for Advertising Your Business and Personal Brand on Instagram, YouTube, Twitter, And Facebook. A Guide to being an Influencer of Millions. Italy: AndreaAstemio.
- Keller, K. L., Kotler, P. (2016). Marketing Management. India: Pearson Education.
- Maity M(2022). Digital Marketing.Oxford University Press.
- Mamoria C.B, Bhatacahrya A,Marketing Management. Kitab Mahal, Delhi
- Mathur,V. & Arora,S. Digital Marketing PHI Learning
- McDonald, J. (2016). Social Media Marketing Workbook: How to Use Social Media for Business. United States: CreateSpace Independent Publishing Platform.
- Parker, J., Roberts, M. L., Zahay, D., Barker, D. I., Barker, M. (2022). Social Media Marketing: A Strategic Approach. United States: Cengage Learning.
- Quesenberry, K. A. (2015). Social Media Strategy: Marketing and Advertising in the Consumer Revolution. United States: Rowman & Littlefield Publishers.
- Rishi, B., Tuten, T.L., (2020) Social Media Marketing, 3ed., Sage Textbook
- Setiawan, I., Kartajaya, H., Kotler, P. (2016). Marketing 4.0: Moving from Traditional to Digital. Germany: Wiley.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi

Design Thinking

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------|---------|-----------------------------------|----------|------------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Design Thinking | 2 | 0 | 0 | 2 | Class XII | NIL |

Learning Objectives

To provide basic understanding of problem search, design process, design thinking and ability to convert an innovative product idea to a prototype.

Learning Outcomes

After studying the course, the student will be able to:

- Understand innovation process
- Do product designing
- Empathy research.
- Do designing brief and proof of concept.
- Do prototyping, product testing and validation

SYLLABUS:

Unit I: Design thinking and innovation in product or process designing. Identifying user needs. Human Centered Design. **(8 hours)**

Unit II: Innovation Opportunities. Problem space exploration. Ideation. Empathy Research **(13 hours)**

Unit III: Novel product or process Opportunities. Solution space exploration. Design brief. Concept generation. User validation **(13 hours)**

Unit IV: Converting ideas to product. Developing Prototypes. Iterative improvement. Proof of concept - Product testing and validation **(18 hours)**

Unit V: Disruptive design innovations – case studies **(8 hours)**

Teaching Plan

Week 1: Design thinking and innovation in product or process designing

Week 2: Identifying user needs. Human Centered Design

Week 3: Innovation Opportunities.
Week 4: Problem space exploration. Ideation.
Week 5: Empathy Research
Week 6: Novel product or process Opportunities.
Week 7: Solution space exploration. Design brief.
Week 8: Concept generation. User validation
Week 9: Converting ideas to product.
Week 10: Developing Prototypes.
Week 11: Iterative improvement.
Week 12: Proof of concept - Product testing and validation
Week 13, 14 & 15: Disruptive design innovations – case studies

Essential Readings:

1. *Creative Confidence: Unleashing the creative potential within us all* by Tom Kelley & David Kelley, Crown Business (New York, 2013)
2. *The Design of everyday things* by Don Norman, Basic Books (2013)
3. *Design Thinking: Understanding how designers think and work* by Nigel Cross, Bloomsbury Visual Arts (2019)

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi

Aquaculture Entrepreneurship

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-------------------------------------|----------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Aquaculture Entrepreneurship | 2 | 0 | 0 | 2 | Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To give first-hand training on traditional and technology-based Aquaculture.
- To understand the importance of different types of ponds required for aquaculture.
- To understand the requirement of advanced technology for sustainable development of aquaculture in India.
- To gain experience in the management of optimum water quality in the fish production systems.
- To enhance the quality of aquacrops and increase the production.

Learning Outcomes

By the end of the course, the students will be able to:

- Identify the useful aquaculture systems for sustainable aquaculture development.
- Recognize the suitable and economically important aquacultural species.
- Understand the importance of aquaculture in nutrition security, poverty elevation and employment generation.

Skill development and job opportunities

After completion of this course students may be

- Employed in various aquaculture related business including prawn and fish farms.
- Fully equipped to start own entrepreneurship in fish farming.

SYLLABUS:

Practical

Unit I: Pond-based Traditional Aquaculture

20 Hours

Introduction to indigenous pond-based fish culture systems and identification of economically important cultivable finfishes and shellfishes. The impact of aquatic organisms in the production of aquacrops.

Exercises:

1. Designing (layout) and drawing of a self-sustainable Aquaculture farm showing different ponds.

2. Selection and identification of cultivable finfishes and shellfishes (prawns, mussels, crabs).
3. Collection and identification of various freshwater aquatic plants. Understanding of the role of different aquatic plants in aquaculture.
4. Identification of harmful aquatic insects and their remedial measures.
5. The study of diurnal fluctuations of major water quality parameters (*viz.*, temperature, pH, dissolved oxygen, ammonia etc.) in a pond.

Unit II: Recirculating Aquaculture System (RAS)

20 Hours

Application of advance technology like, Recirculating Aquaculture System (RAS) for the sustainable development of Aquaculture in India.

Exercises:

1. Designing of a land-based Recirculating Aquaculture System (RAS).
2. Evaluation of various types of filters like, mechanical, chemical and biological filters in the maintenance of water quality in the RAS.
3. The study of role of flow rate and duration of circulation in the maintenance of water quality in the RAS.
4. The monitoring of temperature, pH, dissolved oxygen, ammonia, nitrite, nitrate, phosphate etc. at different hours of water circulation.
5. Culture of various fishes and prawns in the RAS.
6. Visit to a Recirculating Aquaculture System.

Unit III: Aquaponics System

20 Hours

Application of Aquaponics System to grow multiple crops simultaneously and thereby, increases the production of aquacrops in per unit area in a sustainable manner. Thus, enhances the earning of Fish farmers.

Exercises:

1. Designing of an Aquaponics System.
2. Evaluation of role of various types of edible (lettuce, tomato, water spinach etc.) and ornamental plants in the maintenance of ammonia levels in the fish culture units.
4. Identification of microorganisms functioning in the Aquaponics System.
5. Culture of various fishes and prawns in the Aquaponics System.
6. The monitoring of temperature, pH, dissolved oxygen, ammonia, nitrite, nitrate, phosphate etc. in the fish culture units.
7. Visit to an Aquaponics System.

Recommended Readings:

- AOAC, Association of Official Analytical Chemists. 2019. Official Methods of Analysis. Washington, DC: Association of Official Analytical Chemists Inc.
- APHA, American Public Health Association. 2017. Standard Methods for the

Examination of Water and Wastewater. 23rd ed. Washington DC, USA: American Public Health Association, American Water Works Association, Water Environment Federation.

- Chakrabarti, R. and Sharma, J. G. 2008. Aquahouse. New Dimension of Sustainable Aquaculture. DIPAS, Indian Council of Agricultural Research, New Delhi, India.
- Holt, G. J. 2021. Larval Fish Nutrition. Willey-Blackwell, UK.
- ICAR, Indian Council of Agricultural Research. 2013. Handbook of Fisheries and Aquaculture. Directorate of Knowledge Management in Agriculture, Indian Council of Agricultural Research, New Delhi, India.
- Pillay, T. V. R. 2005. Aquaculture. Principles and Practices. Blackwell Publishing, New Delhi, India.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi

Bio-floc Technology

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Bio-floc Technology | 2 | 0 | 0 | 2 | Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To learn about the basics of Bio-floc technology and it's important as a skill for self-sustainable and self-employment
- To learn production of fish in the larger scale with minimum use of water source and land to help in the total production of fish for human consumption in India.
- To learn about how to set-up the technology looking into the different conditions and availability of space and training.
- To teach fundamental concept of running this system with the biological knowledge of bacteria culture, water quality management
- To learn the types of fish species, types of feed and feeding, density of fish to be maintain in the particular volume of water etc.

Learning Outcomes

The Learning Outcomes of this course are as follows:

- After studying this course, students will be able to gain insight into fish culture using minimum amount of water, land, fish feed and with high biosecurity.
- After studying this course, students will be able to learn and explain about the bio-floc technology and they can set up bio-floc tanks for themselves and for others in the form of industries and entrepreneurship as well as for start-up with the help of existing Government funding and self funding.
- After studying this course, students will be able to understand and implement bio-floc system and this can be an alternative skill for earning, self-employment, job generation and contribute in large scale fish production which are hygienic, organic and good protein source for human health.

SYLLABUS:

Practical

Unit-I

12 Hours

Introduction to basics of Bio-floc technology and its applications in aquaculture industry, Standard operating procedure, Microbial Role in Bio-floc System, Design Set-up and installation of Bio-floc system, Biosecurity, Advance over pond aquaculture, basic equipment's and necessary items.

Exercises

1. Inoculation of bacteria and its role in Bio-floc technology.
2. Plankton and microbial analysis of bio-floc.
3. Set-up and Installation of Bio-floc system.

Unit-II

12 Hours

Optimum water quality parameters and its management. Floc water preparation and floc volume measurement. Monitoring and management of dissolved oxygen, pH, conductivity, temperature, salinity, ammonia, nitrate, nitrite, TDS. Measurement of floc volume and its control. Role of bacteria in management of water quality.

Exercises

1. Analysis of following water quality parameters in Bio-floc culture tanks using kits: temperature, pH, conductivity, salinity, TDS, ammonia, nitrate, nitrite.
2. Water preparation for Bio-floc system.
3. Measurement of floc volume using imhoff cone.

Unit-III

12 Hours

Suitable species selection, Pre-stocking and post stocking management, Food and feeding management, Production performance, Nursery rearing days, Survival (%), Average body weight at harvest, feed conversion ratio.

Exercise

1. Identification of suitable fish, feeding habits, stocking capacity, growth rate and duration of culture.
2. The study of Feed Conversion Ratio (FCR) and Feed Conversion Efficiency (FCE).

Unit-IV

12 Hours

C: N ratio management, Nutritional requirements and protein levels in the food.

Source of carbon, calculation of carbon and nitrogen ratio, suitable C:N ration management in the initial floc preparation and during culture days. Selection of species-specific food with optimum protein level, food size, quantity of feed according to per cent body weight, feeding rate.

Exercise

1. Calculation of C: N ratio and its management from the TAN content in the floc water.
2. Mouth size and food size and growth study.

Unit-V

12 Hours

Disease management and prophylactic treatment, Economics values of fish and its marketing strategies. Common disease in bio-floc, identification of disease its causes, species-specific disease, stress management and treatment. Steps for prevention and protections of possible disease, possible control measures with setup systems by controlling light, temperature etc. Sludge management. Economics values of fish and its marketing strategies. Production capacity and requirements, start-up and entrepreneurship opportunities, funding and grants for setting up from Government.

Exercise

1. Fungal, bacterial, parasitic and viral disease commonly found in bio-floc fish culture system.
2. Identification and economically important fish species for culture in bio-floc system like prawn, other new economic species etc.

3. Write a Project for start-up or entrepreneurship and governmental grants.
4. Visit to hatcheries with super-intensive models.

Recommended Readings:

- Avnimelech, Y. 2015. Bio-floc Technology- a Practical Guidebook. 3rd ed. World Aquaculture Society, USA.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi

Fish Breeding and Larviculture

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------------------|----------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Fish Breeding and Larviculture | 2 | 0 | 0 | 2 | Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To give first-hand training on various aspects of brood stock maintenance of carps and air breathing fishes.
- To understand the breeding techniques for carps and air breathing fishes.
- To understand the larviculture techniques for carps.
- To gain experience on the larviculture techniques of air breathing fishes.
- To gather knowledge in the management of optimum water quality for larviculture.
- To gather knowledge on the nutritional requirements of the cultivable species.
- To gain knowledge on the impact of live food in larviculture.

Learning Outcomes

By the end of the course, the students will be able to:

- Produce seeds of carps and air breathing fishes.
- Start the Fish hatchery business.
- Start fish-food production.
- Initiate entrepreneurship in fish seeds production.

Skill development and job opportunities

After completion of this course students may be

- Employed in various aquaculture related business including prawn and fish farms.
- Fully equipped to start own entrepreneurship in fish farming.

SYLLABUS:

Practical

Unit I: Breeding of Economically Important Fishes

20 Hours

Breeding of various fishes in the captivity and production of quality fish seeds for aquaculture.

Exercises:

1. Management of brood stock units and breeding of carps.
2. Maintenance of brood stock units and breeding of air breathing fishes.
3. Estimation of major water quality parameters *viz.*, temperature, pH, dissolved oxygen, conductivity etc. in the fish breeding units.

Unit II: Culture of Important Live Food Organisms

15 Hours

Culture of various live food organisms using organic manures and feeding of different fish larvae produced.

Exercises:

1. Culture of live food organisms *viz.*, rotifers, cladocerans, copepods, chironomid larva etc. using organic manures (like cattle manure, poultry wastes and mustard oil-cake).
2. Evaluation of major water quality parameters *viz.*, temperature, pH, dissolved oxygen, ammonia etc. in the live food culture units.
3. The enrichment of live food organisms (with vitamin C, DHA, EPA etc.) to enhance the nutritional value of the live food for fish larvae.

Unit II: Larviculture

25 Hours

Culture of larvae of carps and air breathing fishes and production of healthy seeds for stocking ponds.

Exercises:

1. Culture of fish larvae in the static water/ Recirculating Aquaculture Systems (RAS).
2. Measurement of water quality parameters (*viz.*, temperature, pH, dissolved oxygen, ammonia etc.) in the larvae culture unit regularly.
3. Feeding of fish larvae with live food thrice daily.
4. The study of morphological and physiological changes in the larvae during ontogenic development.
5. Visit to a fish farm.

Recommended Readings:

- AOAC, Association of Official Analytical Chemists. 2017. Official Methods of Analysis. Washington, DC: Association of Official Analytical Chemists Inc.
- APHA, American Public Health Association. 2017. Standard Methods for the Examination of Water and Wastewater. 23rd ed. Washington DC, USA: American Public Health Association, American Water Works Association, Water Environment Federation.
- Chakrabarti, R. and Sharma, J. G. 2008. Aquahouse. New Dimension of Sustainable Aquaculture. DIPAS, Indian Council of Agricultural Research, New Delhi, India.
- Holt, G. J. 2021. Larval Fish Nutrition. Willey-Blackwell, UK.

- ICAR, Indian Council of Agricultural Research. 2013. Handbook of Fisheries and Aquaculture. Directorate of Knowledge Management in Agriculture, Indian Council of Agricultural Research, New Delhi, India.
- Pillay, T. V. R. 2005. Aquaculture. Principles and Practices. Blackwell Publishing, New Delhi, India.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi

Formulation of Fish Feed

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------------|----------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Formulation of Fish Feed | 2 | 0 | 0 | 2 | Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To give first-hand training on identification of various indigenous ingredients for formulation of fish feed.
- To gather knowledge on the nutritional requirements of the cultivable species.
- To gain knowledge on the impact of formulated feeds on fish growth.
- To enhance the quality of aquacrops and increase the production.

Learning Outcomes

By the end of the course, the students will be able to:

- Identify the useful ingredients for fish feed formulation.
- Learn to prepare fish feed using locally available ingredients.
- Start the Fish feed production industry.
- Initiate entrepreneurship on Fish feed production.

Skill development and job opportunities

After completion of this course students may be

- Employed in various aquaculture related business including prawn and fish farms.
- Fully equipped to start own fish feed production industry.

SYLLABUS:

Practical

Unit I: Selection of ingredients

20 Hours

Identification of various types of non-conventional ingredients for fish feed formulation. Evaluation of their nutritional quality. Preparation of fish feed and feeding of the prepared feeds to the cultivable fishes and prawns. The study of impact of the prepared feeds on the performances of fishes and prawns.

Exercises:

1. Identification of various types of locally available ingredients (*viz.* macrophytes, oil-cakes, plants etc.) for fish feed formulation.
2. Evaluation of the nutritional values (*viz.* protein, lipid, carbohydrates, ash, amino acids, fatty acids) of these ingredients.
3. Assay of presence of anti-nutritional factors (*viz.* tannin, saponin, phytic acid, oxalic acid etc.) in these ingredient

Unit II: Formulation of Fish Feed

20 Hours

Preparation of fish feed using traditional method and computerized soft ware. Evaluation of quality of prepared feed for the cultivable species.

Exercises:

1. Formulation of fish feed using “Pearson Square” method.
2. Formulation of fish feed using computerized soft ware.
3. The assay of biochemical composition of formulated feed: protein, lipid, carbohydrate, ash, amino acids, fatty acids.

Unit III: Feeding of Fish

20 Hours

The feeding of the prepared feeds to the cultivable fishes and prawns. The study of impact of the prepared feeds on the performances of fishes and prawns. Evaluation of nutritional value of fishes for human consumption.

Exercises:

1. The feeding of the prepared feeds to the cultivable fishes and prawns.
2. Evaluation of impact of the prepared feeds on the survival, growth and production of fishes and prawns.
3. Assessment of Feed Conversion Ratio (FCR) and Feed Conversion Efficiency (FCE) of the feed.
4. Assay of nutritional value of the produced fishes/ prawns for human consumption.
5. Evaluation of impact of prepared feed on the water quality of the culture system.
6. Visit to a Fish feed preparation facility/ industry.

Recommended Readings:

- AOAC, Association of Official Analytical Chemists. 2017. Official Methods of Analysis. Washington, DC: Association of Official Analytical Chemists Inc.
- APHA, American Public Health Association. 2017. Standard Methods for the Examination of Water and Wastewater. 23rd ed. Washington DC, USA: American Public Health Association, American Water Works Association, Water Environment Federation.
- Chakrabarti, R. and Sharma, J. G. 2008. Aquahouse. New Dimension of Sustainable Aquaculture. DIPAS, Indian Council of Agricultural Research, New Delhi, India.
- Holt, G. J. 2021. Larval Fish Nutrition. Willey-Blackwell, UK.
- ICAR, Indian Council of Agricultural Research. 2013. Handbook of Fisheries and Aquaculture. Directorate of Knowledge Management in Agriculture, Indian Council of Agricultural Research, New Delhi, India.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi

Ornamental Fish Culture: Opportunity and Scope

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Ornamental Fish Culture: Opportunity and Scope | 2 | 0 | 0 | 2 | Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To give first-hand training on Aquarium preparation and decoration.
- To gain hands-on training on breeding and culture of various Ornamental fishes.
- To gain experience in the management of optimum water quality in the fish aquarium.
- To gather knowledge on the nutritional requirements of the cultivable species.

Learning Outcomes

By the end of the course, the students will be able to:

- Prepare and decorate ornamental fish aquarium.
- Identify the suitable and economically important Ornamental fish species.
- Initiate entrepreneurship on Aquarium making and Ornamental fish production.

Skill development and job opportunities

After completion of this course students will be

- Fully equipped to start own entrepreneurship in **aquarium making and its decoration**.
- Aware about the requirements to start their own **Ornamental fish industry**.

SYLLABUS:

Practical

Unit I: Preparation of Aquarium and Its Decoration

20 Hours

Preparation of glass aquaria of various shapes and their decoration using locally available materials. The impact of aquatic plants in the maintenance of healthy environment in the aquarium.

Exercises:

1. Construction of glass aquaria of various shapes (rectangular, square, round etc.).
2. Identification and culture of useful aquatic plants for the decoration of fish aquarium.
3. Decoration of aquarium with plants and locally available materials.

Unit II: Breeding of Ornamental Fishes and Culture of Plants

20 Hours

Identification of economically important cultivable Ornamental plants and fishes for culture.

Exercises:

1. Identification of economically important Ornamental fishes and their breeding.
2. Culture of young larvae and feeding them live food.
3. Regular monitoring of water quality parameters viz. temperature, pH, conductivity, dissolved oxygen, ammonia etc. in the fish aquarium.
4. Culture of zooplankton (rotifers, cladocerans, copepods etc.) using organic manures for the feeding of fish larvae.
5. Production of plants for the decoration of aquarium.

Unit III: Production of Marketable Ornamental Fishes

20 Hours

Culture of compatible fishes together and feeding them with live food and prepared diets. Keep them ready for local market.

Exercises:

1. Maintenance of aquarium.
2. Feeding of ornamental fishes with various natural foods and prepared diets.
3. Evaluation of their growth rate and colour development.
4. Development of marketing strategy for the produced ornamental fishes in well decorated aquaria.
5. Visit to any Aquarium Facility.

Recommended Readings:

- AOAC, Association of Official Analytical Chemists. 2019. Official Methods of Analysis. Washington, DC: Association of Official Analytical Chemists Inc.

- APHA, American Public Health Association. 2017. Standard Methods for the Examination of Water and Wastewater. 23rd ed. Washington DC, USA: American Public Health Association, American Water Works Association, Water Environment Federation.
- Chakrabarti, R. and Sharma, J. G. 2008. Aquahouse. New Dimension of Sustainable Aquaculture. DIPAS, Indian Council of Agricultural Research, New Delhi, India.
- Holt, G. J. 2021. Larval Fish Nutrition. Willey-Blackwell, UK.
- ICAR, Indian Council of Agricultural Research. 2013. Handbook of Fisheries and Aquaculture. Directorate of Knowledge Management in Agriculture, Indian Council of Agricultural Research, New Delhi, India.
- Pillay, T. V. R. 2005. Aquaculture. Principles and Practices. Blackwell Publishing, New Delhi, India.
- Swain, S. K., Sarangi, N. and Ayyapan, S. 2010. Ornamental Fish Farming. DIPAS, Indian Council of Agricultural Research, New Delhi, India.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi

Pearl Culture

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Pearl Culture | 2 | 0 | 0 | 2 | XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To learn the basics of Pearl culture and it's important as a skill for self-sustainable and self-employment.
- To impart a comprehensive knowledge regarding morphology, anatomy, physiology, food and feeding behaviour, related diseases and its control measures of the mother Pearl Oyster.
- To gather a comprehensive knowledge of various types of implantations in Oyster and also the technique of insertion of beads for the formation of Pearl.
- To gather experience of post-operative care.
- To learn the techniques of harvesting, processing, sorting and marketing of the Pearl produced.

The Learning Outcomes:

By the end of the course, the students will be able to:

- Gain overall idea about Pearl oyster - its biology, morphology especially the histology of mantle, pearl formation etc.
- Recognize the suitable species of oyster for pearl culture in India.
- Set up a pearl culture system in pond/ tanks.
- Start entrepreneurship on Pearl culture.
- Start-up with the help of existing Government funding.

Skill development and job opportunities

After completion of this course students may be

- Employed in various pearl farming related businesses.
- Fully equipped to start own entrepreneurship in **pearl farming**.
- Completely aware about the requirements to start their own **Pear processing industry**.

SYLLABUS:

Practical

Unit-I

20 Hours

Introduction to pearl culture. Morphology and anatomy of pearl culture. Structure and histology of mantle. Origin of pearls, mussels producing pearls. Identification of species capable of producing pearl.

Exercises:

1. Set-up and Installation of culture system (sac culture, raft culture) for sustainable production.

2. Identification of suitable species capable to produce pearl.
3. The study of morphology and growth rate of the pearl oyster.
4. Measurement of major water quality parameters.
5. Feeding of the pearly oyster.

Unit-II

20 Hours

Implantation of foreign particles for pearl formation and post operation care.

Exercise:

1. Preparation of the graft tissue for insertion.
2. Pearl oyster surgery and insertion technique of bead.
3. Post-operational care.
4. Culture of the pearl oyster using natural food .
5. Regular monitoring of the water quality parameters.

Unit-III

20 Hours

Harvesting of Pearl and its processing. Sorting of Pearl. Marketing and economics concerned.

Exercises:

1. Bleaching and collection of pearls.
2. Cleaning of pearls.
3. Sorting of pearls.
4. Marketing of pearl.
5. Visit to a pear production site.

Recommended Readings:

- Srivastava, C.B.L. 2014. Fishery Science and Indian Fisheries.
- Far, A. E. 1986. Pearls. Butterworth Heinemann publications.
- Beveridge, M.C.M. 1987. Cage aquaculture. Fishing News.
- Bardach, J.E.W . 1972. Aquaculture farming and husbandry of freshwater and
Sorting of Pearl. Marketing and economics concerned with Pearl Culture. Generation
marine organisms
- Dobilet, D. 199. Pearl Farming. Australia: Nat Geographic Mag publication.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi

Sericulture I: Mulberry Silkworm Rearing

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Sericulture I: Mulberry Silkworm Rearing | 2 | 0 | 0 | 2 | Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

1. To make the students aware about the significance of sericulture as a profit-making enterprise.
2. To help the students to understand the biology of silkworms and its nutritional requirement to secrete quality silk.
3. To give an understanding about the techniques of silkworm rearing, reeling of silk and various measures to be taken to maximize the benefits.
4. To help the students to know about various uses of silk and develop entrepreneurial skills required for self-employment in sericulture and silk production sector.

Learning Outcomes

Upon completion of the course, students should be able to:

1. Learn about the history of sericulture and silk route.
2. Recognize various species of silk moths in India, and exotic and indigenous races.
3. Be aware about the opportunities and employment in sericulture industry- in public, private and government sector.
4. Gain thorough knowledge about the techniques involved in silkworm rearing and silk reeling.
5. Develop entrepreneurial skills necessary for self-employment in mulberry and seed production and be apprised about practicing sericulture as a profit-making enterprise.
6. Enhance collaborative learning and communication skills through practical sessions, team work, group discussions, assignments and projects.

Skill Development and Job Opportunities

1. Sericulture is multi-disciplinary activity consists of mulberry leaf production, silkworm rearing (cocoon production), silkworm egg production, silk reeling (yarn production), twisting, Warp and weft making, printing and dyeing, weaving, finishing, garment designing, marketing etc.
2. The demand for silk is bound to increase in the coming years This course will therefore help in generating employment, economic development and improvement in the quality of life of unemployed youth.

3. This course will generate entrepreneurs in this field. Sericulture offers gainful employment not only the rural masses but also for the educated youth in semi-urban and urban areas.
4. Effective utilization of waste generated in the industry will help in making the sericulture sector more viable, stable and create more employment opportunities.
5. Sericulturists fall under the category of primary activities. They usually find employment in sectors like government and research development centres.

SYLLABUS:

Introduction to sericulture. Life cycle of silkworm and its characteristic features, Rearing of mulberry silk worm **(60 hours)**

Practical

1. Study of models of rearing houses, appliances used in silkworm rearing
2. Preparation and application of disinfectants in rearing house and appliances
3. Technique for hot and cold acid treatment of silkworm eggs, its advantages and disadvantages
4. Rearing Techniques: Harvesting and preservation technique; leaf selecting for different instants; mulberry leaf estimation; Identification of moulting larva, care during moulting, mounting and mounting density, types of mountages; Harvesting of cocoons, assessment of cocoons.
5. Selection of moth, pairing and despairing, preparation of eggs (loose and sheet, surface sterilization of eggs)
6. Visit to seed cocoon markets, commercial grainage and cold storage centre to know activities of cocoon markets, preparation of laying and cold storage of eggs.
7. Mulberry Crop Cultivation: Preparation of nursery beds, Different propagation methods – grafting and layering, Planting System and Intercultural Operations: - pit and row system, mulching, irrigation.
8. Visit to Sericulture research institute

Essential Readings

- Manual on Sericulture (1976); Food and Agriculture Organisation, Rome Ullal, S.R. and Narasimhanna M.N. (1987) Handbook of Practical Sericulture; 3rd Edition, CSB, Bangalore

Suggested Readings

- Yonemura, M. and Rama Rao, N. (1951) A Handbook of Sericulture. I. Rearing of silk-worms. Government Branch Press, Mysore.
- Ananthanarayanan, S. K. (2008) Silkworm Rearing. Daya Publishing House
- Aruga, H. (1994). Principles of Sericulture. CRC Press
- Sathe, T. V. and Jadhav, A. (2002) Sericulture and Pest Management. Daya Publishing House
- Yup-Lian, L. (1991) Silkworm Diseases. Food and Agricultural Organization.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi

Sericulture II: Eri Silkworm Rearing

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Sericulture II: Eri Silkworm Rearing | 2 | 0 | 0 | 2 | Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

1. To make the students aware about the significance of sericulture as a profit-making enterprise.
2. To help the students to understand the biology of silkworms and its nutritional requirement to secrete quality silk.
3. To give an understanding about the techniques of silkworm rearing, reeling of silk and various measures to be taken to maximize the benefits.
4. To help the students to know about various uses of silk and develop entrepreneurial skills required for self-employment in sericulture and silk production sector.

Learning Outcomes

Upon completion of the course, students should be able to:

1. Learn about the history of sericulture and silk route.
2. Recognize various species of silk moths in India, and exotic and indigenous races.
3. Be aware about the opportunities and employment in sericulture industry- in public, private and government sector.
4. Gain thorough knowledge about the techniques involved in silkworm rearing and silk reeling.
5. Develop entrepreneurial skills necessary for self-employment in mulberry and seed production and be apprised about practicing sericulture as a profit-making enterprise.
6. Enhance collaborative learning and communication skills through practical sessions, team work, group discussions, assignments and projects.

Skill Development and Job Opportunities

Sericulture mainly focuses on silkworms rearing with the main aim of silk production. There are several applications of this:

1. The demand for silk is bound to increase in the coming years This course will therefore help in generating employment, economic development and improvement in the quality of life of unemployed youth. This course will generate entrepreneurs in this field.
2. . Sericulture by-products have remarkable application in the preparation of compost. Sericulture waste upon enrichment can be converted to high value manures.
3. Silk consists of two types of proteins, silk fibroin and sericin.
 - a. Sericin contributes about 20-30 per cent of total cocoon weight. It is characterized by its high content of serine and 18 amino acids, including essential amino acids. Sericin has wide applications in pharmaceuticals and cosmetics such as, wound healing, bioadhesive moisturizing, antiwrinkle and antiaging properties.
 - b. Silk fibroin, has a variety of applications in pharmaceutical, food, and fodder industries. Silk fibroin is used for bone formation, silk thread in surgery, and drug delivery system . Silk fibroin has unique properties including good adherence with flexibility to wound bed, absorption of exudates, biocompatibility, biodegradability, minimal inflammatory reaction and in skin grafting due to its outstanding mechanical properties.
4. Mulberry, the sole food plant of silkworm has also the potential to be used in pharmaceutical and food industry.

Syllabus:

Introduction to non-mulberry sericulture (Eri, Tassar, Muga). Morphology of Eri silkworm, Propagation of host plant. **(60 hours)**

Practical

1. Propagation of castor food plant
2. Study of models of rearing houses, appliances used in Eri silkworm rearing
3. Preparation and application of disinfectants in rearing house and appliances
4. Rearing techniques of Eri silkworm, Eri mother moth examination, mounting method and storage of cocoons.
5. Incubation of eri eggs and its egg hatching ratio

Essential Readings

- Manual on Sericulture (1976); Food and Agriculture Organisation, Rome Ullal, S.R. and Narasimhanna M.N. (1987) Handbook of Practical Sericulture; 3rd Edition, CSB, Bangalore

Suggested Readings

- Yonemura, M. and Rama Rao, N. (1951) A Handbook of Sericulture. I. Rearing of silk-worms. Government Branch Press, Mysore.
- Ananthanarayanan, S. K. (2008) Silkworm Rearing. Daya Publishing House
- Aruga, H. (1994). Principles of Sericulture. CRC Press
- Sathe, T. V. and Jadhav, A. (2002) Sericulture and Pest Management. Daya Publishing House
- Yup-Lian, L. (1991) Silkworm Diseases. Food and Agricultural Organization.

- Hisao Aruga, Principles of Sericulture, Oxford & IBH Publications
- Eikichi Hiratsuka, Silkworm Breeding, Oxford & IBH Publications
- P.K. Pandey, S.K. Sharan, Silk Culture, APH Publishing Corp.
- Dr. P.K. Rajan, Silkworm Rearing Technology, Central Silk Board
- R.K. Goel, Laboratory Techniques in Sericulture, APH Publishing Corp.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi

Sericulture III: Silk Technology

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Sericulture III: Silk Technology | 2 | 0 | 0 | 2 | Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

1. To make the students aware about the significance of sericulture as a profit-making enterprise.
2. To help the students to understand the biology of silkworms and its nutritional requirement to secrete quality silk.
3. To give an understanding about the techniques of silkworm rearing, reeling of silk and various measures to be taken to maximize the benefits.
4. To help the students to know about various uses of silk and develop entrepreneurial skills required for self-employment in sericulture and silk production sector.

Learning Outcomes

Upon completion of the course, students should be able to:

1. Learn about the history of sericulture and silk route.
2. Recognize various species of silk moths in India, and exotic and indigenous races.
3. Be aware about the opportunities and employment in sericulture industry- in public, private and government sector.
4. Gain thorough knowledge about the techniques involved in silkworm rearing and silk reeling.
5. Develop entrepreneurial skills necessary for self-employment in mulberry and seed production and be apprised about practicing sericulture as a profit-making enterprise.
6. Enhance collaborative learning and communication skills through practical sessions, team work, group discussions, assignments and projects.

Skill Development and Job Opportunities

Sericulture mainly focuses on silkworms rearing with the main aim of silk production. There are several applications of this:

1. The demand for silk is bound to increase in the coming years This course will therefore help in generating employment, economic development and improvement in the quality of life of unemployed youth. This course will generate entrepreneurs in this field.
2. . Sericulture by-products have remarkable application in the preparation of compost. Sericulture waste upon enrichment can be converted to high value manures.
3. Silk consists of two types of proteins, silk fibroin and sericin.
 - a. Sericin contributes about 20-30 per cent of total cocoon weight. It is characterized by its high content of serine and 18 amino acids, including essential amino acids.

Sericin has wide applications in pharmaceuticals and cosmetics such as, wound healing, bioadhesive moisturizing, antiwrinkle and antiaging properties.

- b. Silk fibroin, has a variety of applications in pharmaceutical, food, and fodder industries. Silk fibroin is used for bone formation, silk thread in surgery, and drug delivery system. Silk fibroin has unique properties including good adherence with flexibility to wound bed, absorption of exudates, biocompatibility, biodegradability, minimal inflammatory reaction and in skin grafting due to its outstanding mechanical properties.
4. Mulberry, the sole food plant of silkworm has also the potential to be used in pharmaceutical and food industry.

Syllabus:

Introduction to Silk Technology

(60 hours)

Practical

Introduction to different textile fibres.

Cocoon stifling- different methods and determination of degree of drying.

Determination of commercial characters of cocoon: average cocoon weight, shell weight, shell percentage, average filament length, reelability, raw silk recovery percentage, renditta and denier.

Identification of silk, cotton, wool and synthetic fibres by various tests.

Raw silk testing and grading by mechanical tests like winding test, seriplane test and cohesion test.

Study of silk manufacturing unit.

Essential Readings

- Manual on Sericulture (1976); Food and Agriculture Organisation, Rome Ullal, S.R. and Narasimhanna M.N. (1987) Handbook of Practical Sericulture; 3rd Edition, CSB, Bangalore

Suggested Readings

- Yonemura, M. and Rama Rao, N. (1951) A Handbook of Sericulture. I. Rearing of silkworms. Government Branch Press, Mysore.
- Ananthanarayanan, S. K. (2008) Silkworm Rearing. Daya Publishing House Aruga, H. (1994). Principles of Sericulture. CRC Press
- Sathe, T. V. and Jadhav, A. (2002) Sericulture and Pest Management. Daya Publishing House Yp-Lian, L. (1991) Silkworm Diseases. Food and Agricultural Organization.
- Hisao Aruga, Principles of Sericulture, Oxford & IBH Publications
- Eikichi Hiratsuka, Silkworm Breeding, Oxford & IBH Publications
- P.K. Pandey, S.K. Sharan, Silk Culture, APH Publishing Corp.
- Dr. P.K. Rajan, Silkworm Rearing Technology, Central Silk Board
- R.K. Goel, Laboratory Techniques in Sericulture, APH Publishing Corp.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi

Sericulture IV: APPLICATION OF SERICULTURE IN THERAPEUTIC AND COSMETIC

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|----------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Sericulture IV: Application of Sericulture in Therapeutic and Cosmetic Industry | 2 | 0 | 0 | 2 | Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

1. To make the students aware about the significance of sericulture as a profit-making enterprise.
2. To help the students to understand the biology of silkworms and its nutritional requirement to secrete quality silk.
3. To give an understanding about the techniques of silkworm rearing, reeling of silk and various measures to be taken to maximize the benefits.
4. To help the students to know about various uses of silk and develop entrepreneurial skills required for self-employment in sericulture and silk production sector.

Learning Outcomes

Upon completion of the course, students should be able to:

1. Learn about the history of sericulture and silk route.
2. Recognize various species of silk moths in India, and exotic and indigenous races.
3. Be aware about the opportunities and employment in sericulture industry- in public, private and government sector.
4. Gain thorough knowledge about the techniques involved in silkworm rearing and silk reeling.
5. Develop entrepreneurial skills necessary for self-employment in mulberry and seed production and be apprised about practicing sericulture as a profit-making enterprise.
6. Enhance collaborative learning and communication skills through practical sessions, team work, group discussions, assignments and projects.

Skill Development and Job Opportunities

1. Sericulture is multi-disciplinary activity consists of mulberry leaf production, silkworm rearing (cocoon production), silkworm egg production, silk reeling (yarn production), twisting, Warp and weft making, printing and dyeing, weaving, finishing, garment designing, marketing etc.

2. The demand for silk is bound to increase in the coming years This course will therefore help in generating employment, economic development and improvement in the quality of life of unemployed youth.
3. This course will generate entrepreneurs in this field. Sericulture offers gainful employment not only the rural masses but also for the educated youth in semi-urban and urban areas.
4. Effective utilization of waste generated in the industry will help in making the sericulture sector more viable, stable and create more employment opportunities.
5. Sericulturists fall under the category of primary activities. They usually find employment in sectors like government and research development centres.

Syllabus:

Sericulture as a tool for rural development. Uses of different by-products of sericulture in pharmaceuticals and Cosmetics **(60 hours)**

Practical

1. Identify and collection of different waste materials of mulberry, silkworm rearing and silk reeling
2. Prepare different useful products of mulberry leaf waste and sticks.
3. Silkworm sericin in- medical textiles, regenerative drugs, and tissue engineering, cosmeceuticals, food additives, and manufacturing of valuable biomaterials.
4. Silkworm pupa in the field of therapeutics, cosmetics, animal feed, fertilizer, etc.
5. Sericulture wastes in sustainable applications for biofuels generation.
6. Entrepreneurial ideas to convert waste material of sericulture into raw material for other industries.
7. IT/ non IT based projects of sericulture.

Essential Readings

- Manual on Sericulture (1976); Food and Agriculture Organisation, Rome Ullal, S.R. and Narasimhanna M.N. (1987) Handbook of Practical Sericulture; 3rd Edition, CSB, Bangalore

Suggested Readings

- Yonemura, M. and Rama Rao, N. (1951) A Handbook of Sericulture. I. Rearing of silkworms. Government Branch Press, Mysore.
- Ananthanarayanan, S. K. (2008) Silkworm Rearing. Daya Publishing House
- Aruga, H. (1994). Principles of Sericulture. CRC Press
- Sathe, T. V. and Jadhav, A. (2002) Sericulture and Pest Management. Daya Publishing House
- Yup-Lian, L. (1991) Silkworm Diseases. Food and Agricultural Organization.

Examination scheme and mode:

Evaluation scheme and mode will be as per the guidelines notified by the University of Delhi

38. Amendment to Appendix -II-A to the Ordinance V (2-A) of the Ordinances of the University vide EC Resolution 38-1-4 dated 08.12.2022 regarding Syllabi of 2nd Semester of departments under Faculty of Mathematical Sciences.

Add the following:

Syllabi of Semester-II of the following departments under Faculty of Mathematical Sciences based on Under Graduate Curriculum Framework -2022 to be implemented from the Academic Year 2022-23.

FACULTY OF MATHEMATICAL SCIENCES

DEPARTMENT OF MATHEMATICS

Category-I
B.Sc. (Hons.) Mathematics

DISCIPLINE SPECIFIC CORE COURSE – 4: LINEAR ALGEBRA

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Linear Algebra | 4 | 3 | 1 | 0 | Class XII pass with Mathematics | DSC-I: Algebra |

Learning Objectives: The objective of the course is to introduce:

- The concept of vectors in R^n , and their linear independence and dependence.
- Rank and nullity of linear transformations through matrices.
- Various applications of vectors in computer graphics and movements in plane.

Learning Outcomes: This course will enable the students to:

- Visualize the space R^n in terms of vectors and their interrelation with matrices.
- Familiarize with basic concepts in vector spaces, linear independence and span of vectors over a field.
- Learn about the concept of basis and dimension of a vector space.
- Basic concepts of linear transformations, dimension theorem, matrix representation of a linear transformation with application to computer graphics.

SYLLABUS OF DSC-4

UNIT – I: Matrices and System of Linear Equations (18 hours)

Fundamental operations with vectors in Euclidean space R^n , Linear combinations of vectors, Dot product and their properties, Cauchy-Schwarz inequality, Triangle inequality, Solving linear systems using Gaussian elimination, Gauss-Jordan row reduction, Reduced row echelon form, Equivalent systems, Rank and row space, Eigenvalues, Eigenvectors, Eigenspace, Diagonalization, Characteristic polynomial of a matrix, Cayley-Hamilton theorem.

UNIT – II: Introduction to Vector Spaces (12 hours)

Vector spaces, Subspaces, Algebra of subspaces, Linear combination of vectors, Linear span, Linear independence, Bases and dimension, Dimension of subspaces.

UNIT – III: Linear Transformations (15 hours)

Linear transformations, Null space, Range, Rank and nullity of a linear transformation, Matrix representation of a linear transformation, Algebra of linear transformations, Invertibility and isomorphisms; Application: Computer Graphics-Fundamental movements in a plane, homogenous coordinates, composition of movements.

Essential Readings

1. Andrilli, S., & Hecker, D. (2016). *Elementary Linear Algebra* (5th ed.). Elsevier India.
2. Friedberg, Stephen H., Insel, Arnold J., & Spence, Lawrence E. (2003). *Linear Algebra* (4th ed.). Prentice-Hall of India Pvt. Ltd. New Delhi.

Suggestive Readings

- Lay, David C., Lay, Steven R., & McDonald, Judi J. (2016). *Linear Algebra and its Applications* (5th ed.). Pearson Education.
- Kolman, Bernard, & Hill, David R. (2001). *Introductory Linear Algebra with Applications* (7th ed.). Pearson Education, Delhi. First Indian Reprint 2003.
- Hoffman, Kenneth, & Kunze, Ray Alden (1978). *Linear Algebra* (2nd ed.). Prentice Hall of India Pvt. Limited. Delhi. Pearson Education India Reprint, 2015.

DISCIPLINE SPECIFIC CORE COURSE – 5: CALCULUS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Calculus | 4 | 3 | 1 | 0 | Class XII pass with Mathematics | DSC-2: Elementary Real Analysis |

Learning Objectives: The primary objective of this course is:

- To introduce the basic tools of calculus, also known as ‘science of variation’.
- To provide a way of viewing and analyzing the real-world.

Learning Outcomes: This course will enable the students to understand:

- The notion of limits, continuity and uniform continuity of functions.
- Geometrical properties of continuous functions on closed and bounded intervals.
- Applications of derivative, relative extrema and mean value theorems.
- Higher order derivatives, Taylor’s theorem, indeterminate forms and tracing of curves.

SYLLABUS OF DSC-5

UNIT – I: Limits and Continuity (15 hours)

Limits of functions ($\varepsilon - \delta$ and sequential approach), Algebra of limits, Squeeze theorem, One-sided limits, Infinite limits and limits at infinity; Continuous functions and its properties on closed and bounded intervals; Uniform continuity.

UNIT – II: Differentiability and Mean Value Theorems (15 hours)

Differentiability of a real-valued function, Algebra of differentiable functions, Chain rule, Relative extrema, Interior extremum theorem, Rolle’s theorem, Mean-value theorem and its applications, Intermediate value theorem for derivatives.

UNIT – III: (15 hours)

Successive Differentiation, Taylor’s Theorem and Tracing of Plane Curves

Higher order derivatives and calculation of the n th derivative, Leibnitz’s theorem; Taylor’s theorem, Taylor’s series expansions of e^x , $\sin x$, $\cos x$. Indeterminate forms, L’Hôpital’s rule; Concavity and inflexion points; Singular points, Asymptotes, Tracing graphs of rational functions and polar equations.

Essential Readings

1. Anton, Howard, Bivens, Irl, & Davis, Stephen (2013). *Calculus* (10th ed.). John Wiley & Sons Singapore Pvt. Ltd. Reprint (2016) by Wiley India Pvt. Ltd. Delhi.
2. Bartle, Robert G., & Sherbert, Donald R. (2011). *Introduction to Real Analysis* (4th ed.). John Wiley & Sons. Wiley India edition reprint.

3. Prasad, Gorakh (2016). *Differential Calculus* (19th ed.). Pothishala Pvt. Ltd. Allahabad.
4. Ross, Kenneth A. (2013). *Elementary Analysis: The Theory of Calculus* (2nd ed.). Undergraduate Texts in Mathematics, Springer. Indian reprint.

Suggestive Readings

- Apostol, T. M. (2007). *Calculus: One-Variable Calculus with an Introduction to Linear Algebra* (2nd ed.). Vol. 1. Wiley India Pvt. Ltd.
- Ghorpade, Sudhir R. & Limaye, B. V. (2006). *A Course in Calculus and Real Analysis*. Undergraduate Texts in Mathematics, Springer (SIE). Indian reprint.

DISCIPLINE SPECIFIC CORE COURSE – 6: ORDINARY DIFFERENTIAL EQUATIONS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Ordinary Differential Equations | 4 | 3 | 0 | 1 | Class XII pass with Mathematics | NIL |

Learning Objectives: The main objective of this course is to introduce the students:

- The exciting world of differential equations.
- Their applications and mathematical modeling.

Learning Outcomes: The course will enable the students to:

- Learn the basics of differential equations and compartmental models.
- Formulate differential equations for various mathematical models.
- Solve first order non-linear differential equations, linear differential equations of higher order and system of linear differential equations using various techniques.
- Apply these techniques to solve and analyze various mathematical models.

SYLLABUS OF DSC-6

UNIT – I: First-Order Differential Equations (12 hours)

Concept of implicit, general and singular solutions for the first order ordinary differential equation; Bernoulli's equation, Exact equations, Integrating factors, Initial value problems, Reducible second order differential equations; Applications of first order differential equations to Newton's law of cooling, exponential growth and decay problems.

UNIT – II: Second and Higher-Order Differential Equations (18 hours)

General solution of homogenous equation of second order, Principle of superposition for a homogenous equation, Wronskian and its properties, Linear homogeneous and non-homogeneous equations of higher order with constant coefficients, Method of variation of parameters, Method of undetermined coefficients, Two-point boundary value problems, Cauchy- Euler's equation, System of linear differential equations, Application of second order differential equation: Simple pendulum problem.

UNIT – III: Formulation and Analysis of Mathematical Models (15 hours)

Introduction to compartmental models, Lake pollution model; Density-dependent growth model, Interacting population models, Epidemic model of influenza and its analysis, Predator-prey model and its analysis, Equilibrium points, Interpretation of phase plane

Practical (30 hours)- Practical / Lab work to be performed in a Computer Lab:

Modeling of the following problems using SageMath/Mathematica/MATLAB/Maple/Maxima/Scilab etc.

1. Solutions of first, second and third order differential equations.
2. Plotting of family of solutions of differential equations of first, second and third order.
3. Solution of differential equations using method of variation of parameters.
4. Growth and decay model (exponential case only).
5. Lake pollution model (with constant/seasonal flow and pollution concentration).
6. Density-dependent growth model.
7. Predatory-prey model (basic Volterra model, with density dependence, effect of DDT, two prey one predator).
8. Epidemic model of influenza (basic epidemic model, contagious for life, disease with carriers).

Essential Readings

1. Barnes, Belinda & Fulford, Glenn R. (2015). *Mathematical Modeling with Case Studies, Using Maple and MATLAB* (3rd ed.). CRC Press. Taylor & Francis Group.
2. Edwards, C. Henry, Penney, David E., & Calvis, David T. (2015). *Differential Equations and Boundary Value Problems: Computing and Modeling* (5th ed.). Pearson Education.
3. Ross, Shepley L. (2014). *Differential Equations* (3rd ed.). Wiley India Pvt. Ltd.

Suggestive Reading

- Simmons, George F. (2017). *Differential Equations with Applications and Historical Notes* (3rd ed.). CRC Press. Taylor & Francis Group.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BA. (Prog.) with Mathematics as Major

Category II

DISCIPLINE SPECIFIC CORE COURSE (DSC-2): ANALYTIC GEOMETRY

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Analytic Geometry | 4 | 3 | 1 | 0 | Class XII pass with Mathematics | NIL |

Learning Objectives: The course aims at:

- Identifying and sketching curves, studying three dimensional objects, their geometric properties and applications.
- Use of vector approach to three-dimensional geometry makes the study simple and elegant.

Learning Outcomes: This course will enable the students to:

- Learn concepts in two-dimensional geometry.
- Identify and sketch conics namely, ellipse, parabola and hyperbola.
- Learn about three-dimensional objects such as straight lines and planes using vectors, spheres, cones and cylinders.

SYLLABUS OF DSC-2

UNIT – I: Conic Sections

(15 hours)

Techniques for sketching parabola, ellipse and hyperbola; Reflection properties of parabola, ellipse, hyperbola, and their applications to signals; Classification of quadratic equation representing lines, parabola, ellipse and hyperbola; Rotation of axes; Second degree equations.

UNIT – II: Vectors, Lines and Planes

(18 hours)

Rectangular coordinates in 3-dimensional space, vectors viewed geometrically, vectors in coordinate systems and vectors determined by length and angle; Dot product; Projections; Cross product, scalar triple product, vector triple product and their geometrical properties; Parametric equations of lines, direction cosines and direction ratios of a line, vector and symmetric equations of lines, angle between two lines; Planes in 3-dimensional space, coplanarity of two lines, angle between two planes, distance of a point from a plane, angle between a line and a plane, distance between parallel planes; Shortest distance between two skew lines.

UNIT – III: Sphere, Cone and Cylinder**(12 hours)**

Equation of a sphere, plane section of sphere, tangents and tangent plane to a sphere; Equation of a cone, enveloping cone of a sphere, Reciprocal cones and right circular cone; Equation of a cylinder, enveloping cylinder and right circular cylinder.

Essential Readings

1. Anton, Howard, Bivens, Irl, & Davis, Stephen (2013). *Calculus* (10th ed.). John Wiley & Sons Singapore Pte. Ltd. Indian reprint (2016) by Wiley India Pvt. Ltd. Delhi.
2. Narayan, Shanti & Mittal, P. K. (2007). *Analytical Solid Geometry*. S. Chand & Company Pvt Ltd. India.

Suggestive Readings

- Bell, Robert J.T. (1972). *An Elementary Treatise on Coordinate Geometry of Three Dimensions*. Macmillan & Co. Ltd. London.
- George B. Thomas, Jr., & Ross L. Finney (2012). *Calculus and Analytic Geometry* (9th ed.). Pearson Indian Education Services Pvt Ltd. India.

DISCIPLINE SPECIFIC CORE COURSE – 2 (Discipline A-2): Elementary Linear Algebra**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------------------|---------|-----------------------------------|----------|---------------------|---|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Elementar y Linear Algebra | 4 | 3 | 1 | 0 | Class XII pass with Mathematic s | NIL |

Learning Objectives: The objective of the course is:

- To introduce the concept of vectors in R^n .
- Understanding the nature of solution of system of linear equations.
- To view the $m \times n$ matrices as a linear function from R^n to R^m and vice versa.
- To introduce the concepts of linear independence and dependence, rank and linear transformations has been explained through matrices.

Learning Outcomes: This course will enable the students to:

- Visualize the space R^n in terms of vectors and the interrelation of vectors with matrices.
- Familiarize with concepts of bases, dimension and minimal spanning sets in vector spaces.
- Learn about linear transformation and its corresponding matrix.

SYLLABUS OF DSC-2

UNIT – I: Euclidean Space R^n and Matrices (18 hours)

Fundamental operations with vectors in Euclidean space R^n , Linear combinations of vectors, Dot product and their properties, Cauchy-Schwarz inequality, Triangle inequality, Solving system of linear equations using Gaussian elimination, Application: Curve Fitting, Gauss-Jordan row reduction, Reduced row echelon form, Application: Solving several systems simultaneously, Equivalent systems, Rank and row space of a matrix, Eigenvalues, Eigenvectors, Eigenspace, Diagonalization, Characteristic polynomial of a matrix.

UNIT – II: Introduction to Vector Spaces (12 hours)

Definition, Examples and some elementary properties of vector spaces, Subspaces, Span, Linear independence and linear dependence of vectors, Basis and dimension of a vector space, Maximal linearly independent sets, Minimal spanning sets.

UNIT – II: Linear Transformations (15 hours)

Linear transformations: Definition, Examples and elementary properties, The matrix of a linear transformation, Kernel and range of a linear transformation, The dimension theorem, one-to-one and onto linear transformations, Invertible linear transformations, Isomorphic vector spaces.

Essential Reading

1. Andrilli, S., & Hecker, D. (2016). *Elementary Linear Algebra* (5th ed.). Elsevier India.

Suggestive Readings

- Lay, David C., Lay, Steven R., & McDonald, Judi J. (2016). *Linear Algebra and its Applications* (5th ed.). Pearson Education.
- Kolman, Bernard, & Hill, David R. (2001). *Introductory Linear Algebra with Applications* (7th ed.). Pearson Education, Delhi. First Indian Reprint 2003.

B.Sc. (Prog.)/ BA (Prog.) with Mathematics as Non-Major Category-III

DISCIPLINE SPECIFIC CORE COURSE – 2 (Discipline A-2): Elementary Linear Algebra

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Elementary Linear Algebra | 4 | 3 | 1 | 0 | Class XII pass with Mathematics | NIL |

Learning Objectives: The objective of the course is:

- To introduce the concept of vectors in R^n .
- Understand the nature of solution of system of linear equations.
- To view the $m \times n$ matrices as a linear function from R^n to R^m and vice versa.
- To introduce the concepts of linear independence and dependence, rank and linear transformations has been explained through matrices.

Learning Outcomes: This course will enable the students to:

- Visualize the space R^n in terms of vectors and the interrelation of vectors with matrices.
- Familiarize with concepts of bases, dimension and minimal spanning sets in vector spaces.
- Learn about linear transformation and its corresponding matrix.

SYLLABUS OF DSC-2

UNIT – I: Euclidean Space R^n and Matrices (18 hours)

Fundamental operations with vectors in Euclidean space R^n , Linear combinations of vectors, Dot product and their properties, Cauchy-Schwarz inequality, Triangle inequality, Solving system of linear equations using Gaussian elimination, Application: Curve Fitting, Gauss-Jordan row reduction, Reduced row echelon form, Application: Solving several systems simultaneously, Equivalent systems, Rank and row space of a matrix, Eigenvalues, Eigenvectors, Eigenspace, Diagonalization, Characteristic polynomial of a matrix.

UNIT – II: Introduction to Vector Spaces (12 hours)

Definition, Examples and some elementary properties of vector spaces, Subspaces, Span, Linear independence and linear dependence of vectors, Basis and dimension of a vector space, Maximal linearly independent sets, Minimal spanning sets.

UNIT – III: Linear Transformations (15 hours)

Linear transformations: Definition, Examples and elementary properties, The matrix of a linear transformation, Kernel and range of a linear transformation, The dimension theorem, one-to-one and onto linear transformations, Invertible linear transformations, Isomorphic vector spaces.

Essential Reading

1. Andrilli, S., & Hecker, D. (2016). *Elementary Linear Algebra* (5th ed.). Elsevier India.

Suggestive Readings

- Lay, David C., Lay, Steven R., & McDonald, Judi J. (2016). *Linear Algebra and its Applications* (5th ed.). Pearson Education.
- Kolman, Bernard, & Hill, David R. (2001). *Introductory Linear Algebra with Applications* (7th ed.). Pearson Education, Delhi. First Indian Reprint 2003.

(Category-IV)
COMMON POOL OF GENERIC ELECTIVES (GE) COURSES OFFERED
BY THE DEPARTMENT OF MATHEMATICS

GENERIC ELECTIVES (GE-2(i)): ANALYTIC GEOMETRY

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Analytic Geometry | 4 | 3 | 1 | 0 | Class XII pass with Mathematics | NIL |

Learning Objectives: The course aims at:

- Identifying and sketching curves, studying three dimensional objects, their geometric properties and applications.
- Use of vector approach to three-dimensional geometry makes the study simple and elegant.

Learning Outcomes: This course will enable the students to:

- Learn concepts in two-dimensional geometry.
- Identify and sketch conics namely, ellipse, parabola and hyperbola.
- Learn about three-dimensional objects such as straight lines and planes using vectors, spheres, cones and cylinders.

SYLLABUS OF GE-2(i)

UNIT – I: Conic Sections **(15 hours)**

Techniques for sketching parabola, ellipse and hyperbola; Reflection properties of parabola, ellipse, hyperbola, and their applications to signals; Classification of quadratic equation representing lines, parabola, ellipse and hyperbola; Rotation of axes; Second degree equations.

UNIT – II: Vectors, Lines and Planes **(18 hours)**

Rectangular coordinates in 3-dimensional space, vectors viewed geometrically, vectors in coordinate systems and vectors determined by length and angle; Dot product; Projections; Cross product, scalar triple product, vector triple product and their geometrical properties; Parametric equations of lines, direction cosines and direction ratios of a line, vector and symmetric equations of lines, angle between two lines; Planes in 3-dimensional space, coplanarity of two lines, angle between two planes, distance of a point from a plane, angle between a line and a plane, distance between parallel planes; Shortest distance between two skew lines.

UNIT – III: Sphere, Cone and Cylinder**(12 hours)**

Equation of a sphere, plane section of sphere, tangents and tangent plane to a sphere;
Equation of a cone, enveloping cone of a sphere, Reciprocal cones and right circular cone;
Equation of a cylinder, enveloping cylinder and right circular cylinder.

Recommended Readings:

1. Anton, Howard, Bivens, Irl, & Davis, Stephen (2013). *Calculus* (10th ed.). John Wiley & Sons Singapore Pte. Ltd. Indian reprint (2016) by Wiley India Pvt. Ltd. Delhi.
2. Narayan, Shanti & Mittal, P. K. (2007). *Analytical Solid Geometry*. S. Chand & Company Pvt Ltd. India.

Suggestive Readings:

- Bell, Robert J.T. (1972). *An Elementary Treatise on Coordinate Geometry of Three Dimensions*. Macmillan & Co. Ltd. London.
- George B. Thomas, Jr., & Ross L. Finney (2012). *Calculus and Analytic Geometry* (9th ed.). Pearson Indian Education Services Pvt Ltd. India.

GENERIC ELECTIVES (GE-2(ii)): INTRODUCTION TO LINEAR ALGEBRA**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--------------------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction to Linear Algebra | 4 | 3 | 1 | 0 | Class XII pass with Mathematics | NIL |

Learning Objectives: The objective of the course is:

- To introduce the concept of vectors in R^n .
- Understand the nature of solution of system of linear equations.
- To view the $m \times n$ matrices as a linear function from R^n to R^m and vice versa.
- To introduce the concepts of linear independence and dependence, rank and linear transformations has been explained through matrices.

Learning Outcomes: This course will enable the students to:

- Visualize the space R^n in terms of vectors and the interrelation of vectors with matrices.
- Understand important uses of eigenvalues and eigenvectors in the diagonalization of matrices.
- Familiarize with concepts of bases, dimension and minimal spanning sets in vector spaces.
- Learn about linear transformation and its corresponding matrix.

SYLLABUS OF GE-2(ii)

UNIT – I: Vectors and Matrices (18 hours)

Fundamental operations and properties of vectors in R^n , Linear combinations of vectors, Dot product and their properties, Cauchy-Schwarz and triangle inequality, Orthogonal and parallel vectors; Solving system of linear equations using Gaussian elimination, and Gauss-Jordan row reduction, Reduced row echelon form; Equivalent systems, Rank and row space of a matrix; Eigenvalues, eigenvectors and characteristic polynomial of a square matrix; Diagonalization.

UNIT – II: Vector Spaces (12 hours)

Definition, examples and some elementary properties of vector spaces; Subspaces, Span, Linear independence and dependence; Basis and dimension of a vector space; Diagonalization and bases.

UNIT – III: Linear Transformations (15 hours)

Definition, examples and elementary properties of linear transformations; The matrix of a linear transformation; Kernel and range of a linear transformation, The dimension theorem, one-to-one and onto linear transformations.

Essential Reading

1. Andrilli, S., & Hecker, D. (2016). *Elementary Linear Algebra* (5th ed.). Elsevier India.

Suggestive Reading

- Kolman, Bernard, & Hill, David R. (2001). *Introductory Linear Algebra with Applications* (7th ed.). Pearson Education, Delhi. First Indian Reprint 2003.

DEPARTMENT OF OPERATIONAL RESEARCH

Category I

BSc. (Hons.) Operational Research

DISCIPLINE SPECIFIC CORE COURSE – 4: Advanced Linear Programming

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Advanced Linear Programming DSC-4 | 4 | 3 | 0 | 1 | Class XII pass with Mathematics | Basic Linear Programming |

Learning Objectives

The Learning Objectives of this course are as follows:

- To enrich the knowledge of students with advanced concepts and techniques of linear programming problem along with real life applications
- To make students understand the theoretical basics of different computational algorithms used in solving linear programming and related problems.

Learning outcomes

Students completing this course will be able to:

- Explain the relationship between a linear program and its dual, including strong duality and complementary slackness, and understand the economic interpretation of duality.
- Learn an alternative method for solving linear programming problems.
- Perform sensitivity analysis to identify the direction and magnitude of change of a linear programming model's optimal solution as the input data changes.
- Formulate specialized linear programming problems, namely transportation and assignment problems and describe theoretical workings of the solution methods for transportation and assignment problems, demonstrate solution process by hand and solver.

SYLLABUS OF DSC-4

Unit I (12 Hours): Duality: Duality in linear programming, Duality theorems (Weak duality, Strong duality, Existence theorem and Complementary slackness conditions), Economic interpretation of duality, Dual simplex method.

Unit II (09 Hours): Sensitivity Analysis: Post Optimality Analysis (change in resource vector, change in cost vector, addition and deletion of a constraint, addition and deletion of a decision variable).

Unit III (15 Hours): Transportation problem (TP) : TP and its formulation, finding initial basic feasible solution of TP using North-West Corner rule, Least Cost method and Vogel's Approximation method, MODI method for finding optimal solution, Special cases in TP.

Unit IV (09 Hours): Assignment problem (AP) : AP and its formulation, Hungarian method for solving AP, Special cases in AP, Transshipment and Travelling salesmen problem.

Practical component (if any) – 30 Hours

Practical/Lab to be performed on a computer using OR/Statistical packages

1. Solution to linear programming problem through dual simplex method.
2. Computational sensitivity analysis with respect to changes in the cost vector.
3. Computational sensitivity analysis with respect to changes in the resource vector.
4. Solution of transportation problem.
5. Solution of assignment problem.
6. Solution of travelling salesman problem.

Essential/recommended readings

- Bazaraa, M. S., Jarvis, J. J. and Sherali. H. D. (2011). *Linear Programming and Network Flows* (4th ed.). John Wiley & Sons.
- Chandra, S., Jayadeva, Mehra, A. (2009). *Numerical Optimization with Applications*. Narosa Publishing House.
- Hadley, G. (2002). *Linear Programming*. Narosa Publishing House.
- Ravindran, A., Phillips, D. T. and Solberg, J. J. (2007). *Operations Research-Principles and Practice* (2nd ed.) (WSE), John Wiley & Sons.
- Taha, H. A. (2017). *Operations Research-An Introduction* (10th ed.). Pearson.
- Winston, W. L. and Venkataramanan, M. (2002). *Introduction to Mathematical Programming: Applications and Algorithms* (4th ed.). Duxbury Press.

Suggestive readings-Nil

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 5: Statistics

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Statistics DSC-5 | 4 | 3 | 0 | 1 | Class XII pass with Mathematics | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

- The aim of this course is to acquaint the students with the fundamental concepts of Probability and Statistics, to provide an understanding of the processes by which real-life statistical problems are analysed
- To develop an understanding of the role of Statistics in Operational Research.

Learning Outcomes

Students completing this course will be able to:

- Quantify uncertainty using probability, learn how to find probability using the concepts of random variables and distribution functions, obtain characteristics of the underlying distributions, and study functional relationships between two random variables.
- Know various discrete and continuous probability distributions along with their characteristics and identify the situations where they provide realistic models.
- Know about the modes of convergence in probability theory.
- Define the functional relationship between two variables and gain a foothold in basic concepts of forecasting.

SYLLABUS OF DSC-5

Unit I (06 Hours): Probability: Probability Axioms, Conditional Probability and Bayes' Theorem and its Applications.

Unit II (15 Hours): Random Variables, Distribution Functions and Moments: Introduction, Expectation and Variance, Moment Generating Functions and Characteristic Function, Multidimensional Random Variable, Conditional Expectation and Conditional Variance. Joint, Marginal and Conditional Distributions. Independent Random Variables.

Unit III (15 Hours): Probability Distributions and Large Sample Theory: Discrete and Continuous Probability Distributions (Binomial, Poisson, Geometric Negative binomial, Uniform, Exponential, Normal), Weak Law of Large Numbers, Strong Law of Large Numbers. Central Limit Theorem.

Unit IV (9 Hours): Regression and Forecasting: Karl Pearson's Coefficient of Correlation, Lines of regression, Introduction to Forecasting.

Practical component (if any) -

1. Practicals to Analyse frequency distribution using moments.
2. Practicals to demonstrate applications of Binomial, Poisson and Normal Distributions
3. Practicals to understand Fitting of discrete distributions-Binomial, Poisson, Negative Binomial
4. Fitting of continuous distributions-Exponential. Normal
5. Finding Karl Pearson's Correlation Coefficient using raw and grouped data
6. Analysis of data to be used for forecasting- graphically, using summary statistics, and various measures of forecasting accuracy that are used to help judge the appropriateness of a model
7. Regression Analysis and forecasting using Lines of regression

Essential/recommended readings

- Makridakis, S., Wheelwright, S. C., & Hyndman, R. J. (2008). *Forecasting methods and applications*. John Wiley & sons.
- Devore, J. L. (2012). *Probability and Statistics for Engineering and the Sciences* (8th ed.) Cengage Learning.
- Gupta, S.C, Kapoor, V K (2020). *Fundamentals of Mathematical Statistics* (12th Ed.) Sultan Chand and Sons.
- Rohatgi, V. K., & Saleh, A. K. E. Md. (2015). *An Introduction to Probability and Statistics* (3rd ed.). Wiley.
- Ross, S. (2014). *Introduction to Probability Models* (11th ed.). Academic Press/Elsevier.

Suggestive readings

- Feller, W. (2008). *An Introduction to Probability Theory and its Applications - Vol I* (3rd ed.). Wiley.
- Hogg, R.V., Craig, A.T., and McKean, J.W. (2019). *Introduction to Mathematical Statistics* (8th ed.). Pearson.

DISCIPLINE SPECIFIC CORE COURSE – 6: Python Programming for Business Modelling

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|----------|-----------------------------------|----------|---------------------|--|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Python Programming for Business Modelling DSC-6 | 4 | 3 | 0 | 1 | Class XII pass with Mathematics | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

- To introduce the basic concepts of Python programming. The course will familiarize the students with Python's ability to handle different data formats such as numbers, strings, lists, dictionaries, sets, tuples, etc.
- The students will be made familiar with the concepts of loops. Modularization of code using inbuilt functions as well as user defined functions will also be explained.
- To introduce the basics for various useful libraries so as to equip the students with modern computing skills.

Learning outcomes

Upon successful completion of this course the student will be able to:

- Learn Python installation and configuration.
- Understand simple scripting using Python.
- Learn Syntax and Semantics of Python Programming.
- Understand different data types and arithmetical, logical and relational expressions in Python.
- Understand the control structures and functions in Python by writing codes for some real-world problems.
- Handle simple data structures, lists, dictionaries, sets and tuples.
- Modularize the code using inbuilt functions and user defined functions.
- Handle various managerial decision making related problems

SYLLABUS OF DSC-6

Unit I (6 Hours)

Python installation, Basic Terminal Commands, interactive mode and script mode, Structure of a Program, Simple Python Script Writing, script execution, debugging errors and understanding simple programs in Python

Unit II (12 Hours)

Identifiers and keywords; literals, numbers, and strings; Operators and expressions; Input and Output statements; control structures (conditional statements, loop control statements, break, Continue and pass).

Unit III (10 Hours)

Introduction to Functions and its definition: Modules, built in and user-defined functions, passing arguments and returning values, default arguments, functions as data.

Unit IV (8 Hours)

Data Structures: Strings, Lists, Tuples, Sets, Dictionaries, Analysing their functions and basic operations.

Unit V (9 Hours): Introduction to Core Libraries in Python : Numpy Library for Arrays (Creating and accessing One and Multi-Dimensional Array), Pandas Library for Data Processing (Basics of DataFrame), Matplotlib Library for Visualization (Pie Chart, Scatter Plot, Histogram, Bar Chart), SciPy Library for Statistics (for handling basic statistics like; Descriptive Statistics, Rank, Determining Homogeneity of Variances, Correlation), Using PuLP for solving Linear Programming Problems

Practical component (if any) –

1. Write a program to enter a name and display: “Hello, Name”.
2. Write a program to compute the roots of a quadratic equation.
3. Write a program to print a pyramid **pattern** with 8 rows.
4. Write a menu-driven program to enter a number and print whether the number is odd or even.
5. Write a program to build a **random number generator** that generates random numbers between 1 and 6 (simulates a dice).
6. Write a program that takes two **lists** and returns “True” if they have at least one common member.
7. Write a program to check if one **list** is reverse of another.
8. Write a program to check if a given **array** is Monotonic.
9. Write a program to find the maximum number out of 3 entered numbers. (**loop**)
10. Write a program to build a menu driven **calculator** and perform basic arithmetic operations between two numbers. (Addition, Subtraction, Multiplication and Division)
11. Write a program to create a **dictionary** and remove one key.
12. Write a program to enter 5 subject’s marks and print the grades A/B/C/D. (**loop**)
13. Write a program to print a Fibonacci sequence. (**loop**)
14. Write a program in python to plot a **graph** for the function $y = x^2$.
15. Programmes related to creating and modifying List, Tuple and Dictionary.
16. Programmes to find correlation between dependent and independent variables.
17. Programme to develop a regression model on an existing data set.

18. Programmes for data visualization (Charts using plot() function, Pie Chart, Scatter Plot, Histogram, Bar Chart)
19. Programmes for handling descriptive statistics using SciPy.
20. Solution to linear programming problems using PuLP Library.
21. Solution to deterministic EOQ based models for Inventory Management

Essential/recommended readings

- Elkner, J., Downey, A. B., & Meyers, C. (2016). *How to think like a computer scientist: learning with python*. Samurai Media Limited, United Kingdom.
- Guttag, J. V. (2013). *Introduction to computation and programming using Python*. MIT Press.
- Taneja, S., Kumar, N. Python Programming- A modular Approach, Pearson Education India, 2018.
- Deitel, P. J. (2019). *Python Fundamentals*. Pearson.
- Dierbach, C. (2012). *Introduction to computer science using python: a computational problem-solving focus*. Wiley Publishing.
- Lambert, K. A. (2018). *Fundamentals of python: first programs*. Cengage Learning.
- Lutz, M., & Lutz, M. (1996). *Programming python* (volume 8). O'Reilly Media, Inc.
- Thareja, R. (2017). *Python programming using problem solving approach*. Oxford University Press.
- VanderPlas, J. (2016). *Python data science handbook: essential tools for working with data*. O'Reilly Media, Inc.

Suggestive readings: Nil

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Operational Research Courses for Undergraduate Programme of study
with Operational Research as one of the Core Disciplines

(B.A. Programme with Operational Research as Major discipline)

Category II

DISCIPLINE SPECIFIC CORE COURSE – 3: Advanced Linear Programming

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Advanced Linear Programming DSC-3 | 4 | 3 | 0 | 1 | Class XII pass with Mathematics | Basic Linear Programming |

Learning Objectives

The Learning Objectives of this course are as follows:

- To enrich the knowledge of students with advanced concepts and techniques of linear programming problem along with real life applications
- To make students understand the theoretical basics of different computational algorithms used in solving linear programming and related problems.

Learning outcomes

Students completing this course will be able to:

- Explain the relationship between a linear program and its dual, including strong duality and complementary slackness, and understand the economic interpretation of duality.
- Learn an alternative method for solving linear programming problems.
- Perform sensitivity analysis to identify the direction and magnitude of change of a linear programming model's optimal solution as the input data changes.
- Formulate specialized linear programming problems, namely transportation and assignment problems and describe theoretical workings of the solution methods for transportation and assignment problems, demonstrate solution process by hand and solver.

SYLLABUS OF DSC-3

Unit I (12 Hours): Duality: Duality in linear programming, Duality theorems (Weak duality, Strong duality, Existence theorem and Complementary slackness conditions), Economic interpretation of duality, Dual simplex method.

Unit II (09 Hours): Sensitivity Analysis: Post Optimality Analysis (change in resource vector, change in cost vector, addition and deletion of a constraint, addition and deletion of a decision variable).

Unit III (15 Hours): Transportation Problem (TP): TP and its formulation, finding initial basic feasible solution of TP using North-West Corner rule, Least Cost method and Vogel's Approximation method, MODI method for finding optimal solution, Special cases in TP.

Unit IV (09 Hours): Assignment Problem (AP): AP and its formulation, Hungarian method for solving AP, Special cases in AP, Transshipment and Travelling salesmen problem.

Practical component (if any) –

Practical/Lab to be performed on a computer using OR/Statistical packages

1. Solution to linear programming problem through dual simplex method.
2. Computational sensitivity analysis with respect to changes in the cost vector.
3. Computational sensitivity analysis with respect to changes in the resource vector.
4. Solution of transportation problem.
5. Solution of assignment problem.
6. Solution of travelling salesman problem.

Essential/recommended readings

- Bazaraa, M. S., Jarvis, J. J. and Sherali. H. D. (2011). *Linear Programming and Network Flows* (4th ed.). John Wiley & Sons.
- Chandra, S., Jayadeva, Mehra, A. (2009). *Numerical Optimization with Applications*. Narosa Publishing House.
- Hadley, G. (2002). *Linear Programming*. Narosa Publishing House.
- Ravindran, A., Phillips, D. T. and Solberg, J. J. (2007). *Operations Research-Principles and Practice* (2nd ed.) (WSE), John Wiley & Sons.
- Taha, H. A. (2017). *Operations Research-An Introduction* (10th ed.). Pearson.
- Winston, W. L. and Venkataramanan, M. (2002). *Introduction to Mathematical Programming: Applications and Algorithms* (4th ed.). Duxbury Press.

Suggestive readings-Nil

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 4: Statistics

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------|---------|-----------------------------------|----------|------------------------|---------------------------------------|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Statistics DSC-4 | 4 | 3 | 0 | 1 | Class XII pass with Mathematics | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

- The aim of this course is to acquaint the students with the fundamental concepts of Probability and Statistics, to provide an understanding of the processes by which real-life statistical problems are analysed
- To develop an understanding of the role of Statistics in Operational Research.

Learning Outcomes

Students completing this course will be able to:

- Quantify uncertainty using probability, learn how to find probability using the concepts of random variables and distribution functions, obtain characteristics of the underlying distributions, and study functional relationships between two random variables.
- Know various discrete and continuous probability distributions along with their characteristics and identify the situations where they provide realistic models.
- Know about the modes of convergence in probability theory.
- Define the functional relationship between two variables and gain a foothold in basic concepts of forecasting.

SYLLABUS OF DSC-4

Unit I (6 Hours): Probability: Probability Axioms, Conditional Probability and Bayes' Theorem and its Applications.

Unit II (15 hours): Random Variables, Distribution Functions, and Moments: Expectation and Variance, Moment Generating Functions and Characteristic Function, Multidimensional Random Variable, Conditional Expectation and Conditional Variance. Joint, Marginal and Conditional Distributions. Independent Random Variables.

Unit III (15 Hours): Probability Distributions and Large Sample Theory:

Discrete and Continuous Probability Distributions (Binomial, Poisson, Geometric Negative binomial, Uniform, Exponential, Normal), Weak Law of Large Numbers, Strong Law of Large Numbers. Central Limit Theorem.

Unit IV (09 Hours): Regression and Forecasting: Karl Pearson's Coefficient of Correlation, Lines of regression, Introduction to Forecasting.

Practical component (if any) -

1. Practicals to Analyse frequency distribution using moments.
2. Practicals to demonstrate applications of Binomial, Poisson and Normal Distributions
3. Practicals to understand Fitting of discrete distributions-Binomial, Poisson, Negative Binomial
4. Fitting of continuous distributions-Exponential. Normal
5. Finding Karl Pearson's Correlation Coefficient using raw and grouped data
6. Analysis of data to be used for forecasting- graphically, using summary statistics, and various measures of forecasting accuracy that are used to help judge the appropriateness of a model
7. Regression Analysis and forecasting using Lines of regression

Essential/recommended readings

- Makridakis, S., Wheelwright, S. C., & Hyndman, R. J. (2008). *Forecasting methods and applications*. John Wiley & sons.
- Devore, J. L. (2012). *Probability and Statistics for Engineering and the Sciences* (8th ed.) Cengage Learning.
- Feller, W. (2008). *An Introduction to Probability Theory and its Applications - Vol I* (3rd ed.). Wiley.
- Gupta, S.C, Kapoor, V K (2020). *Fundamentals of Mathematical Statistics* (12th Ed.) Sultan Chand and Sons.
- Hogg, R.V., Craig, A.T., and McKean, J.W. (2019). *Introduction to Mathematical Statistics* (8th ed.). Pearson.
- Rohatgi, V. K., & Saleh, A. K. E. Md. (2015). *An Introduction to Probability and Statistics* (3rd ed.). Wiley.
- Ross, S. (2014). *Introduction to Probability Models* (11th ed.). Academic Press/Elsevier.

Suggestive readings: Nil

Operational Research Courses for Undergraduate Programme of study
with Operational Research as one of the Core Disciplines

(B.A Programme with Operational Research as non-Major or Minor discipline)

Category III

DISCIPLINE SPECIFIC CORE COURSE – 3: Advanced Linear Programming

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Advanced Linear Programming DSC-3 | 4 | 3 | 0 | 1 | Class XII pass with Mathematics | Basic Linear Programming |

Learning Objectives

The Learning Objectives of this course are as follows:

- To enrich the knowledge of students with advanced concepts and techniques of linear programming problem along with real life applications
- To make students understand the theoretical basics of different computational algorithms used in solving linear programming and related problems.

Learning outcomes

Students completing this course will be able to:

- Explain the relationship between a linear program and its dual, including strong duality and complementary slackness, and understand the economic interpretation of duality.
- Learn an alternative method for solving linear programming problems.
- Perform sensitivity analysis to identify the direction and magnitude of change of a linear programming model's optimal solution as the input data changes.
- Formulate specialized linear programming problems, namely transportation and assignment problems and describe theoretical workings of the solution methods for transportation and assignment problems, demonstrate solution process by hand and solver.

SYLLABUS OF DSC-3

Unit I (12 Hours): Duality: Duality in linear programming, Duality theorems (Weak duality, Strong duality, Existence theorem and Complementary slackness conditions), Economic interpretation of duality, Dual simplex method.

Unit II (09 Hours): Sensitivity Analysis: Post Optimality Analysis (change in resource vector, change in cost vector, addition and deletion of a constraint, addition and deletion of a decision variable).

Unit III (15 Hours): Transportation Problem (TP): TP and its formulation, finding initial basic feasible solution of TP using North-West Corner rule, Least Cost method and Vogel's Approximation method, MODI method for finding optimal solution, Special cases in TP.

Unit IV (09 Hours): Assignment problem (AP): AP and its formulation, Hungarian method for solving AP, Special cases in AP, Transshipment and Travelling salesmen problem.

Practical component (if any) –

Practical/Lab to be performed on a computer using OR/Statistical packages

1. Solution to linear programming problem through dual simplex method.
2. Computational sensitivity analysis with respect to changes in the cost vector.
3. Computational sensitivity analysis with respect to changes in the resource vector.
4. Solution of transportation problem.
5. Solution of assignment problem.
6. Solution of travelling salesman problem.

Essential/recommended readings

- Bazaraa, M. S., Jarvis, J. J. and Sherali. H. D. (2011). *Linear Programming and Network Flows* (4th ed.). John Wiley & Sons.
- Chandra, S., Jayadeva, Mehra, A. (2009). *Numerical Optimization with Applications*. Narosa Publishing House.
- Hadley, G. (2002). *Linear Programming*. Narosa Publishing House.
- Ravindran, A., Phillips, D. T. and Solberg, J. J. (2007). *Operations Research-Principles and Practice* (2nd ed.) (WSE), John Wiley & Sons.
- Taha, H. A. (2017). *Operations Research-An Introduction* (10th ed.). Pearson.
- Winston, W. L. and Venkataramanan, M. (2002). *Introduction to Mathematical Programming: Applications and Algorithms* (4th ed.). Duxbury Press.

Suggestive readings-Nil

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BSc. (Physical Sciences/ Mathematical Sciences) with
Operational Research as one of the Core
Disciplines

Category IV

DISCIPLINE SPECIFIC CORE COURSE – 3: Advanced Linear Programming

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Advanced Linear Programming DSC-3 | 4 | 3 | 0 | 1 | Class XII pass with Mathematics | Basic Linear Programming |

Learning Objectives

The Learning Objectives of this course are as follows:

- To enrich the knowledge of students with advanced concepts and techniques of linear programming problem along with real life applications
- To make students understand the theoretical basics of different computational algorithms used in solving linear programming and related problems.

Learning outcomes

Students completing this course will be able to:

- Explain the relationship between a linear program and its dual, including strong duality and complementary slackness, and understand the economic interpretation of duality.
- Learn an alternative method for solving linear programming problems.
- Perform sensitivity analysis to identify the direction and magnitude of change of a linear programming model's optimal solution as the input data changes.
- Formulate specialized linear programming problems, namely transportation and assignment problems and describe theoretical workings of the solution methods for transportation and assignment problems, demonstrate solution process by hand and solver.

SYLLABUS OF DSC-3

Unit I (12 Hours): Duality: Duality in linear programming, Duality theorems (Weak duality, Strong duality, Existence theorem and Complementary slackness conditions), Economic interpretation of duality, Dual simplex method.

Unit II (09 Hours): Sensitivity Analysis: Post Optimality Analysis (change in resource vector, change in cost vector, addition and deletion of a constraint, addition and deletion of a decision variable).

Unit III (15 Hours): Transportation Problem (TP): TP and its formulation, finding initial basic feasible solution of TP using North-West Corner rule, Least Cost method and Vogel's Approximation method, MODI method for finding optimal solution, Special cases in TP.

Unit IV (09 Hours): Assignment problem (AP): AP and its formulation, Hungarian method for solving AP, Special cases in AP, Transshipment and Travelling salesmen problem.

Practical component (if any) –

Practical/Lab to be performed on a computer using OR/Statistical packages

1. Solution to linear programming problem through dual simplex method.
2. Computational sensitivity analysis with respect to changes in the cost vector.
3. Computational sensitivity analysis with respect to changes in the resource vector.
4. Solution of transportation problem.
5. Solution of assignment problem.
6. Solution of travelling salesman problem.

Essential/recommended readings

- Bazaraa, M. S., Jarvis, J. J. and Sherali. H. D. (2011). *Linear Programming and Network Flows* (4th ed.). John Wiley & Sons.
- Chandra, S., Jayadeva, Mehra, A. (2009). *Numerical Optimization with Applications*. Narosa Publishing House.
- Hadley, G. (2002). *Linear Programming*. Narosa Publishing House.
- Ravindran, A., Phillips, D. T. and Solberg, J. J. (2007). *Operations Research-Principles and Practice* (2nd ed.) (WSE), John Wiley & Sons.
- Taha, H. A. (2017). *Operations Research-An Introduction* (10th ed.). Pearson.
- Winston, W. L. and Venkataramanan, M. (2002). *Introduction to Mathematical Programming: Applications and Algorithms* (4th ed.). Duxbury Press.

Suggestive readings-Nil

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category-V
Common Pool of Generic Electives (GE) Courses offered by
Department of Operational Research

GENERIC ELECTIVES (GE-2): Production and Inventory Management

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|----------|-----------------------------------|----------|---------------------|--|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Production and Inventory Management GE-2 | 4 | 3 | 0 | 1 | Class XII pass with Mathematics | Nil |

Learning Objectives

The objective of this course is to introduce fundamental concepts in production and inventory management and at the same time, develop the students' modelling and analytical skills.

Learning outcomes

After completion of the course, students will possess knowledge and skills required to

- Gain an understanding of key concepts of Production and Inventory management and its role in various organizations.
- Apply selective inventory control techniques and understand its significance.
- Determine optimal order quantity for various deterministic and probabilistic inventory models.
- Understand quantity discount models in inventory management.
- Formulate and develop Production Planning and Scheduling models.
- To apply and extend production and inventory models to analyse real world systems.

SYLLABUS OF GE-2

Unit I (9 Hours): Production and Inventory Management, Introduction , Different types of costs in inventory system, Selective inventory classification (VED, XML, FNSD, ABC) and its use in controlling inventory.

Unit II (15 Hours): Deterministic continuous review models: Economic order quantity (EOQ) model with and without shortages, Finite replenishment rate Inventory models without and with planned shortages. Determination of reorder point, Quantity discount models.

Unit III (9 Hours): Probabilistic inventory models: Single period probabilistic inventory models with discrete and continuous demand.

Unit IV (12 Hours): Production Planning and Scheduling,: Introduction, Aggregate production plan, Formulation of lot size production problem: Wagner and Within algorithm. Basic concepts of Just-in-Time (JIT) and Material Requirement Planning (MRP).

Practical component (if any) -

Practical/Lab to be performed on a computer using OR/Statistical packages

1. Problems based on selective inventory classification. (ABC and FNS analysis)
2. To find optimal inventory policy for EOQ model.
3. To find optimal inventory policy for EOQ model with finite supply.
4. To find optimal inventory policy for EOQ model with backorders.
5. To solve all units quantity discounts model.
6. To solve Incremental quantity discount model
7. To find optimal inventory policy for Probabilistic inventory model with discrete demand.
8. To find optimal inventory policy for Probabilistic inventory model with continuous.
9. Solution of procurement/production scheduling model.

Essential/recommended readings

- Axsäter, S. (2015). *Inventory control* (3rd Edition). Springer.
- Buffa, Elwood S., & Sarin, Rakesh, K. (2009). *Modern Production/Operations Management* (8th ed.). Wiley, India.
- Hadley, G., & Whitin, T. M. (1963). *Analysis of inventory systems*. Prentice-Hall.
- Heizer, J., & Render, B. (2011). *Operations Management* (10th ed.). Pearson's Publication.
- Johnson, L.A., & Montgomery, D.C. (1974) *Operations Research in Production Planning, Scheduling and Inventory Control*. Wiley, New York.
- Waters, D. (2008). *Inventory control and management*. (2nd ed.). John Wiley & Sons.

Suggestive readings

- Naddor, E. (1966). *Inventory Systems*. Wiley.
- Silver, E. A., Pyke, D. F., & Peterson, R. (1998). *Inventory management and production planning and scheduling* (3rd ed.). Wiley.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DEPARTMENT OF COMPUTER SCIENCE

BSc. (Hons.) Computer Science -DSC

Category I

DISCIPLINE SPECIFIC CORE COURSE – 4: Object Oriented Programming

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DSC04 Object Oriented Programming with C++ | 4 | 3 | 0 | 1 | Class pass with Mathematics XII | Nil |

Learning Objectives

This course is designed to introduce programming concepts using C++ to students. The course aims to develop structured as well as object-oriented programming skills using C++ programming language. The course also aims to achieve competence amongst its students to develop correct and efficient C++ programs to solve problems spanning multiple domains.

Learning outcomes

On successful completion of the course, students will be able to:

- Write simple programs using built-in data types of C++.
- Implement arrays and user defined functions in C++.
- Write programs using dynamic memory allocation, handling external files, interrupts and exceptions.
- Solve problems spanning multiple domains using suitable programming constructs in C++.
- Solve problems spanning multiple domains using the concepts of object oriented programming in C++.

SYLLABUS OF DSC-4

UNIT – I (3 Hours)

Introduction to C++: Overview of Procedural and Object-Oriented Programming, Using main() function, Header Files, Compiling and Executing Simple Programs in C++

UNIT – II (12 Hours)

Programming Fundamentals: Data types, Variables, Operators, Expressions, Arrays, Keywords, Decision making constructs, Iteration, Type Casting, Input-output statements, Functions, Command Line Arguments/Parameters

UNIT – III (15 Hours)

Object Oriented Programming: Concepts of Abstraction, Encapsulation. Creating Classes and objects, Modifiers and Access Control, Constructors, Destructors, Implementation of Inheritance and Polymorphism, Template functions and classes

UNIT – IV (9 Hours)

Pointers and References: Static and dynamic memory allocation, Pointer and Reference Variables, Implementing Runtime polymorphism using pointers and references

UNIT – V (6 Hours)

Exception and File Handling: Using try, catch, throw, throws and finally; Nested try, creating user defined exceptions, File I/O Basics, File Operations

Practical component (if any) -30 Hours

1. Write a program to compute the sum of the first n terms of the following series:

$$sum = 1 - \frac{1}{2^2} + \frac{1}{3^3} - \dots$$

The number of terms n is to be taken from the user through the command line. If the command line argument is not found then prompt the user to enter the value of n.

2. Write a program to remove the duplicates from an array.
3. Write a program that prints a table indicating the number of occurrences of each alphabet in the text entered as command line arguments.
4. Write a menu driven program to perform string manipulation (without using inbuilt string functions):
 - a. Show address of each character in string
 - b. Concatenate two strings.
 - c. Compare two strings
 - d. Calculate length of the string (use pointers)
 - e. Convert all lowercase characters to uppercase
 - f. Reverse the string
 - g. Insert a string in another string at a user specified position
5. Write a program to merge two ordered arrays to get a single ordered array.

6. Write a program to search a given element in a set of N numbers using Binary search
(i) with recursion (ii) without recursion.
7. Write a program to calculate GCD of two numbers (i) with recursion (ii) without recursion.
8. Create a Matrix class. Write a menu-driven program to perform following Matrix operations (exceptions should be thrown by the functions if matrices passed to them are incompatible and handled by the main() function):
 - a. Sum
 - b. Product
 - c. Transpose
9. Define a class Person having name as a data member. Inherit two classes Student and Employee from Person. Student has additional attributes as course, marks and year and Employee has department and salary. Write display() method in all the three classes to display the corresponding attributes. Provide the necessary methods to show runtime polymorphism.
10. Create a Triangle class. Add exception handling statements to ensure the following conditions: all sides are greater than 0 and sum of any two sides are greater than the third side. The class should also have overloaded functions for calculating the area of a right angled triangle as well as using Heron's formula to calculate the area of any type of triangle.
11. Create a class Student containing fields for Roll No., Name, Class, Year and Total Marks. Write a program to store 5 objects of Student class in a file. Retrieve these records from the file and display them.
12. Copy the contents of one text file to another file, after removing all whitespaces.

Essential/recommended readings

1. Stephen Prata, *C++ Primer Plus*, 6th Edition, Pearson India, 2015.
2. E Balaguruswamy, *Object Oriented Programming with C++*, 8th edition, McGraw-Hill Education, 2020.
3. D.S. Malik, *C++ Programming: From Problem Analysis to Program Design*, 6th edition, Cengage Learning, 2013.

Suggestive readings

- (i) Schildt, H. *C++: The Complete Reference*, 4th edition, McGraw Hill, 2003

- (ii) Forouzan, A. B., Gilberg, R. F. *Computer Science: A Structured Approach using C++*, 2nd edition, Cengage Learning, 2010

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 5: Discrete Mathematical Structures

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DSC 05 Discrete Mathematical Structures | 4 | 3 | 0 | 1 | Class XII pass with Mathematics | Nil |

Learning Objectives

This course is designed as a foundational course to make students learn about the mathematical constructs that are used in Computer Science such as Boolean algebra, sets, relations, functions, principles of counting, and recurrences. In this course, the knowledge of mathematical notation, ideas and concepts learnt at the pre-college levels is extended to orient the students towards mathematical thinking required in Computer Science.

Learning outcomes

On successful completion of the course, students will be able to:

- Relate mathematical concepts and terminology to examples in the domain of Computer Science.
- Model real world problems using various mathematical constructs.
- Use different proofing techniques; construct simple mathematical proofs using logical arguments.
- Formulate mathematical claims and construct counterexamples.

SYLLABUS OF DSC- 5

UNIT – I (06 Hours)

Sets, Functions, Sequences and Summations, Relations: Sets: Set Operations, Computer Representation of Sets, Countable and Uncountable Set, Principle of Inclusion and Exclusion, Multisets; Functions: One-to-one and Onto Functions, Inverse Functions and Compositions of

Functions, Graphs of Functions Sequences and Summations: Sequences, Special Integer Sequences, Summations; Relations: Properties of Binary Relations, Equivalence relations and Partitions, Partial Ordering Relations and Lattices.

UNIT – II (09 Hours)

Logic and Proofs: Propositional Logic, Propositional Equivalences, Use of first-order logic to express natural language predicates, Quantifiers, Nested Quantifiers, Rules of Inference, Introduction to Proofs, Proof Methods and Strategies, Mathematical Induction.

UNIT – III (09 Hours)

Number Theory: Division and Integers, Primes and Greatest Common Divisors, Representation of Integers, Algorithms for Integer Operations, Modular Exponentiation, Applications of Number Theory.

UNIT – IV (06 Hours)

Combinatorics/Counting: The Pigeonhole Principle, Permutations and Combinations, Binomial Coefficients, Generalized Permutations and Combinations, Generating Permutations and Combinations.

UNIT – V (09 Hours)

Graphs and Trees: Graphs: Basic Terminology, Multigraphs and Weighted Graphs, Paths and Circuits, Eulerian Paths and Circuits, Hamiltonian paths and Circuits, Shortest Paths, Spanning Trees, Graph Isomorphism, Planar Graphs; Trees: Trees, Rooted Trees, Path Lengths in Rooted Trees.

UNIT – VI (06 Hours)

Recurrence: Recurrence Relations, Generating Functions, Linear Recurrence Relations with Constant Coefficients and their solution.

Practical component (if any) – 30 Hours

1. Create a class SET. Create member functions to perform the following SET operations:
 - 1) is member: check whether an element belongs to the set or not and return value as true/false.
 - 2) powerset: list all the elements of the power set of a set .
 - 3) subset: Check whether one set is a subset of the other or not.
 - 4) union and Intersection of two Sets.
 - 5) complement: Assume Universal Set as per the input elements from the user.
 - 6) set Difference and Symmetric Difference between two sets.
 - 7) cartesian Product of Sets.

Write a menu driven program to perform the above functions on an instance of the SET class.

2. Create a class RELATION, use Matrix notation to represent a relation. Include member functions to check if the relation is Reflexive, Symmetric, Anti-symmetric, Transitive. Using these functions check whether the given relation is: Equivalence or Partial Order relation or None

3. Write a Program that generates all the permutations of a given set of digits, with or without repetition.
4. For any number n , write a program to list all the solutions of the equation $x_1 + x_2 + x_3 + \dots + x_n = C$, where C is a constant ($C \leq 10$) and $x_1, x_2, x_3, \dots, x_n$ are nonnegative integers, using brute force strategy.
5. Write a Program to evaluate a polynomial function. (For example store $f(x) = 4n^2 + 2n + 9$ in an array and for a given value of n , say $n = 5$, compute the value of $f(n)$).
6. Write a Program to check if a given graph is a complete graph. Represent the graph using the Adjacency Matrix representation.
7. Write a Program to check if a given graph is a complete graph. Represent the graph using the Adjacency List representation.
8. Write a Program to accept a directed graph G and compute the in-degree and out-degree of each vertex.

Essential/recommended readings

1. Liu, C. L., Mohapatra, D. P. *Elements of Discrete Mathematics: A Computer Oriented Approach*, 4th edition, Tata McGraw Hill, 2017.
2. Rosen, K. H.. *Discrete Mathematics and Its Applications*, 8th edition, McGraw Hill, 2018.

Suggestive readings

- (i) Cormen, T. H., Leiserson, C. E., Rivest, R. L., Stein C. *Introduction to Algorithms*, 4th edition, Prentice Hall of India. 2022.
- (ii) Trembley, J. P., Manohar, R. *Discrete Mathematical Structures with Application to Computer Science*, Tata McGraw Hill, 1997.
- (iii) Albertson, M. O. and Hutchinson, J. P. *Discrete Mathematics with Algorithms*, John Wiley and Sons, 1988.

DISCIPLINE SPECIFIC CORE COURSE – 6: Probability for Computing

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|----------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DSC06 Probability for computing | 4 | 3 | 0 | 1 | Class XII pass with Mathematics | Nil |

Learning Objectives

This course introduces the students to the fundamental concepts and topics of probability and statistics, whose knowledge is important in other computer science courses. The course aims to build the foundation for some of the core courses in later semesters.

Learning outcomes

After successful completion of this course, the student will be able to:

- Use probability theory to evaluate the probability of real-world events.
- Describe discrete and continuous probability distribution functions and generate random numbers from the given distributions.
- Find the distance between two probability distributions
- Define and quantify the information contained in the data.
- Perform data analysis in a probabilistic framework.
- Visualize and model the given problem using mathematical concepts covered in the course.

SYLLABUS OF DSC-6 UNIT-I (09 Hours)

Basic Probability: Introduction to the notion of probability, Random experiment, Sample space and Events, Probability defined on events, Algebra of events. Conditional probabilities, independent events, Bayes' theorem.

UNIT-II (12 Hours)

Random Variables: Introduction to Random Variables, Probability mass/density functions, Cumulative distribution functions. Discrete Random Variables (Bernoulli, Binomial, Poisson, Multinomial and Geometric). Continuous Random Variables (Uniform, Exponential and Normal). Expectation of a Random Variable, Expectation of Function of a Random Variable and Variance. Markov inequality, Chebyshev's inequality, Central Limit Theorem, Weak and Strong Laws of Large Numbers.

UNIT-III (09 Hours)

Joint Distributions: Jointly distributed Random Variables, Joint distribution functions, Independent Random Variables, Covariance of Random Variables, Correlation Coefficients,

Conditional Expectation.

UNIT-IV (15 Hours)

Markov Chain and Information Theory: Introduction to Stochastic Processes, Chapman–Kolmogorov equations, Classification of states, Limiting and Stationary Probabilities. Random Number Generation, Pseudo Random Numbers, Inverse Transformation Method, Rejection Method, Uncertainty, Information and Entropy, Mutual Information, KL Divergence.

Practical component (if any) – 30 Hours

The goal of this lab is to develop data interpretation skills. Following exercises are designed to enable students to understand data characteristics either by visualization or by interpreting computed measures. All the exercises are to be completed using MS Excel functions and graphs. At the end of each exercise, the student should be able to draw a conclusion and state in a concise manner. Teachers are expected to guide students to obtain real data available through the internet for the following exercises.

1. Plotting and fitting of Binomial distribution and graphical representation of probabilities.
2. Plotting and fitting of Multinomial distribution and graphical representation of probabilities.
3. Plotting and fitting of Poisson distribution and graphical representation of probabilities.
4. Plotting and fitting of Geometric distribution and graphical representation of probabilities.
5. Plotting and fitting of Uniform distribution and graphical representation of probabilities.
6. Plotting and fitting of Exponential distribution and graphical representation of probabilities.
7. Plotting and fitting of Normal distribution and graphical representation of probabilities.
8. Calculation of cumulative distribution functions for Exponential and Normal distribution.
9. Given data from two distributions, find the distance between the distributions.
10. Application problems based on the Binomial distribution.
11. Application problems based on the Poisson distribution.
12. Application problems based on the Normal distribution.
13. Presentation of bivariate data through scatter-plot diagrams and calculations of covariance.
14. Calculation of Karl Pearson's correlation coefficients.
15. To find the correlation coefficient for a bivariate frequency distribution.
16. Generating Random numbers from discrete (Bernoulli, Binomial, Poisson) distributions.

17. Generating Random numbers from continuous (Uniform, Normal) distributions.

18. Find the entropy from the given data set.

Essential/recommended readings

1. Ross Sheldon M. *Introduction to Probability Models*, 12th Edition, Elsevier, 2019.
2. Trivedi, K. S. *Probability and Statistics with Reliability, Queuing and Computer Science Applications*, 2nd edition, Wiley, 2015.
3. Deisenroth, Marc Peter, Faisal A. Aldo and Ong Cheng Soon, *Mathematics for Machine Learning*, 1st edition, Cambridge University Press, 2020.
4. Ian F. Blake, *An Introduction to Applied Probability*, John Wiley.

Suggestive readings

- (i) Johnson James L., *Probability and Statistics for Computer Science*, 6th edition, Wiley, 2004.
- (ii) Forsyth David, *Probability and Statistics for Computer Science*, 1st edition, Springer, 2019.
- (iii) Freund J.E., *Mathematical Statistics with Applications*, 8th edition, Pearson Education, 2013.
- (iv) Devore Jay L., *Probability and Statistics for Engineering and the Sciences*, 9th edition, Cengage Learning, 2020.

**BSc. (Physical Sciences/ Mathematical Sciences) with Computer
Science as one of the Core Disciplines**

Category II

DISCIPLINE SPECIFIC CORE COURSE (DSC-2): Data Structures using C++

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|--|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DSC02: Data Structures using C++ | 4 | 3 | 0 | 1 | Class pass with Mathematics XII | Nil |

Learning Objectives

The course aims at developing the ability to use basic data structures like arrays, stacks, queues, lists, trees to solve problems. C++ is chosen as the language to understand implementation of these data structures.

Learning outcomes

On successful completion of the course, students will be able to:

- Compare two functions for their rates of growth.
- Understand abstract specification of data-structures and their implementation.
- Compute time and space complexity of operations on a data-structure.
- Identify the appropriate data structure(s) for a given application and understand the trade-offs involved in terms of time and space complexity.
- Apply recursive techniques to solve problems.

SYLLABUS OF DSC-2 UNIT – I (06 Hours)

Growth of Functions, Recurrence Relations. Functions used in analysis, asymptotic notations, asymptotic analysis, solving recurrences using recursion tree, Master Theorem.

UNIT – II (12 Hours)

Arrays, Linked Lists, Stacks, Queues, Deques. Arrays: array operations, applications, sorting, two-dimensional arrays, dynamic allocation of arrays; Linked Lists: singly linked lists, doubly linked lists, circularly linked lists, Stacks: stack as an ADT, implementing stacks using arrays, implementing stacks using linked lists, applications of stacks; Queues:

queue as an ADT, implementing queues using arrays, implementing queues using linked lists, double-ended queue as an ADT. Time complexity analysis of operations on all data structures.

UNIT – III (06 Hours)

Sorting: Insertion Sort, Count Sort and their complexity analysis.

UNIT – IV (03 Hours)

Recursion: Recursive functions, linear recursion, binary recursion.

UNIT – V (06 Hours)

Trees, Binary Trees. Trees: definition and properties, binary trees: definition and properties, traversal of binary trees and their time complexity analysis.

UNIT – VI (09 Hours)

Binary Search Trees, Balanced Search Trees: Binary Search Trees: insert, delete (by copying), search operations, time complexity analysis of these operations; Balanced Search Trees and (2,4) Trees: motivation and introduction.

UNIT – VII (03 Hours)

Binary Heap, Priority Queue: Binary Heaps: motivation and introduction, application of heaps - Priority Queues.

Practical component (if any) – 30 Hours

1. Perform matrix addition and multiplication.
2. Implement following recursive functions:
 - a. Factorial of a number
 - b. N^{th} fibonacci number
 - c. Power function: x^y
3. Implement singly linked lists.
4. Implement doubly linked lists.
5. Implement circular linked lists.
6. Implement stack data structure and its operations using arrays.
7. Implement stack data structure and its operations using linked lists.
8. Convert Prefix expression to Infix and Postfix expressions, and evaluate.
9. Implement queue data structure and its operations using arrays.
10. Implement queue data structure and its operations using linked lists.
11. Implement Binary Trees and its traversals.

Essential/recommended readings

1. Goodrich, M., Tamassia, R., & Mount, D., *Data Structures and Algorithms Analysis in C++*, 2nd edition. Wiley, 2011.
2. Cormen, T.H., Leiserson, C.E., Rivest, R. L., Stein C., *Introduction to Algorithms*, 3rd edition, Prentice Hall of India, 2010.
3. Drozdek, A., *Data Structures and Algorithms in C++*, 4th edition, Cengage Learning, 2012.

Suggestive readings

- (i) Sahni, S. *Data Structures, Algorithms and applications in C++*. 2nd Edition. Universities Press, 2011.
- (ii) Tanenbaum, A. M., Augenstein, M. J., & Langsam Y., *Data Structures Using C and C++*. 2nd edition. Prentice Hall of India, 2009.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time

BA (Prog.) with Computer Science as Major

Category III

DISCIPLINE SPECIFIC CORE COURSE (DSC-2): Data Structures

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-------------------------------|----------|-----------------------------------|----------|---------------------|--|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DSC02: Data Structures | 4 | 3 | 0 | 1 | Class XII with pass Mathematics | Nil |

Learning Objectives

The course aims at developing the ability to define, differentiate, implement the basic data structures like arrays, stacks, queues, lists, trees and use them to solve problems. C++ is chosen as the language to understand implementation of these data structures.

Learning outcomes

On successful completion of the course, students will be able to:

- Understand abstract specification of data-structures.
- Implement data structures as ADT..
- Identify the appropriate data structure(s) for a given application.
- Apply recursive techniques to solve problems.

SYLLABUS OF DSC-2

UNIT – I (15 Hours)

Arrays, Linked Lists, Stacks, Queues, Deques: Arrays: array operations, applications, sorting, two-dimensional arrays, dynamic allocation of arrays; Linked Lists: singly linked lists, doubly

linked lists, circularly linked lists, Stacks: stack as an ADT, implementing stacks using arrays, implementing stacks using linked lists, applications of stacks; Queues: queue as an ADT, implementing queues using arrays, implementing queues using linked lists, double-ended queue as an ADT.

UNIT – II (06 Hours)

Searching and Sorting: Linear Search, Binary Search, Insertion Sort, Count Sort.

UNIT – III (09 Hours)

Recursion: Recursive functions, linear recursion, binary recursion.

UNIT – IV (06 Hours)

Trees, Binary Trees: Trees: definition and properties, binary trees: definition and properties, traversal of binary trees.

UNIT – V(09 Hours)

Binary Search Trees: insert, delete (by copying), search operations.

Practical component (if any) – 30 Hours

1. Perform matrix addition and multiplication.
2. Implement following recursive functions:
 - Factorial of a number
 - N^{th} fibonacci number
 - Power function: x^y
3. Implement singly linked lists.
4. Implement doubly linked lists.
5. Implement circular linked lists.
6. Implement stack data structure and its operations using arrays.
7. Implement stack data structure and its operations using linked lists.
8. Convert Prefix expression to Infix and Postfix expressions, and evaluate.
9. Implement queue data structure and its operations using arrays.
10. Implement queue data structure and its operations using linked lists.
11. Implement Binary Trees and its traversals.

Essential/recommended readings

1. Goodrich, M.T., Tamassia, R., & Mount, D. *Data Structures and Algorithms Analysis in C++*, 2nd edition, Wiley, 2011.
2. Cormen, T.H., Leiserson, C.E., Rivest, R. L. Stein C. *Introduction to Algorithms*, 4th edition, Prentice Hall of India, 2022.
3. Drozdek, A. *Data Structures and Algorithms in C++*, 4th edition, Cengage Learning, 2012.

Suggestive readings

- (i) Sahni, S., *Data Structures, Algorithms and applications in C++*, 2nd edition, Universities Press, 2011.
- (ii) Langsam Y., Augenstein, M. J., & Tanenbaum, A. M. *Data Structures Using C and C++*, Pearson, 2009.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – A2 : DATA INTERPRETATION AND VISUALIZATION USING PYTHON

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| A2: Data Interpretation and Visualization using Python | 4 | 3 | 0 | 1 | Class pass with Mathematics XII | knowledge of Python |

Learning Objectives

This course is designed to introduce the students to the application of Python to get a deterministic view of data and interpret results..

Learning outcomes

On successful completion of the course, students will be able to:

- Interpret Data
- Obtain a deterministic view of data
- Perform data handling using Numpy arrays
- Load, clean, transform, merge and reshape data using Pandas
- Visualize data using Pandas and matplotlib libraries

SYLLABUS OF A2

UNIT – I (06 Hours)

Introduction to basic statistics and analysis: Fundamentals of Data Analysis, Statistical foundations for Data Analysis, Types of data, Descriptive Statistics, Correlation and covariance, Linear Regression, Statistical Hypothesis Generation and Testing, Python Libraries: NumPy, Pandas, Matplotlib

UNIT – II (09 Hours)

Array manipulation using Numpy: Numpy array: Creating Numpy arrays; various data types of Numpy arrays, indexing and slicing, swapping axes, transposing arrays, data processing using Numpy arrays

UNIT – III (12 Hours)

Data Manipulation using Pandas: Data Structures in Pandas: Series, DataFrame, Index objects, Loading data into Pandas data frame, Working with Data Frames: Arithmetics, Statistics, Binning, Indexing, Reindexing, Filtering, Handling missing data, Hierarchical indexing, Data wrangling: Data cleaning, transforming, merging and reshaping

UNIT – IV (12 Hours)

Plotting and Visualization: Using Matplotlib to plot data: figures, subplots, markings, color and line styles, labels and legends, plotting functions in Pandas: Line, bar, Scatter plots, histograms, stacked bars, Heatmap

UNIT-V (06 Hours)

Data Aggregation and Group operations: Group by Mechanics, Data aggregation, General split-apply-combine, Pivot tables and cross tabulation.

Practical component (if any) – 30 Hours

Use a dataset of your choice from Open Data Portal ([https:// data.gov.in/](https://data.gov.in/), UCI repository) or load from scikit, seaborn library for the following exercises to practice the concepts learnt.

1. Load a Pandas dataframe with a selected dataset. Identify and count the missing values in a dataframe. Clean the data after removing noise as follows
 - a. Drop duplicate rows.
 - b. Detect the outliers and remove the rows having outliers
 - c. Identify the most correlated positively correlated attributes and negatively correlated attributes
2. Import iris data using sklearn library or (Download IRIS data from: <https://archive.ics.uci.edu/ml/datasets/iris> or import it from sklearn.datasets)

- i. Compute mean, mode, median, standard deviation, confidence interval and standard error for each feature
 - ii. Compute correlation coefficients between each pair of features and plot heatmap
 - iii. Find covariance between length of sepal and petal
 - iv. Build contingency table for class feature
3. Load Titanic data from sklearn library, plot the following with proper legend and axis labels:
 - a. Plot bar chart to show the frequency of survivors and non-survivors for male and female passengers separately
 - b. Draw a scatter plot for any two selected features
 - c. Compare density distribution for features age and passenger fare
 - d. Use a pair plot to show pairwise bivariate distribution
4. Using Titanic dataset, do the following
 - a. Find total number of passengers with age less than 30
 - b. Find total fare paid by passengers of first class
 - c. Compare number of survivors of each passenger class
5. Download any dataset and do the following
 - a. Count number of categorical and numeric features
 - b. Remove one correlated attribute (if any)
 - c. Display five-number summary of each attribute and show it visually

Essential/recommended readings

1. McKinney W. *Python for Data Analysis: Data Wrangling with Pandas, NumPy and IPython*, 2nd edition, O'Reilly Media, 2018.
2. Molin S. *Hands-On Data Analysis with Pandas*, Packt Publishing, 2019.
3. Gupta S.C., Kapoor V.K. *Fundamentals of Mathematical Statistics*, 12th edition, Sultan Chand & Sons, 2020.

Suggestive readings

- (i) Chen D. Y. *Pandas for Everyone: Python Data Analysis*, 1st edition, Pearson Education, 2018.
- (ii) Miller J.D. *Statistics for Data Science*, Packt Publishing Limited, 2017.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BA (Prog.) with Computer Science as Non-Major

Category III

DISCIPLINE SPECIFIC CORE COURSE (DSC-2): Data Structures

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-------------------------------|----------|-----------------------------------|----------|---------------------|--|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DSC02: Data Structures | 4 | 3 | 0 | 1 | Class pass XII with Mathematics | Knowledge of C++ |

Learning Objectives

The course aims at developing the ability to define, differentiate, implement the basic data structures like arrays, stacks, queues, lists, trees and use them to solve problems. C++ is chosen as the language to understand implementation of these data structures.

Learning outcomes

On successful completion of the course, students will be able to:

- Understand abstract specification of data-structures.
- Implement data structures as ADT..
- Identify the appropriate data structure(s) for a given application.
- Apply recursive techniques to solve problems.

SYLLABUS OF DSC-2

UNIT – I (15 Hours)

Arrays, Linked Lists, Stacks, Queues, Deques: Arrays: array operations, applications, sorting, two-dimensional arrays, dynamic allocation of arrays; Linked Lists: singly linked lists, doubly linked lists, circularly linked lists, Stacks: stack as an ADT, implementing stacks using arrays, implementing stacks using linked lists, applications of stacks; Queues: queue as an ADT, implementing queues using arrays, implementing queues using linked lists, double-ended queue as an ADT.

UNIT – II (06 Hours)

Searching and Sorting: Linear Search, Binary Search, Insertion Sort, Count Sort.

UNIT – III (09 Hours)

Recursion: Recursive functions, linear recursion, binary recursion.

UNIT – IV (06 Hours)

Trees, Binary Trees: Trees: definition and properties, binary trees: definition and properties, traversal of binary trees.

UNIT – V (09 Hours)

Binary Search Trees: insert, delete (by copying), search operations.

Practical component (if any) – 30 Hours

1. Perform matrix addition and multiplication.
2. Implement following recursive functions:
 - i. Factorial of a number
 - ii. N^{th} fibonacci number
 - iii. Power function: x^y
3. Implement singly linked lists.
4. Implement doubly linked lists.
5. Implement circular linked lists.
6. Implement stack data structure and its operations using arrays.
7. Implement stack data structure and its operations using linked lists.
8. Convert Prefix expression to Infix and Postfix expressions, and evaluate.
9. Implement queue data structure and its operations using arrays.
10. Implement queue data structure and its operations using linked lists.
11. Implement Binary Trees and its traversals.

Essential/recommended readings

1. Goodrich, M.T., Tamassia, R., & Mount, D. *Data Structures and Algorithms Analysis in C++*, 2nd edition, Wiley, 2011.
2. Cormen, T.H., Leiserson, C.E., Rivest, R. L. Stein C. *Introduction to Algorithms*, 4th edition, Prentice Hall of India, 2022.
3. Drozdek, A. *Data Structures and Algorithms in C++*, 4th edition, Cengage Learning, 2012.

Suggestive readings

- (i) Sahni, S., *Data Structures, Algorithms and applications in C++*, 2nd edition, Universities Press, 2011.
- (ii) Langsam Y., Augenstein, M. J., & Tanenbaum, A. M. *Data Structures Using C and C++*, Pearson, 2009.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Common Pool of Generic Electives (GE) Courses
Offered by Department of Computer Sciences
Category-IV

GENERIC ELECTIVES (GE-2a): Data Analysis and Visualization

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre- requisite of the course |
|--|----------|-----------------------------------|----------|---------------------|--|------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GE2a Data Analysis and Visualization using Python | 4 | 3 | 0 | 1 | Class XII pass with Mathematics | knowledge of Python |

Learning Objectives

This course is designed to introduce the students to real-world data analysis problems, their analysis and interpretation of results in the field of exploratory data science using Python.

Learning outcomes

On successful completion of the course, students will be able to:

- Apply descriptive statistics to obtain a deterministic view of data
- Apply basic and advanced level statistical function on data
- Perform data handling using Numpy arrays
- Do data cleaning and transformation before extracting useful information
- Visualize data for ease of understanding the revealed information

SYLLABUS OF GE-2a

UNIT – I & II (09 Hours)

Introduction to basic statistics and analysis: Fundamentals of Data Analysis, Statistical foundations for Data Analysis, Types of data, Descriptive Statistics, Python Libraries: NumPy, Pandas, Matplotlib

Array manipulation using NumPy: NumPy array: Creating NumPy arrays, various data types of NumPy arrays

UNIT – I & II (09 Hours)

Introduction to basic statistics and analysis: contd..

Correlation and covariance, Linear Regression, Statistical Hypothesis Generation and Testing

Unit 2 Array manipulation using Numpy: contd..

Indexing and slicing, swapping axes, transposing arrays, data processing using Numpy arrays

UNIT – III (15 Hours)

Data Manipulation using Pandas: Data Structures in Pandas: Series, Data Frame, Index objects, loading data into Panda's data frame, Working with Data Frames: Arithmetics, Statistics, Binning, Indexing, Reindexing, Filtering, Handling missing data, Hierarchical indexing, Data wrangling: Data cleaning, transforming, merging and reshaping

UNIT – IV (12 Hours)

Plotting and Visualization: Using Matplotlib to plot data: figures, subplots, markings, color and line styles, labels and legends, Plotting functions in Pandas: Lines, bar, Scatter plots, histograms, stacked bars, Heatmap

Practical component (if any) – 30 Hours

Use data set of your choice from Open Data Portal ([https:// data.gov.in/](https://data.gov.in/), UCI repository) or load from scikit, seaborn library for the following exercises to practice the concepts learnt.

1. Load a Pandas data frame with a selected dataset. Identify and count the missing values in a data frame. Clean the data after removing noise as follows
 - a. Drop duplicate rows.
 - b. Detect the outliers and remove the rows having outliers
 - c. Identify the most correlated positively correlated attributes and negatively correlated attributes
2. Import iris data using sklearn library or (Download IRIS data from: <https://archive.ics.uci.edu/ml/datasets/iris> or import it from sklearn.datasets)
 - a. Compute mean, mode, median, standard deviation, confidence interval and standard error for each feature
 - b. Compute correlation coefficients between each pair of features and plot heatmap
 - c. Find covariance between length of sepal and petal
 - d. Build contingency table for class feature
3. Load Titanic data from sklearn library , plot the following with proper legend and axis labels:
 - a. Plot bar chart to show the frequency of survivors and non-survivors for male and female passengers separately
 - b. Draw a scatter plot for any two selected features
 - c. Compare density distribution for features age and passenger fare

- d. Use a pair plot to show pairwise bivariate distribution
4. Using Titanic dataset, do the following
 - a. Find total number of passengers with age less than 30
 - b. Find total fare paid by passengers of first class
 - c. Compare number of survivors of each passenger class

Project students are encouraged to work on a good dataset in consultation with their faculty and apply the concepts learned in the course.

Essential/recommended readings

1. McKinney W. *Python for Data Analysis: Data Wrangling with Pandas, NumPy and IPython*. 2nd edition, O'Reilly Media, 2018.
2. Molin S. *Hands-On Data Analysis with Pandas*, Packt Publishing, 2019.
3. Gupta S.C., Kapoor V.K., *Fundamentals of Mathematical Statistics*, Sultan Chand & Sons, 2020.

Suggestive readings

- (i) Chen D. Y, *Pandas for Everyone: Python Data Analysis*, Pearson, 2018.
- (ii) Miller J.D. *Statistics for Data Science*, Packt Publishing, 2017.

GENERIC ELECTIVES (GE-2b): Data Analysis and Visualization using Spreadsheet

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|----------|-----------------------------------|----------|---------------------|--|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GE2b Data Analysis and Visualization using Spreadsheet | 4 | 3 | 0 | 1 | Class XII pass with Mathematics | Nil |

Learning Objectives

This course is designed to inculcate statistical thinking about data to the students who have studied Mathematics up to Class 10th ONLY. It gently introduces the students to basic statistics, and builds gradually to cover advanced functionalities for data analysis in spreadsheets. The objective is to enhance the knowledge of statistics and enable students to make sense of data by analyzing and visualizing it using spreadsheets, interpreting the results and gaining insights.

Learning outcomes

On successful completion of the course, students will be able to:

- Analyze and visualize data using spreadsheets
- Apply basic and advanced level statistical functions in spreadsheets
- Gain practical, hands-on experience of data analysis using spreadsheet

SYLLABUS OF GE-2b

UNIT – I (09 Hours)

Introduction to Basic Statistics

Fundamentals of Data Analysis, Statistical foundations for Data Analysis, Types of data, Descriptive Statistics, Correlation and covariance, Linear Regression.

UNIT – II (15 Hours)

Data Handling

Spreadsheet concepts, managing worksheets, formatting cells, entering data, Handling operators in formula, Cell referencing and naming of cells and cell ranges, Sorting, Multilayer sorting, Data validation, Find and Replace, Paste special, Filter and advanced filter, Formatting as table, Pivot tables, Formulae vs functions, Cell formulae vs Array formulae.

Mathematical functions, Statistical functions, Logical functions, Date and Time functions, Lookup and reference: Hlookup, and Vlookup, Index and Match functions, Text functions.

What-if-analysis: Goal-seek, Data tables, Scenario manager.

UNIT – III (12 Hours)

Data Analysis

Explore a data model: its content, and its structure, using the Power Pivot add-in. Learning DAX formula language. Create calculated fields and calculated measure for each cell, filter context for calculation, and explore several advanced DAX functions.

Cube formulas to retrieve data from data model.

UNIT – IV (09 Hours)

Data Visualization

Different types of charts including Pivot charts: Column, Line, Pie, Bar, Scatter charts. Fine tuning of charts: Chart Elements, Chart Styles, Chart Filters, Box Plot.

Practical component (if any) – 30 Hours

1. In a meeting of a marketing department of an organization it has been decided that price of selling an item is fixed at Rs. 40. It was resolved to increase the selling of more items and getting the profit of Rs. 50000/-. Use Goal Seek to find out how many items you will have to sell to meet your profit figure.
2. Create worksheet related to crop production of various crops in Indian states in last five years (wheat, rice, pulses, soya-bean, and cane-sugar etc).
 - i) Make a bar chart
 - ii) Make a pie chart
 - iii) Make a box plot
3. Study and perform the various DAX functions to analyse the data.
4. Create workbook related to sales of Business Company having various products in last four quarters for 10 sales persons.
 - i) Make a line graph to show the growth/decline in the sales
 - ii) Show the graph of each sales person's sales
 - iii) Find the two sales persons done in last 2 quarters
 - iv) Find the sales persons consistent in last four quarters
 - v) Find the most popular product of the company and the current popular product of company.
5. Create a Pivot-table showing the Customer Names who placed orders with GSS during 2019-2022. For each customer, also show the total number of orders, Total Sales, and Total Profit. Add a Slicer or a Filter that can be used to show the information specifically for each Customer Segment. Use information from the Pivot-table to answer the following questions (Hint: Filter and sort the data in the Pivot-table to locate the answer):
 - i) Which small business customer had the highest sales?
 - ii) Which corporate customer placed the greatest number of orders in 2019-2022? How many orders were placed by the corporate customer?
 - iii) Which consumer customer was the most profitable one?
 - iv) What is the sales figure of the least profitable home office customer?
6. Consider the following worksheet: (enter 5 records)

| FULL NAME | GRADE 1/2/3 | BASIC SALARY | HRA | PF | GROSS | NET | VA | VA>HRA |
|-----------|-------------|--------------|-----|----|-------|-----|----|--------|
| | | | | | | | | |

HRA is calculated as follows:

| Grade | HRA (% of basic) |
|-------|------------------|
| 1 | 40% |
| 2 | 35% |
| 3 | 30% |

PF is 8% for all grades

VA is 15000, 10000, 7000 for Grades 1, 2 and 3.

Gross=Basic + HRA+VA

Net=Gross - PF

- i) Find max, min and average salary of employees in respective Grade.
 - ii) Count no. of people where VA>HRA
 - iii) Find out most frequently occurring grade.
 - iv) Extract records where employee name starts with “A” has HRA>10000
 - v) Print Grade wise report of all employees with subtotals of net salary and also grand totals.
 - vi) Use subtotal command.
 - vii) Extract records where Grade is 1 or 2 and salary is between 10000 and 20000 both inclusive.
7. Create workbook related to sales of Business Company having various product in last ten quarters for 20 sales persons. Perform the following on workbook:
 - i) Create and modify a Pivot-table
 - ii) Apply Pivot-table styles and formatting
 - iii) Filter a Pivot-table
 - iv) Insert a slicer to filter a Pivot-table
 - v) Create a Pivot Chart
8. Create a PivotTable showing Total Sales breakdown by Region, Product Category, and Product Sub-Category. Use information from the PivotTable to answer the following questions:
 - i) What was the Total Sales figure included in this data set?
 - ii) Which Product Category had the highest sales?

- iii) Which Region had the lowest sales?
iv) What was the Total Sales of Appliances in Delhi?

9. You are required to prepare a payroll statement in the given format making maximum use of cell referencing facility:

| Code | Name | Category | Is HRA to be Paid | Basic | DP | DA | HRA | TA | CCA | Gross |
|------|-------|----------|-------------------|-------|----|----|-----|----|-----|-------|
| 1 | | | Y | | | | | | | |
| 2 | | | N | | | | | | | |
| | Total | | | | | | | | | |

Required:

- Basic salary (Allow any Basic salary in the range of Rs.10000-35000)
- DP is 50% of Basic Salary.
- DA (as a Percentage of Basic + DP) is more than 35000 then 40% of basic else 30% of basic.
- HRA is to be paid @ 40% of (Basic plus DP) to those whom HRA payable is yes.
- TA is to be paid @ Rs. 800 PM if Basic Salary is Less than Rs.12000, otherwise the TA is Rs. 1000 PM)
- CCA is to be paid @ Rs. 300 PM if Basic Salary is less than Rs.12000/- otherwise the CCA is Rs. 500 PM)
- Gross salary is the sum of Salary and all other allowances
- Deduction: a) GPF 10% of (Basic +DP) subject to a minimum of Rs.2000/- b) IT 10% of Gross Salary
- Net salary is Gross salary minus total deductions.

10. Consider the following worksheet for APS 1st year students:

| S.No. | Name | Physics | Chem | Bio | Maths | CS | Total | % | Grade |
|-------|------|---------|------|-----|-------|----|-------|---|-------|
| | | | | | | | | | |

| | | | | | | | | | |
|---|--|--|--|--|--|--|--|--|--|
| 1 | | | | | | | | | |
| 2 | | | | | | | | | |
| 3 | | | | | | | | | |
| 4 | | | | | | | | | |
| 5 | | | | | | | | | |

The value of Grade is calculated as follows:

| | |
|----------------|---------|
| If % ≥ 90 | Grade A |
|----------------|---------|

| | |
|-------------------------|---------|
| If % ≥ 80 & < 90 | Grade B |
| If % ≥ 70 & < 80 | Grade C |
| If % ≥ 60 & < 70 | Grade D |

Otherwise, students will be declared fail.

- i) Calculate Grade using if function
- ii) Sort the data according to total marks
- iii) Apply filter to display the marks of the students having more than 65% marks.
- iv) Enter the S.No. of a student and find out the Grade of the student using VLOOKUP.
- v) Extract all records where name
 - a) Begins with “A”
 - b) Contains “A”
 - c) Ends with “A”

Essential/recommended readings

1. Gupta, S.P., *Elementary Statistical Methods*, Sultan Chand and Sons, New Delhi, 2017.

2. Goldmeier, J., *Advanced Excel Essentials*, Apress, 2014.
3. Slager, D., *Essential Excel 2016: A Step-by-Step Guide*, Apress, 2016.
4. Valerie M. Sue and Matthew T. Griffin, *Data Visualization and Presentation with Microsoft Office*, SAGE, 2016.
5. Schmuller, J., *Statistical Analysis with Excel for Dummies*, 4th edition., Wiley India Pvt Ltd., 2020.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DEPARTMENT OF STATISTICS

B. Sc. (H) Statistics

Category-I

DISCIPLINE SPECIFIC CORE COURSE-4: THEORY OF PROBABILITY DISTRIBUTIONS

CREDIT DISTRIBUTION, ELIGIBILITY, AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the Course | | | Eligibility Criteria | Pre-requisite of the Course (if any) |
|-------------------------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Theory of probability distributions | 4 | 3 | 0 | 1 | Class XII pass with Mathematics | Descriptive Statistics, Probability Theory, Calculus |

Learning Objectives

The learning objectives of this course are as follows:

- Acquaint students with requisite tools for problem-solving available in statistical methodology.
- Prepare students to handle two/three-dimensional data and familiarize them with different measures of association as well as regression.
- Introduction to various discrete and continuous distributions and their properties.

Learning Outcomes

The learning outcomes of this course are as follows:

- Understand the role of expectation and its usefulness. Get familiar with different kind of generating functions and their strength and weaknesses
- Handle problems based on two-dimensional random variables using Jacobians and bivariate transformations.
- Understand and exploit various measures of correlation and regression for problem-solving.
- Familiarize with the concept of partial and multiple correlation coefficients and their properties
- Get acquainted with various discrete and continuous distributions their properties and interrelations and solve problems based on them.

SYLLABUS OF DSC-4

Theory

UNIT I

(09 Hours)

Expectation

Mathematical Expectation: Conditional expectations and its properties. Bivariate transformations with illustrations. Moments, moment generating function and its properties. Cumulants, cumulant generating function and its properties. Characteristic function and its properties. Inversion theorem for continuous random variables (without proof) along with applications.

UNIT II

(12 Hours)

Expectation (contd.)

Some inequalities involving expectation - Cauchy Schwartz Inequality, Jensen's inequality.

Two-dimensional random variables: Joint probability mass function/ Joint probability density function, marginal and conditional probability mass function/ probability density function, independence of random variables, examples based on joint/marginal/conditional pmf/pdf.

Conditional expectation and variance, Jacobian of transformation, Bivariate transformation of random variables, and Examples based on bivariate transformation.

UNIT III

(09 Hours)

Correlation and Regression

Properties of various measures of correlation and regression using expectation, Correlation Ratio, Intra-class correlation, Partial and multiple correlations – definition, Yule's notation, the plane of regression, properties of residuals, multiple and partial correlation coefficients and their properties (derivation based on three variables), the relationship between multiple, partial and total correlations and examples based on them.

UNIT IV

(15 Hours)

Probability Distributions

Discrete probability distribution – Binomial, Poisson- measures of central tendency, dispersion, skewness and kurtosis, recurrence relations based on moments, moment generating function, cumulant generating function, characteristic function, additive property, fitting of distribution, and examples based on application.

Continuous Probability distribution - Normal - measures of central tendency, dispersion, skewness and kurtosis, recurrence relations based on moments, moment generating function, cumulant generating function, characteristic function, additive property fitting of distribution and examples based on application, Uniform distribution – moments, mgf, mean deviation and examples based on bivariate transformations.

PRACTICAL – 30 Hours

List of Practicals:

1. Practical based on regression lines and properties of regression coefficients.
2. Practical based on Correlation ratio.
3. Practical based on Intra-class correlation.
4. Practical based on multiple correlation coefficient.
5. Practical based on partial correlation coefficient.

6. Practical based on planes of regression.
7. Word problems based on applications of Binomial distribution.
8. Practical based on fitting of Binomial distribution (when parameters are given).
9. Practical based on fitting of Binomial distribution (when parameters are not given).
10. Practical based on calculation of area under the normal curve.
11. Practical based on calculation of ordinates given area under the normal curve.
12. Practical based on fitting of the normal curve when parameters are not given.
13. Practical based on use of normal approximation to the binomial distribution.

Practical work to be conducted using electronic spreadsheet / EXCEL/ Statistical Software Package/ SPSS.

ESSENTIAL READINGS

- Goon, A.M., Gupta, M.K. and Dasgupta, B. (2016). *An Outline of Statistical Theory*, Vol. I, The World Press, Kolkata.
- Gupta, S. C. and Kapoor, V. K. (2020). *Fundamentals of Mathematical Statistics*, 12th Edn., S. Chand and Sons. Delhi.
- Hogg, R.V., Tanis, E.A. and Rao, J.M. (2009). *Probability and Statistical Inference*, 7th Ed., Pearson Education, New Delhi.
- Miller, I. and Miller, M. (2006). *John E. Freund's Mathematical Statistics with Applications*, 8th Ed., Pearson Education, Asia.
- Mukhopadhyay, P. (2016). *Mathematical Statistics*. Books And Allied, India.

SUGGESTED READINGS

- Mood, A.M. Graybill, F.A. and Boes, D.C. (2007). *Introduction to the Theory of Statistics*, 3rd Ed., (Reprint), Tata McGraw-Hill Pub. Co. Ltd.
- Rohatgi, V. K and Saleh M. E. (2015). *An Introduction to Probability and Statistics*, 3rd Edn. John Wiley & Sons, Inc., New Jersey.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE-5: APPLIED STATISTICS I

CREDIT DISTRIBUTION, ELIGIBILITY, AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the Course | | | Eligibility Criteria | Pre-requisite of the Course (if any) |
|----------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Applied Statistics I | 4 | 3 | 0 | 1 | Class XII pass with Mathematics | Descriptive Statistics |

Learning Objectives

The learning objectives of this course are as follows:

- This course will help students to know the applications of Statistics and learn and apply these concepts in real life situations.
- This course will give exposure to two applied fields of statistics viz. Vital Statistics and Index Numbers.
- They will be having hands on practice of working on the data related to above mentioned fields.
- This course will help them understand about the working of the Indian Official Statistical System.

Learning Outcomes:

The learning outcomes of this course are as follows:

- Understanding of the distinction between Vital Statistics and Demography.
- Knowledge of basic measures of Mortality, Fertility, and Population Growth.
- Ability to construct of Life Tables.
- Understanding of fundamental concepts of Index Numbers.
- Ability to construct Price and Quantity Index numbers, Consumer and Wholesale Price Index Numbers.
- Knowledge of Official Statistical System in India, Statistical offices at the Centre and States along with their functions.

SYLLABUS OF DSC-5

Theory

UNIT I

(18 Hours)

Vital Statistics

Introduction, Sources of collecting vital statistics, Errors in census and registration data, Uses of Vital Statistics. Measurements of mortality: Crude death rate (CDR), Age specific death rate (ASDR), Standardized death rates and Infant mortality rate.

Life table: Assumptions, description and construction of Complete life table. Definition of Abridged life table.

Measurements of fertility: Crude birth rate (CBR), General fertility rate (GFR), Age specific fertility rate (ASFR), Total fertility rate (TFR).

Measurements of population growth: Crude rate of natural increase, Pearle's vital index, Gross reproduction rate (GRR) and Net reproduction rate (NRR).

UNIT 2

(12 Hours)

Index numbers

Introduction, Problems involved in the construction of index numbers, Constructions of index numbers of Prices and Quantities. Index numbers based on Average of Price Relatives, Criteria for a good Index numbers. Errors in the measurement of Price and Quantity Index Numbers, Consumer price index number, Concept of Wholesale price index number with interpretation. Uses and Limitation of Index numbers.

UNIT 3

(15 Hours)

Indian Official Statistics

Introduction, Present official statistical system in India, Statistical offices at the Centre, Statistical offices in the States, Methods of collection of official statistics on population, price (retail as well wholesale).

PRACTICAL -30 Hours

List of Practicals:

1. To calculate CDR and ASDR for a given set of data
2. To find Standardized death rate by Direct and Indirect method
3. To construct a complete life table
4. To fill in the missing entries in a life table
5. To calculate CBR and GFR for a given set of data
6. To calculate ASFR for a given set of data
7. To calculate TFR for a given set of data
8. To calculate Crude rate of Natural Increase and Pearle's Vital Index
9. To calculate GRR and NRR for a given set of data and compare them
10. To Construct price and quantity index numbers by Laspeyre's, Paasche's, Marshall-Edgeworth, Drobish -Bowley, Walsch and Fisher's Formula.
11. To test the goodness of an Index number using Time Reversible Test and Factor Reversible Test
12. To Construct price index numbers based on Average of Price Relatives
13. To Construct Chain base index numbers
14. Base shifting, Splicing and Deflating of Index Numbers
15. To construct Consumer price index number using Aggregate Expenditure method and Family Budget method and compare

Practical work to be conducted using electronic spreadsheet / EXCEL/ Statistical Software Package/ SPSS.

ESSENTIAL READINGS:

- Croxton, Fredrick E, Cowden, Dudley J. and Klein, S. (1973): Applied General Statistics, 3rd edition, Prentice Hall of India Pvt. Ltd.

- Gun, A.M., Gupta, M.K. and Dasgupta, B. (2008): Fundamentals of Statistics, Vol. II, 9th edition, World Press Pvt. Ltd.
- Gupta, S.C., and Kapoor, V.K. (2008): Fundamentals of Applied Statistics, 4th edition (reprint 2010), Sultan Chand and Sons.
- Mukhopadhyay P. (2011): Applied Statistics, 2nd edition (revised reprint), Books and Allied Pvt. Ltd.

SUGGESTED READINGS

- Benjamin, B. (1968): Health and Vital Statistics. G. Allen and Unwin.
- Mudgett B.D. (1951): Index Numbers, John Wiley.
- Allen R.G.D. (1975): Index Numbers in Theory and Practice, Macmillan.
- Nagar A.L. & Das R. K. (1976): Basic Statistics.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch University of Delhi, from time to time.

DISCIPLINE-SPECIFIC CORE COURSE-6: ALGEBRA FOR STATISTICS

CREDIT DISTRIBUTION, ELIGIBILITY, AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the Course | | | Eligibility Criteria | Pre-requisite of the Course (if any) |
|------------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Algebra For Statistics | 4 | 3 | 0 | 1 | Class XII pass with Mathematics | Nil |

Learning Objectives

- Algebra serves as a building block that will enable students to learn more advanced techniques that will help them to solve problems more quickly and easily.

Learning Outcomes:

The learning outcomes of this course are as follows:

- Understanding the fundamental concepts of matrices and determinants
- Understanding of partitioning of matrices, Echelon form
- Solving Linear equations
- Knowledge of Vector spaces and Subspaces, Orthonormal Basis
- Identifying rank of a Matrix
- Computing generalized inverse, characteristic roots and vectors, quadratic forms

SYLLABUS OF DSC-6

Theory

UNIT I

(09 Hours)

Algebra of matrices

A review related to triangular, symmetric, and skew-symmetric matrices, singular, and non-singular matrices, and their properties.

Idempotent matrices, Hermitian and skew Hermitian matrices, orthogonal matrices, Trace of a matrix, unitary, involutory and nilpotent matrices. Adjoint and inverse of a matrix and related properties. Partitioning of matrices and simple properties.

UNIT II

(12 Hours)

Determinants

A review related to properties and applications of determinants for 3rd and higher orders. Alternant determinant, Circulant determinant, Jacobi's Theorem, the product of determinants. Use of determinants in solution to the system of linear equations, row reduction and echelon forms, the matrix equations $AX=B$, solution sets of linear equations, Applications of linear equations, inverse of a matrix.

UNIT III

(09 Hours)

Vector spaces

Vector spaces, Subspaces, sum of subspaces, Span of a set, Linear dependence and independence, dimension and basis, Gram Schmidt Orthogonalization Process. Rank of a matrix, row-rank, column-rank, standard theorems on ranks, rank of the sum, and the product of two matrices.

UNIT IV

(15 Hours)

Generalized Inverse

Generalized inverse (concept, properties with illustrations). Characteristic roots and characteristic vector, Properties of characteristic roots and characteristic vector, Cayley Hamilton theorem and application, Spectral Decomposition. Quadratic forms, Derivatives of linear functions, and quadratic forms. Linear orthogonal transformation and their diagonalization.

PRACTICAL – 30 Hours

List of Practicals:

1. Inverse of a matrix by method of partitioning.
2. Every non-singular square matrix can be expressed as product of elementary matrices.
3. Generalised Inverse of a matrix and Symmetric Generalised Inverse of a matrix.
4. Find XX' for any matrix X of order $n \times k$; $k < n$, where G is generalized inverse of X' and study its properties.
5. Construction of Idempotent matrix and study its properties.
6. Construction of Orthogonal matrix and study its properties.
7. Characteristic roots and characteristic vectors and its properties

8. Cayley Hamilton Theorem and application.
9. Quadratic Form:
 - (a) Reducing Quadratic Form into canonical form and find rank, index and signature of the form.
 - (b) Identify the nature of Quadratic Form.
10. Construction of an orthonormal basis vector using Gram Schmidt Orthogonalization process.

Practical work to be conducted using electronic spreadsheet / EXCEL/ Statistical Software Package/ SPSS.

ESSENTIAL READINGS:

- Searle, S.R.: Matrix Algebra useful for Statistics, John Wiley & Sons, 1982.
- Krishnamurthy, V., Mainra, V.P. and Arora, J.L. (2015). An Introduction to Linear Algebra, East West Press Pvt. Ltd., New Delhi.
- Hadley, G.: Linear Algebra, Narosa Publishing House (Reprint), 2002.
- Gupta, S. C.: An Introduction to Matrices (Reprint), Sultan Chand & Sons, 2008.

SUGGESTED READINGS:

- Biswas, S. (1997). A Textbook of Matrix Algebra, New Age International.
 - Singal, M.K. and Singal, Asha Rani: Algebra, R. Chand & Co., 2011.
- Note: Examination scheme and mode shall be as prescribed by the Examination Branch University of Delhi, from time to time.**

B.Sc.(Prog.)/B.A(Prog.) with Statistics as Major

Category-II

DISCIPLINE SPECIFIC CORE COURSE – 3: Statistical

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Statistical Methods | 4 | 3 | 0 | 1 | Class XII pass with Mathematics | Descriptive Statistics |

Course Objectives:

The learning objectives include:

- To know the difference between discrete and continuous random variables.
- To develop the thinking of students so that they can use the concepts of statistical probability distribution in real life.
- To understand the concept of random variables, probability distributions and expectation

Course Learning Outcomes:

After completing this course, students should have developed a clear understanding of:

- Concept of random variables.
- Basic concepts of discrete & continuous random variables.
- Distinguish between Moments generating functions & Cumulant generating functions
- Concept of joint, marginal and conditional probability distribution for two dimensional random variables and their independence.
- Discrete probability distributions with their properties.
- Continuous probability distributions with their properties.

SYLLABUS OF DSC

Theory

Unit – 1 (15 hours)

Random Variables

Random variables: Discrete and continuous random variables, pmf, pdf and cdf, illustrations of random variables and its properties, expectation of random variable and its properties. Variance, covariance and their properties with illustrations. Moments and cumulants, moment generating function with properties, cumulants generating function and characteristic function.

Unit – 2 (08 hours)

Bivariate Probability Distribution

Bivariate probability distributions, marginal and conditional distributions, independence of variates (only general idea to be given). Transformation in univariate and bivariate distributions.

Unit – 3 (10 hours)

Discrete Probability Distributions

Discrete probability distributions – Binomial, Poisson- measures of central tendency, dispersion, skewness and kurtosis, recurrence relations based on moments, moment generating function, cumulant generating function, characteristic function, additive property, fitting of distribution and examples.

Unit – 4 (12 hours)

Continuous Probability Distributions

Continuous Probability distribution - Normal - measures of central tendency, dispersion, skewness and kurtosis, recurrence relations based on moments, moment generating function, cumulant generating function, characteristic function, additive property and examples. Exponential distribution – moment generating function and lack of memory. Gamma distribution – moment generating function, cumulant generating function and additive property.

Practicals

List of Practicals: (30 hours)

(Practical to be performed on computer using Microsoft Excel/Electronic Spreadsheet/SPSS/Any Statistical Package)

1. Problems based on expectations, variance and co-variances.
2. Fitting of binomial distributions for n and $p = q = \frac{1}{2}$ and for n and p given.
3. Fitting of binomial distributions computing mean and variance.

4. Fitting of Poisson distributions for give n and λ and after estimating mean.
5. Fitting of suitable distribution.
6. Application problems based on Binomial distribution.
7. Application problems based on Poisson distribution.
8. Problems based on the Area property of Normal distribution.
9. Application problems based on Normal distribution.
10. Problems based on bivariate probability distributions.

Essential Readings

1. Goon, M., Gupta, M.K. and Dasgupta, B. (2003). *An outline of Statistical Theory*, Vol. I, 4th Ed., World Press, Kolkata.
2. Gupta, S.C. and Kapoor, V.K. (2020). *Fundamentals of Mathematical Statistics*, 12th Ed., Sultan Chand and Sons.
3. Hogg, R. V., McKean, J., and Craig, A. T. (2005). *Introduction to mathematical statistics*. Pearson Education.
4. Rohtagi, V.K. and Saleh, A.K. Md. E. (2009). *An Introduction to Probability and Statistics*, 2nd Ed., John Wiley and Sons.

Suggestive Readings

1. Ross, S.A. (2007). *Introduction to Probability Models*, 9 Ed., Academic Press
2. Mood, A.M., Graybill, F.A. and Boss, D.C. (2007). *Introduction to the Theory of Statistics*, 3rd Ed., Tata McGraw Hill Publication.

DISCIPLINE SPECIFIC CORE COURSE – 4: APPLICATIONS IN STATISTICS

CREDIT DISTRIBUTION, ELIGIBILITY, AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the Course | | | Eligibility Criteria | Pre-requisite of the Course (if any) |
|----------------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Applications in Statistics | 4 | 3 | 0 | 1 | Class XII pass with Mathematics | Nil |

Learning Objectives:

- Acquaint students with the current official statistical system in India
- Familiarize students with important concepts of Demand Analysis
- Introduction to Utility and Production functions.

Learning Outcomes:

After taking this paper, the student should be able to:

- Understand the current and prevailing official statistical system in India, role of MoSPI, CSO, NSSO, and their important publication
- Understand the laws of demand and supply, Price and Income elasticity of demand.
- Differentiate between Partial and Cross Elasticities of Demand, Engel's law, Pareto's law, and different curves of concentration.
- Understand theory of utility function, Utility Curve, Marginal rate of substitution, Budget line, and Construction of Utility Curve.

SYLLABUS OF DSC

Theory

Unit I (12 Hours)

Indian Official Statistics

Present official statistical system in India, Methods of collection of official statistics and their reliability and limitations. Role of Ministry of Statistics & Program Implementation (MoSPI), Central Statistical Office (CSO), National Sample Survey Office (NSSO), and National Statistical Commission. Government of India's Principal publications.

Unit II (12 Hours)

Demand Analysis

Concept of differentiation and partial differential.

Introduction: Demand and Supply and its laws, Price Elasticity of Demand, Income elasticity of demand, Nature of commodities, Partial and Cross Elasticities of Demand, Types of data required for its estimation, computation of demand function from given price elasticity of demand, Engel's law and Engel Curves, Pareto's law of income distribution, Curves of concentration.

Unit III (12 Hours)

Utility Function

Introduction: Theory of Utility, Statistical decision making under Utilities, general definition of utility function, advantages and disadvantage of Utility function, Utility Curve, Basic axioms of Utility, example of utility function, Indifference curves and their properties, Marginal rate of substitution, Budget line, constrained utility maximization, Construction of Utility Curve.

Unit IV (09 Hours)

Production Function

Production function, Marginal productivity, Average productivity, Degree of production function, Linear homogeneous production function, Euler's theorem, Returns to scales, Isoquants, Isocost curves, Equilibrium of the firm, Marginal rate of technical substitution, Elasticity of substitution, Constant elasticity of substitution.

PRACTICAL - 30 Hours

List of Practical

1. Fitting of demand curve.
2. Calculate income elasticity of demand from given data.
3. Calculation of price elasticity of demand from the given data.
4. Estimation of constant demand function.
5. To fit Engel's curve and draw them.
6. Comparison of inequality in distribution of expenditure.
7. Fitting of Pareto distribution to given data.
8. Computation and plotting of Lorenz Curve and computation of concentration ratio.

Practical work to be conducted using electronic spreadsheet / EXCEL/ Statistical Software Package/ SPSS.

ESSENTIAL READINGS:

- Fundamentals of Statistics, Vol.2, Goon, A. M., Gupta, M. K. and Dasgupta, B. (2001). World Press.
- Business Mathematics with Applications, S.R. Arora and Dinesh Khattar, S.Chand & Company Ltd.
- Applied Statistics, Parimal Mukhopadhyay (2011), Books and Allied (P) Ltd.
- Business Mathematics Theory and Applications, V.K. Kapoor (2012), Sultan Chand & Sons.

SUGGESTED READINGS:

- Guide to current Indian Official Statistics, Central Statistical Office, GOI, New Delhi.
- mospi.nic.in/nscr/iss.html.
- Business Mathematics with applications in Business and Economics, R.S. Soni, Pitambar Publishing Company (P) Ltd.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch University of Delhi, from time to time.

B.Sc(P)/B.A(P) with Statistics as Non-Major

Category-III

DISCIPLINE SPECIFIC CORE COURSE – 2: Statistical

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Statistical Methods | 4 | 3 | 0 | 1 | Class XII pass with Mathematics | Descriptive Statistics |

Course Objectives:

The learning objectives include:

- To know the difference between discrete and continuous random variables.
- To develop the thinking of students so that they can use the concepts of statistical probability distribution in real life.
- To understand the concept of random variables, probability distributions and expectation

Course Learning Outcomes:

After completing this course, students should have developed a clear understanding of:

- Concept of random variables.
- Basic concepts of discrete & continuous random variables.
- Distinguish between Moments generating functions & Cumulant generating functions
- Concept of joint, marginal and conditional probability distribution for two dimensional random variables and their independence.
- Discrete probability distributions with their properties.
- Continuous probability distributions with their properties.

SYLLABUS OF DSC

Theory

Unit – 1 (15 hours)

Random Variables

Random variables: Discrete and continuous random variables, pmf, pdf and cdf, illustrations of random variables and its properties, expectation of random variable and its properties. Variance, covariance and their properties with illustrations. Moments and cumulants, moment generating function with properties, cumulants generating function and characteristic function.

Unit – 2 (8 hours)

Bivariate Probability Distribution

Bivariate probability distributions, marginal and conditional distributions, independence of variates (only general idea to be given). Transformation in univariate and bivariate distributions.

Unit – 3 (10 hours)

Discrete Probability Distributions

Discrete probability distributions – Binomial, Poisson- measures of central tendency, dispersion, skewness and kurtosis, recurrence relations based on moments, moment generating function, cumulant generating function, characteristic function, additive property, fitting of distribution and examples.

Unit – 4 (12 hours)

Continuous Probability Distributions

Continuous Probability distribution - Normal - measures of central tendency, dispersion, skewness and kurtosis, recurrence relations based on moments, moment generating function, cumulant generating function, characteristic function, additive property and examples. Exponential distribution – moment generating function and lack of memory. Gamma distribution – moment generating function, cumulant generating function and additive property.

Practicals

List of Practicals: (30 hours)

(Practical to be performed on computer using Microsoft Excel/Electronic Spreadsheet/SPSS/Any Statistical Package)

1. Problems based on expectations, variance and co-variances.
2. Fitting of binomial distributions for n and $p = q = \frac{1}{2}$ and for n and p given.
3. Fitting of binomial distributions computing mean and variance.
4. Fitting of Poisson distributions for given n and λ and after estimating mean.
5. Fitting of suitable distribution.
6. Application problems based on Binomial distribution.
7. Application problems based on Poisson distribution.

8. Problems based on the Area property of Normal distribution.
9. Application problems based on Normal distribution.
10. Problems based on bivariate probability distributions.

Essential Readings

1. Goon, M., Gupta, M.K. and Dasgupta, B. (2003). *An outline of Statistical Theory*, Vol. I, 4th Ed., World Press, Kolkata.
2. Gupta, S.C. and Kapoor, V.K. (2020). *Fundamentals of Mathematical Statistics*, 12th Ed., Sultan Chand and Sons.
3. Hogg, R. V., McKean, J., and Craig, A. T. (2005). *Introduction to mathematical statistics*. Pearson Education.
4. Rohtagi, V.K. and Saleh, A.K. Md. E. (2009). *An Introduction to Probability and Statistics*, 2nd Ed., John Wiley and Sons.

Suggestive Readings

1. Ross, S.A. (2007). *Introduction to Probability Models*, 9 Ed., Academic Press
2. Mood, A.M., Graybill, F.A. and Boss, D.C. (2007). *Introduction to the Theory of Statistics*, 3rd Ed., Tata McGraw Hill Publication.

**COMMON POOL OF GENERIC ELECTIVES (GE) COURSES
OFFERED BY DEPARTMENT OF STATISTICS
CATEGORY-IV**

GENERIC ELECTIVES : INTRODUCTORY PROBABILITY

**CREDIT DISTRIBUTION, ELIGIBILITY, AND PRE-REQUISITES OF THE
COURSE**

| Course title & Code | Credits | Credit distribution of the Course | | | Eligibility Criteria | Pre-requisite of the Course (if any) |
|--------------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introductory Probability | 4 | 3 | 0 | 1 | Class XII pass with Mathematics | Nil |

Learning Objectives :

- Acquaint students with the mathematical foundation of probability.
- familiarize students with important tools for statistical analyses at introductory level.
- Introduction to some common discrete and continuous distributions and their properties.

Learning Outcomes:

After taking this paper, the student should be able to:

- Understand the meaning of probability and probabilistic experiment. Various approaches to probability theory and in particular the axiomatic approach. Laws of probability, conditional probability, conditioning, and reduced sample space, compute joint and conditional probabilities. Bayes' rule and applications.
- Understand the concept of a random variable, expectation and its properties, Compute variance and covariance in terms of expectation. Moment generating function and its properties.
- Get familiar with some standard discrete and continuous distribution and the usefulness of Central limit Theorem in daily life.

SYLLABUS OF GE

Theory

UNIT-I

(12 Hours)

Probability

Probability: Introduction, random experiments, sample space, events and algebra of events. Definitions of Probability – classical, statistical, and axiomatic. Conditional

Probability, laws of addition and multiplication, independent events, theorem of total probability, Bayes' theorem and its applications.

UNIT II

(18 Hours)

Random Variables

Random Variables: Discrete and continuous random variables, pmf, pdf, cdf. Illustrations of random variables and its properties. Expectation, variance, moments and moment generating function.

UNIT III

(15 Hours)

Probability Distributions

Standard probability distributions: Binomial, Poisson, Geometric, Negative Binomial, Hypergeometric, Uniform, Normal, Exponential, Beta, Gamma. De-Moivre Laplace and Lindeberg-Levy Central Limit Theorem (C.L.T.) (Only Statements)

PRACTICAL - 30 Hours

List of Practical:

1. Application problems based on addition law of probability.
2. Application problems based on conditional probability.
3. Application problems based on Bayes law.
4. Application problems based on Expectation of random variable.
5. Computing MGF and how it helps in finding moments.
6. Computing cdf for discrete and continuous random variables drawing its graph.
7. Fitting of binomial distributions for n and $p = q = \frac{1}{2}$
8. Fitting of binomial distributions for n and p given.
9. Fitting of binomial distributions computing mean and variance.
10. Fitting of Poisson distributions for given value of λ .
11. Fitting of Poisson distributions after computing mean.
12. Application problems based on binomial distribution.
13. Application problems based on Poisson distribution.
14. Problems based on area property of normal distribution.
15. To find the ordinate for a given area for normal distribution.
16. Application based problems using normal distribution.
17. Fitting of normal distribution when parameters are given.
18. Fitting of normal distribution when parameters are not given.
19. Computing probabilities using Microsoft Excel functions `binomdist()`, `poisson()`, `normsdist()`, `normsinv()`, `normdist()`, and `norminv()`.
20. Computing Binomial probabilities for large n and small p using Microsoft Excel functions `binomdist()` and `poisson()`.
21. Computing Binomial probabilities for large n and $p \in (0.4, 0.6)$ using Microsoft Excel functions `binomdist()` and `normdist()`.

Practical work to be conducted using electronic spreadsheet / EXCEL/ Statistical Software Package/ SPSS.

SUGGESTED READINGS:

1. Hogg, R.V., Tanis, E.A. and Rao, J.M. (2009). Probability and Statistical Inference, 7th Ed, Pearson Education, New Delhi.
2. Miller, I. and Miller, M. John E. Freund (2006). Mathematical Statistics with Applications, 7th Ed., Pearson Education, Asia.
3. Myer, P.L. (1970). Introductory Probability and Statistical Applications, Oxford & IBH Publishing, New Delhi.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch University of Delhi, from time to time.

GENERIC ELECTIVES : APPLICATIONS IN STATISTICS

CREDIT DISTRIBUTION, ELIGIBILITY, AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the Course | | | Eligibility Criteria | Pre-requisite of the Course (if any) |
|-------------------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Applications in Statistics-II | 4 | 3 | 0 | 1 | Class XII pass with Mathematics | Nil |

Learning Objectives:

- Acquaint students with the current official statistical system in India
- Familiarize students with important concepts of Demand Analysis
- Introduction to Utility and Production functions.

Learning Outcomes:

After taking this paper, the student should be able to:

- Understand the current and prevailing official statistical system in India, role of MoSPI, CSO, NSSO, and their important publication
- Understand the laws of demand and supply, Price and Income elasticity of demand.
- Differentiate between Partial and Cross Elasticities of Demand, Engel's law, Pareto's law, and different curves of concentration.
- Understand theory of utility function, Utility Curve, Marginal rate of substitution, Budget line, and Construction of Utility Curve.

SYLLABUS OF GE

Theory

Unit I (09 Hours)

Indian Official Statistics

Present official statistical system in India, Methods of collection of official statistics and their reliability and limitations. Role of Ministry of Statistics & Program Implementation (MoSPI), Central Statistical Office (CSO), National Sample Survey Office (NSSO), and National Statistical Commission. Government of India's Principal publications.

Unit II (12 Hours)

Demand Analysis

Concept of differentiation and partial differential.

Introduction: Demand and Supply and its laws, Price Elasticity of Demand, Income elasticity of demand, Nature of commodities, Partial and Cross Elasticities of Demand, Types of data required for its estimation, computation of demand function from given price elasticity of demand, Engel's law and Engel Curves, Pareto's law of income distribution, Curves of concentration.

Unit III (12 Hours)

Utility Function

Introduction: Theory of Utility, Statistical decision making under Utilities, general definition of utility function, advantages and disadvantage of Utility function, Utility Curve, Basic axioms of Utility, example of utility function, Indifference curves and their properties, Marginal rate of substitution, Budget line, constrained utility maximization, Construction of Utility Curve.

Unit IV (12 Hours)

Production Function

Production function, Marginal productivity, Average productivity, Degree of production function, Linear homogeneous production function, Euler's theorem, Returns to scales, Isoquants, Isocost curves, Equilibrium of the firm, Marginal rate of technical substitution, Elasticity of substitution, Constant elasticity of substitution.

PRACTICAL - 30 Hours

List of Practical

1. Fitting of demand curve.
2. Calculate income elasticity of demand from given data.
3. Calculation of price elasticity of demand from the given data.
4. Estimation of constant demand function.
5. To fit Engel's curve and draw them.
6. Comparison of inequality in distribution of expenditure.
7. Fitting of Pareto distribution to given data.
8. Computation and plotting of Lorenz Curve and computation of concentration ratio.

Practical work to be conducted using electronic spreadsheet / EXCEL/ Statistical Software Package/ SPSS.

ESSENTIAL READINGS:

- Fundamentals of Statistics, Vol.2, Goon, A. M., Gupta, M. K. and Dasgupta, B. (2001). World Press.
- Business Mathematics with Applications, S.R. Arora and Dinesh Khattar, S.Chand & Company Ltd.
- Applied Statistics, Parimal Mukhopadhyay (2011), Books and Allied (P) Ltd.
- Business Mathematics Theory and Applications, V.K. Kapoor (2012), Sultan Chand & Sons.

SUGGESTED READINGS:

- Guide to current Indian Official Statistics, Central Statistical Office, GOI, New Delhi.
- mospi.nic.in/nscr/iss.html.
- Business Mathematics with applications in Business and Economics, R.S. Soni, Pitambar Publishing Company (P) Ltd.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch University of Delhi, from time to time.

39. Amendment to Appendix -II-A to the Ordinance V (2-A) of the Ordinances of the University vide EC Resolution 38-1-8 dated 08.12.2022 regarding Syllabi of 2nd Semester of Department under Faculty of Applied Social Sciences & Humanities

Add the following:

Syllabi of Semester-II of the Department of Finance & Business Economics under Faculty of Applied Social Sciences & Humanities based on Under Graduate Curriculum Framework -2022 to be implemented from the Academic Year 2022-23.

CATEGORY-I

Business Economics Course for Undergraduate Programme of study with Business Economics as a Single Core Discipline

(B.A. Honours in Business Economics in three years)

DISCIPLINE SPECIFIC CORE COURSE – 4: MACROECONOMICS-I

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Macroeconomics – I DSC-4 | 4 | 3 | 1 | 0 | Class XII | Nil |

Learning Objectives

This course aims at inculcating basic understanding of the fundamentals of macroeconomics. It will enable students to identify major macroeconomic issues, their applicability to the real economy.

Learning outcomes

By studying this course, the students will be able to:

- To understand the basic concept of circular flow of income in four sector economies and different approaches to measurement of National Income.
- To introduce basic concepts of the money market including demand and supply aspects of money.

- To apply the closed economy Hicks- Hansen (IS-LM) model for effectiveness of Fiscal and Monetary policies in the short run.
- To identify macroeconomic issues of developing countries in a global macro setting and its difference from issues of developed countries.

SYLLABUS OF DSC-4

UNIT–I: Introduction to Macroeconomics and National Income Accounting (6 Hours)

Origin of macroeconomics; Income, expenditure and the circular flow in three and four sectoral economies; real versus nominal GDP; price indices; measurements of gross domestic product; national income accounting for closed economy and for open economy and National Income Identity; balance of payments accounts and its components.

UNIT – II: Theory of Income Determination (9 Hours)

An introduction to Classical and Keynesian systems; Simple Keynesian Theory of Income Determination, Consumption function – MPC and APC, changes in equilibrium, Paradox of Thrift and Investment multiplier.

UNIT – III: Money, Interest and Monetary Policy (12 Hours)

Meaning and nature of money, Primary and secondary functions of money; Quantity Theory of Money–Cambridge version, Classical theory of interest rate, Loanable fund Theory and Keynesian Theory of Liquidity Preference and interest rate, Liquidity Trap; Credit Creation and Money Multiplier Determination of money supply and demand; credit creation; money multiplier, monetary base; tools of monetary policy

UNIT – IV:IS-LM Analysis and Aggregate Demand (12 Hours)

Goods market and money market, graphical derivations of the Hicks-Henson model (IS and LM functions); Properties of IS-LM curves, factors affecting the position and slope of IS-LM curves, determination of equilibrium income and interest rates; Studying the impact of fiscal and monetary policies using IS-LM framework;Macro policy in a global setting and developing countries

Unit V: Inflation (6 Hours)

Inflation: meaning; demand and supply side factors; natural rate theory; monetary policy-output and inflation (monetarist view); Phillips curve: short run and long run.

Essential/recommended readings

1. Abel Andrew B., Bernanke Ben and Croushore Dean (2011). Macroeconomics (7th edition). Pearson
2. Schiller Bradley R. and Gebhardt Karen (2019) Macro economy Today (14th edition), McGraw Hill
3. Froyen Richard T. (2013). Macroeconomics: Theories and Policies (10th ed.), Pearson.

4. Blanchard O. (2017). Macroeconomics (7th edition). Pearson
5. Dornbusch R., Fischer S., and Startz R. Macroeconomics (11th edition). McGraw-Hill
6. Colander David C. (2017) Macroeconomics (9th edition), McGraw Hill

Suggested readings

1. Gordwin, Harris, Nelson, Roach and Torris (2017) Macroeconomics in context (2nd edition), Routledge Taylor and Francis Pub Indian Edition
2. Government of India (GOI) (Latest Year), Economic Survey, Ministry of Finance New Delhi.
3. Government of India (GOI) (Latest Year), Handbook of Indian Economy, RBI Publication New Delhi.
4. Mankiw N. Gregory, Macroeconomics, Worth Publishers.
5. Chugh, S. (2015) Modern Macroeconomics, MIT Press.
6. D'Souza, E, Macroeconomics, Pearson Education

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 5: FINANCIAL INSTITUTIONS

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Financial Institutions and Markets DSC-5 | 4 | 3 | 1 | 0 | Class XII | Nil |

Learning Objectives

This course provides an understanding of the existing financial institutions and markets in the Indian financial system. Students will be equipped with the knowledge of primary and secondary segments of the equity, money, and debt markets.

Learning outcomes

By studying this course, the students will be able to:

- To understand the role of banking and non-banking financial institutions in India.

- To learn the methods for companies to raise funds in the primary market
- To use the methodology to create stock price indices in India.
- To analyze the process of issuance, trading, and settlement in equity, debt and money market instruments.

SYLLABUS OF DSC- 2

UNIT – I:Financial Institutions in India

(9 Hours)

- Overview of Formal Financial System: Financial Institutions, Financial Markets, Financial Instruments, Financial Services, Role of Financial System in Economic Development.
- Banking and Non-Banking Institutions: Scheduled Commercial Banks in India, Risk Management Process in Banks, Non-Performing Assets, Tools to Manage Non-Performing Assets, Payment Banks.
- Credit Rating Agencies: Meaning, Methodology and Agencies in India.
- Housing Finance: Housing Finance Companies in India, Repricing of Loan, Floating vs. Fixed Rate, The Rest Method, Problems in Housing Finance.
- NBFCs in India: Objectives, Functions, Types, Difference between NBFCs and Banks, Role of NBFCs in Indian Economy.
- Regulatory Institutions: Reserve Bank of India (RBI), Securities Exchange Board of India (SEBI)

UNIT – II:Primary Market for Corporate Securities in India

(15 Hours)

- Financial Markets: Role and Importance of Financial Markets, Types of Financial Markets- Equity Market, Debt market, Money market, Forex Market.
- Procedure of an IPO: Entry Norms for IPOs -Profitability Route, QIB Route, Appraisal Route; Intermediaries to an Issue, Pricing Methods-Fixed Price Process, Book Building Mechanism (Book Building Process, Bidding Process, Reverse Book Building, Limitations), Green Shoe option.
- Methods of Raising Funds: Venture Capital, Private Equity, Public Issues- IPO, FPO, offer for sale; Rights Issue, Private Placement -Preferential Issue, Qualified Institutional Placements, Disinvestment of PSU- Objectives, Sell-off methods.
- Raising of Funds from International Markets-ADRs, GDRs, FCCB and Euro Issues, Masala Bonds.
- Listing and Delisting of Corporate Stocks in Indian Stock markets.

UNIT – III:Secondary Market in India

(12 Hours)

- Overview of Secondary Market: Functions of Secondary Market, Demutualization of Stock Exchange, Bulls and Bears in Stock Markets, Volatility and Circuit Breakers in stock Market, Stock exchanges in India; International stock exchanges, Capital Market Scams.
- Market Mechanism: Financial Instruments-Equity Shares, Debentures & Bonds, Derivatives. Types of Brokers, Depository Process in India.
- Trading, Clearing and Settlement of securities: Types of orders, Contract Note, Clearing Corporations (ICCL, NSCCL), Depositories (NSDL, CDSL), Settlement Mechanism.
- Risk Management: Margin Requirement and Capital requirement of a Broker, MTM and VaR Margins, Margin Trading and Margin Adjustments.

- Indian Stock Indices: Major Indices in India (Sensex and Nifty), Market Capitalization (free float, full float methodology), Calculation Methodology (Price weighted, Equal weighted, Fundamental weighted, Market Capitalisation weighted Index), Classification of Securities to be included in the Index, Impact of corporate actions (Rights, Bonus, and Stock split) on security prices and indices.

UNIT – IV: Money Markets & Debt Market in India

(9 Hours)

- Money Market: Characteristics, Functions and Benefits of Efficient Money Market, Participants in money markets, Money Market Instruments- Auctioned Treasury Bills (Features, Types, and Issuance/Sale by Auction), Commercial Paper (Guidelines and Process for Issuance), Commercial Bills (Features and Types), Certificate of Deposits (Guidelines and Process for Issuance), Call/Notice Money (Reason of volatility and Process of Issuance) Repo, Reverse Repo.
- Long Term Debt Market: Participants and Instruments in Debt market, Private Corporate Debt Market-Issue and listing of Debt Securities; Govt Securities Market-Issuers, Investors and Types; Govt Dated Securities- Issuance, Trading and Settlement. RBI Direct Portal for retail investors for Government Securities

Notes:

1. The relevant rules, regulations and guidelines of the RBI, the SEBI and other regulators for all of the above topics should be covered.

Essential/recommended readings

1. Khan M. Y. Indian Financial System. Tata McGraw Hill.
2. Kannan, R., Shanmugam, K.R., &Bhaduri, S. Non-Banking Financial Companies-Role in India's Development. Springer.
3. Pathak, B. Indian Financial System. Pearson.
4. Eakins, Stanley G. Finance: Investments, Institutions and Management. Addison-wesley Publications.
5. National Stock Exchange of India (2003), "Indian Securities Market: A Review", NSE, Mumbai.
6. RBI Website- <https://www.rbi.org.in/Scripts/NotificationUser.aspx?Id=12179&Mode=0>
7. NSE website: <https://www.nseindia.com/resources/publications-indian-securities-ismr>

Suggested readings

1. Desai, V. Indian Financial System and Development. Himalaya Publishing House.
2. Gordan, E. Natarajan, K. Indian Financial System. Himalaya Publishing House.
3. Madura, J. Financial Markets and Institutions. Cengage Learning.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 6: STATISTICS FOR BUSINESS

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course(if any) |
|---|---------|-----------------------------------|----------|---------------------|----------------------|-------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Statistics for Business Economics -I DSC-6 | 4 | 3 | 0 | 1 | Class XII | Nil |

Learning Objectives

This course aims to introduce different kinds of data, its visual representation, and descriptive measures to analyse and describe times series data along with a theory and practice of indices.

Learning outcomes

By studying this course, students will be able to:

- To organize, manage, present data to gain proficiency in using statistical software for data analysis.
- To prepare a technical report/statistical analysis and interpret results to enhance the ability for broader implication of application in the statistical field.
- To conduct the survey in proper way to collect data on specific economic problem and to grasp different variety of probability/nonprobability sampling methods for selecting a sample from a population.
- To make intelligent judgments and informed decisions in the presence of uncertainty and variation.

SYLLABUS OF DSC-3

UNIT – I Descriptive Statistics

(12 Hours)

Sources of data, census and sample, methods of collection, types of data. Graphical representation – Simple Charts, Box Plot, Histogram; Measures of central tendency, dispersion, skewness and Moments.

UNIT – II Probability and distribution

(15 Hours)

Sample space, event and probability. Types of events: joint, conditional and independence. Theories of probability - Classical Theory of Probability; Relative Frequency Theory of Probability; Subjective Theory of Probability and Axiomatic Theory of Probability, Random variable - Discrete and continuous, mass and density functions, cumulative distributions and properties. Joint distributions, marginal and conditional distributions. Bayes Theorem; Mathematical expectation and variance.

Theoretical Discrete and Continuous Probability Distributions – Binomial, Poisson and Normal distributions

UNIT – III Time Series

(6 Hours)

Components. Measurement of trend: linear, exponential and growth. Change in origin and scale. Measurement of seasonal fluctuations.

UNIT – IV Index Numbers

(6 Hours)

Types of index number systems and their relations. Fixed and chain-base. Tests of adequacy. Base shifting, splicing and deflating. Consumer price index, GDP deflator and Stock Prices indices – BSE Sensex and Nifty Fifty.

UNIT – V Correlation and Regression

(6 Hours)

Covariance & Correlation – Bivariate Analysis: Cross-tabulations and Scatter Plot; Rank Correlation and Pearson's Correlation; Impact of origin shift and change in scale of Correlation; Linear Regression – Simple and Multiple.

Practical component (30 hours)- Laboratory work using spreadsheet software. Projects using primary or secondary data.

Assessment Method

Total Marks: 100

Practical: 25

Internal Assessment: 25

End Semester Exam: 3 Hours; Maximum Marks: 50

Essential/recommended readings

1. Devore, Jay L., (2012). Probability and Statistics for Engineering and the sciences. 8th Edition, Cengage Learning.

Suggested readings

1. Miller, Irwin and Marylees Miller. John E. Freund's Mathematical Statistics with Applications, Eighth Edition, Pearson Education.
2. Nagar, A.L., and R.K. Das. Basic Statistics, Second Edition, Oxford University Press
3. Gupta, S.C., Fundamentals of Mathematical Statistics, Himalaya Publishing House

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES OFFERED BY THE DEPARTMENTS

GENERIC ELECTIVES (GE-1): INTRODUCTION TO DIGITAL MARKETING

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction to Digital Marketing GEC-2 | 4 | 3 | 1 | 0 | Class XII | Nil |

Learning Objectives

To acquaint the students with the tools and techniques used by the digital marketers for driving the marketing decisions to attain marketing objectives and understand its integration with traditional marketing.

Learning outcomes

By studying this course, students will be able to:

- To understand the concept of digital marketing and its integration with traditional marketing.
- To understand customer value journey in digital context and behaviour of online consumers.
- To learn email, content and social media marketing and apply the learnings to create digital media campaigns.
- To examine various tactics for enhancing a website's position and ranking with search engines and search advertising.

SYLLABUS OF GE-1

UNIT – I: Fundamentals of Marketing

(6 Hours)

Importance of marketing; Core marketing Concepts; Company Orientations; Concept of Segmentation, Targeting-Positioning; 7 P's Framework; Product Life cycle; Pricing strategies, Types of distribution channels; Promotion Mix.

UNIT – II: Marketing in the Digital World**(9 Hours)**

Digital marketing: Concept, Features, Difference between traditional and digital marketing, Moving from traditional to digital Marketing; Digital Marketing Channels: Intent Based- SEO, Search Advertising; Brand Based- Display Advertising; Community Based-SMM; Others- Affiliate, Email, Content, Mobile; Customer Value Journey: 5As Framework; The Ozone O₃ Concept Key; Traits of online consumer

UNIT – III: Content, Email and Social Media Marketing**(15 Hours)**

Content Marketing: Developing a content marketing strategy; Email Marketing: Types of Emails in email marketing, Email Marketing best practices; Social Media Marketing: Building Successful Social Media strategy; Social Media Marketing Channels; Facebook, LinkedIn, YouTube (Concepts and strategies)

UNIT – IV: Search Marketing**(15 Hours)**

Detailed contents Introduction of SEM: Working of Search Engine; SERP Positioning; Search Engine Optimization: Overview of SEO Process; Goal Setting-Types On-Page Optimization: Keyword Research, SEO Process -Site Structure, Content, Technical Mechanics, Headings, Image & Alt text, Social Sharing, Sitemaps, Technical Aspects-Compatibility, Structured Data Markup.

Off Page Optimization: Link Formats, Link Building, Content Marketing, Social Sharing; Black and White Hat Techniques

Search Advertising: Overview of PPC Process; Benefits of Paid Search; Basis of Ranking; Goal Setting-Objectives; Account Setting-Creation of Google Ads, Campaign architecture, Campaign setup, Targeting, Bid Strategy, Delivery, Ad Scheduling, Ad Rotation, Keyword Selection; Ad Copy composition, Ad Extension

Overview of Display Advertising: Working of Display Advertising; Benefits and challenges.

Essential/recommended readings

1. Dodson, I. (2016). The art of digital marketing: the definitive guide to creating strategic, targeted, and measurable online campaigns. John Wiley & Sons.
2. Kartajaya, H., Kotler, P., & Setiawan, I. (2016). Marketing 4.0: moving from traditional to digital. John Wiley & Sons.
3. Ryan, Damien. Understanding Digital Marketing - Marketing Strategies for Engaging the Digital Generation. Kogan Page Limited.

Suggested readings

1. Kotler, P. (2009). Marketing management: A south asian perspective. Pearson Education, India.
2. Maity, Moutusy. Internet Marketing: A practical approach in the Indian Context. Oxford Publishing.
3. Gupta, Seema. Digital Marketing. McGraw Hill
4. Ultimate guide to digital Marketing. Digital Marketer

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-2): STATISTICS FOR BUSINESS

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Statistics for Business GEC-4 | 4 | 3 | 0 | 1 | Class XII | Nil |

Learning Objectives

The objective is to enable students develop understanding of data and statistical tools available to describe it which shall facilitate to make evidence-based decisions using inferential statistics that are based on well-reasoned statistical arguments.

Learning outcomes

By studying this course, students will be able to:

- To learn tools and concepts of statistical analysis and interpretation.
- To comprehend fundamentals of probability theory.
- To develop skills in statistical computing, statistical reasoning and inferential methods.
- To comprehend and analyse real data like real indices.

SYLLABUS OF GE-2

UNIT – I Descriptive Statistics and Exploratory Data Analysis

(9 Hours)

- Types of Variables (Quantitative, Qualitative, discrete, continuous), Scales of Data Measurement (nominal, ordinal, Interval & Ratio), Variable-; Primary & secondary Data.
- Frequency distributions, Relative Frequency, Cumulative Distributions, Percentiles, Quartiles; Graphical representation of data- bar charts, pie, histograms, box plots.
- Measures of central tendency: Mean, median, mode, Geometric Mean, Harmonic Mean, Weighted Mean & their properties. Selection of a measure of central tendency.
- Measures of Dispersion: Range, inter-quartile range, quartile deviation, mean deviation, standard deviation, variance, coefficient of variance, properties of standard deviation. Moments.
- Skewness and Kurtosis: Meaning, measures- Karl Pearson, Bowley, Kelly's, Kurtosis- meaning and measurement of Kurtosis

UNIT – II Probability

(12 Hours)

- Axioms of probability; Review of counting rules, experiments, sample space, simple and complex events; Addition and multiplication rules; Concepts of Mutually exclusive events, independent events; Concepts of Joint, marginal and conditional probability; Bayes Theorem.

- Concept of Discrete and continuous Random Variables; Expected value and variance; Theoretical Discrete and Continuous Probability Distributions – Binomial, Poisson and Normal distributions

UNIT – III Sampling, Estimation and Hypotheses Testing (12 Hours)

- Population versus Sample; Sample Statistics versus population parameters; Definition and Statistical properties of a Random Sample; Point and Interval Estimation and Small Sample Properties of Estimators (unbiasedness, efficiency); Central Limit Theorem. (Interval estimation for mean for large samples)
- Basic concepts of Hypotheses Testing: Formulation of Null and Alternate Hypotheses; One-tailed and two-tailed Tests about population Mean; Concepts of Type I and Type II errors. (Hypothesis testing for mean and difference between mean for large samples only)

UNIT – IV: Index Numbers (6 Hours)

- Index Numbers: Use and construction of Laspeyres and Paasche index numbers; Fixed and chain base index numbers; Base shifting, splicing and deflating. Construction of real indexes: Consumer Price Index and Stock Market Indices – BSE SENSEX and NSE Nifty.

UNIT – V Correlation and Regression (6 Hours)

- Covariance & Correlation: Bivariate Analysis: Cross-tabulations and Scatter diagram; Rank Correlation and Pearson's Correlation; Linear Regression – Simple.

Practical component (30 hours)- Laboratory work using relevant software for statistical data analysis. Projects using primary or secondary data.

Practical component –yes

Assessment Method

Total Marks: 100

Practical: 25

Internal Assessment: 25

End Semester Exam: Duration: 3 Hours & Maximum Marks: 50

Essential/recommended readings

1. Spiegel, M.R.(2003). Theory & Problems of Statistics, Schaum's outline series, McGraw Hill.
2. Levin, Richard I. and Rubin, David (1998). Statistics for Management (7th Edition), Pearson.
3. Gupta, S.C. (2018). Fundamentals of Statistics, Himalaya Publishing House
4. Spiegel, M. and Stephens, Larry (2017). Statistics (Schaum's Outline Series), Tata-Mcgraw-Hill, New Delhi

Suggested readings

1. Nagar, A. L. and Das. R. K.. Basic Statistics (2nd Edition), Oxford University Press
2. Karmel, P. H. and Polasek, M. (1978). Applied Statistics for Economists (4th edition), Pitman.
3. Larsen, Richard J. and Marx, Morris L. (2011). An Introduction to Mathematical Statistics and its Applications. Prentice Hall.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category I

BACHELOR OF MANAGEMENT STUDIES

[UG Programme for Bachelor in Management Studies (Honours) degree in three years]

DISCIPLINE SPECIFIC CORE COURSE -4 (DSC-4)– : COST AND MANAGEMENT ACCOUNTING

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Cost & Management Accounting (DSC-4) | 4 | 3 | 1 | 0 | Class XII Pass | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

- The rapidly changing business environment requires managers to make informed decisions.
- This paper will equip the students with cost and management accounting concepts, techniques and practices which will help them in planning and controlling business operations and management decision making.

Learning Outcomes

The Learning Outcomes of this course are as follows:

- Understand and distinguish various types of costs in manufacturing and service organizations.
- Determine the costs of products and services.
- Identify relevant costs for decision making and undertake different analysis of various types of decisions.
- Prepare budgets and analyse variances from standard cost to identify areas in need of control.

SYLLABUS OF DSC-4

Unit 1: Nature, Scope of Management Accounting

(9 Hours)

Meaning, nature and scope of Cost Accounting and Management Accounting; Comparison between Cost Accounting & Management Accounting; Cost Control, Cost Reduction & Cost Management, Components of Total Cost & Preparation of Cost Sheet. Cost Ascertainment: Cost Unit and Cost Center. Overheads: Meaning, Cost Drivers, Accumulation, Allocation, Apportionment and Absorption.

Classification of Costs: Fixed, Variable, Mixed Cost; Product, and Period Costs; Direct and Indirect Costs; Relevant and Irrelevant Costs; Shut-down and Sunk Costs; Controllable, and Uncontrollable Costs; Avoidable, and Unavoidable Costs; Imputed / Hypothetical/Implicit Costs and Out-of-pocket Costs; Opportunity Costs; Expired, and Unexpired Costs.

Unit 2: Cost-Volume-Profit Analysis

(15 Hours)

Absorption Costing and Marginal costing, Contribution. Profit Volume Ratio, Break-even Analysis: Break-even Point, Composite Break-even Point, Cash Break-even Point, Margin of safety. Angle of Incidence.

Relevant Costs and Decision Making such as: Key Factor, Pricing, Product Profitability, Dropping a product line, Make or Buy, Export Order, Shut down vs. Continue operations.

Unit 3: Budgets and Budgetary Control

(9 Hours)

Meaning, Steps in Budgetary Control, Types of Budgets: Sales budget, Production Budget, Raw material consumption Budget, Raw Material Purchase Budget, Overhead Budgets, Cash Budget, and Master Budget. Fixed and Flexible Budgets, Zero based budgeting.

Unit 4: Standard Costing and Variance Analysis

(9 Hours)

Meaning of Standard Cost and Standard Costing, Advantages, Limitations and Applications; Material Cost Variance, Price and Usage Variance and Mix and yield Variance; Labor Cost Variance, Rate and Usage Variance, Idle time, Mix and Yield variance.

Unit 5: Contemporary Issues in Cost Accounting and Management Accounting (3 Week)

Introduction to the concept of Target Costing, Life Cycle Costing, Quality Costing, and Activity based Costing.

Practical component (if any) - NIL

Essential/Recommended Readings: Latest editions of the following to be used:

1. Horngren's Cost Accounting: A Managerial Emphasis. Pearson.
2. Arora, M.N. (2016) A Textbook of Cost and Management Accounting. Vikas Publishing House Pvt. Ltd.
3. Maheshwari, S.N. and Mittal, S.N. (2016) Cost Accounting: Theory and Problems. Shree Mahavir Book Depot.

Suggested Readings: Latest editions of the following to be used:

1. Arora, M.N. & Katyal Priyanka, Management Accounting: Theory, Problems & Solutions, Himalaya Publishing House
2. Lal, Jawahar. Advanced Management Accounting: Text, Problems & Cases, Sultan Chand & Company Ltd.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE CORE COURSE – 5 (DSC-5): MICROECONOMICS

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Microeconomics (DSC 5) | 4 | 3 | 1 | 0 | CLASS XII PASS | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To learn application of micro economic concepts and techniques in evaluating business decisions taken by firms.
- To explain how tools of standard price theory can be employed to formulate a decision problem, evaluate alternative courses of action and finally choose among alternatives.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Apply the knowledge of the mechanics of supply and demand to explain working of markets.
- Understand the choices made by a rational consumer.
- Explain relationships between production and costs.
- Define key characteristics and consequences of different forms of markets.

SYLLABUS OF DSC- 5

Unit 1: Demand, Supply and Market Equilibrium (9 Hours)

Individual demand, market demand, individual supply, market supply, market equilibrium; Elasticities of demand and supply; Price elasticity of demand, income elasticity of demand, cross price elasticity of demand, elasticity of supply.

Unit 2: Theory of Consumer Behaviour (12 Hours)

Cardinal utility theory; ordinal utility theory (indifference curves, budget line, consumer choice, price effect, substitution effect, income effect for normal, inferior and giffen goods).

Unit 3: Producer and Optimal Production Choice (12 Hours)

Optimizing behaviour in short run (product curves, law of diminishing margin productivity, stages of production); optimizing behaviour in long run (isoquants, isocost line, optimal combination of resources); traditional theory of cost (short run and long run); modern theory of cost.

Unit 4: Market Structures**(12 Hours)**

Perfect competition: basic features, short run equilibrium of firm/industry, long run equilibrium of firm/industry, monopoly: basic features, short run equilibrium, long run equilibrium, comparison with perfect competition, welfare cost of monopoly; price discrimination; monopolistic competition: basic features, demand and cost, short run equilibrium, long run equilibrium, excess capacity; oligopoly kinked demand curve model, dominant price leadership model.

Practical component (if any) - NIL

Essential/recommended readings

1. Dominick Salvatore (2009). Principles of Microeconomics (5th Edition). Oxford University Press
2. Pindyck, Rubinfeld and Mehta (2009). Micro Economics (7th Edition) Pearson.

Suggested Readings

1. Lipsey and Chrystal (2008). Economics. (11th Edition). Oxford University Press

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE– 6 (DSC-6): PRINCIPLES OF MARKETING**Credit distribution, Eligibility and Pre-requisites of the Course**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Principles of Marketing (DSC 6) | 4 | 3 | 1 | 0 | CLASS XII PASS | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- This course aims to familiarize students with the marketing function in organizations.
- It will equip the students with understanding of the Marketing Mix elements and sensitise them to certain emerging issues in Marketing.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Understand the concept of marketing and related concepts.

- An in-depth understanding to various elements marketing mix for effective functioning of an organization.
- Learn some of the tools and techniques of marketing with focus on Indian experiences, approaches and cases.

SYLLABUS OF DSC-6

Unit 1: Introduction

(12 Hours)

Nature, Scope and Importance of Marketing, Evolution of Marketing; Core marketing concepts; Company orientation – Production concept, Product concept, Selling concept, Marketing concept, Holistic marketing concept. Marketing Environment: Demographic, Economic, Political, Legal, Socio cultural, Technological environment (Indian context); Portfolio approach – Boston Consulting Group (BCG) matrix.

Unit 2: Segmentation, Targeting and Positioning

(12 Hours)

Concept; Levels of Market Segmentation, Basis for Segmenting Consumer Markets; Product decisions: Concept of Product Life Cycle (PLC), PLC marketing strategies, Product Classification, Product Line Decision, Product Mix Decision, Branding Decisions, Packaging & Labelling.

Unit 3: Pricing, Promotion and Marketing Channel Decisions

(15 Hours)

Pricing Decisions: Determinants of Price, Pricing Methods (Non-mathematical treatment), Adapting Price. Promotion Decisions: Factors determining promotion mix, Promotional Tools – Fundamentals of advertisement, Sales Promotion, Public Relations & Publicity and Personal Selling. Marketing Channel Decision: Channel functions, Channel Levels, Types of Intermediaries: Wholesalers and Retailers.

Unit 4: Marketing of Services

(6 Hours)

Unique characteristics of services, marketing strategies for service firms – 7Ps.

Practical component (if any) - NIL

Essential/recommended readings

1. Kotler, P., Armstrong, G., Agnihotri, P. Y., & UlHaq, E.: Principles of Marketing: A South Asian Perspective, Pearson.
2. Kotler, P. & Keller, K. L.: Marketing Management, Pearson. (15th Edition)

Suggested readings

1. Ramaswamy, V. S. & Namakumari, S.: Marketing Management: Global Perspective-Indian Context, Macmillan Publishers India Limited.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES

GENERIC ELECTIVES (GE-7): FAMILY BUSINESS MANAGEMENT

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Family Business and Management (GE 7) | 4 | 3 | 1 | 0 | CLASS XII PASS | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- Students will develop an understanding of the dynamics of joining a family firm
- Explore and secure values and opportunities within the family business.

Learning outcomes

The Learning Outcomes of this course are as follows:

- To understand the various concepts of family business.
- Plan the growth and sustainability of family business.
- Describe the government support available for business.

SYLLABUS OF GE-7

Unit - 1: Family-Owned Business

(12 Hours)

Define family-owned business, nature, importance, and uniqueness of family business. Classic systems of a family enterprise (the family system, the ownership system, the enterprise system). Governance systems (enterprise governance, family governance - family council, owner governance - ownership form); creating a governance structure. Systems approach to family interaction (triangle, scapegoat, homeostasis, boundaries). Great families in business: building trust and commitment.

Unit -2: Diagnosing Family Entanglements

(12 Hours)

Family genogram. Developing Business family's genogram, the role of genograms and family messages to understand the family system. Using the Genogram to identify family scripts and themes. Family emotional intelligence - The ECI-U Model. Circumplex model of marriage and family systems (understanding family cohesion and family flexibility), Application of

circumplex model, clinical rating scale and developing circumplex model.

Unit - 3: Family-Owned Business and Readiness (12 Hours)

Personal Readiness (Identity, Change in Capacity, Temperament, Health), System Readiness – Family (Spouse, Children, Extended Family), System Readiness – Business (Enterprise Itself, Owners, Successors), System Readiness – Social and Cultural Context (Community and Cultural Norms).

Unit - 4: Succession Planning in Family-Owned Business (9 Hours)

Succession Planning. Advice to successes and successor. Moores and Barrett's 4L framework of family business leadership. the future of family business: new leaders of the evolution - three states of evolution - continuity and culture - changing the culture - commitment planning - organic competencies and business's future - thriving through competition - institutionalizing the change.

Practical component (if any) - NIL

Essential/recommended readings

1. Leach, P.: Family Business: The Essentials, Profile Books Ltd.
2. Sudipt Dutta, Family Business in India, Sage Publications, 1997.

Suggested readings

1. DeVries, M. F. K., & Carlock, R. S. (2010). Family Business on the Couch: A Psychological Perspective. John Wiley & Sons.
2. Hall, A. (2012). Family business dynamics: a role and identity-based perspective. Edward Elgar Publishing.
3. Gimeno, A., Bualenas, G. and Coma-Cros, J., Family Business Models.
4. De Pontet, S. B. (2017). Transitioning from the Top: Personal Continuity Planning for the Retiring Family Business Leader. Springer.
5. Liebowitz, B. (2011). The family in business: The dynamics of the family-owned firm. Business Expert Press.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-8): FINANCIAL PLANNING FOR INDIVIDUALS

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Financial Planning For Individuals (GE 8) | 4 | 3 | 1 | 0 | CLASS XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To equip students with the knowledge and practical understanding of important dimensions of managing one's personal finance.
- To enable students' understand and plan their tax liabilities, investments, insurance coverage, and retirement.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Understand the fundamentals of Personal Financial Planning.
- Learn the basics of managing personal tax liabilities.
- Able to ascertain and choose appropriate insurance policies for managing personal risks.
- Appreciate the importance of choosing the right investments for managing personal finance.
- Learn the basic concepts and underlying principles for Retirement Planning.

SYLLABUS OF GE-8

Unit -1: Basics of Personal Finance and Tax Planning (12 Hours)

Understanding Personal Finance. Rewards of Sound Financial Planning. Personal Financial Planning Process. Personal Financial Planning Life Cycle. Making Plans to Achieve Your Financial Goals. Common Misconceptions about Financial Planning. Personal Tax Planning – Fundamental Objectives of Tax Planning, Tax Structure in India for Individuals, Common Tax Planning Strategies – Maximizing Deductions, Income Shifting, Tax-Free and Tax- Deferred Income.

Unit -2: Managing Insurance Needs (12 Hours)

Insuring Life – Benefits of Life Insurance, Evaluating need for Life Insurance, Determining the Right Amount of Life Insurance. Choosing the Right Life Insurance Policy – Term Life Insurance,

Whole Life Insurance, Universal Life Insurance, Variable Life Insurance, Group Life Insurance, Other Special Purpose Life Policies. Buying Life Insurance – Compare Costs and Features, Select an Insurance Company, and Choose an Agent. Life Insurance Contract Features. Insuring Health – Importance of Health Insurance Coverage. Making Health Insurance Decision – Evaluate Your Health Care Cost Risk, Determine Available Coverage and Resources, Choose a Health Insurance Plan. Types of Medical Expense Coverage. Policy Provisions of Medical Expense Plans. Property Insurance – Basic Principles, Types of Exposure, Principle of Indemnity, and Coinsurance.

Unit -3: Managing Investments

(12 Hours)

Role of Investing in Personal Financial Planning, Identifying the Investment Objectives, Different Investment Choices. The Risks of Investing, The Returns from Investing, The Risk-Return Trade-off. Managing Your Investment Holdings – Building a Portfolio of Securities, Asset Allocation and Portfolio Management, Keeping Track of Investments. Investing in Equity – Common Considerations, Key Measures of Performance, Types of Equity Stock, Market Globalization and Foreign Stock, Making the Investment Decision. Investing in Bonds – Benefits of Investing in Bonds, Bonds Versus Stocks, Basic Issue Characteristics, The Bond Market, Bond Ratings. Investing in Mutual Funds and Exchange Traded Funds (ETFs) – Concept of Mutual Funds and ETFs, Benefits of Investing in Mutual Funds or ETFs, Some Important Cost Considerations, Services Offered by Mutual Funds, Selecting appropriate Mutual Fund and ETF investments, Evaluating the performance of Mutual Funds and ETF.

Unit 4: Investing in Real Estate and Retirement Planning

(9 Hours)

Investing in Real Estate – Some Basic Considerations. Modes of Real Estate Investment – Raw Land, Commercial Properties, Residential Properties, Real Estate Investment Trusts (REITs) and Infrastructure Investment Trust (InvITs).

Planning for Retirement – Role of Retirement Planning in Personal Financial Planning, Pitfalls to Sound Retirement Planning, Estimating Income Needs, Sources of Retirement Income

Practical component (if any) - NIL

Essential/recommended readings

1. Randall S. Billingsley, Lawrence J. Gitman, and Michael D. Joehnk (2017): Personal Financial Planning. Cengage Learning.
2. Susan M. Tillery, and Thomas N. Tillery: Essentials of Personal Financial Planning. Association of International Certified Professional Accountants.

Suggested readings -

1. Introduction to Financial Planning (4th Edition 2017) – Indian Institute of Banking & Finance.
2. Sinha, Madhu. Financial Planning: A Ready Reckoner. July 2017. Mc Graw Hill

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-9) INTRODUCTION TO INTERNATIONAL BUSINESS

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction to International Business (GE 9) | 4 | 3 | 1 | 0 | CLASS XII PASS | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- The course would introduce students to international trading and investment environment
- Create awareness about emerging issues such as outsourcing and sustainable development in the context of international business.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Understand the process of globalization and its impact on growth of international business.
- Appreciate the changing dynamics of the diverse international business environment.
- Analyse the theoretical dimensions of international trade as well as intervention measures adopted.
- Describe the forms of foreign direct investment and analyse benefits and costs of FDI.
- Demonstrate awareness about emerging issues in international business such as outsourcing and sustainable development.

SYLLABUS OF GE-9

Unit 1: Introduction to International Business (9 Hours)

Globalization – concept, significance and impact on international business; international business contrasted with domestic business; complexities of international business; internationalization stages and orientations; modes of entry into international businesses.

Unit 2: International Trade (12 Hours)

Theories of international trade – Theory of Absolute Advantage theory, Theory of Comparative Advantage, Factor Proportions theory and Leontief paradox, Product Life Cycle theory, Theory of National Competitive Advantage; Instruments of trade control.

Unit 3: International Business Environment (12 Hours)

Role of political and legal systems in international business; cultural environment of

international business; implications of economic environment for international business. International Economic Organisations: WTO- functions, structure and scope; World Bank and IMF.

Unit 4: International Finance and Contemporary Issues (12 Hours)

Types of FDI - Greenfield investment, Mergers & Acquisition, strategic alliances; benefits and drawbacks of FDI. Overview of Exchange Rate systems. Contemporary issues in international business: Outsourcing and its potential for India; international business and sustainable development.

Practical component (if any) - NIL

Essential/recommended readings

1. Bennett, R. International Business, Delhi: Pearson.
2. Cavusgil, S. T., Knight, G. & Riesenberger. International Business: Strategy, Management and the New Realities. Pearson India.
3. Charles, W L Hill & Jain, A. K. International Business, New Delhi: Tata McGraw Hill.

Suggested readings

1. Daniels, J. D., Radenbaugh, L. H. & Sullivan, D. P. International Business, Pearson Education.
2. Griffin, R. W & Pustay, M. W. International Business - A Managerial Perspective. Prentice Hall.
3. Menipaz, E., Menipaz A. and Tripathi S.S. International Business : Theory and Practice. New Delhi. Sage Publications India Pvt. Ltd.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time

GENERIC ELECTIVES (GE-10) PERSONAL SELLING

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Personal Selling (GE 10) | 4 | 3 | 1 | 0 | CLASS XII PASS | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To familiarize the students with the concept and practice of personal selling process, techniques and methods in the modern organizational setting.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Understand the concept of personal selling and related terms.
- An in-depth understanding of various stages in the selling process and the catalytic role of sales persons in the effective functioning of an organization.
- Learn some of the tools and techniques of selling process.

SYLLABUS OF GE-10

Unit 1: Personal Selling

(12 Hours)

An overview of personal selling; functions of a sales person, characteristics of a sales person, Sales as a career. Importance and role of Personal Selling, Building trust and Sales Ethics.

Unit 2: Theories of Selling

(9 Hours)

Personal Selling situations; Theories: AIDAS, Right set of circumstances theory, buying formula theory, Behavioural Equation Theory.

Unit 3: Selling Process

(15 Hours)

Prospecting: Need and Methods; Pre approach: Sales Knowledge; Sales presentation: methods, elements, the approach; Handling Objections: categories and techniques; Closing the sale: techniques; Post sale follow up, Communication for Relationship Building.

Unit IV: Sales Territory

(9 Hours)

Sales territory concept, reasons for establishing sales territories, procedure for setting up sales territories.

Practical component (if any) - NIL

Essential/recommended readings

1. Charles Futrell: Fundamentals of Selling, McGraw Hill (13th Edition).
2. Still, Cundiff & Govani: Sales Management, Prentice Hall of India (2nd Revised Edition).
3. Charles Futrell, ABC's of Relationship Selling through Service", McGraw Hill Publications (Latest Edition).

Suggested readings

1. Rolph E. Anderson, Essentials of personal selling: the new professionalism, Prentice Hall, 1995 (3rd Edition)

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-11) BASICS OF HUMAN RESOURCE

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basics of Human Resource Management (GE 11) | 4 | 3 | 1 | 0 | CLASS XII PASS | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- The objective of this course is to help the students to develop an understanding of the concept and functions of human resource management.
- The course also aims to explore the recent practices and trends in human resource management.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Enhance the understanding of role of human resource management and explore the recent trends of human resource management.

- Develop an understanding of human resource management functions and practices.
- Enhance awareness of certain important issues in industrial relations.

SYLLABUS OF GE-11

Unit -1: Introduction to Human Resource Management (9 Hours)

Introduction, Concept and Importance of Human Resource Management, Functions and Role of Human Resource Management; Globalization and its Impact on HR trends of Human Resource in India; Work life balance; Human Resource Information Systems; Overview of International HRM polycentric geocentric ethnocentric approaches.

Unit -2: Recruitment and Selection (12 Hours)

Human Resource Planning, Need and process, HR Forecasting Techniques Skill inventories; Job analysis-Uses, methods, Job description & Job specifications; Recruitment: Factors affecting recruitment, internal & external sources; Selection process; Orientation: Concept and process.

Unit -3: Training and Development (12Hours)

Training: Concept, Training Process, Methods of training; Management development: Concept & Methods; Performance Management System: Concept, uses of performance appraisal, performance management methods; Career planning: Importance and stages. Compensation: Components of pay, factors influencing compensation, steps in determining compensation, job evaluation; Incentives: Importance and types; Benefits: Need, types of benefits.

Unit -4: Industrial Relations (12 Hours)

Introduction to Industrial Relations; Industrial disputes: concept, causes & machinery for settlement of disputes; Employee Grievances- concept, causes, grievance redressal procedure; Discipline-concept, aspects of discipline & disciplinary procedure; Collective bargaining: concept, process, problems, essentials of effective collective bargaining.

Practical component (if any) - NIL

Essential/recommended readings

1. Dessler Gary, Warkkey Biju, *Human Resource Management*, Pearson.
2. Decenzo and Robbins, *Fundamentals of Human Resource Management*, John Wiley and sons.
3. Chhabra T.N, *Human Resource Management Concept & Issues*, Dhanpat Rai and company.

Suggested readings

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time

GENERIC ELECTIVES (GE-12) ETHICS AND GOVERNANCE IN BUSINESS

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|----------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Ethics and Governance in Business (GE 12) | 4 | 3 | 1 | 0 | CLASS XII PASS | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- The objective of this paper is to develop skills for recognizing and analyzing ethical issues in business and to equip students with moral reasoning for ethical decision making.
- The course aims to acquaint the students with basic concept and standards of corporate governance.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Determining ethical dilemmas in common business situation and finding ways to solve it.
- Examine the role of ethics in different functional areas of business.
- Understand the importance of corporate governance in ensuring fairness, accountability and transparency in the organization.

SYLLABUS OF GE-12

Unit -1: Business Ethics

(9 Hours)

Introduction, meaning of ethics, moral and ethics, types of business ethical issues, why ethical problems occur in business, ethical dilemmas in business; Normative theories – Egoism, Utilitarianism, Ethics of duty, Ethics of rights and justice, Virtue ethics and ethics of care; Gandhian Ethics and its relationship with normative theories.

Unit -2: Ethical Issues in Functional Areas of Business

(15 Hours)

Finance: ethical issues in accounting, finance, banking, takeovers; Whistle blowing: kinds of whistle blowing, whistle blowing as morally prohibited, permitted and required, corporate disclosure; Insider trading.

HRM: Discrimination, affirmative action and reverse discrimination; Inclusion and preferential hiring; Sexual harassment.

Marketing: Green marketing; Product recalls; Ethics and Advertising.

Production: Safety and acceptable risk,, Product safety and corporate liability; Green production..

Information technology : Cyber-crime; Privacy and internet ethics

Unit -3: Corporate Governance

(12 Hours)

Concept, need to improve corporate governance standards, pillars of good governance; Role played by the Government as a regulator to improve corporate governance with reference to provisions introduced in the Companies Act. 2013; Board of Directors and their role in governance; Duties and responsibilities of auditors; Rights and privileges of shareholders, investor's problem and protection; Corporate governance rating process and parameters.

Unit -3: Corporate Governance Models and Committees

(9 Hours)

Models of corporate governance; Committees on Corporate Governance: UK scenario (Cadbury Committee), US scenario (Sarbanes Oxley Act), OECD principles; Indian experience: An overview of recommendations of corporate governance committees in India - CII Code of Best Practices, Kumar Mangalam Birla Committee, Naresh Chandra Committee, Narayan Murthy Committee, Kotak Committee, SEBI (Listing Obligations and Disclosure Requirements) Regulations, 2015 with reference to composition and role of Board of Directors, and Role of independent directors

Practical component (if any) - NIL

Essential/recommended readings

1. Fernando, A.C., "Business Ethics and Corporate Governance", Pearson Education India. (Chapter 1, 2)
2. Velasquez, Manuel G., "Business Ethics- Concepts and Cases", PHI. (Chapter 1, 2)
3. Fernando, A.C., "Business Ethics – An Indian Perspective", Pearson. (Chapter 1 to, 4; 9 to 12, 14,15,18))
4. Crane, Andrew and Matten, Dirk., "Business Ethics", Oxford. (Chapter 1, 7, 8)
5. Ghosh, B N., "Business Ethics and Corporate Governance," Mc Graw Hill. (Chapter 8, 9, 11)
6. De George, Richard T., "Business Ethics", Pearson. (Chapter 3, 4, 13 to 16)
7. Sharma, J. P., "Corporate Governance, Business Ethics and CSR", Ane Books. (Chapter 12)
8. Stanwick, Peter and Stanwick, Sarah, " Understanding Business Ethics", Sage Publications. (Chapter 10)
9. Arnold, Denis G., Beauchamp, Tom L., and Bowie, Norman E., " Ethical Theory and Business", Pearson Education (Chapter 7)

Suggested readings

1. Fernando, A.C.- Business Ethics, Prentice Hall, Latest Edition.
2. Crane, Andrew and Matten, Dirk - Business Ethics, Oxford Publications.
3. Davies, Adrain – Best Practices in Corporate Governance (Gower), Latest Edition.
4. Fernando, A.C. – Corporate Governance :Principles, Policies, and Practices (Pearson Education).

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time

Category I

Bachelor of Business Administration (Financial Investment Analysis) [BBA (FIA)]

(Provide the details of the Discipline Specific Courses offered by your department for the UG Programme with your discipline as the Single Core Discipline)

DISCIPLINE SPECIFIC CORE COURSE – 4 (DSC-4): COST & MANAGEMENT ACCOUNTING

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Cost & Management Accounting (DSC-4) | 4 | 3 | 1 | 0 | Class XII Pass | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

- The rapidly changing business environment requires managers to make informed decisions.
- This paper will equip the students with cost and management accounting concepts, techniques and practices which will help them in planning and controlling business operations and management decision making.

Learning Outcomes

The Learning Outcomes of this course are as follows:

- Understand and distinguish various types of costs in manufacturing and service organizations.
- Determine the costs of products and services.
- Identify relevant costs for decision making and undertake different analysis of various types of decisions.
- Prepare budgets and analyse variances from standard cost to identify areas in need of control.

SYLLABUS OF DSC-4

Unit 1: Nature, Scope of Management Accounting

(12 Hours)

Meaning, nature and scope of Cost Accounting and Management Accounting; Comparison between Cost Accounting & Management Accounting; Cost Control, Cost Reduction & Cost Management, Components of Total Cost & Preparation of Cost Sheet. Cost Ascertainment: Cost Unit and Cost Center. Overheads: Meaning, Cost Drivers, Accumulation, Allocation, Apportionment and Absorption.

Classification of Costs: Fixed, Variable, Mixed Cost; Product, and Period Costs; Direct and Indirect Costs; Relevant and Irrelevant Costs; Shut-down and Sunk Costs; Controllable, and Uncontrollable Costs; Avoidable, and Unavoidable Costs; Imputed / Hypothetical/Implicit Costs and Out-of-pocket Costs; Opportunity Costs; Expired, and Unexpired Costs.

Unit 2: Cost-Volume-Profit Analysis

(12 Hours)

Absorption Costing and Marginal costing, Contribution. Profit Volume Ratio, Break-even Analysis: Break-even Point, Composite Break-even Point, Cash Break-even Point, Margin of safety. Angle of Incidence.

Relevant Costs and Decision Making such as: Key Factor, Pricing, Product Profitability, Dropping a product line, Make or Buy, Export Order, Shut down vs. Continue operations.

Unit 3: Budgets and Budgetary Control

(9 Hours)

Meaning, Steps in Budgetary Control, Types of Budgets: Sales budget, Production Budget, Raw material consumption Budget, Raw Material Purchase Budget, Overhead Budgets, Cash Budget, and Master Budget. Fixed and Flexible Budgets, Zero based budgeting.

Unit 4: Standard Costing and Variance Analysis

(9 Hours)

Meaning of Standard Cost and Standard Costing, Advantages, Limitations and Applications; Material Cost Variance, Price and Usage Variance and Mix and yield Variance; Labor Cost Variance, Rate and Usage Variance, Idle time, Mix and Yield variance.

Unit 5: Contemporary Issues in Cost Accounting and Management Accounting (3 hours)

Introduction to the concept of Target Costing, Life Cycle Costing, Quality Costing, and Activity based Costing.

Practical component (if any) - NIL

Essential/Recommended Readings: Latest editions of the following to be used:

1. Horngren's Cost Accounting: A Managerial Emphasis. Pearson.
2. Arora, M.N. (2016) A Textbook of Cost and Management Accounting. Vikas Publishing House Pvt. Ltd.
3. Maheshwari, S.N. and Mittal, S.N. (2016) Cost Accounting: Theory and Problems. Shree Mahavir Book Depot.

Suggested Readings: Latest editions of the following to be used:

1. Arora, M.N. & Katyal Priyanka, Management Accounting: Theory, Problems & Solutions, Himalaya Publishing House
2. Lal, Jawahar. Advanced Management Accounting: Text, Problems & Cases, Sultan Chand & Company Ltd.

Note: Latest edition of the readings may be used.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 5 (DSC-5): MACROECONOMICS

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-------------------------------|----------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| MACROECONOMICS (DSC-5) | 4 | 3 | 1 | 0 | Class XII Pass | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

- This course deals with the principles of Macroeconomics.
- The coverage includes determination of and linkages between major economic variables, level of output and prices, inflation, interest rates and exchange rates.
- The course is designed to study the impact of monetary and fiscal policy on the aggregate behaviour of individuals.

Learning Outcomes

The Learning Outcomes of this course are as follows:

- Understand the determination of key macroeconomic variables.
- Describe models of determination of equilibrium outputs, prices and rate of interest.
- Analyse the role of the Government in an economy and examine how it uses its fiscal and monetary policy to influence macro-economic variables.
- Explain the working of an open economy.

SYLLABUS OF DSC –5

Unit 1: Introduction to Macroeconomics and National Income Accounting (6 Hours)

Origin of macroeconomics; Income, expenditure and the circular flow in three and four sectoral economies; real versus nominal GDP; price indices; measurements of gross domestic product; national income accounting for open economy; National Income Identity.

Unit 2: Theory of Income Determination and Interest Rate (18 Hours)

Classical theory of income and employment and Simple Keynesian Theory of Income Determination, changes in equilibrium, Paradox of Thrift and Investment multiplier.

Quantity Theory of Money–Cambridge version, Classical theory of interest rate and Keynesian Theory of Liquidity Preference and interest rate, Liquidity Trap; Credit Creation and Money Multiplier

Goods market and money market, graphical derivations of the Hicks-Henson model (IS and LM functions); Properties of IS-LM curves, factors affecting the position and slope of IS-LM curves, determination of equilibrium income and interest rates; Studying the impact of fiscal and monetary policies using IS-LM framework.

Unit 3: Inflation

(9 Hours)

Inflation: meaning; demand and supply side factors; natural rate theory; monetary policy-output and inflation (monetarist view); Phillips curve: short run and long run.

Unit 4: Balance of Payment and International Trade

(12 Hours)

Brief introduction to Balance of Payment (BOP) account; market for foreign exchange and exchange rate; monetary and fiscal policy in open economy; Mundell Fleming model: perfect capital mobility and imperfect capital mobility under fixed and flexible exchange rate.

Practical component (if any) - NIL

Essential/Recommended Readings

1. Froyen, R. P. (2011): Macroeconomics-theories and policies (8th Edition). Pearson.
2. Dornbusch and Fischer (2010): Macro economics (9th Edition).Tata McGraw Hill.
3. N Gregory Mankiw (2010). Macro economics (7th Edition).Worth Publishers

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE– 6 (DSC-6): QUANTITATIVE TECHNIQUES

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course(if any) |
|---------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| QUANTITATIVE TECHNIQUES (DSC-6) | 4 | 3 | 1 | 0 | Class XII Pass | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

- To apprise students with the construction of mathematical models for managerial decision situations and to use spreadsheets or computer software packages to obtain a solution wherever applicable.
- The emphasis is on understanding the concepts, formulation and interpretation.

Learning Outcomes: After the end of the course, students should be able to

- Identify, formulate and solve Linear Programming Problems graphically, mathematically and by using excel solver.
- Solve optimization problems like transportation and assignment problem.
- Develop critical thinking and use PERT and CPM techniques to improve decision making.
- Identify different types of decision-making environments and choose the appropriate decision-making approaches for each.

SYLLABUS OF DSC – 6

Unit 1: Optimization: Linear Programming Problem

(12 Hours)

Formulation of Linear Programming Problems, Graphical Solutions (Special cases: Multiple optimal solution, infeasibility, unbounded solution); Simplex Method, Big-M method and Two-phase method; Special cases, Duality (emphasis on formulation & economic interpretation); Post-optimality and Sensitivity Analysis. Applications of linear programming to Marketing, Finance, Operations Management, Data Envelopment Analysis etc.,

Unit 2: Transportation and Assignment Problem

(9 Hours)

Transportation Problem: Formulation, Solution by N.W. Corner Rule, Least Cost method, Vogel's Approximation Method (VAM), Modified Distribution Method; Degeneracy, Special cases: Multiple Solutions, Maximization case, Unbalanced case, Prohibited routes.

Assignment Problem: Hungarian Method, Special cases: Multiple Solutions, Maximization case, Unbalanced case, Restrictions on assignment.

Unit 3: Network Analysis

(12 Hours)

Basic Concept, Construction of AOA Network diagram, Critical Path Analysis, float and slack analysis (Total float, free float, independent float, Safety Float), probability consideration in PERT, Time-Cost Trade-off in Project.

Unit 4: Decision Theory

(12 Hours)

Decision making environment, Construction of Pay off Table, Opportunity Loss Table, Decision under uncertainty, Decision under Risk: EMV, EOL, EVPI.

Decision under Conflict: Game Theory, Two-person Zero-Sum games, Maximin Minimax Principle, Games without Saddle point- Mixed strategy, Dominance Rule; Reduction of $m \times n$ game and solution of 2×2 , $2 \times s$, and $r \times 2$ cases by Graphical Method.

Practical component (if any) - NIL

Essential/Recommended Readings

1. Vohra, N. D., Quantitative Management, Tata McGraw Hill.
2. Kanti Swarup, Gupta, P. K., & Man Mohan, Operations Research, Sultan Chand & Sons.

Suggested readings

1. Taylor, B. W., Introduction to Management Science, Pearson India.
2. Hillier, M. S., & Hillier, F. S., Introduction to Management Science, Pearson India.

Note: Latest edition of the readings may be used.

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES

GENERIC ELECTIVES (GE-4): FUNDAMENTALS OF ECONOMETRICS

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| FUNDAMENTALS OF ECONOMETRICS (GE-4) | 4 | 3 | 0 | 1 | Class XII Pass | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

- This course provides a comprehensive introduction to basic econometric concepts and techniques.
- It covers estimation and diagnostic testing of simple, multiple regression models, panel data models, and dummy variable regression with qualitative response regression models.

Learning Outcomes

The Learning Outcomes of this course are as follows:

- Understanding of basic econometrics and its assumptions and the impact of violations of classical assumptions.
- Interpretation of functional forms of regression model.
- Understanding of models using dummy variables and Qualitative Response Regression Models.

SYLLABUS OF GE-4

Unit 1

(12 Hours)

Introduction to Econometrics and an overview of its applications; Simple Regression with Classical Assumptions; Properties of estimators, Least Square Estimation and BLUE, Multiple Regression Model and Hypothesis Testing Related to Parameters – Simple and Joint. Functional forms of regression models.

Unit 2

(9 Hours)

Understanding the impact of change in scale of variables on output. Indicators of Goodness of fit of a model; Understanding and calculation of R Square and adjusted R Square. Understanding and calculation of information criteria for model selection: AIC, BIC, and HQC. Understanding of outliers and their impact on the model's output.

Unit 3

(12 Hours)

Violations of Classical Assumptions: expected value of error term is zero, normality, multicollinearity, heteroscedasticity, autocorrelation, and model specification errors, their identification, their impact on parameters; tests related to and impact on the reliability and the validity of inferences in case of, violations of Assumptions; methods to take care of violations of assumptions.

Unit 4

(12 Hours)

Dummy variables: Intercept dummy variables, slope dummy variables, Interactive dummy variables, Use of Dummy Variables to model qualitative/Binary/Structural changes, Response Regression Models or Regression Models with Limited Dependent Variables - Use of Logit, and Probit Models.

Practical component (30 Hours) – *Recommendation Computer Package to be used: Use of softwares like E-Views, R, and STATA to solve real-life problems and check assumptions, taking care of*

assumption violations, and test goodness of fit, and for estimation of Logit, and Probit Models is recommended.

Essential/Recommended Readings:

1. Christopher Dougherty. Introductory Econometrics. Oxford University Press.
2. Gujarati, N. Damodar. Basic Econometrics. New Delhi: McGraw Hill.
3. Gujarati, N. Damodar. Econometrics by Examples. New Delhi: McGraw Hill.

Suggested Readings:

1. Pindyck, Robert S. and Daniel L. Rubinfeld Econometric Models and Economic Forecasts. Singapore: McGraw Hill.
2. Ramanathan, Ramu (2002). Introductory Econometrics with Applications (5th ed.). Thomson South-Western.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-5): ESSENTIALS OF FINANCIAL INVESTMENTS

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Essentials of Financial Investments (GE-5) | 4 | 3 | 1 | 0 | Class XII Pass | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

- To familiarize students with the essential concepts and fundamentals of financial investments.
- The course will enable them to understand and make informed choice about the various available financial investment alternatives.

Learning Outcomes

On successful completion of his course, the students will be able to:

- Understand the fundamentals of financial investments and the investment decision process.
- Able to compute various measures of risk and return, and understand their role for evaluating investments.
- Understand and carry out security analysis using different approaches.
- Learn basic approaches to valuation of securities and carry out portfolio analysis.

SYLLABUS OF GE-5

Unit 1: Investments – An Overview

(9 Hours)

Concept of Investment, Financial Investment Vs. Real Investment, Investment Vs Speculation, Objectives of Investment, Risk Return Trade Off, Investment Environment – Overview of Securities Market and Different Types of Financial Investment. Investment Decision Process, Direct Investing Vs Indirect Investing, Approaches to Investing – Active Vs Passive. Diversification, Hedging and Arbitrage.

Unit 2: Risk – Return Analysis

(9 Hours)

Concepts of Return and Risk, Types of Return - their Calculation & Utility: Absolute Return, Average Return, Expected Return, Portfolio Return, Holding Period Return, Effective Annualized Return, Risk-Adjusted Return. Causes (or Sources) and Types of Risk – Systematic and Unsystematic Risk, Calculation of Total, Systematic and Unsystematic Risk. Impact of Taxes (discuss relevant provisions of Income Tax Act, 1961) and Inflation on Investment – Computation of Post Tax and Real Returns.

Unit 3: Security Analysis**(15 Hours)**

Approaches to Security Analysis – Fundamental Analysis, Technical Analysis, and Efficient Market Hypothesis (EMH). Fundamental Analysis – EIC Framework, Economic Analysis, Industry Analysis, and Company Analysis. Technical Analysis – Basic Tenets of Technical Analysis, Tool of Technical Analysis – Charts, and Technical Indicators, Limitations of Technical Analysis. Difference between Fundamental Analysis and Technical Analysis. Efficient Market Theory (EMH) – Concept, Forms of Market Efficiency, Weak Form Hypothesis, Semi Strong Form, and Strong Form of Market Efficiency. Implications of EMH.

Unit 4: Fundamentals of Valuation and Portfolio Analysis**(12 Hours)**

Valuation of Equity Shares – Peculiar features of Equity Shares, Dividend Discount Model, Relative Valuation - Earning Multiplier or Price-Earnings (P/E) Model and Price to Book Ratio; Capital Asset Pricing Model (CAPM) – its assumptions and limitations. Valuation of Fixed Income Securities – Bond Fundamentals, Types of Bonds, Determination of Bond Prices and Bond Yield. Portfolio Analysis – Portfolio Management Process, Portfolio Analysis – Portfolio Risk, Portfolio Return, Markowitz Model.

Practical component (if any) - NIL

Essential/Recommended Readings:

1. Tripathi, Vanita: Security Analysis and Portfolio Management. Taxmann Publications.
2. Chandra, Prasanna: Investment Analysis and Portfolio Management. McGraw Hill Education.

Suggested Readings:

1. Rustagi, R.P., Investment Management. Sultan Chand Publications.
2. Reilly, F. K. & Brown, K.C. Analysis of Investments and Management of Portfolios, Cengage India Pvt. Ltd.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-6): PERSONAL FINANCE

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--------------------------------|----------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| PERSONAL FINANCE (GE-6) | 4 | 3 | 1 | 0 | Class XII Pass | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

- To equip students with the knowledge and practical understanding of important dimensions of managing one's personal finance.
- They would be able to understand and do planning for their tax liabilities, investments, insurance coverage, and retirement.

Learning Outcomes

On successful completion of his course, the students will be able to:

- Understand the fundamentals of Personal Financial Planning.
- Learn the basics of managing personal tax liabilities.
- Able to ascertain and choose appropriate insurance policies for managing personal risks.
- Appreciate the importance of choosing right investments for managing personal finance.
- Learn the basic concepts and underlying principles for Retirement Planning.

SYLLABUS OF GE-6

Unit 1: Basics of Personal Finance and Tax Planning

(12 Hours)

Understanding Personal Finance. Rewards of Sound Financial Planning. Personal Financial Planning Process. Personal Financial Planning Life Cycle. Making Plans to Achieve Your Financial Goals. Common Misconceptions about Financial Planning. Financial Planning as a career choice. The Financial Planning Environment. Personal Tax Planning – Tax Avoidance versus Tax Evasion, Fundamental Objectives of Tax Planning, Tax Structure in India for Individuals, Common Tax Planning Strategies – Maximizing Deductions, Income Shifting, Tax-Free and Tax-Deferred Income.

Unit 2: Managing Insurance Needs

(12 Hours)

Basics Concepts – Risks, Risk Management and Underwriting. Insuring Life – Benefits of Life Insurance, evaluating need for Life Insurance, Determining the Right Amount of Life Insurance. Choosing the Right Life Insurance Policy – Term Life Insurance, Whole Life Insurance, Universal Life Insurance, Variable Life Insurance, Group Life Insurance, Other Special Purpose Life Policies. Buying Life Insurance – Compare Costs and Features, Select an Insurance Company, and Choose an Agent. Life Insurance Contract Features. Insuring Health – Importance of Health Insurance Coverage.

Making Health Insurance Decision – Evaluate Your Health Care Cost Risk, Determine Available Coverage and Resources, Choose a Health Insurance Plan. Types of Medical Expense Coverage. Policy Provisions of Medical Expense Plans. Property Insurance – Basic Principles, Types of Exposure, Principle of Indemnity, and Coinsurance.

Unit 3: Managing Investments

(12 Hours)

Role of Investing in Personal Financial Planning, Identifying the Investment Objectives, Different Investment Choices. The Risks of Investing, The Returns from Investing, The Risk-Return Trade-off. Managing Your Investment Holdings – Building a Portfolio of Securities, Asset Allocation and Portfolio Management, Keeping Track of Investments. Investing in Equity – Common Considerations, Key Measures of Performance, Types of Equity Stocks, Market Globalization and Foreign Stock, Making the Investment Decision. Investing in Bonds – Benefits of Investing in Bonds, Bonds Versus Stocks, Basic Issue Characteristics, The Bond Market, Bond Ratings. Investing in Mutual Funds and Exchange Traded Funds (ETFs) – Concept of Mutual Funds and ETFs, Benefits of Investing in Mutual Funds or ETFs, Some Important Cost Considerations, Services Offered by Mutual Funds, Selecting appropriate Mutual Fund and ETF investments, Evaluating the performance of Mutual Funds and ETF.

Unit 4: Investing in Real Estate and Retirement Planning

(9 Hours)

Investing in Real Estate – Some Basic Considerations. Modes of Real Estate Investment – Raw Land, Commercial Properties, Residential Properties, Real Estate Investment Trusts (REITs) and Infrastructure Investment Trust (InvITs).

Planning for Retirement – Role of Retirement Planning in Personal Financial Planning, Pitfalls to Sound Retirement Planning, Estimating Income Needs, Sources of Retirement Income.

Practical component (if any) - NIL

Essential/Recommended Readings:

1. Randall S. Billingsley, Lawrence J. Gitman, and Michael D. Joehnk (2017): Personal Financial Planning. Cengage Learning.
2. Susan M. Tillery, and Thomas N. Tillery: Essentials of Personal Financial Planning. Association of International Certified Professional Accountants.

Suggested Readings:

1. Introduction to Financial Planning (4th Edition 2017) – Indian Institute of Banking & Finance.
2. Sinha, Madhu. Financial Planning: A Ready Reckoner. July 2017. Mc Graw Hill

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BA (Hons.) Multi Media and Mass Communication
Communication Research
DSC – 4

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-------------------------------|----------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Communication Research | 4 | 3 | 1 | 0 | Class XII Pass | NIL |

Course Objectives

1. To understand the role and functions of media research: aims, subjects, fields, primary and secondary sources.
2. To introduce various methodologies of research.
3. To introduce ways of analysing data generated by different kinds of research.
4. To develop a research proposal for academic and professional purposes.

Course Learning Outcomes

- i. Undertaking research for mass communication, understanding objectives.
- ii. Data collection and ethics of research.
- iii. Understand the various methodologies of research.
- iv. Develop a research proposal: structured format, citation of sources.

Unit 1: Introduction to Communication Research

(12 Hours)

- Definition, Role and Functions of Research
- Role of Theory in Research
- Primary and Secondary Data
- Types of Communication Research: Market Research, Consumer Research, Media Research, Archival Research, Online Research and Opinion Polls

Unit 2: Research Methodology

(18 Hours)

- Quantitative and Qualitative Methodology
- Quantitative Methods: Survey, Sample, Questionnaire Design
- Qualitative Methods: Content Analysis, Ethnographic Methods, Interview
- Tools of Data Analysis: Presentation and Visualisation of Data

Unit 3: Developing a Proposal

(15 Hours)

- Research Objectives, Aims and Questions, Review of Literature
- Feasibility: Field Access, Size of Sample, Time and Funding

- Ethical Issues and Questions: Informed consent, privacy issues, protection of sources, anonymity, Human Rights, IPR- Permission, Acknowledgement, Plagiarism
- Budget, Bibliography and Citation

References

Essential Readings

- Berger, A. A. (1998). *Media research techniques*. London: Sage.
- Hansen, A. (2011). *Mass communication research methods*. London: Sage.
- Kothari, C. R. (2004). *Research methodology methods & techniques*. New Delhi: New Age International
- Wimmer, R. D., & Dominick, J. R. (2009). *Mass media research: An introduction*. New York: Thomson Wadsworth.

Additional Resources:

Suggested Reading

- Baran, S. J., & Davis, D. K. (2015). *Mass communication theory: Foundations, ferment, and future*. Connecticut: Cengage Learning.
- Croteau, D., & Hoynes, W. (2003). *Media society: Industries, images, and audiences*. London: Sage.
- McLuhan, M., & Moos, M. A. (1998). *Media research: Technology, art, communication*. London: Routledge
- Neuendorf, K. A. (2017). *The content analysis guidebook*. Los Angeles: Sage.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Still Photography

DSC – 5

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Still Photography | 4 | 2 | 0 | 2 | Class XII Pass | NIL |

Course Objectives

1. To train students with hands-on skills using different types of still cameras.
2. To train them for digital editing and manipulation in photography.
3. To familiarize students with the contemporary image making techniques.
4. To make them understand the theoretical perspective behind politics of an image.
5. To prepare students to use photography as a tool of creative expression.

Course Learning Outcomes

- i. Understanding and interpreting the photograph as a historical and technological artefact.
- ii. Familiarity with the elements of a still cameras and techniques of their usage.
- iii. Production with a still camera.
- iv. Skill acquisition of lighting techniques and digital editing for photography.
- v. Production of a theme based photography project.

Unit 1: The Photograph

(8 Hours)

- Photography, Photograph and Culture
- The Black and White; Colour and its Impact
- Image and Text: The Captioned Photo
- The Photograph in Virtual Spaces: Instagram, Pinterest, Snapchat, Flickr

Unit 2: Camera- Controls and Tools

(10 Hours)

- Image and the Camera
- Photographic Optics: Lenses- Types and Specifications
- Exposure: Aperture, Shutter Speed, ISO, Depth of Field, Perspective, Use of Filters
- Camera Settings: Menu and Resolution
- Shooting Modes: Point and Shoot, SLR, DSLR, SLD, SLT, Mirrorless and Mobile

Unit 3: Lighting Techniques and Editing

(12 Hours)

- Fundamental Lighting Concepts and Techniques: Colour Temperature and On-camera Flash

- White Balance and its Uses
- External Lighting Techniques
- Digital Editing: Adobe Photoshop, Lightroom, Apps and Open Sources

Practical (60 Hours):

- Hands-on with a DSLR and other professional-grade camera
- Application of Lighting Techniques and understanding Equipment in photograph
- Enhancing Skills in Digital photo Editing and other manipulation techniques using different software applications and mobile applications
- Improving skills in using mobile phones for digital photography applications

References

Essential Readings

- Ang, T. (2018). *Digital photography: an introduction*. United Kingdom: Dorling Kindersley Limited.
- Barthes, R., & Dyer, G. (2010). *Camera lucida: Reflections on photography*. United Kingdom: Farrar, Straus and Giroux.
- Barthes, R. (1977). *Image, music, text*. United Kingdom: Fontana Press.
- Berger, J. (2008). *Ways of seeing*. United Kingdom: Penguin Books Limited.
- Fox, A. (2015). *Langford's basic photography: The guide for serious photographers*. United States: Taylor & Francis.
- Edwards, S. (2006). *Photography: A very short introduction*. United Kingdom: OUP Oxford.
- Sontag, S. (2008). *On Photography*. Penguin.

Additional Resources:

Suggested Readings

- Berger, J., & Dyer, G. (2013). *Understanding a photograph*. Penguin.
- Adams, A. (2018). *The Camera*. United States: Little, Brown.
- Szarkowski, J. (2007). *The Photographer's Eye*. United Kingdom: Museum of Modern Art.
- Smith, R. S., Fox, A., & Langford, M. (2007). *Langford's basic photography: The guide for serious photographers*. Germany: Elsevier/Focal Press.
- Kelby, S. (2020). *The digital photography book*. United States: Rocky Nook, Inc.

Teaching Learning Process

- Blended, interactive classroom teaching
- Hands-on equipment use in the Photography Lab
- Hands-on software training in the Multi Media Lab
- Production of photography Project
- Workshops
- Internships

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DESIGNING VISUAL COMMUNICATION

DSC – 6

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------------------------|----------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Designing Visual Communication | 4 | 2 | 0 | 2 | Class XII Pass | NIL |

Course Objectives

1. To train students to understand various visual mediums of design.
2. To develop skills to use and interpret graphics for communication.
3. To understand the function of various design elements used for effective visual communication.
4. To acquire comprehensive skills in designing and creating layouts using manual techniques.

Course Learning Outcomes

- i. Understanding of graphics and images as visual communication.
- ii. Design and graphics as communication.
- iii. Acquiring comprehensive skills in designing.
- iv. Capacity to use acquired skills and knowledge to produce a book cover/ poster

Unit 1: Communication and Graphics

(8 Hours)

- What is Visual Communication?
- Elements and Principles of Design
- Roles and Responsibilities of a Graphic Designer
- Ethical Issues and Legal Implications in Visual Communication: Morphing and Manipulation

Unit 2: Colour Theory and Typography

(10 Hours)

- Introduction to the Theory of Colours: Primary, Secondary and Tertiary
- Colour Composition and Schemes
- Font Types and Font Families
- Character Settings in a Design

Unit 3: Technology in Visual Communication

(12 Hours)

- File Formats of Images
- Vector, Raster and Bitmap Graphics
- Working with Images

- Visual Communication: Photographs, Traditional and Folk Media, Films, Radio, Television and New Media

Practical (60 Hours):

- **Visual Communication Warm Up-** Exercise on Ideation : On a blank sheet of paper, make a random mark...a squiggle, pass the sheet to the person on your right, take the sheet from the person on your left and add something more...whatever occurs to you. Continue drawing and passing the sheets for about 3 minutes. Keep it moving! Objective- Only basic information is needed to convey the idea.
- **Exercise on Elements of design-** Create a Line Drawing using basic elements of design
- **Exercise on design Principles & Colour Theory-** Draw a Poster using negative and positive space, colour it using primary colours.
- **Exercise on Typography-** Type/ create a font in an image style.
- **Exercise on Illustration-** Illustrate 5 phrases you hear at College
- **Group Activity -** Storytelling exercise using shapes
-

Think of visuals as a language that has its own alphabet made up of basic shapes like squares and circles. Combine simple drawings to form visual words, sentences, and more complex thoughts like stories.

References

Essential Readings

- Davis, M. (2012). *Graphic design theory*. London: Thames and Hudson. Ohio
- Joss, M., & Nelson, L. (1977). *Graphic design tricks and techniques*: North Light Books.
- Sarkar, N. N. (2012). *Art and print production*. Canada: Oxford University Press.
- Villamil, J., & Molina, L. (1999). *Multimedia: An introduction*. Indianapolis: Que Education.
- White, A. W. (2002). *Elements of graphic design: Space, unity, page architecture, and type*. New York, NY: Allworth Press.

Additional Resources:

Suggested Readings

- Ambrose, G., & Harris, P. (2019). *Design thinking for visual communication*. Bloomsbury Visual Arts.
- Lester, P. M. (2021). *Visual communication: Images with messages*. Lex Publishing.

E-resources

- <http://design.tutsplus.com/graphic> Design Illustration Tutorials
- <http://www.springer.com/in/book/9783540673262>
- <https://stuyhsdesign.wordpress.com/web-design/elements-and-principles-of-design/>
- https://99designs.com/blog/tips/principles-of-design/?clickid=yodxCa3ROxyLW2ZwUx0Mo3Z0UkBxWtS7kziWXI0&utm_medium=27

Teaching Learning Process

- Blended, interactive classroom teaching
- Media-lab work
- Hands on Software Training
- Class work application demos
- Production of Book Cover/ Poster/ Brochure
- Internships

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

COMMON POOL OF GENERIC ELECTIVE

Public Service Broadcasting GE – 2

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|------------------------------------|----------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Public Service Broadcasting | 4 | 3 | 1 | 0 | Class XII Pass | NIL |

Course Objectives

1. To know about the global overview of Public Service Broadcasting.
2. To understand the functioning and role of various government agencies like Prasar Bharati, AIR, Doordarshan, Films Division etc.
3. To know about the latest technology adopted in various Public Service Broadcasting agencies.
4. To have an understanding about the global revenue models of Public Service Broadcasting.

Course Learning Outcomes

- i. Understanding the concept of Public Service Broadcasting
- ii. Critical evaluation of global revenue models in Public Service Broadcasting
- iii. Understanding of role and functions of Prasar Bharati and other agencies

Unit 1: Introduction to Public Service Broadcasting

(15 Hours)

- Global Overview of Public Service Broadcasting
- Model Public Service Broadcasting Law, UNESCO
- Public Service Model in India: An Overview
- Early Public Service Broadcasting in India: Prasar Bharati, All India Radio, Doordarshan, Films Division

Unit 2: Revenue Models of PSB

(15 Hours)

- Government Grants Model
- License Fee Model
- Hybrid Model
- Advertising Model

Unit 3: Public Service Broadcasting in the Digital Age

(15 Hours)

- Radio and the Digital Age
- PSB Television and Webcasting
- Direct to Home Public Service Broadcasting

- Curriculum Broadcasting in the Digital Age: E-pathshalas

References

Essential Readings

- Chatterji, P. C. (1991). *Broadcasting in India*. New Delhi: Sage.
- Ghosal, H. R. (1962). *An outline history of the Indian people*. Delhi: Publications Division, Ministry of Information and Broadcasting, Govt. of India.
- Saxena, A. (2011). *Radio in new avatar: AM to FM*. New Delhi: Kanishka, Distributors.

Additional Resources:

Suggested Readings

- Fleming, C. (2010). *The radio handbook*. London: Routledge.
- Luthra, H. R. (1986). *Indian broadcasting*. New Delhi: Publications Division, Ministry of Information and Broadcasting, Govt. of India.
- Natarajan, J. (1955). *History of Indian journalism*. Delhi: Publications Division, Ministry of Information and Broadcasting.

E-resources

- <http://osou.ac.in/eresources/Deveopment%20of%20Public%20Srvice%20Bradcasting%20in%20India.pdf>
- <https://unesdoc.unesco.org/ark:/48223/pf0000141584>

Teaching Learning Process

- Blended, interactive classroom teaching
- Illustrations with vase studies
- Multi-media students presentations
- Self-study
- Written assignment

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

40. Amendment to Appendix -II-A to the Ordinance V (2-A) of the Ordinances of the University vide EC Resolution 38-1-6 dated 08.12.2022 regarding Syllabi of 2nd Semester of Department of Commerce

Add the following:

Syllabi of Semester-II of the Department of Commerce under Faculty of Commerce & Business Studies based on Under Graduate Curriculum Framework -2022 to be implemented from the Academic Year 2022-23.

Category-I

B.Com (Hons.)

Discipline Specific Core Course- 2.1(DSC-2.1): Corporate Accounting

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Corporate Accounting DSC- 2.1 | 4 | 3 | 1 | 0 | Pass in XII | Pass in Financial Accounting (DSC-1.3) |

Learning Objectives

The course aims to help learners to acquire conceptual knowledge of corporate accounting systems and to learn the techniques of preparing the financial statements of companies.

Learning Outcomes

After completion of the course, learners will be able to:

1. Analyse the matters related to issues of share capital, debentures, bonus shares, redemption of preference shares and debentures of a company.
2. Prepare financial statements of companies manually as well as using online software.
3. Interpret the valuation of intangible assets and shares.
4. Describe accounting for Amalgamation and Internal Reconstruction of Companies.
5. Prepare Annual Reports of companies and analyse the voluntary and mandatory information contained in them.

SYLLABUS OF DSC-2.1

Unit 1: Accounting for Share Capital and Debentures (6 hours)

Types of shares; Accounting for Share Capital, Issue of Rights and Bonus Shares; ESOPs and Buy-Back of shares; Issue and Redemption of preference Shares and Debentures. Underwriting of Shares and Debentures. [In reference to Relevant Accounting Standards (AS and Ind AS) and Guidance Notes as applicable.]

Unit 2: Financial Statements of Companies (12 hours)

Preparation of financial statements of corporate entities including one Person Company (excluding calculation of managerial remuneration) as per Division I and II of Schedule III of the Companies Act 2013; Related Parties as per AS-18, Preparation of Statement of Profit and Loss, Balance Sheet, Statement of Equity and Cashflow Statement manually and using appropriate software. Interpreting the ratios calculated as per Schedule III of the Companies Act 2013 [with reference to Relevant Accounting Standards (AS and Ind AS) and the relevant provisions of The Companies Act, 2013, as applicable.]. Calculation of EPS as per AS 20.

Unit 3: Valuation of Intangible Assets and Shares (9 hours)

Valuation of Intangible Assets and Shares. Value Added Statement, Economic Value Added, Market Value Added, and Shareholder Value Added.

Unit 4: Amalgamation of Companies and Internal Reconstruction (9 hours)

- (a) Accounting for Amalgamation of Companies (excluding inter-company holdings) applying AS 14/Ind AS 103.
- (b) Accounting for Different forms of Internal Reconstruction (excluding drafting of Internal Reconstruction Scheme).

Unit 5: Corporate Financial Reporting (9 hours)

Meaning, need and objectives; Constituents of Annual Report and how it is different from financial statements; Contents of report of the Board of Directors; XBRL Reporting. Drafting of Notes to Accounts. Segment Reporting as per AS - 17, Sustainability Reporting, Triple Bottom Line Reporting, CSR Reporting.

Notes:

1. The relevant Accounting Standards (both AS & Ind AS) for all of the above topics should be covered.
2. Any revision of the relevant Indian Accounting Standards/Accounting Standards would become applicable.
3. The relevant provisions of The Companies Act, 2013, as applicable for all of the above topics should be covered.

Practical Exercises:

The learners are required to:

1. Collect prospectus issued by reputed companies, and examine the matters related to issue of shares.
2. Prepare financial statements of companies manually as well as using appropriate software.
3. Examine the annual reports of business organisations to find out whether applicable accounting standards (AS and Ind AS) are complied with or not.
4. Value Intangible Assets and Shares of a company.
5. Collect information from business newspapers, periodicals, print and digital media on the amalgamation of companies and prepare a report.
6. Download annual reports of reputed companies from the websites and analyse the voluntary and mandatory information contained in these statements.
7. Download and analyse notes on accounts from the annual reports of reputed companies from the websites.

Suggested Readings

- Bergeron, B. (2003). *Essentials of XBRL: Financial Reporting in the 21st Century*. (1st Ed.). New Jersey: John Wiley & Sons.
- Dam, B. B., & Gautam, H. C. (2019). *Corporate Accounting*. Guwahati: Gayatri Publications.
- Goyal, B. K. (2021). *Corporate Accounting*. (7th Ed.). New Delhi: Taxmann Publication.
- Goyal, V. K., & Goyal, R. (2012). *Corporate Accounting*. (3rd Ed.). New Delhi: PHI Learning.
- Jain, S. P., & Narang, K. L. (2015). *Corporate Accounting*. New Delhi: Kalyani Publishers.
- Kumar, A. (2021). *Corporate Accounting*. (7th Ed.). New Delhi: Singhal Publications.
- Maheshwari, S. N., Maheshwari, S. K., & Maheshwari, S. K. (2018). *Corporate Accounting*. (6th Ed.). New Delhi: Vikas Publishing House.
- Monga, J. R., & Bahadur, R. (2022). *Fundamentals of Corporate Accounting*. (27th Ed.). New Delhi: Scholar Tech Press.

- Mukherjee, A., & Hanif, M. (2017). *Corporate Accounting*. (2nd Ed.). New Delhi: Tata McGraw Hill Education.
- Mukherjee, S., & Mukherjee, A. (2019). *Corporate Accounting*. (1st Ed.). New Delhi: Oxford University Press.
- Sah, R.K. (2019). *Concept Building Approach to Corporate Accounting*. (2nd Ed.). Cengage.
- Sehgal, A. (2012). *Fundamentals of Corporate Accounting*. (3rd Ed.). New Delhi: Taxmann Publication.
- Shukla, M. C., Grewal, T. S., & Gupta, S. C. (2016). *Advanced Accounts. Vol.-II*. (19th Ed.). New Delhi: S. Chand Publishing.
- Tulsian, P. C., & Tulsian, B. (2008). *Corporate Accounting*. (Rev. Ed.). New Delhi: S. Chand Publishing.

Additional Resources

- Accounting Standards at the Website of the Institute of Chartered Accountants of India.
- Indian Accounting Standards at the Website of the Ministry of Corporate Affairs.
- The Companies Act, 2013 as amended from time to time.

Note: Suggested readings will be updated by the Department of Commerce and uploaded on the Department's website.

Discipline Specific Core Course- 2.2 (DSC-2.2): Company Law

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------------|----------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Company Law DSC- 2.2 | 4 | 3 | 1 | 0 | Pass in XII | NIL |

Learning Objectives

The course aims to develop and comprehend business and its processes in accordance with the provisions of the Companies Act, 2013 while analysing case laws.

Learning Outcomes

After completion of the course, learners will be able to:

1. Analyse the regulatory aspects and the broader procedural aspects involved in different types of companies covering the Companies Act, 2013 and Rules.
2. Prepare the basic legal documents required for formation of a company.
3. Analyse the process and documents required for raising capital for the company.
4. Analyse the managerial composition of companies and examine the process of company meetings.
5. Evaluate the framework of dividend distribution and develop understanding of the winding up process including Insolvency Resolution.

SYLLABUS OF DSC-2.2

Unit 1: Introduction (9 hours)

Meaning and characteristics of a company; Lifting of corporate veil; Overview of administration of Company Law; Types of companies including private and public company, government company, foreign company, one person company, small company, associate company, dormant company and producer company; Association not for profit; Illegal association.

Unit 2: Formation and Incorporation documents (9 hours)

Formation of company, promoters, their legal position and pre-incorporation contracts; Online registration of a company. Memorandum of Association and its alteration, Articles of

Association and its alteration, Doctrine of constructive notice, Doctrine of ultra vires and indoor management.

Unit 3: Share Capital (9 hours)

Prospectus, Shelf and Red herring prospectus, misstatement in prospectus; Book building. Allotment and Forfeiture of share, Sweat Equity, ESOPs, Bonus issue, and Further issue of shares, buyback, split of sharers and provisions regarding buyback; Transfer and transmission of shares; Demat system.

Unit 4: Management and Meetings (9 hours)

Directors: Legal position, Disqualifications, Director Identification Number (DIN); Classification of directors-Additional, Alternate and Casual directors, Women directors, Independent director, small shareholder's director; Appointment, Removal of directors; Powers and Duties; Key managerial personnel (KMP); Board Meetings; Shareholders' meetings: AGM and EGM. Convening and conduct of meetings: Requisites of a valid meeting; Resolutions (Virtual meetings); Postal ballot; e-voting.

Unit 5: Dividends, Audit and Winding up (9 hours)

Provisions relating to payment of Dividend. Company Audit: auditor's qualification and disqualifications, Auditor's appointment, rotation and removal, Secretarial Audit. Winding Up: Concept and Modes of Winding Up; Provisions of winding up under Insolvency and Bankruptcy Code 2016.

Practical Exercises

The learners are required to:

1. Identify the type of company based on information available on NSE/BSE website and then analyse the regulatory and procedural aspects covering the Companies Act, 2013.
2. Fill dummy SPICe+ form for incorporation of a company.
3. Write about the timeline and details of the book building process of an actual IPO/FPO.
4. Identify the actual composition of the Board of Directors and examine the minutes of AGM/EGM of listed companies.
5. Analyse a case study on the winding up of a company.

Suggested Readings

- Jagota, R. (2021). *Corporate Laws*. New Delhi: Taxmann Pvt Ltd.
- Kapoor, N. D. (2022). *Corporate Laws*. New Delhi: Sultan Chand.
- Kaur, H. (2022). *Company Law*. New Delhi: Kitab Mahal.
- Kuchhal, M. C. & Kuchhal, A. (2013). *Company Law*, Mahavir Publications.
- Kumar, A. (2021). *Corporate Laws*. New Delhi: Taxmann Pvt. Ltd.
- Maheshwari, S. N., & Maheshwari, S. K. (2015). *Elements of Corporate Laws*. New Delhi: Himalaya Publishing House Pvt. Ltd.

- Maheshwari, S. N., & Maheshwari, S. K. (2019). *Company Law*. New Delhi: Himalaya Publishing House Pvt. Ltd.
- Ramaiya, A. (2020). *A Guide to Companies Act*. India: LexisNexis.

Additional Resources

- Hanningan, B. (2021). *Company Law*. UK: Oxford University Press.
- Sharma, J. P. (2020). *An Easy Approach to Corporate Laws*. New Delhi: Ane Books Pvt. Ltd.

Note: Suggested readings will be updated by the Department of Commerce and uploaded on the Department's website.

Discipline Specific Core Course- 2.3 (DSC-2.3): Human Resource Management

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Human Resource Management DSC- 2.3 | 4 | 3 | 1 | 0 | Pass in XII | NIL |

Learning Objectives

The course aims to acquaint the learners with the techniques and principles to manage human resources of an organisation for better performance and workplace environment.

Learning Outcomes

After the completion of the course, the learners will be able to:

1. Evaluate the importance of contemporary and emerging HR issues.
2. Analyse the concept and sources of recruitment and selection process.
3. Devise employee training and development programs.
4. Design performance appraisal techniques and compensation schemes.
5. Design HR policies for employee engagement and experience; grievance redressal, employee health, safety, welfare, social security, and stress-free work life balance.

SYLLABUS OF DSC-2.3

Unit 1: Introduction to Human Resource Management (9 hours)

Concept and functions; Role, status and competencies of HR manager; HR policies; Evolution of HRM; Emerging challenges of HRM- Workplace diversity, empowerment, downsizing, VRS, work life balance.

Unit 2: Procurement of Human Resource (9 hours)

Human resource planning- Quantitative and qualitative dimensions; Job analysis – Job description and job specification; Recruitment – concept and sources; Selection – concept and process; Test and interview; Placement, induction and socialization; Retention of employees.

Unit 3: Upgrading Employees: Training and Development (9 hours)

A. Concept and significance; Role specific and competency-based training; Training and development methods – Apprenticeship, understudy, job rotation, vestibule training, case study, role playing, hands on, shadowing, e-learning, sensitivity training, In-basket, management games, conferences and seminars, coaching and mentoring, management development programs; Training process outsourcing.

B. Scope of training; On board, soft skills, technical skills, product & service, quality, anti-harassment, legal.

Unit 4: Performance Appraisal and Compensation Management (9 hours)

Performance appraisal- Nature, objectives and process; Performance management; Methods of performance appraisal; Potential appraisal; Employee counselling; Job Transfer and promotion.

Compensation - Concept and policies, Base and supplementary compensation; Individual, group and organisation incentive plans; Fringe benefits; Performance linked compensation; Employee stock option; Pay band compensation system; Job evaluation.

Unit 5: Employee Maintenance, Engagement and Emerging Horizons (9 hours)

Employee health and safety; Employee welfare; Social security (excluding legal provisions);

Employer-employee relations; Grievance handling and redressal; Industrial disputes: Causes and settlement machinery, Stress-free environment, Rejuvenation breaks and leisure activities.

Emerging Horizons; Redundant manpower, e-HRM; Human Resource Information System (HRIS); HR Audit, Emerging job opportunities, Talent management, Employee burnout, Work life balance, Work from Home.

Practical Exercises

The learners are required to:

1. Design a human resource plan with a focus on contemporary and emerging HR issues.
2. Perform a role play and conduct an orientation cum induction programme for new recruits.
3. Design a training and development plan for a hypothetical organisation.
4. Design performance appraisal techniques and compensation schemes for a hypothetical organisation.
5. Design employee welfare scheme for a hypothetical organisation.

Suggested Readings

- Aswathappa, K. & Dash, S. (2021). *Human Resource Management-Text and cases* (9th Ed.), Tata McGraw-Hill.

- Chhabra, T. N. & Chhabra, M. (2020). *Human Resource Management*. New Delhi: Sun India Publications.
- Decenzo, D. A., & Robbins, S. P. (2009). *Fundamental of Human Resource Management*, New Jersey: Wiley.
- Dessler G. & Varrkey B. (2020). *Human Resource Management*, Sixteenth Edition, Pearson Paperback.
- French, W. L. (2006). *Human Resource Management*. Boston: Houghton Mifflin.
- Gupta, C. B. (2018). *Human Resource Management*. New Delhi: Sultan Chand & Sons.
- Pattanayak, B. (2019). *Human Resource Management* (6th ed.). PHI learning
- Prasad, L. M. (2018). *Human Resource Management*. New Delhi: Sultan Chand & Sons
- Rao, V. S. P. (2020). *Human Resource Management* (2nd Ed.). New Delhi: Taxmann Pvt. Ltd.
- Sengupta, A. (2018). *Human Resource Management*, Sage Textbook.

Note: Suggested readings will be updated by the Department of Commerce and uploaded on the Department's website.

Generic Elective Course- 2.1(GE-2.1): Communication in Management

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Communication in Management GE-2.1 | 4 | 3 | 1 | 0 | Pass in XII | Pass in Business Organisation (GE- 1.1) |

Learning Objectives

The course aims to train students to enhance written as well as oral communication in management. This course will help students in understanding the principles and techniques of communication. Also, to understand the use of electronic media for communication.

Learning Outcomes

After completion of the course, learners will be able to:

1. Analyse the need of communication in management.
2. Interpret the need for effective listening.
3. Examine the concepts of written and spoken communication.
4. Demonstrate the role of group discussion and interviews.
5. Summarise business reports and proposals.

SYLLABUS OF GE-2.1

Unit 1: Introduction to Communications (9 hours)

Meaning and Objectives of Communication. Process of Communication. Forms of communication: formal and informal; upward, downward, diagonal and lateral. Role of a Manager. Barriers to effective communication and overcoming them. Effectiveness in Managerial Communication. Make use of grapevine. Role of verbal and non-verbal communication; interpreting non-verbal communication.

Unit 2: Listening (9 hours)

Meaning and objectives of Listening, Features of a good listener. Analysing poor listening. Effective listening skills and barriers to effective listening.

Unit 3: Spoken communication (9 hours)

Oral Presentation: Planning, structuring and delivering presentation. Handling queries. Challenges and etiquettes associated with Telephonic, web-conferencing and Teleconferencing communication.

Written communication: Principles and steps of effective writing. Seven Cs of Letter writing. Business Letters: inquiries, placing orders, sales letters. Job applications and resumes. Memos.

Unit 4: Group Discussion (9 hours)

Nature, forms and classification of Groups. Role of managers in group discussions. Effective group decision making. Group conflict.

Interviews: Interviewing, Nature and types of Interviewing Questions. Verbal and Non-Verbal aspects of interviewing. Types of Interviews: structured and unstructured; group and depth.

Unit 5: Meetings (9 hours)

Planning and conducting meetings. Meeting Process. Ways to effectively lead a meeting. Evaluating meetings and drafting minutes of a meeting.

E-mail, Business Reports and Proposals: E-mail Etiquettes, smartness and presentation. Business Reports and proposals: Writing and purpose.

Practical Exercises

The learners are required to:

1. Analyse the communication channel in your educational institution.
2. Analyse the barriers to effective listening in your educational institution.
3. Organise webinars and draft mock business letters.
4. Participate in group discussions and mock interviews.
5. Conduct a meeting in your institution and draft minutes of the meeting.

Suggested Readings

- Bhatia, R. C. (2008). *Business Communication*. New Delhi: Ane Books Pvt. Ltd.
- Bell, R. & Martin, J. (2014). *Managerial Communication*. Business Expert Press.
- Kaul, A. (2015). *Effective Business Communication* (2nd ed.). PHI learning.
- Lesikar, R. V. & Flatley, M. E. (2001). *Basic Business Communication Skills for Empowering the Internet Generation*. New Delhi: Tata McGraw Hill Publishing Company Ltd.
- Ludlow, R. & Panton, F. (1992). *The Essence of Effective Communications*. New Delhi: Prentice Hall of India Pvt. Ltd.
- Meyer C, D. (2021). *Communicating for Results*, Oxford University Press.

- Owen, H., David, D. & Dennis, T. (1999). *Communication in Management*. Gower Publishing, Ltd.
- Quintanilla, Kelly, M. (2021). *Business and Professional Communication*. 4thed. Sage Textbook.
- Raman, M. & Singh, P. (2012). *Business Communication*. Oxford University Press.
- Scot, O. (2004). *Contemporary Business Communication*. New Delhi: Biztantra.

Note: Suggested readings will be updated by the Department of Commerce and uploaded on Department's website.

Generic Elective Course- 2.2(GE-2.2): Financial Management for Beginners

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|----------------------|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Financial Management for Beginners GE- 2.2 | 4 | 3 | 1 | 0 | Pass in XII | Pass in Finance for Everyone (GE- 1.2) |

Learning Objectives

The course aims to familiarize the students with the basic concepts of financial management.

Learning Outcomes

After completion of the course, learners will be able to:

1. Analyse the overview of finance, the concept of time value of money and risk & return.
2. Perform financial analysis with the aid of various financial statements, and analyse the capital budgeting process and techniques.
3. Analyse the cost of capital, capital structure and leverage.
4. Examine dividend & working capital dividend decisions.
5. Perform valuation of securities.

SYLLABUS OF GE-2.2

Unit 1: Introduction (9 hours)

Meaning and importance of finance. Time value of money (Compounding & Discounting), Risk & Return. Alternative investment options, Sources of long term financing and short term financing.

Unit 2: Financial Analysis & Capital Budgeting (9 hours)

Financial statements- income statement, balance sheet, Ratio analysis: meaning, significance and limitations. Current ratio, quick ratio, absolute liquidity ratio, debt-equity ratio, interest coverage ratio, inventory turnover ratio, debtors turnover ratio, average collection period, creditors turnover ratio, average payment period, return on capital employed, return on equity, earnings per share, dividend per share, price-earning ratio.

Capital budgeting process, Capital budgeting techniques (Payback period, Discounted payback period, NPV, IRR).

Unit 3: Cost of Capital & Capital Structure (9 hours)

Concept of cost of capital and capital structure: Cost of debt capital, Cost of preference share capital, Cost of equity share capital, Weighted average cost of capital (WACC). Meaning of leverage. Operating leverage, Financial leverage, Combined leverage.

Unit 4: Dividend Decisions & Working Capital (9 hours)

Types of dividends, Dividend policies and factors affecting dividend policies. Stock-split and bonus Shares. Concept of working capital, its components and factors affecting working capital requirements.

Unit 5: Valuation of Securities (9 hours)

Types of risks and returns. Concept of valuation, Equity valuation & analysis, Bond valuation & analysis. Portfolio analysis.

Contemporary issues in finance.

Practical Exercises

The learners are required to:

1. Assess the present value of financial investments made by your family members.
2. Analyse the risk and return of financial securities listed on NSE/BSE.
3. Analyse the capital budgeting process of various companies.
4. Examine the capital structure of various companies from their annual reports.
5. Evaluate the dividend and working capital policy of various companies.
6. Perform valuation of financial securities using MS-EXCEL.

Suggested Readings

- Bhargav, B. K. (2015). *Finance For Non-Finance Managers*. Jaiko Publishing House.
- Chandra, P. (2017). *Finance Sense: Finance for Non-Finance executives*. Tata McGraw Hill.
- Gabriel, H. & Claude, V. (2008). *Finance for Non-Finance Managers*. Cengage Delmar Learning India Pvt. Ltd.
- Gene, S. (2003). *Finance for Nonfinancial Managers*. (Briefcase Books Series). Tata McGraw Hill.
- Joshipura, M. (2022). *Cases in Financial Management*. Sage Textbook
- Maheshwari, S. N. (2019). *Elements of Financial Management*. New Delhi: Sultan Chand & Sons.
- Maheshwari, S. N. (2013). *Financial Management – Principles & Practice*. New Delhi: Sultan Chand & Sons.

- Tripathi, V. (2021). *Basic Financial Management*. New Delhi: Taxmann Publication Pvt. Ltd.

Note: Suggested readings will be updated by the Department of Commerce and uploaded on Department's website.

Assessment Method:

1. There shall be 3 credit hours for lectures + one credit hour for tutorials (per group).
2. Theory exam shall carry 100 marks (including Internal Assessment of 25 Marks). The theory exam will be for 3 hours.

Generic Elective Course- 2.3(GE-2.3): Sales Promotion

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------------|---------|-----------------------------------|----------|------------------------|----------------------|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Sales Promotion GE- 2.3 | 4 | 3 | 1 | 0 | Pass in XII | Pass in Marketing for Beginners (GE- 1.3) |

Learning Objectives

The course aims to familiarize the students with the basics of Sales Promotion and its importance in marketing.

Learning Outcomes

After completion of the course, learners will be able to:

1. Evaluate the importance of sales promotion in marketing.
2. Analyse the different forms of sales promotion.
3. Design different tools for sales promotion campaign and analyse the need of a particular tool.
4. Develop and evaluate sales promotion programs.
5. Analyse the ethical and legal aspects of sales promotion.

SYLLABUS OF GE-2.3

Unit 1: Introduction to Sales Promotion (12 hours)

Sales Promotion: Nature, meaning and importance of Sales Promotions; Significance of Sales Promotion in marketing; Misconception about sales promotion; Relationship marketing and Sales Promotion; Role of Sales Promotion in Integrated marketing communication.

Unit 2: Types of Sales Promotion (6 hours)

Different forms of Sales Promotions; Consumer-oriented Sales Promotion; Trade oriented Sales Promotion; and Sales force oriented Sales Promotion

Unit 3: Major tools of Sales Promotion (12 hours)

Sales Promotion tools including -Premiums, price offs, coupons, sampling, refunds and rebates, contest, games and lotteries, point of purchase; Displays and demonstrations; Conferences use; Trade fairs; Exhibition and fashion shows, Specialities and novelties, and recent prevalent tools -features, strength and limitations.

Unit 4: Developing sales promotion programmes (12 hours)

Pre-testing; implementation; evaluating the result and making necessary modifications

Unit 5: Ethical and legal aspects of sales promotion (3 hours)

Importance of ethics in sales promotion; Unethical practices and its consequences in Sales Promotion; Puffery or misrepresentation

Practical Exercises

The learners are required to:

1. Analyse the sales promotion campaign of different organisations.
2. Identify the different forms of sales promotions in various organisations.
3. Design different tools for sales promotion campaign for a hypothetical firm.
4. Develop a sales promotion programme for a hypothetical firm.
5. Analyse case studies concerning ethical and legal aspects on sales promotion.

Suggested Readings

- Kazmi, S. H. H. & Batra, S. K. (2009). *Advertising and sales promotion*. India: Excel Books.
- Kotler, P. & Keller, K.L. (2021). *A framework for marketing management*. (6th ed.). Pearson.
- Minahan, S. & Ogden-Barnes, S. (2015). *Sales Promotion Decision Making: Concepts, Principles, and Practice*. (1st ed.) United States: Business Expert Press.
- Mullin, R & Cummins, J. (2010). *Sales Promotion: How to Create, Implement and Integrate Campaigns that Really Work*. Paperback.
- Neslin, S. A., & Blattberg, R. C. (1990). *Sales Promotion: Concepts, Methods and Strategies*. United States: Prentice Hall.
- Quelch, J. A. (1989). *Sales promotion management*. Prentice Hall.

Note: Suggested readings will be updated by the Department of Commerce and uploaded on Department's website.

Generic Elective Course- 2.4(GE-2.4): Computerised Accounting System

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|----------------------|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Computerised Accounting System GE- 2.4 | 4 | 2 | 0 | 2 | Pass in XII | Pass in Accounting for Everyone (GE- 1.4) |

Learning Objectives

This course aims to impart the skills needed for recording business transactions and producing final accounts by a non-commerce student using computerised accounting software.

Learning Outcomes

After completion of the course, learners will be able to:

1. Analyse the significance of accounting in an organisation.
2. Prepare and analyse financial statements.
3. Create a structure of a computerised accounting system for a business firm.
4. Record day to day business transactions in computerised accounting system
5. Evaluate the necessary adjustments for Goods and Service Tax (GST) while recording business transactions.
6. Generate various accounting reports for analysis and decision making.

SYLLABUS OF GE-2.4

Unit 1: Introduction to Accounting (2 hours)

Accounting – meaning, importance and need, its objectives and relevance to business establishments and other organisations, and individuals. accounting information: meaning, users and utilities, sources of accounting information. some basic terms –transaction, account, asset, liability, capital, expenditure & expense, income, revenue, gain, profit, surplus, loss, deficit. debit, credit, accounting year, financial year, financial accounting principles.

Unit 2: Recording of business transactions and preparation of financial statements (8 hours)

Features of recordable transactions and events; types of accounts: personal account, real account and nominal account; rules for debit and credit; double entry bookkeeping system, journalising transactions; preparation of ledgers; fundamental accounting equation; preparation of Trial Balance; concept of revenue and capital; preparation of Trading and Profit & Loss Account and Balance Sheet manually.

Unit 3: Computerised Accounting System (2 hours)

Computerised Accounting Systems: Basics of computerised accounting systems; difference between manual and computerised accounting system; overview of available software packages for computerised accounting; factors affecting selection of suitable computerised accounting software; procurement and installation of computerised accounting software.

Using any popular accounting software: create, select, shut, and delete a Company; setting security features of company; date and period features; configure and features settings; backup and restore data of a company.

Unit 4: Creating Masters and voucher entry (12 hours)

Creating Accounting Ledgers and Groups: Single create vs. multiple create, creating ledger under a group and entering opening balances

Creating Stock Items and Groups: Creating unit of measurement, creating stock groups using single or multiple create feature under an existing group, creating Stock items using single or multiple feature under an existing group,

Voucher Entry: Types of vouchers, selection of voucher type for transactions, vouchers entry, voucher number and date settings, voucher entry with more than one debit or credit accounts, editing and deleting a voucher and printing of voucher.

Unit 5: Taxation and Generating Reports (6 hours)

Taxation: Accounting for Goods and Service Tax

Generating Reports: Cash Book, ledger accounts, Trial Balance, Profit and Loss Account, Balance Sheet, Ratio analysis and Cash Flow Statement; exporting reports in pdf and excel formats.

Note:

1. The General Purpose Software referred in this course will be notified by the University Departments every three years. If the specific features, referred to in the detailed course above, are not available in that software, to that extent it will be deemed to have been modified.
2. There shall be a practical examination of 50 Marks (2 hours duration), theory exam of 25 marks (1 hour duration) and Internal Assessment of 25 marks (Class Test-10 Marks, Work Book- 10 Marks and attendance- 5 marks).
3. There shall be 2 lecture periods per class and 4 Practical Lab periods per batch to be taught in the Computer Laboratory.

Practical Exercises

The learners are required to:

1. Collect basic financial data of a reputed company to identify key accounts prepared by the enterprise and assess the importance of accounting.
2. Examine the annual reports of business organisations to find out whether applicable accounting standards (AS and IND AS) are complied with or not.
3. Analyse a firm's case study on computerised accounting and financial reporting.
4. Record periodic business transactions in computerised accounting system.
5. Collect information from business newspapers, periodicals, print and digital media related to financial statements released by the reputed companies and prepare a report on the basis of collected information.
6. Download one manufacturing, one service and one trading company's annual financial statement and report. Identify and compare the Goods and Services Tax of the companies.
7. Prepare financial statements using appropriate software.

Suggested Readings

- Charles, T. H., Gart L. S., John A. E., & Donna R. P. (2017). *Introduction to Financial Accounting*. (11th Ed.). London: Pearson.
- Goyal, B. K., & Tiwari, H. N. (2021). *Financial Accounting*. (9th Ed.). New Delhi: Taxmann Publications Pvt. Ltd.
- Kumar, A. (2021). *Corporate Accounting*. (7th Ed.). New Delhi: Singhal Publications.
- Lal, J., Srivastava, S., & Abrol, S. (2019). *Financial Accounting Text and problems*. New Delhi: Himalaya Publishing House.
- Davis, J. R., Alderman, C. W., & Robinson, L.A. (1990). *Accounting Information Systems: A cycle Approach*. (3rd Ed.). New Jersey: Wiley.
- Lt. Bhupinder. (2019). *Financial Accounting – Concepts and Applications*. (1st Ed.). New Delhi: Cengage.
- Monga, J. R., & Bahadur, R. (2021). *Financial Accounting: Concept and Applications*. (21st Ed.). New Delhi: Scholar Tech Press.
- Hurt, R. L. (2015). *Accounting Information Systems: Basic Concepts and Current Issues*. (3rd Ed.). New York: McGraw Hill.
- Sah, R. K. (2019). *Concept Building Approach to Financial Accounting*. (2nd Ed.). Cengage Learning India Pvt. Ltd.
- Sehgal, A., & Sehgal, D. (2010). *Fundamentals of Financial Accounting*. New Delhi: Taxmann Publications Pvt. Ltd.
- Nadhani, A. K. (2018). *Tally ERP 9 Training Guide*. New Delhi: BPB Publications.
- Satpathy, S. (2020). *Tally ERP 9 Book Advanced User*. Tally, New Delhi.
- Tulsian, P. C. (2016). *Financial Accounting*. (2nd Ed.). New Delhi: S.Chand.

Additional Resources:

Web resource: <http://tallyerp9book.com/TallyERP9-Book-Content.html>

Note: Suggested readings will be updated by the Department of Commerce and uploaded on Department's website.

CATEGORY-III
B.A. COMMERCE BASED PAPER

BAC: DSC-2: Financial Accounting

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------------------|---------|-----------------------------------|----------|------------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Financial Accounting BAC: DSC-2 | 4 | 3 | 0 | 1 | Pass in XII | NIL |

Learning Objectives

The course aims to help learners to acquire conceptual knowledge of financial accounting, to impart skills for recording various kinds of business transactions and to prepare financial statements.

Learning Outcomes

After completion of the course, learners will be able to:

1. Analyse the applicability of Accounting Standards in the preparation of Financial statements of companies.
2. Apply the Generally Accepted Accounting Principles while recording transactions and preparing financial statements.
3. Measure business income applying relevant accounting standards.
4. Evaluate the impact of depreciation and inventories on Business Income.
5. Prepare the Financial Statements of sole proprietor firms and Not-For-Profit Organisations.
6. Prepare the accounts for Inland Branches, Departments and Leases.
7. Demonstrate accounting process under a computerized accounting system.

SYLLABUS OF BAC: DSC-2

Unit 1: Theoretical Framework and Accounting Process (9 hours)

(A) Theoretical Framework

- (i) Accounting as an information system, the users of financial accounting information and their needs. An overview of Artificial Intelligence and Data Analytics in Accounting.
- (ii) Qualitative characteristics of accounting information. Functions, advantages and limitations of accounting. Branches of accounting. Bases of accounting: cash basis and accrual basis. Capital

and revenue expenditures and receipts. Events occurring after the balance sheet date, Extraordinary Items, Prior Period Items, Accounting Estimate. Accounting Policies, Fair Value, Meaning, Recognition and Disclosure Requirements of Provision, Contingent Liability and Contingent Asset.

- (iii) Financial Accounting Principles: Meaning and need; Generally Accepted Accounting Principles (GAAP): Entity, Money Measurement, Going Concern, Cost, Revenue Recognition, Realization, Fundamental Accounting Assumptions, Accruals, Periodicity, Full Disclosure, Consistency, Materiality, and Prudence (Conservatism). Fundamental Accounting Assumptions as per AS 1.
- (iv) Accounting Standards: Concept, benefits, and Process of formulation of Accounting Standards including Ind AS (IFRS converged standards) and IFRSs; convergence vs adoption; Application of accounting standards (AS and Ind AS) on various entities in India. International Financial Accounting Standards (IFRS) –meaning, need, and scope.

(B) Accounting Process

From the recording of a business transaction to the preparation of trial balance including adjusting, transfer and closing entries. Application of Generally Accepted Accounting Principles in recording financial transactions and preparing financial statements and accounting treatment of GST.

Unit 2: Business Income, Accounting for Property, Plant and Equipment, and Valuation of Inventory (9 hours)

- (a) Business income: Concept of Revenue and Business Income, Measurement of business income; relevance of accounting period, continuity doctrine and matching concept in the measurement of business income; Objectives of measurement of Business income.
- (b) Revenue recognition with reference to AS 9.
- (c) Accounting for Property, Plant, and Equipment with reference to AS 10. Impact of Depreciation on measurement of business income. Accounting for Intangible Assets with reference to AS 26.
- (d) Valuation of Inventory with reference to AS 2. Impact of inventory valuation on measurement of business income by using FIFO, LIFO, and Weighted Average Method.

Unit 3: Financial Statements of Sole Proprietorship and Not-for-Profit Organisations (9 hours)

Preparation of Financial Statements of Sole Proprietorship and Not-for-Profit Organisations

Unit 4: Accounting for Inland Branches, Departments and Leases (9 hours)

- (a) Accounting for Inland Branches: Concept of Dependent branches; Branch Accounting as per Debtors System, Stock and Debtors' System
- (b) Accounting for Departments (excluding Mark-up Account)
- (c) Accounting for Leases with reference to AS 19

Unit 5: Computerized Accounting Systems (9 hours)

Computerized Accounting Systems: Computerized Accounts by using any popular accounting software Creating a Company; Configure and Features settings; Creating Accounting Ledgers and Groups; Creating Stock Items and Groups; Vouchers Entry including GST; Generating Reports - Cash Book, Ledger Accounts, Trial Balance, Profit and Loss Account, Balance Sheet, Cash Flow Statement. Selecting and shutting a Company; Backup, and Restore data of a Company.

Notes:

- The relevant Accounting Standards (both AS and Ind AS) for all of the above topics should be covered.
- Any revision of the relevant Indian Accounting Standard/Accounting Standard would become applicable.

Practical Exercises

The learners are required to:

1. Identify the applicability of different accounting standards on the basis of examining the nature of business transactions after considering Framework for the Preparation and Presentation of Financial Statements from the websites of the Institute of Chartered Accountants of India (ICAI).
2. Analyse Generally Accepted Accounting Principles applied in financial statements of listed companies.
3. Examine the accounting policies and revenue recognition policies by collecting necessary data from small business firms.
4. Prepare Trading and Profit & Loss Account and Balance Sheet collecting necessary data from small business firms and analyse the impact of depreciation and inventories on Business Income.
5. Prepare financial statements manually and using appropriate software with the help of financial transaction data of sole proprietor firms and Not-For-Profit Organisations.
6. Prepare accounts of Inland Branches, Departments and Leases by collecting data from the annual report of two Multinational Companies and two NGOs and prepare their relevant accounts.
7. Collect the data related to balance sheets of business Organisations and prepare the financial statements using computerized accounting system.

Suggested Readings

- Anthony, R. N., Hawkins, D. F., Merchant, K. A., & Singh, P. (2019). *Accounting: Text and Cases*. (13th Ed.). New Delhi: McGraw-Hill Education.
- Batra, J. K. (2018). *Accounting and Finance for Non-finance Managers*. (1st Ed.). New Delhi: SAGE Publications Pvt. Ltd.
- Dam, B. B., & Gautam, H. C. (2019). *Financial Accounting*. Guwahati: Gayatri Publications.
- Goldwin, N., Alderman, W., & Sanyal, D. (2016). *Financial Accounting*. Boston: Cengage Learning.
- Goyal, B. K., & Tiwari, H. N. (2021). *Financial Accounting*. (9th Ed.). New Delhi: Taxmann Publication.
- Horngren, C., Sundem, G., Elliott, J., & Philbrick, D. (2013). *Introduction to Financial Accounting*. (11th Ed.). London: Pearson Education.
- Kumar, A. (2019). *Financial Accounting*. (2nd Ed.). New Delhi: Singhal Publication.
- Lal, J., Srivastava, S., & Abrol, S. (2017). *Financial Accounting Text & Problems*. Mumbai: Himalaya Publishing House.
- Lt Bhupinder. (2020). *Financial Accounting – Concepts and Applications*. New Delhi: Cengage Learning.
- Maheshwari, S. N., Maheshwari, S. K., & Maheshwari, S. K. (2018). *Financial Accounting*. (6th Ed.). New Delhi: Vikas Publishing House Pvt. Ltd.
- Monga, J. R. & Bahadur, R. (2021). *Financial Accounting: Concepts and Applications*. New Delhi: Scholar Tech Press.
- Sehgal, A. & Sehgal D. (2011). *Fundamentals of Financial Accounting*. New Delhi: Taxmann Publications Private Limited.
- Sehgal, D. (2014). *Financial Accounting*. New Delhi: Vikas Publishing House Pvt. Ltd.
- Shukla, M. C., Grewal, T. S., & Gupta, S. C. (2013). *Advanced Accounts. Vol.-I*. (Rev. Ed.). New Delhi: Sultan Chand Publishing.

- Tulsian, P. C., & Tulsian, B. (2016). *Financial Accounting*. (2nd Ed.). New Delhi: S. Chand Ltd.

Additional Resources

- Accounting Standards at the Website of the Institute of Chartered Accountants of India
- Indian Accounting Standards at the Website of the Ministry of Corporate Affairs.

Assessment Method:

- (1) There shall be 2 credit hours for lectures + one credit hour (Two Practical Periods per week per batch) for practical lab + one credit hour for tutorials (per group).
- (2) Examination scheme for computerized accounting system: Practical for 20 marks. The practical exam will be for one hour.
- (3) Theory exam shall carry 80 marks (Including Internal Assessment of 25 Marks). The theory exam will be for 2.5 hours.

Note: Suggested readings will be updated by the Department of Commerce and uploaded on the Department's website.

BAC: Discipline (ESB)- A2: Fundamentals of Entrepreneurship

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|----------------------|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Fundamentals of Entrepreneurship BAC: Discipline (ESB) – A2 | 4 | 3 | 1 | 0 | Pass in XII | Pass in Fundamentals of Business of organisation for Entrepreneurs (BAC: Discipline (ESB) - A1) |

Learning Objectives

The basic objective of this paper is to promote entrepreneurial awareness among the learners so as to understand its need and relevance in Indian society as well as to make students aware of the existing environmental support system for the promotion of entrepreneurship in the country.

Learning Outcomes

After completion of the course, learners will be able to:

1. Analyse the process of entrepreneurship and the role of entrepreneurs in an organisation.
2. Assess the personality and competency desirable in an entrepreneur.
3. Analyse the entrepreneurial process for establishing a new venture.
4. Evaluate the entrepreneurial environment.
5. Analyse the risk and rewards associated with an entrepreneurial venture.

SYLLABUS OF BAC: Discipline (ESB) – A2

Unit I: Entrepreneur and Enterprise (9 hours)

Meaning and types of entrepreneurs, characteristics of entrepreneurs, entrepreneur vs. manager; Role and functions of entrepreneurs in relation to the enterprise and in relation to the economy.

Unit II: Entrepreneurial Person (9 hours)

Entrepreneurial personality; Entrepreneurial competencies; EDI's prescribed competencies; Social groups and their entrepreneurial actions; Entrepreneurial motivation; Motivation theories and entrepreneurial behavior- need for achievement.

Unit III: Entrepreneurship and its Process (9 hours)

Entrepreneurial process and its dynamics in the environment; Opportunity identification process;

Business plan and feasibility analysis of business ideas; Contents of a business plan/project.

Unit IV: Entrepreneurial Environment (9 hours)

Entrepreneurial support system- social, economic and financial support system; Contemporary role models; Family business in India and their contribution to entrepreneurship; Role of educational institutions in the promotion of entrepreneurship.

Unit V: Entrepreneurial Performance and Rewards (9 hours)

Measures of entrepreneurial performance; Financial and psychological rewards; Entrepreneurial risks; Risk-rewards compatibility; Entrepreneurial rewards in the context of socio-economic environment of India.

Practical Exercises

The learners are required to:

1. Evaluate the role of entrepreneur in a new venture.
2. Assess their strengths and weaknesses as an entrepreneur.
3. Analyse the entrepreneurial process a newly established venture.
4. Assess the role of different environmental factors that have promoted an entrepreneurial venture.
5. Analyse the risk and return trade off for an entrepreneurial venture.

Suggested Readings

- Holt, D. H. (1992). *Entrepreneurship: New Venture Creation*. New Delhi: Prentice Hall of India.
- Panda, S. C. (2008). *Entrepreneurship Development*. New Delhi: Anmol Publications.
- Taneja, S., & Gupta, S. L. (2001). *Entrepreneurship Development-New Venture creation*. New Delhi: Galgotia Publishing House.

Additional Resources

Journals & Periodicals:

- Journal of Entrepreneurship
- SEDME
- Laghu Udyog Samachar

Note: Suggested readings will be updated by the Department of Commerce and uploaded on the Department's website.

BAC: Discipline (A&F)- A2: Fundamentals of Investment

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|----------------------|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Fundamentals of Investment BAC: Discipline (A&F) – A2 | 4 | 3 | 1 | 0 | Pass in XII | Pass in Fundamentals of Financial management (BAC: Discipline (A&F) - A1) |

Learning Objectives

The course aims to familiarize learners with different aspects of investment management and risks, and introduce them to the framework of securities analysis, valuation and portfolio management.

Learning Outcomes

After completion of the course, learners will be able to:

1. Evaluate the investment decision making process and analyse the risk and return of securities.
2. Perform bond valuation.
3. Estimate value of equity shares.
4. Create investment portfolios.
5. Analyse mutual funds and financial derivatives as investment alternatives.

SYLLABUS OF BAC: DISCIPLINE (A&F) – A2

Unit 1: Introduction to Investment (9 hours)

Concept of Investment, Investment Decision Process; Avenues for investment- features and classes; Difference between investment, speculation, and gambling; Primary market and Secondary Markets- Trading of securities, Security market indices; Return and risk: concept and calculation.

Unit 2: Bond Analysis and Valuation (9 hours)

Bond Fundamentals; Estimating bond yield; Bond Valuation, bond risks and credit rating.

Unit 3: Equity Analysis and Valuation (9 hours)

Fundamental Analysis, Technical Analysis and Efficient Market Hypothesis; Valuation of Equity Shares using Dividend Discount Model (Zero-growth dividend and constant growth model).

Unit 4: Portfolio Management (9 hours)

Portfolio Management- Concept and need; Measurement of Portfolio Return and risk; Diversification- Markowitz Theory.

Unit 5: Mutual Fund and Derivatives (9 hours)

Mutual Fund- concept and types; Overview of Financial Derivatives-Forwards; Futures and Options.

Practical Exercises

The learners are required to:

1. Compute the risk and return of NIFTY 50 stocks using MS-EXCEL.
2. Perform valuation of select debt instruments by collecting their data from the market and applying statistical tools in MS-EXCEL.
3. Analyse the price and volume movements of equity shares of selected companies and indices using technical charts and graphs.
4. Explore the portfolios of different firms with the help of annual reports of the companies and analyse the portfolio risk and return.
5. Collect the data of top five mutual fund investments based on CAGR and examine their actual CAGR to compare with claimed CAGR.

Suggested Readings

- Jones, C. P., & Jensen, G. R. (2019). *Investments: Analysis and Management*. (14th Ed.). New Jersey: Wiley.
- Chandra, P. (2021). *Investment Analysis & Portfolio Management*. (6th Ed.). Noida: Tata McGraw Hill Education.
- Pandian, P. (2012). *Security Analysis and Portfolio Management*. (2nd Ed.). New Delhi: Vikas Publishing House.
- Ranganatham M., & Madhumathi R. (2011). *Security Analysis and Portfolio Management*. (2nd Ed.). Noida: Pearson (India) Education.
- Rustagi, R. P. (2021). *Investment Management*. (11th Ed.). New Delhi: Sultan Chand and Sons.
- Singh, Y. P. (2017). *Fundamentals of Investment Management*. (6th Ed.). New Delhi: Galgotia Publications.
- Tripathi, V. (2017). *Fundamentals of Investment*. New Delhi: Taxmann Publications.
- Sharma S. K., & Kaur G. (2019). *Fundamentals of Investment*. New Delhi: Sultan Chand and Sons.

Additional Readings

- Kevin, S. (2015). *Security Analysis and Portfolio Management*. (2nd Ed.). New Delhi: PHI Learning.
- Alexander G. J., Sharpe, W. F., & Bailey, J.V. (2009). *Fundamentals of Investments*. New Delhi: PHI Learning.
- Bodie, Z., Kane, A., Marcus, A. J., & Mohanty, P. (2019). *Investments*. (11th Ed.). New Delhi: Tata McGraw Hill.

Assessment Method:

1. There shall be 3 credit hours for lectures + one credit hour for tutorials (per group).
2. Theory exam shall carry 100 marks (including Internal Assessment of 25 Marks). The theory exam will be for 3 hours.

Note: Suggested readings will be updated by the Department of Commerce and uploaded on the Department's website.

Banking and Insurance

BAC: Discipline (B&I)- A2: Introduction to Banking

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|----------------------|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction to Banking BAC: Discipline (B&I) – A2 | 4 | 3 | 1 | 0 | Pass in XII | Pass in Introduction to Insurance (BAC: Discipline (B&I) - A1) |

Learning Objectives

The course aims to equip the students with an understanding of the Indian Banking system, its evolution, current practices and challenges in the future.

Learning Outcomes

After completion of the course, learners will be able to:

1. Assess the evolution and growth of Banking in India.
2. Evaluate the banking structure in India.
3. Analyse the method of granting loans and advances and the concept of Non-Performing Assets (NPAs).
4. Perform electronic banking transactions.
5. Analyse the new forms of banking.

SYLLABUS OF BAC: Discipline (B&I) – A2

Unit 1: Introduction to Banking Business (6 hours)

Evolution of banking in India; Various types of bank – customer relationships; Types of customer accounts – Time and Term deposit accounts including Non-Resident Individual accounts; Functions of Banks – Traditional and Modern.

Unit 2: Structure of Commercial Banks and Apex Banking Institution (9 hours)

Structure and Composition of Commercial Banks; Types of Banks – Public, Private, Cooperative, Regional Rural Banks (RRBs), Foreign, National Housing Bank, Small Industries Development Bank of India (SIDBI), Export-Import Bank of India (EXIM); Comparison between public and private banks; comparison between Cooperative and Regional Rural Banks.

Unit 3: Loans and Advances (12 hours)

Principles of sound lending; Methods of granting advances; Priority Sector Lending; Introduction to

the Balance Sheet of a Commercial Bank, Concept of Non-Performing Assets (NPAs)-Reasons for Non-Performing Assets and Measures to check Non-Performing Assets. Anti-Money Laundering (AML), CIBIL.

Unit 4: Electronic Banking (9 hours)

Meaning of Electronic banking, Automated Teller Machine (ATM), Internet Banking, Telebanking, Mobile Banking, Electronic Clearing System, National Electronic Fund Transfer (NEFT), Real Time Gross Settlement (RTGS), Immediate Payment System (IMPS), Electronic Cheques and E-Wallet; Digital Payment – concept, advantages and disadvantages; Measures to ensure secured digital payment.

Unit 5: Recent Developments in Banking Industry (9 hours)

Emerging role of Reserve Bank of India in Indian Banking System, Banking Sector Reforms – Narasimham Committee -I, Narasimham Committee- II; Introduction to various forms of Banking – Corporate Banking, Retail Banking, International Banking, Investment Banking, Development Banking, Virtual Banking, Non-Banking Financial Intermediaries

Practical Exercises

The learners are required to:

1. Analyse the growth in the Indian banking sector.
2. Compare the role of different types of banks in the Indian Banking structure.
3. Analyse the problem of NPAs in Indian Banks and the mechanism to deal with it.
4. Evaluate the advantages and risks associated with various modes of performing electronic banking transactions.
5. Evaluate different forms of banking in present times and contrast them with traditional banking.

Suggested Readings

- Gupta, A. (2021). *Banking and Insurance*, New Delhi: A.K. Publications.
- Paul, R. R. & Mansuri, B. B. (2020). *Banking and Financial Systems*, New Delhi: Kalyani Publications.
- Sethi, J. & Bhatia, N. (2012). *Elements of Banking and Insurance*, New Delhi: PHI Learning Pvt. Ltd.
- Chaturvedi, D. D. & Mittal, A. (2021). *Banking and Insurance*, New Delhi: Scholar Tech Press.

Additional Resources

- Tandon, D. & Tandon, N. (2022). *Management of Banks- Text and Cases*, New Delhi: Taxmann Publications Pvt. Ltd.
- Varshney, P. N. (2018). *Banking Vidhi evam Vyavahar*, New Delhi: S.Chand.

Note: Suggested readings will be updated by the Department of Commerce and uploaded on the Department's website.

Advertising, Sales Promotion and Sales Management

BAC: Discipline (ASPSM)- A2: Marketing Communication

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|----------------------|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Marketing Communication BAC: Discipline (ASPSM) – A2 | 4 | 3 | 1 | 0 | Pass in XII | Pass in Principles of Marketing (BAC: Discipline (ASPSM) - A1) |

Learning Objectives

The aim of this course is to provide insights into the communication aspects of marketing.

Learning Outcomes

After completion of the course, learners will be able to:

1. Explore the fundamental concepts of marketing communication and learn effective communication.
2. Develop effective marketing communication simulations.
3. Categorize the promotion mix tools to be used for creating public relations, sales promotion and direct marketing.
4. Analyse the consumer buying behaviour which will serve as a guide to develop new and suitable marketing strategies.
5. Demonstrate the process of integrated marketing communication process, and manage cultural diversity through communication.

SYLLABUS OF BAC: Discipline (ASPSM) – A2

Unit 1: Communication (6 hours)

Meaning, Importance, Communication process and its elements, Barriers to effective communication, Ways to overcome barriers, Role of communication in marketing, Effective Communication

Unit 2: Developing Marketing Communication (9 hours)

Concept, its role; Communication response models AIDA, Hierarchy-of-effects, Steps for developing effective marketing communication.

Unit 3: Promotion-mix (12 hours)

Concept of Promotion Mix, Tools of promotion-mix- advertising, personal selling, public relations, publicity, sales promotion and direct marketing: their meaning, distinctive characteristics and functions; Factors affecting promotion mix.

Unit 4: Understanding Consumer Behaviour (12 hours)

Meaning, Importance, Consumer buying process, Factors influencing buying behavior. Types of consumer buying decisions

Unit 5: Integrated Marketing Communication (6 hours)

Types of Media: advantages and disadvantages; Concept, reasons for growing importance of IMC, Process of integrated marketing communication. Managing cultural diversity through communication

Practical Exercises

The learners are required to:

1. Perform a role-play to analyse the communication challenges faced by a firm.
2. Analyse how consumer response models could be used by a company such as Philips in planning the introduction of a new product like an Air Purifier.
3. Describe and analyse the promotion mix used by various organisations.
4. Analyse the role of consumer buying behavior in designing marketing strategies of various firms.
5. Design and develop an Integrated Promotion Campaign for a novelty in rural market.
6. Discuss how marketers of low-involvement products like shampoo or soaps would use the various IMC tools differently than a marketer of a high involvement product like a smartphone or a car.

Suggested Readings

- Aggarwal, K. V. (2019). *Marketing Communication*. Delhi: Scholar Tech Press.
- Belch, G. E., Belch, M. A., & Purani K. (2017). *Advertising and Promotion: An Integrated Marketing Communications Perspective*. New York: McGraw Hill Education.
- Kotler, P. & Keller, K. L. (2017). *Marketing Management*. London: Pearson.
- Shimp, A. T., & Andrews, J. C. (2015). *Advertising, Promotion, and other aspects of Integrated Marketing Communications*, 9th Ed. Boston: Cengage Learning.

Additional Resources

- Kotler, P., Keller, K. L., Koshy, A., & Jha, M. (2014). *Marketing Management*. London: Pearson.
- Schiffman, L. G., Wisenblit, J., & Kumar, S. R. (2018). *Consumer Behavior*. 11th Ed. London: Pearson.
- Stanton, M. J., Walker, B. J., Stanton, W. J., & Pandit, A. (2010). *Marketing*. 14th ed. New York: McGraw Hill Education.

Note: Suggested readings will be updated by the Department of Commerce and uploaded on the Department's website.

Human Resource Management

BAC: Discipline (HRM)- A2: Organisational Behaviour

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|----------------------|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Organisational Behaviour BAC: Discipline (HRM) – A2 | 4 | 3 | 1 | 0 | Pass in XII | Pass in Human Resource Management (BAC: Discipline (HRM) - A1) |

Learning Objectives

The course aims to enhance the understanding of the basic concept of organisational behaviour (OB) and the working of modern organizations. It focuses on the study of human behaviour at three levels: Individual, Interpersonal and Group.

Learning Outcomes

After completion of the course, learners will be able to:

1. Apply the concepts of OB in managing people at the workplace.
2. Analyse the impact of individual behaviour in the working of organisations.
3. Assess the importance of effective communication in organisations.
4. Critically evaluate the role of motivation theories in guiding human behaviour.
5. Analyse the dynamics of group behaviour and evaluate diverse leadership styles and strategies.
6. Evaluate strategies employed to manage organisational conflict, organisational change and stress.

SYLLABUS OF BAC: Discipline (HRM) – A2

Unit 1: Introduction (6 hours)

Organisational Behaviour: Concepts, history and determinants; Contributing disciplines of OB; challenges and opportunities of OB.

Unit 2: Individual Behavior (9 hours)

Meaning and significance of Individual Behavior; Types of Personality; Job related attitude; Components of learning, Factors influencing perception; Values-nature and types.

Unit 3: Communication and Motivation (12 hours)

Understanding Communication; Process of Communication; Essentials of effective communication; Contemporary means of communication.

Motivation – meaning, significance and process; Theories of motivation (Need Hierarchy, Theory X and Theory Y, Two Factors Theory).

Unit 4: Group Behavior and Leadership (12 hours)

Group behavior, Group norms, Group roles, and Group cohesiveness; Group decision making process. Leadership – concept, styles and contemporary issues in leadership.

Unit 5: Dynamics of Organisational Behavior (6 hours)

Organisational culture- concept and determinants; Organisational conflict - sources, resolution strategies; Organisational change- significance and resistance to change; Stress- causes and management of stress.

Practical Exercises

The learners are required to:

1. Analyse the challenges and opportunities of OB.
2. Undertake a group activity to identify personality type of different individuals.
3. Perform role plays on JOHARI Window Model to understand how to improve communication at workplace.
4. Identify innovative motivational tools practiced by contemporary organizations.
5. Conduct a primary survey to study the dynamics of group behaviour.
6. Analyse different leadership styles used in various organisations.
7. Apply and test various stress management techniques like deep breathing, exercise, and mindfulness.

Suggested Readings

- Greenberg, J. (2015). *Behavior in Organizations*. (10th Ed.). Pearson Education India.
- Hersey, P. K., Blanchard, D., & Johnson, D. (2013). *Management of Organizational Behavior*. Pearson.
- Luthans, F. (2017). *Organisational Behavior-An evidence-based approach*. (12th Ed.) McGraw-Hill Education.
- Pareek, U. (2014). *Understanding Organisational Behavior*. Oxford University Press.
- Robbins, S. T., Judge, T. A. (2019). *Essentials of Organizational Behaviour*. Pearson.
- Singh, A. K., & Singh, B. P. *Organisational Behavior*. New Delhi: Excel Books Pvt. Ltd.
- Singh, K. (2015). *Organisational Behavior: Texts & Cases* (3rd Ed.). India: Pearson. Additional Resources

Note: Suggested readings will be updated by the Department of Commerce and uploaded on the Department's website.

Commercial Laws and Corporate Governance

BAC: Discipline (CLCG)- A2: Cyber Crimes and Laws

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|----------------------|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Cyber Crimes and Laws BAC: Discipline (CLCG) – A2 | 4 | 3 | 1 | 0 | Pass in XII | Pass in Limited Liability Partnership: Law and Practice (BAC: Discipline (CLCG) - A1) |

Learning Objectives

The course aims to create an understanding of cyber crimes and to familiarize the students with the application of cyber laws in business and day to day life.

Learning Outcomes

After completion of the course, learners will be able to:

1. Analyse cyber risk associated with online activities and develop related cyber hygiene.
2. Prepare protocols for safe working in the verticals having varied access points, data sources, network, and system-related issues in online activities.
3. Work safely in global virtual space conforming to the regulatory framework and not falling under the ambit of cybercrimes.
4. Generate and preserve electronic evidence for personal and professional use.
5. Analyse the cases and find pertinent facts for resolutions on managerial cyber issues.

SYLLABUS OF BAC: DISCIPLINE (CLCG) – A2

Unit 1: Introduction to Cybercrimes (9 hours)

Computer crime and cybercrimes; Distinction between cybercrime and conventional crimes; Kinds of cybercrimes - cyber stalking, cyber terrorism, forgery and fraud, crimes related to IPRs, cyber defamation, computer vandalism, cyber forensic.

Unit 2: Contemporary Business Issues in Cyber Space (9 hours)

Web-Centric Business, E-Business, and its significance, Instant messaging platform, social networking sites and mobile applications, security risks, Cyber jurisdiction, E-forms; Electronic Money Transfer and UPI, Privacy of Data and Secure Ways of Operation in Cyber Space.

Unit 3: Legal framework and Cyber Laws in India (9 hours)

Definitions under IT Act, 2000; Authentication of Electronic Records; Electronic Governance; Legal Recognition of Electronic Records; Legal Recognition of Digital Signatures; Applications and usage of electronic records and Digital Signatures in Government and its Agencies; Retention of Electronic Records, Intermediaries, and their liabilities; E-signatures.

Unit 4: Regulatory Framework and International Perspective (9 hours)

Regulation of Certifying Authorities; Appointment and Functions of Controller; License to issue Digital Signatures Certificate; Renewal of License; Controller's Powers; Procedure to be Followed by Certifying Authority; Issue, Suspension and Revocation of Digital Signatures Certificate, Duties of Subscribers; Penalties and Adjudication; Appellate Tribunal; Offences; Regulations of PPI (Pre-Payment Instruments) by RBI, Overview of GDPR and Indian data protection regime.

Unit 5: Case Laws (9 hours)

1. Communication Device-Section 2(ha) of the Information Technology (Amendment) Act, 2008-'State v Mohd. Afzal and others (2003), VIIAD (Delhi) 1, 107(2003) DLT385, 2003(71) DRJ178, 2003(3) JCC1669'
2. Computer Network-Section 2 (j) of the Information Technology (Amendment) Act, 2008 'Diebold System Pvt Ltd. v The Commissioner of Commercial Taxes, (2006), 144 STC, 59 (Kar)'
3. Electronic Record Sec. 2 (t)- 'Dharambir v Central Bureau of Investigation 148 (2008) DLT 289'
4. Penalty for Damage to Computer or Computer System- Section 43-'Umashankar Sivasubramanian v ICICI Bank, 18.04.2010. (Petition No. 2462/2008)'
5. Tampering with Computer Source Documents-Section 65-'Syed Asifuddin and Ors.v The State of Andhra Pradesh &Anr. 2006 (1) ALD Cri 96, 2005 CriLJ 4314'
6. Punishment for sending offensive messages-Sec. 66A- 'SMC Pneumatics (India) Pvt. Ltd v Jogesh Kwatra", Suit No. 1279/2001'
7. Punishment for Identity Theft-Section 66C- 'CBI v Arif Azim Case Judicial Reports (Criminal) 2003 (2) page 272'
8. Punishment for Cheating by Personating by using Computer Resource-section 66D- 'National Association of Software and Service Companies (NASSCOM)v Ajay Sood. (2005) F.S.R. 38; 119 (2005) DLT 596, 2005 (30) PTC 437 Del'
9. Punishment for Publishing or Transmitting Obscene Material in Electronic form section 67-'Avnish Bajaj v State (N.C.T.) of Delhi, (2005) 3 Comp, LJ 364 (Del), 116(2005) DLT427, 2005(79) DRJ576'
10. Punishment for Publishing or Transmitting of Material Containing Sexually Explicit Act, etc., in Electronic Form-Section 67A-'R v Graham Waddon., Southwark [Crown Court, 30/6/1999]'

Practical Exercises:

The learners are required to:

1. Discuss recent cyber crime cases reported in dailies and spread awareness about various cyber offences and remedies available.
2. Conduct a survey to ascertain the awareness about various cybercrimes in their nearby locality and prepare easy do's and don'ts for most problematic areas.

3. Enlist cyber hygiene and usage of e-signatures/digital signatures in daily life for improved cyber hygiene.
4. Describe and evaluate the procedure of recording and maintaining electronic evidence, filing online and offline complaints in Cyber Cells.
5. Analyse recent cases related to various cybercrimes and draw implications for managers.

Suggested Readings

- Arora, S., & Arora, R. (2021). *Cybercrimes and laws*, New Delhi: Taxmann Pvt. Ltd.
- Brian, C. (2012). *Cyber Law: The Law of the Internet and Information Technology*. Pearson Education.
- Gusai, O. P. (2019). *Concept Building Approach to Cybercrimes and Cyber Laws: Indian and International Perspective*. Delhi: Cengage Learning India Pvt. Ltd.
- Sharma J. P., and Kanojia, S. (2018). *E-Business and Cyber Laws*. New Delhi: Bharat Law House Pvt Ltd.

Additional Resources

- Joseph, P.T. (2012). *E-Commerce-An Indian Perspective*. PHI
- Rattan, J. (2022). *Cyber Crime and Information Technology*, Bharat Law House, Pvt Ltd.

Note: Suggested readings will be updated by the Department of Commerce and uploaded on the Department's website.

Tax Procedures and Practices

BAC: Discipline (TTP)- A2: Income Tax Practice and Procedures

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|----------------------|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Income Tax Practice and Procedures BAC: Discipline (TTP) – A2 | 4 | 3 | 1 | 0 | Pass in XII | Pass in Income Tax Law and Practice (BAC: Discipline (TTP) - A1) |

Learning Objectives

This paper focuses on various provisions and procedures applicable under the Income Tax Act 1961 for filing return of income, assessment and penalties & prosecutions.

Learning Outcomes

After completion of the course, learners will be able to:

1. Analyse the tax planning framework for HUF and firm.
2. Assess the due dates and amount of payment of advance tax.
3. Explore the provisions applicable in case of tax deducted at source (TDS).
4. Analyse the process of assessment and file return of income.
5. Discuss the penalties applicable in case of different defaults.

SYLLABUS OF BAC: DISCIPLINE (TTP) – A2

Unit 1: Computation of Total Income and Tax Liability of Hindu Undivided Family & Firm (12 hours)

Computation of taxable income and tax liability of HUF, computation of taxable income and tax liability of firms and partners [conditions under sections 184 and 40(b)].

Unit 2: Advance Payment of Tax (9 hours)

Advance payment of tax, liability to pay advance tax and due dates of payment of advance tax.

Unit 3: Tax Deducted at Source (9 hours)

Concept of TDS/ TCS, TDS-obligations of the payer of income, TDS on salaries, TDS on interest on securities, TDS on winnings from lotteries, section 194-IA and 194-IB.

Unit 4: Return of Income and Assessment (9 hours)

Return of income, types of returns, Assessment under section 143(1), regular assessment, best judgement assessment, income escaping assessment, the time limit for notice, the time limit for completion of assessment and reassessment.

Unit 5: Penalties and Prosecutions (6 hours)

Penalties and prosecutions, appeals, revisions, rectifications, search and seizure, Information technology and tax administration, Income Tax authorities, TAN (Tax Deduction and Collection Account Number) and TIN (Tax Information Network).

Practical Exercises

The learners are required to

1. Prepare a case study for the HUF with adjustments for carry forward and set off.
2. File the advance taxes for an assessee.
3. File the TDS return for an assessee.
4. Assess the tax liability under the normal tax provisions of the Income Tax Act 1961 and under the alternative tax regime structure.
5. Prepare a flow chart of the appeal procedure.
6. Prepare a report on the penalties and interest applicable in case of default.

Suggested Readings

- Ahuja, G. , & Gupta, R. (2022). *Simplified Approach to Income Tax*. Delhi: Flair Publications.
- Mittal, N. (2022). *Concept Building Approach to Income Tax Law & Practice*. Delhi: Cengage Learning India.
- Singhanian, V. K., & Singhanian, M. (2022). *Student's Guide to Income Tax*. Delhi: Taxmann Publications.
- Singhanian, V. K., & Singhanian, M. (2022). *Corporate Tax Planning & Business Tax Procedures*. Delhi: Taxmann Publications.

Additional Resources

- Income-tax Act 1961
- www.incometaxindia.gov.in

Note: Suggested readings will be updated by the Department of Commerce and uploaded on the Department's website.

Modern Office Management

BAC: Discipline (MOM)- A2: Modern Office Practices

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|----------------------|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Modern Office Practices BAC: Discipline (MOM) – A2 | 4 | 3 | 1 | 0 | Pass in XII | Pass in Business Communication (BAC: Discipline (MOM) - A1) |

Learning Objectives

The aim of the paper is to acquaint the students with Modern Office Practices in an office environment. The knowledge acquired by the students would help them to manage the modern office effectively as office manager, executive or personal secretary by using the skills set acquired by them through this course.

Learning Outcomes

After completion of the course, learners will be able to:

1. Examine the nature of conventional office, modern office, paperless office, automated and virtual office.
2. Analyse recent trends in office environment.
3. Evaluate the significance of office mechanisation.
4. Analyse the procedure of procurement and maintenance of office forms, stationery, office supplies and machines procured and used by employees.
5. Maintain official records and interpret office correspondence system.

SYLLABUS OF BAC: Discipline (MOM) – A2

Unit 1: Modern Office and its Functions (9 hours)

Meaning and Definition of Office, Characteristics of an Office, Requisites of an Office, Significance of Modern Office, Scope and Growth of Office Activities, Office Management, Objectives and Principles of Office Management, Primary and Secondary/Administrative Functions, Development of Office Practices, Office Hierarchy, Changing the Nature And Scope of Office Work, Functions of Office Manager, Essential Qualification, Experience and Supervisory Skills Required For Office Manager, Management and Administrative Functions, Changing Office Scenario, Concept of Paperless Office, Automated Office, Virtual Office.

Unit 2: Office Environment (9 hours)

Location and Office Building, New Trends -Office Spaces, Open and Private Office, Front and Back Office Support, Infrastructure, Safety and Security, Ventilation, Green Office, office layout, concept of open office, front and back office support, Use of modular office furniture, emerging office concepts: green office, home environment at work, work from home, flexible office hours, significance of office location, factors affecting choice of office location, working environment.

Unit 3: Office Mechanization (9 hours)

Introduction, meaning and importance of Office Mechanization, objectives and use of office automation tools – desktop/personal computers, printers, scanner, fax machines, photocopier, calling bell, telephones, mobile phones, video conferencing, CCTV Camera, biometric attendance machines.

Unit 4: Office Supplies, Office Forms and Procurement (9 hours)

Office Forms, Principles of Design and Development of Forms, Control of Forms, Office Stationery and Supplies, Office Mechanization, Advantages and Disadvantages of Mechanization, Criteria of selection of Office Machines, Lease and Purchase of Office Equipment, Procurement of Office Supplies, Modular Furniture, Purchase Procedure, e-Tender and Stock of Supplies.

Unit 5: Office Correspondence, Records Management and Banking (9 hours)

Mails, Office Correspondence, Organizing Correspondence, Production and Drafting of Correspondence, Typing and Stenographic Services, Dictating Letters, Handling and Disposal of Mails, Handling and Supervision of Office Records, Management of office records, Disposal and Retention of Office Records. Banking: UPI, PayTM, Net Banking, Mobile Banking, RTGS/NEFT/IMPS, Demand Drafts and validity of cheques.

Practical Exercises

The learners are required to:

1. Visit the administrative office of their College, any Government office or any Private office, and examine its characteristics.
2. Observe the office building, ventilation and layout of the office building visited.
3. Analyse the mechanisation tools employed in the office visited.
4. Observe the office supplies, stationery, office forms used in different office systems.
5. Analyse the system of maintaining official records and communication in different offices.

Suggested Readings

- Bhatia, R. C. (2003). *Office Management*. New Delhi, India: Galgotia Publishing Company.
- Chopra, R. K., & Bhatia, A. (2010). *Office Management*. 15th Edition. Mumbai, India: Himalaya Publishing House.
- Geoffrey, M., Standingford, O., & Appleby, R. C. (1991). *Modern Office Management*, NY, USA.
- Mills, G., & Standingford, O. (1949). *Office Organization and Method*. Pitman.
- O'Rourke, J. S. (2019). *Management communication: A case analysis approach*. Chapter 4, England, UK: Routledge.
- Thukaram Rao, M. E. (2009). *Office Organization and Management*. New Delhi, India: Atlantic Publishers and Distributors.

Note: Suggested readings will be updated by the Department of Commerce and uploaded on the Department's website.

Category-II

B.Com. (Prog.)

Discipline Specific Core Course- 2.1 (DSC-2.1): Corporate Accounting

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Corporate Accounting DSC- 2.1 | 4 | 3 | 1 | 0 | Pass in XII | Pass in Financial Accounting (DSC- 1.3) |

Learning Objectives

The course aims to help learners to acquire conceptual knowledge of corporate accounting systems and to learn the techniques of preparing the financial statements of companies.

Learning outcomes

After completion of the course, learners will be able to:

1. Analyse accounting for share capital, debentures, bonus shares, redemption of preference shares and debentures of a company.
2. Prepare financial statements of companies manually as well as using online software.
3. Interpret the Valuation of Intangible Assets and Shares.
4. Describe accounting for Amalgamation and Internal Reconstruction of Companies.
5. Prepare Annual Reports of companies and analyse the voluntary and mandatory information contained in them.

SYLLABUS OF DSC-2.1

Unit 1: Accounting for Share Capital and Debentures (6 hours)

Types of shares; Accounting for Share Capital, Issue of Rights and Bonus Shares; ESOPs and Buy-Back of shares; Issue and Redemption of preference Shares and Debentures. Underwriting of Shares and Debentures. [In reference to Relevant Accounting Standards (AS and Ind AS) and Guidance Notes as applicable.]

Unit 2: Financial Statements of Companies (12 hours)

Preparation of financial statements of corporate entities including one Person Company (excluding calculation of managerial remuneration) as per Division I and II of Schedule III of the Companies Act 2013; Related Parties as per AS-18, Preparation of Statement of Profit and Loss, Balance Sheet, Statement of Equity and Cash flow Statement manually and using appropriate software. Interpreting the ratios calculated as per Schedule III of the Companies Act 2013 [with reference to Relevant Accounting Standards (AS and Ind AS) and the relevant provisions of The Companies Act, 2013, as applicable.]. Calculation of EPS as per AS 20.

Unit 3: Valuation of Intangible Assets and Shares (9 hours)

Valuation of Intangible Assets and Shares. Value Added Statement, Economic Value Added, Market Value Added, And Shareholder Value Added.

Unit 4: Amalgamation of Companies and Internal Reconstruction (9 hours)

- (a) Accounting for Amalgamation of Companies (excluding inter-company holdings) applying AS 14/Ind AS 103.
- (b) Accounting for Different forms of Internal Reconstruction (excluding drafting of Internal Reconstruction Scheme).

Unit 5: Corporate Financial Reporting (9 hours)

Meaning, need and objectives; Constituents of Annual Report and how it is different from financial statements; Contents of report of the Board of Directors; XBRL Reporting. Drafting of Notes to Accounts. Segment Reporting as per AS-17, Sustainability Reporting, Triple Bottom Line Reporting, CSR Reporting.

Notes:

- (1) The relevant Accounting Standards (both AS & Ind AS) for all of the above topics should be covered.
- (2) Any revision of the relevant Indian Accounting Standards/Accounting Standards would become applicable.
- (3) The relevant provisions of The Companies Act, 2013, as applicable for all of the above topics should be covered.

Practical Exercises

The learners are required to:

- 1. Collect prospectus issued by reputed companies, and examine the matters related to issue of shares.
- 2. Prepare financial statements of companies manually as well as using appropriate software.
- 3. Examine the annual reports of business organisations to find out whether applicable accounting standards (AS and Ind AS) are complied with or not.
- 4. Value Intangible Assets and Shares of a company.
- 5. Collect information from business newspapers, periodicals, print and digital media on the amalgamation of companies and prepare a report.
- 6. Download annual reports of reputed companies from the websites and analyse the voluntary and mandatory information contained in these statements.

7. Download and analyse notes on accounts from the annual reports of reputed companies from the websites.

Suggested Readings

- Bergeron, B. (2003). *Essentials of XBRL: Financial Reporting in the 21st Century*. (1st Ed.). New Jersey: John Wiley & Sons.
- Dam, B. B., & Gautam, H. C. (2020). *Corporate Accounting*. (2nd Ed.). Guwahati: Gayatri Publications.
- Goyal, B. K. (2021). *Corporate Accounting*. (7th Ed.). New Delhi: Taxmann Publication.
- Goyal, V. K., & Goyal, R. (2012). *Corporate Accounting*. (3rd Ed.). New Delhi: PHI Learning
- Jain, S. P., & Narang, K. L. (2015). *Corporate Accounting*. New Delhi: Kalyani Publishers.
- Kumar, A. (2021). *Corporate Accounting*. (7th Ed.). New Delhi: Singhal Publications.
- Maheshwari, S. N., Maheshwari, S. K., & Maheshwari, S. K. (2018). *Corporate Accounting*. (6th Ed.). New Delhi: Vikas Publishing House.
- Monga, J. R., & Bahadur, R. (2022). *Fundamentals of Corporate Accounting*. (27th Ed.). New Delhi: Scholar Tech Press.
- Mukherjee, A., & Hanif, M. (2017). *Corporate Accounting*. (2nd Ed.). New Delhi: Tata McGraw Hill Education.
- Mukherjee, S., & Mukherjee, A. (2019). *Corporate Accounting*. (1st Ed.). New Delhi: Oxford University Press.
- Sah, R. K. (2019). *Concept Building Approach to Corporate Accounting*. (2nd Ed.). Cengage.
- Sehgal, A. (2012). *Fundamentals of Corporate Accounting*. (3rd Ed.). New Delhi: Taxmann Publication.
- Shukla, M. C., Grewal, T. S., & Gupta, S. C. (2016). *Advanced Accounts. Vol.-II*. (19th Ed.). New Delhi: S. Chand Publishing.
- Tulsian, P. C., & Tulsian, B. (2008). *Corporate Accounting*. (Rev. Ed.). New Delhi: S. Chand Publishing.

Additional Resources

- Accounting Standards at the Website of the Institute of Chartered Accountants of India
- Indian Accounting Standards at the Website of the Ministry of Corporate Affairs.
- The Companies Act, 2013 as amended from time to time.

Note: Suggested readings will be updated by the Department of Commerce and uploaded on the Department's website.

Discipline Specific Core Course- 2.2 (DSC-2.2): Company Law

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Company Law DSC- 2.2 | 4 | 3 | 1 | 0 | Pass in XII | NIL |

Learning Objectives

The course aims to develop and comprehend business and its processes in accordance with the provisions of the Companies Act, 2013 while analysing case laws.

Learning outcomes

After completion of the course, learners will be able to:

1. Analyse the regulatory aspects and the broader procedural aspects involved in different types of companies covering the Companies Act, 2013 and Rules.
2. Prepare the basic legal documents required for formation of a company.
3. Analyse the process and documents required for raising capital for the company.
4. Analyse the managerial composition of companies and examine the process of company meetings.
5. Evaluate the framework of dividend distribution and develop understanding of the winding up process including Insolvency Resolution.

SYLLABUS OF DSC-2.2

Unit 1: Introduction (9 hours)

Meaning and characteristics of a company; Lifting of corporate veil; Overview of administration of Company Law; Types of companies including private and public company, government company, foreign company, one person company, small company, associate company, dormant company and producer company; Association not for profit; Illegal association.

Unit 2: Formation and Incorporation Documents (9 hours)

Formation of company, promoters, their legal position and pre incorporation contracts; Online registration of a company. Memorandum of Association and its alteration, Articles of Association and its alteration, Doctrine of constructive notice, Doctrine of ultra vires and indoor management.

Unit 3: Share Capital (9 hours)

Prospectus, Shelf and Red herring prospectus, misstatement in prospectus; Book building. Allotment and Forfeiture of share, Sweat Equity, ESOPs, Bonus issue, and Further issue of shares, buyback and provisions regarding buyback; Transfer and transmission of shares; Demat system.

Unit 4: Management and Meetings (9 hours)

Directors: Legal position, Disqualifications, Director Identification Number (DIN); Classification of directors-Additional, Alternate and Casual directors, Women directors, Independent director, small shareholder's director; Appointment, Removal of directors; Powers and Duties; Key managerial personnel (KMP); Board Meetings; Shareholders' meetings: AGM and EGM. Convening and conduct of meetings: Requisites of a valid meeting; Resolutions; Postal ballot; e-voting.

Unit 5: Dividends, Audit and Winding up (9 hours)

Provisions relating to payment of Dividend. Company Audit - auditor's qualification and disqualifications, Auditor's appointment, rotation and removal. Winding Up: Concept and Modes of Winding Up; Provisions of winding up under Insolvency and Bankruptcy Code 2016.

Practical Exercises

The learners are required to:

1. Identify the type of company based on information available on NSE/BSE website and analyse the regulatory and procedural aspects covering the Companies Act, 2013.
2. Fill dummy SPICe+ form for incorporation of a company.
3. Write about the timeline and details of the book building process of an actual IPO/FPO.
4. Identify the actual composition of the Board of Directors and examine the minutes of AGM/EGM of listed companies.
5. Analyse a case study on the winding up of a company.

Suggested Readings

- Jagota, R. (2021). *Corporate Laws*. New Delhi: Taxmann Pvt. Ltd.
- Kapoor, N. D. (2022). *Corporate Laws*. New Delhi: Sultan Chand.
- Kaur, H. (2022). *Company Law*. New Delhi: Kitab Mahal.
- Kuchhal, M. C., & Kuchhal, A. (2013). *Company Law*, Mahavir Publications.
- Kumar, A. (2021). *Corporate Laws*. New Delhi: Taxmann Pvt. Ltd.
- Maheshwari, S. N., & Maheshwari, S. K. (2017). *Elements of Corporate Laws*. New Delhi: Himalaya Publishing House Pvt. Ltd.
- Maheshwari, S. N., & Maheshwari, S. K. (2019). *Company Law*. New Delhi: Himalaya Publishing House Pvt. Ltd.
- Ramaiya, A. (2020). *A Guide to Companies Act*. India: LexisNexis.

Additional Resources

- Hanningan, B. (2021). *Company Law*. UK: Oxford University Press.
- Sharma, J. P. (2020). *An Easy Approach to Corporate Laws*. New Delhi: Ane Books P Ltd.

Note: Suggested readings will be updated by the Department of Commerce and uploaded on the Department's website.

Discipline Specific Core Course- 2.3(DSC-2.3): Human Resource Management

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Human Resource Management DSC- 2.3 | 4 | 3 | 1 | 0 | Pass in XII | NIL |

Learning Objectives

The course aims to acquaint the learners with the techniques and principles to manage human resources of an organisation.

Learning Outcomes

After completion of the course, learners will be able to:

1. Evaluate the importance of contemporary and emerging HR issues.
2. Analyse the concept and sources of recruitment and selection process.
3. Devise employee training and development programs.
4. Design performance appraisal techniques and compensation schemes.
5. Design HR policies for grievance redressal, employee health, safety, welfare, social security, and stress-free work life balance.

SYLLABUS OF DSC-2.3

Unit 1: Introduction to Human Resource Management (4 hours)

Basic concepts and significance of HRM, Role and functions of HR manager. Emerging issues in human resource management: Workplace diversity, employee empowerment, downsizing, VRS, work life balance, and work from home.

Unit 2: Procurement of Human Resource (9 hours)

Human resource planning- Quantitative and qualitative dimensions; Job analysis – Job description and job specification; Recruitment – concept and sources; Selection – concept and process; Tests and interview; Placement, induction and socialization; Employee retention.

Unit 3: Aspects of Training and Development (12 hours)

Concept and importance; Role specific and competency-based training; Training and development methods – Apprenticeship, understudy, job rotation, vestibule training, case study, role playing, sensitivity training, In-basket, management games, conferences and

seminars, coaching and mentoring, management development programs; Training process outsourcing.

Unit 4: Performance Appraisal and Compensation Management (12 hours)

Performance appraisal- Nature, objectives, process, and methods; Performance management; Potential appraisal; Employee counselling; Employee enhancement: transfer and promotion. Compensation - concept and policies, Types of compensation: base and supplementary compensation; Individual, group and organisation incentive plans; Fringe benefits; Performance linked compensation: employee stock option; pay band compensation system and job evaluation.

Unit 5: Maintenance of employees and Emerging Horizons of HRM (8 hours)

Employee health and safety; Employee welfare; Social security (excluding legal provisions); Employer-employee relations; Grievance handling and redressal; Industrial disputes: Causes and settlement machinery; e-HRM; Human Resource Information System (HRIS) and e-HRM; Impact of HRM practices on organisational performance; HR Audit, Contemporary issues in HRM - emerging job opportunities, work life balance and work from home.

Practical Exercises

The learners are required to:

1. Design a human resource plan with a focus on contemporary and emerging HR issues.
2. Perform a role play and conduct an orientation cum induction programme for new recruits.
3. Design a training and development plan for a hypothetical organisation.
4. Design performance appraisal techniques and compensation schemes for a hypothetical organisation.
5. Design employee welfare scheme for a hypothetical organisation.

Suggested Readings

- Aswathappa, K. & Dash, S. (2021). *Human Resource Management-Text and cases* (9th ed.). Tata McGraw-Hill.
- Chhabra, T. N. & Chhabra, M. (2020). *Essentials of Human Resource Management*. Delhi: Sun India Publications.
- Decenzo, D. A., & Robbins, S. P. (2009). *Fundamental of Human Resource Management*. New Jersey: Wiley.
- Dessler, G. & Varrkey, B. (2020). *Human Resource Management* (16th ed.). Pearson Paperback.
- French, W. L. (2006). *Human Resource Management*. Boston: Houghton Mifflin.
- Gupta, C. B. (2018). *Human Resource Management*. New Delhi: Sultan Chand & Sons.
- Prasad, L. M. (2018). *Human Resource Management*. New Delhi: Sultan Chand & Sons.
- Pattanayak, B. (2019). *Human Resource Management* (6th ed.). PHI learning.
- Rao, V. S. P. (2020). *Human Resource Management* (2nd ed.). New Delhi: Taxmann Pvt. Ltd.
- Sengupta, A. (2018). *Human Resource Management*. Sage Textbook.

Note: Suggested readings will be updated by the Department of Commerce and uploaded on the Department's website.

41. Amendment to Appendix -II-A to the Ordinance V (2-A) of the Ordinances of the University vide EC Resolution 38-1-3 dated 08.12.2022 regarding Syllabi of 2nd Semester of Departments under Faculty of Science

Add the following:

Syllabi of Semester-II of the following departments under Faculty of Science based on Under Graduate Curriculum Framework -2022 to be implemented from the Academic Year 2022-23.

FACULTY OF SCIENCE

DEPARTMENT OF BOTANY

**Category-I
B.Sc. (H) Botany**

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|---|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Microbiology and Plant-Microbe Interactions | 04 | 2 | 0 | 2 | 10+2 from any recognized Board with Biology | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

To impart basic understanding about microbial world and their interactions with plants.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Understanding microbes and their roles and applications.
- Understanding about modes of reproduction of Viruses, Archaeobacteria, Eubacteria.
- Understand plant-microbe interaction

SYLLABUS OF DSC-4

Unit 1: Introduction 02 Hours
Microbial world, Growth and nutrition of microbes with reference to nutritional media.

Unit 2: Viruses 07 Hours
Discovery; Physicochemical and biological characteristics; Classification (Baltimore); General structure with special reference to viroids and prions, DNA and RNA viruses; General account and mechanism of replication, lytic and lysogenic cycle; General account of viral diseases of plants (mosaic and vein clearing disease).

Unit 3: Bacteria 09 Hours
Discovery, General characteristics; Types - Archaeobacteria, Eubacteria, Wall less forms (Mycoplasma, Phytoplasma and Spheroplasts); Cell structure; Nutritional types; Reproduction - vegetative, asexual and recombination (conjugation, transformation and transduction); General account of bacterial diseases of plants (Citrus canker, Angular leaf spots of cotton).

Unit 4: Applied Microbiology 04 Hours
Economic importance of viruses with reference to vaccine production, role in research, medicine and diagnostics and agriculture. Economic importance of bacteria with reference to their role in agriculture and industry (fermentation and medicine).

Unit 5: Plant-Microbe interactions 08 Hours
General account of Plant-microbe interactions; Plant growth promoting rhizobacteria (PGPR); Mechanism of nitrogen fixation by Cyanobacteria and Rhizobia; Types of mycorrhizal association with plants; Ectomycorrhiza and Endomycorrhiza and their effects on plant growth.

Practicals:

1. Study of Viruses: Electron micrographs / Model - T-Bacteriophage and TMV; specimens/digital resources/ Line drawings of Lytic and Lysogenic Cycle. 08 Hours
2. Study of Bacteria: Electron micrographs of bacteria; Types of Bacteria from temporary/permanent slides. Endospore, Binary fission, Conjugation, Root nodule through specimens/digital resources. 08 Hours
3. Study of Plant Growth Promoting Rhizobacteria (PGPR) through specimens/digital resources (at least three). 04 Hours
4. Gram staining to differentiate between Gram-positive and Gram-negative bacteria. 08 Hours
5. Study of *Rhizobium* from root nodules of a leguminous plant. 08 Hours
6. Isolation of *Anabaena* from *Azolla* leaves. 08 Hours
7. Histochemical staining to observe Arbuscular Mycorrhizal Fungi (AMF) colonization in roots. 08 Hours
8. Study of Bacterial diseases (Citrus canker, Angular leaf spots of cotton) and viral diseases

of plants (mosaic and vein clearing disease) through specimens/digital resources.

08 Hours

Suggested Readings:

1. Pelczar, M.J. (2001) Microbiology, 5th edition. New Delhi, Delhi: Tata Mc-Graw- Hill Co.
2. Tortora, G.J., Funke, B.R., Case, C.L. (2016) Microbiology: An Introduction, Indian edition, Pearson India Education Services Pvt. Limited, Noida, India
3. Prescott, L.M., Harley J.P., Klein D. A. (2005). Microbiology, 6th edition: McGraw Hill, New Delhi.
4. Gupta, R., Chugh, G. (2022) Plants, Microbes and Diseases 1st Edition, I.K. International Pvt. Ltd., Delhi.
5. Subba Rao, N.S. (2000) Soil Microbiology, Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi

Additional Resources:

1. Talaro, K.P., Talaro, A. (2006). Foundations in Microbiology. Mc-Graw Hill, New Delhi

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 5: Plant Resources and Economic Botany

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-------------------------------------|---------|-----------------------------------|----------|---------------------|---|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Plant Resources and Economic Botany | 04 | 2 | 0 | 2 | 10+2 from any recognized Board with Biology | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

- To familiarize students with the economic importance of diverse plant species and train them in identifying plants of economic importance through field visit/s, live plant specimens, herbarium specimens and digital resources.
- To make students understand the importance of various plant parts and derived products used as food, fibers, medicines, oils and other economically important products.
- To acquaint students with the processing of various economically important plant resources and train them to identify and analyses nutrients using simple microchemical tests.

Learning outcomes

The Learning Outcomes of this course are as follows:

- This course would provide students with information about the economic importance and products derived from plants and their roles in our daily lives.
- Students will learn to perform micro-chemical tests to study presence of various components.
- Students will explore the regional diversity in food crops and other plants and their ethnobotanical importance.

SYLLABUS OF DSC-5

Unit 1: Introduction and Origin of Cultivated Plants

02 Hours

Importance of Plant Resources; Vavilov's concept for the Origin of cultivated plants; Centres of Origin (Primary and Secondary); Centres of diversity, Harlan's concept of gene pools. Plant Genetic Resources and their conservation.

Unit 2: Cereals

04 Hours

Wheats (Origin, Evolution of Wheats (tetra- & hexaploid), Morphology, Production, and Economic Importance of Hexaploid Wheat); Rice (Origin-Monophyletic and Polyphyletic, Production, Morphology, Comparison between *indica* and *japonica* Rice, Parboiling,

Economic Importance); Other cereals: Maize, Barley, Oats, Millets (jowar, bajra, ragi) and Pseudocereals.

Unit 3: Legumes

03 Hours

General account (Nutritive Value of Pulses, Protein Malnutrition, Lathyrism, Favism, Ecological Importance); chick pea and pigeon pea (Production, Morphology and Economic Importance). Other Legumes: Lentil, Cluster Bean, Lathyrus, Beans, Pea, Cowpea, Fodder legumes and Green manure crops.

Unit 4: Sugars and Starches

03 Hours

Sugarcane (Morphology, Ratooning, Nobilization, Products and By-products); Potato (Morphology, Tuber Anatomy, Seed Tubers vs True Potato Seeds and Economic uses).

Unit 5: Spices, Condiments & Flavourings

03 Hours

General Account (Spices, Condiments, Culinary Herbs and Essences, with examples), Importance of Spices, Clove (Morphology, Anatomy of part used and Economic Importance) and Black Pepper (Morphology, Anatomy of part used and Economic Importance). Other examples: Ginger, Turmeric, Cinnamon, Saffron, Cardamom, Chillies & Pepper, Fennel, Coriander, Cumin, Vanilla, Nutmeg.

Unit 6: Beverages

02 Hours

Types of Beverages (Alcoholic and Non-Alcoholic) with examples, Tea and coffee (Morphology, Chemistry, Processing and Economic Importance)

Unit 7: Fibres and Fibre-yielding plants

03 Hours

Classification of Fibres based upon their Origin (surface fibres, bast fibres, and leaf fibres, with examples); Jute (morphology, extraction and economic importance), Cotton (*Gossypium* species, morphology, processing and economic importance) Comparison between Jute and Cotton fibers. Other examples: Flax, Hemp and Coconut.

Unit 8: Oil-Yielding Plants

03 Hours

Fatty Oils and Essential Oils, Comparison between Fatty Oils and Essential Oils; Fatty Oils (Classification with examples, keeping quality), Groundnut (Morphology and Economic Importance); Essential Oils (General characteristics, Methods of Extraction and Economic Importance, with examples). Other examples: Rapeseed & Mustard (canola), Coconut, Olive, Castor, Cottonseed, Sesame, Soybean, Linseed.

Unit 9: Medicinal and Drug-Yielding Plants

02 Hours

Brief Account of Therapeutic Drugs with Examples; Morphology, Chemical Constituents, Economic Importance of *Cinchona*, *Rauwolfia*, *Digitalis*.

Unit 10: Fumigatory & Masticatory

02 Hours

Tobacco (Morphology, species - *Nicotiana tabacum* & *N. rustica*), Processing, Products, Economic Importance and Health Hazards), *Cannabis*, *Papaver* (Morphology, Chemical Constituents, Economic Importance)

Unit 11: Rubber

01 Hour

Para Rubber - *Hevea brasiliensis* (Morphology, Tapping of latex, Processing, Products and Economic Importance)

Unit 12: Fruits & Nuts**01 Hour**

Tropical & Temperate; *Citrus*, Mango, Banana, Apple, Pineapple, Papaya; Nuts: Cashew, Walnut, Almond & Pistachio.

Unit 13: Vegetables**01 Hour**

Common examples of root crops, leafy vegetables (herbage), fruit seed vegetables;

Practicals:

1. **Cereals:** Wheat (Habit Sketch, L.S./T.S. grain, W.M. starch grains, Micro-chemical tests), Rice (Habit Sketch, study of paddy and grain, W.M. starch grains, Micro-chemical tests). Millets - Pearl Millet, Finger Millet and Pseudocereals - Amaranth Grain, Quinoa (specimens/digital resources and grains) **08 Hours**
2. **Legumes:** Chickpea, pigeonpea (Habit, fruit, seed structure, Micro-chemical tests). **04 Hours**
3. **Sugars and Starches:** Sugarcane (Habit Sketch, Products and By-products, Cane Juice- Micro - chemical tests); Potato (Habit Sketch, Tuber morphology, T.S. tuber to show localization of starch grains, W.M. starch grains, Micro-chemical tests). **08 Hours**
4. **Spices:** Clove, Blackpepper (Habit and sections L.S./T.S.), Saffron, fennel (specimen/digital resources) **04 Hours**
5. **Beverages:** Tea (plant specimen, tea leaves), Coffee (plant specimen, beans) **04 Hours**
6. **Fibres:** Jute (specimens/digital resources of *Corchorus capsularis* and *C. olitorius*, T.S. stem, test for cellulose and lignin on section of stem and fibre). Cotton (specimen, W.M. seed to show lint and fuzz; W.M. fibre and test for cellulose) **08 Hours**
7. **Oil-Yielding Plants:** Fatty Oils: Groundnut (Habit-specimen, Fruit, seeds, Microchemical Tests) Coconut-Habit (photograph), Fruit, T.S. nut, Mustard - (Habit- specimen, Fruit, seeds); Essential Oils: Habit Sketch of Rose, Jasmine, Vetiver, Sandalwood and *Eucalyptus* (specimens/photographs) **08 Hours**
8. **Drug-Yielding plants:** Habit - Fever Bark Tree, Poppy, Foxglove and Cannabis (Specimens/ Photographs) **08 Hours**
9. **Tobacco:** *Nicotiana tabacum* and *N. rustica* (specimens/photographs), Tobacco Products
10. **Rubber:** Para Rubber-Habit, Tapping of latex (Specimen/photograph), Rubber Products **04 Hours**
11. **Petro-crops:** *Saccharum officinarum* , *Jatropha* sp. **04 Hours**

Suggested Readings:

1. Kochhar, S.L. (2012). Economic Botany in Tropics. New Delhi, India: MacMillan & Co.
2. Kochhar, S.L. (2016). Economic Botany – A Comprehensive Study, 5th Edition. New Delhi, India: Cambridge University Press.
3. Wickens, G.E. (2001). Economic Botany: Principles & Practices. The Netherlands: Kluwer Academic Publishers.
4. Chrispeels, M.J., Sadava, D.E. (1994). Plants. Genes and Agriculture. Jones & Bartlett-Publishers.
5. Berg L, (2008). Introductory Botany: Plants, People, And The Environment, Thomson Brooks/Cole.
6. Cook F.E.M. (1995). Economic Botany: Data Collection Standard Royal Botanic Garden, Kew, Richmond.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 6: Plant Systematics

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------|-----------|-----------------------------------|----------|---------------------|---|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Plant Systematics | 04 | 2 | 0 | 2 | 10+2 from any recognized Board with Biology | Nil |

Learning Objectives

The course will help students gain knowledge about:

- The basics of plant systematics and its inter-relationships with allied subject areas

Learning outcomes

On completion of the course the students will be able to:

- understand technical terminology used in plant taxonomy
- apply the terminologies to describe, identify and classify flowering plants
- search and analyse taxonomic information from internet-based scientific databases and other resources
- interpret and evaluate the concept of species and evolutionary processes in angiosperms
- comprehend and compare various systems of classifications
- recognise diversity in local/regional flora
- appreciate the significance and application of systematics in science and welfare of society

SYLLABUS OF DSC-6

Unit 1: Introduction

02 Hours

Identification, Classification (types) and Nomenclature, Phylogeny; Major contributions - Parasara, Charaka, Theophrastus, Bauhin, Tournefort, Linnaeus, Adanson, de Candolle, Bessey, Hutchinson, Takhtajan, Bremer, MW Chase

Unit 2: Resources in Plant Identification

02 Hours

Literature (Floras, Manuals, *Icones*, Monographs, Revisions, Journals, e-resources); Herbaria and Botanical gardens (in brief)

Unit 3: Systematics - An Interdisciplinary Science

04 Hours

Relevance of palynology, cytology, phytochemistry and molecular data (cite at least (streak, spread & pour), replica plating, serial dilution.

three examples from each with emphasis on application in resolving taxonomic problems - details of techniques to be excluded)

Unit 4: Botanical Nomenclature

05 Hours

Principles and rules (ICN); Ranks and names; Principle of priority and its limitations; Concept of 'Type', Author citation, Valid publication, Rejection of names; Nomenclature of hybrids

Unit 5: Systems of Classification

06 Hours

Taxonomic hierarchy; Concept of species (morphological, biological and evolutionary); Classifications - Bentham and Hooker's (up to series), Engler and Prantl's (upto sub-class) and Angiosperm Phylogeny Group (APG) classification (major clades).

Unit 6: Approaches in Systematics

06 Hours

Terms and concepts (primitive and advanced, homology and analogy, parallelism and convergence, monophyly, paraphyly, polyphyly, clades and grades).

Phenetics - Principles, Methodology, Characters; Selection of OTUs, Character weighing and Coding; Cluster analysis; Phenogram.

Cladistics - Principles, Methodology, Characters; Selection of EUs, Character weighing and Coding; Cluster analysis; Cladogram

Unit 7: Evolution of Angiosperms

05 Hours

Concept of a primitive flower (Euanthial theory and Pseudanthial theory); Basal Living Angiosperms; Herbaceous origin; Co-evolution of angiosperms with animals.

Practicals:

1. Field trip/ Visit to any herbaria/ Botanical Garden. **04 Hours**
2. To prepare at least five herbarium specimens and identify them using available resources (Literature, herbaria, e-resources, taxonomic keys) and classify up to family level (according to Bentham and Hooker's classification and compare it with APG IV System in the field note book). **08 Hours**
3. Description of taxa using semi-technical terms and identification of the families according to Bentham and Hooker's classification and compare the placement of family with APG IV System (Only placement of family according to APG IV system to be mentioned) **48 Hours**

Note: Any **twelve** families from the following list to be studied with **at least two** specimens (**or one** where limitations exist).

List of Suggested Families (*mandatory)

Acanthaceae, Amaranthaceae, *Apiaceae, Apocynaceae, *Asteraceae, *Brassicaceae, *Euphorbiaceae, *Fabaceae, *Lamiaceae, Liliaceae, *Malvaceae, Moraceae, *Poaceae, *Ranunculaceae, *Solanaceae

Suggested Readings:

1. Simpson, M. G. (2019). Plant systematics. 3rd Edition, Academic press.
2. Singh, G. (2019). Plant Systematics- An Integrated Approach. 4th edition. CRC Press, Taylor and Francis Group.
3. Stuessy, T.F. (2009). Plant Taxonomy: The Systematic Evaluation of Comparative Data, 2nd edition, Columbia University Press.
4. Taylor, D.V., Hickey, L.J. (1997) Flowering Plants: Origin, Evolution and Phylogeny.

CBS Publishers & Distributors, New Delhi.

5. Pandey, A. K., Kasana, S. (2021). *Plant Systematics*. 2nd Edition. CRC Press Taylor and Francis Group
6. <http://www.mobot.org/MOBOT/research/APweb/>
7. Maheshwari, J. K. (1963). The flora of Delhi. Council of Scientific & Industrial Research.
8. Maheshwari, J. K. (1966). Illustrations to the Flora of Delhi. Council of Scientific & Industrial Research.
9. Harris, J. G., Harris, M. W. (2001). Plant Identification Terminology: An Illustrated Glossary. Spring Lake, Utah: Spring Lake Pub. Spring Lake, Utah.
10. Radford, A. E. (1974). Vascular plant systematics. Harper & Row Publishers, New York, London.
11. Judd, W.S., Campbell, L.S., Kellogg, E.A., Stevens, P.F., Donoghue, M.J. (2016) Plant Systematics: A Phylogenetic Approach. 4th edition. Sunderland, MA: Sinauer Associates

Additional Resources:

1. The Angiosperm Phylogeny Group, Chase, M. W., Christenhusz, M. J.M., Fay, M. F., Byng, J. W., Judd, W. S., Soltis, D.E. Mabberley, D. J., Sennikov, A. N., Soltis, P. S., Stevens, P. F. (2016). An update of the Angiosperm Phylogeny Group classification for the orders and families of flowering plants: APG IV. Botanical journal of the Linnean Society 181 (1): 1–20.
2. Soltis, D. E., Bell, C. D., Kim, S., Soltis, P. S. (2008). Origin and early evolution of angiosperms. Annals of the New York Academy of Sciences 1133: 3-25.
3. Scutt, C. P. (2021). The origin of angiosperms. In Evolutionary developmental biology: a reference guide. Cham: Springer International Publishing.
4. <https://www.mobot.org/MOBOT/research/APweb/treeapweb2s.gif>
5. <https://www.digitalatlasofancientlife.org>
6. <http://apps.kew.org/herbcat/navigator.do>
7. <https://efloraofindia.com/>
8. <https://powo.science.kew.org/>
9. Page, R.D.M., Holmes, E.C. (1998). Molecular Evolution: A phylogenetic approach. Blackwell Publishing Ltd.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category II
B.Sc. Life Science with Botany as one of the Core Discipline

| DISCIPLINE SPECIFIC CORE COURSE – 2: Genetics and Molecular Biology | | | | | | |
|---|---------|-----------------------------------|----------|---------------------|---|--------------------------------------|
| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
| | | Lecture | Tutorial | Practical/ Practice | | |
| Genetics and Molecular Biology | 04 | 2 | 0 | 2 | 10+2 from any recognized Board with Biology | Nil |

Learning Objective

To apprise students with the basic principles of Genetics and Molecular Biology and its applications in living systems

Learning Outcome:

Students would be able to

- understand the fundamentals of Mendelian inheritance and non-Mendelian inheritance.
- describe the concepts of linkage and crossing over and their usage in constructing genetic maps.
- gain knowledge about chromosomal aberrations and mutations.
- become familiar with structure and function of nucleic acids with reference to replication, transcription and translation.
- understand the mechanisms of gene regulation

SYLLABUS OF DSC-02

Unit 1: Mendelian genetics and extrachromosomal inheritance

06 Hours

Mendel's principles of inheritance; chromosomal theory of inheritance; incomplete dominance and co-dominance; multiple allelism; lethal alleles (dominant and recessive lethals); deviations of Mendelian dihybrid ratio (Epistatic interactions-Dominant, Recessive, Duplicate Dominant, Duplicate Recessive, Duplicate Gene Interaction, Dominant - Recessive); polygenic inheritance; numericals based on above; extrachromosomal inheritance (Chloroplast Inheritance: Variegation in Four O' clock plant; Mitochondrial inheritance: petite mutants in yeast); Maternal effect (shell coiling in snails).

Unit 2: Structure & Function of the gene

02 Hours

Classical and molecular concept of gene - Benzer's cis-trans complementation analyses & fine map of rII locus in phage. Central Dogma.

Unit 3: Linkage, crossing over and chromosome mapping

03 Hours

Discovery; linkage and crossing over; recombination frequency: two factor crosses; sex linkage (eye color in *Drosophila*; colour blindness and haemophilia in humans).

Unit 4: Variation in chromosome number and structure

03 Hours

Haploidy, polyploidy, autopolyploidy (examples: banana, watermelon), allopolyploidy (ancestry of wheat) and aneuploidy (Down's, Turner's and Klinefelter's syndromes); Deletion; Duplication (Bar eye in *Drosophila*); Inversion (paracentric and pericentric); Translocation (*Rhoeo*, *Oenothera*; Robertsonian translocation, Familial Down Syndrome and cancer).

Unit 5: DNA structure and replication**03 Hours**

Discovery of DNA; Watson and Crick model of DNA structure; semiconservative replication (Meselson & Stahl's experiment); DNA replication mechanism in *E. coli* (semi-discontinuous mode and Y-fork).

Unit 6: Mutations**03 Hours**

History; mutation types with examples [spontaneous and induced; somatic and germinal; biochemical mutations; point mutations (base substitutions): transition and transversion; deletion and frameshift mutations), missense and nonsense mutations]; Molecular basis of mutation; Mutagens - physical (UV and X-rays), chemical mutagens [Base analogues, deaminating, alkylating and intercalating agents] and Transposons.

Unit 7: Gene expression**06 Hours**

Genetic code; Structure and types of RNA; Transcription and Translation in Prokaryotes; Transcription, RNA processing and Translation in Eukaryotes.

Unit 8: Regulation of gene expression: Prokaryotes**04 Hours**

Inducible and repressible systems, negative and positive control of lactose operon and tryptophan operon. **Eukaryotes** - Transcriptional gene silencing - Role of chromatin, DNA methylation, histone modifications; cis-acting elements (promoters & enhancers/silencers), trans-acting factors; Post-transcriptional gene regulation (RNA interference/ PTGS), role of small RNAs, Epigenetics.

Practicals:

1. To study mitosis in *Allium cepa* through squash preparation of root tips. **04 Hours**
2. To study meiosis in *Allium cepa* through smear preparation of anthers. **08 Hours**
3. To study incomplete dominance and deviations of Mendelian dihybrid ratio (12:3:1, 9:3:4, 9:7, 15:1, 13:3) through seed samples. **08 Hours**
 - a) Human Genetics b) Study of autosomal & sex-linked dominant & recessive inheritance through pedigree analyses. c) n ABO blood group testing using kits, d) To study the syndromes (Down's, Klinefelter's, and Turner's) through karyotypes **08 Hours**
4. To study chromosomal aberrations: reciprocal translocation through squash preparations of *Rhoeo* anthers. Complex translocation ring, quadrivalents, lagging chromosomes, dicentric/inversion bridge through permanent slides. **08 Hours**
5. To prepare LB medium, inoculate and maintain (spread plate, streak plate, pour plate & serial dilution methods) *E. coli* cultures. **08 Hours**
6. To isolate genomic DNA from cauliflower and *E.coli*. Visualise using agarose gel electrophoresis. **08 Hours**
7. To estimate DNA by diphenylamine method. **04 Hours**

Suggested Readings:

1. Gardner, E.J., Simmons, M.J., Snustad, D.P. (1991). Principles of Genetics, 8th edition. New Delhi, Delhi: John Wiley & sons.
2. Griffiths, A.J.F., Wessler, S.R., Carroll, S.B., Doebley, J. (2020). Introduction to Genetic Analysis, 12th edition. New York, NY: W.H. Freeman and Co.
3. Klug, W.S., Cummings, M.R., Spencer, C.A. (2020). Concepts of Genetics, 12th edition. San Francisco, California: Benjamin Cummings.

Additional Resources:

1. Russell, P. J. (2010). Genetics- A Molecular Approach. 3rd Edition. Benjamin Cummings
2. Snustad, D.P., Simmons, M.J. (2016). Principles of Genetics, 7th Edition. New Delhi, Delhi: John Wiley & sons
3. Pierce, B. A. (2020). Genetics: A Conceptual Approach Seventh Edition, Macmillan

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES OFFERED BY THE DEPARTMENT of BOTANY

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Ethnobotany | 04 | 2 | 0 | 2 | 12 th Pass | NIL |

Learning Objectives

- To have the knowledge of the plants used by the local communities, tribals, ethnic groups, their nutritive and medicinal value.

Learning outcomes

After studying this course the student will gain knowledge about:

- Students would have an understanding of the treasure, value and usefulness of the natural products and their efficient use by the local communities as food and medicine and their conservation practices.

SYLLABUS OF GE-6

Unit 1: Introduction to Ethnobotany and Basic Taxonomy

06 Hours

Introduction, concept, scope and objectives; Ethnobotany as an interdisciplinary science, databases and knowledge resource (Traditional Knowledge Digital Library), The relevance of ethnobotany in the present context; Major and minor ethnic groups or Tribals of India, and their life styles, Plants used by the indigenous societies: a) Food plants b) Medicinal plants c) intoxicants and beverages d) Resins and oils and miscellaneous uses.

Unit 2: Applied Ethnobotany

07 Weeks

Role of ethnobotany in modern Medicine, Medico-ethnobotanical sources in India; Significance of the following plants in ethnobotanical practices (along with their habitat and morphology): a) *Azadiractha indica*, b) *Ocimum sanctum*, c) *Vitex negundo*, d) *Gloriosa superba*, e) *Tribulus terrestris*, f) *Pongamia pinnata*, g) *Cassia auriculata*, h) *Indigofera tinctoria*.

Unit 3: The Ecology of Ethnobotany

07 Hours

Ethnobotany—Spirits, Lore, Material Cultures, Folk Magic, Narcotics, Stimulants; Nutritional Ethnobotany – Agriculture, foraging and wild foods; Linguistic

Ethnobotany—Botanical Classification and Ethics; Medicinal Ethnobotany and Ethnopharmacology; Ethnoveterinary knowledge

Unit 4: Research Methods in Ethnobotany

06 Hours

Etic and Emic Perspectives: a) Field work; b) Herbarium; c) Ancient Literature and oral traditions; d) Archaeological finding inferences; e) Religious and sacred places.

Unit 5: Protecting Knowledge

04 Hours

Ethnobotany and legal aspects, Ethnobotany as a tool to protect interests of ethnic groups, Sharing of wealth concept with few examples from India, Biopiracy, Intellectual Property Rights and Traditional Knowledge; Case studies of traditional medicines leading to development of modern pharmaceutical products (use of *Trichopus zeylanicus* by kanhi tribe and *Artemesia* sp. for malaria cure)

Practicals: **60 Hours**

- Collection, identification and preparation of herbarium of three ethno-botanically important plants with appropriate references
- Preparation of crude extract of ethno-botanically important plants with appropriate references (any method to be used)
- Project work-documentation, literature survey, and collection of information on ethno-botanically useful plants from traditional healers)

Suggested Readings:

- Jain, S.K. (2010). Manual of Ethnobotany. Rajasthan: Scientific Publishers.
- Martin, G.J. (1995). Ethnobotany: A Methods Manual. Chapman Hall
- Cunningham, A.B. (2001). Applied Ethnobotany: People, Wild Plant Use and Conservation. Earthscan, London.
- Young, K.J. (2007). Ethnobotany. Infobase Publishing, New York.
- Schmidt, B.M., Cheng, D.M.K. (Eds.) (2017). Ethnobotany: A Phytochemical Perspective. John Wiley & Sons Ltd. Chichester, UK.
- Research papers from various Scientific Journals for case studies.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-7)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-------------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Exploring Nature through Lens | 4 | 2 | 0 | 2 | 12 th Pass | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

- To provide students a comprehensive introduction to photography, including both aesthetic and technique.
- To get students to rethink the environment in which they live through the medium of pictures.
- To become thoroughly familiar with digital camera and smartphone photography technology.
- To develop a working knowledge of digital image modification,
- To understand the importance and use Nature photography in your business and career prospects.
- To enhance appreciation for the tremendous beauty inherent in plants and gardens.

Learning outcomes

On successful completion of this course, a student will be able to:

- understand the digital camera or smartphone camera functions.
- use different photographic equipment to enhance their photographic skills.
- know about the photographic variables with weather and season.
- exploit their photographic work in various professions and for entrepreneurship development.

SYLLABUS OF GE-7

Unit 1: Basics of Photography and Videography

10 Hours

History and development of digital photography, Introduction to lenses and camera, Definitions (Megapixel, Magnification, Resolving Power, Zoom feature, contrast and brightness of image), Types of lenses, analog camera, Digital camera, SLR camera, imaging system in camera. Role of lighting, depth of field, focal length, colour and contrast in photography, types of photography and techniques, working of camera: exposure, shutter speed and aperture.

Understanding Image: Types of shots: distance, angle and movement; digital image basics: image format, resolution, aspect ratio, Pixels, DPI and PPI, composition and aesthetics: rules and guidelines.

Unit 2: Diversity of Nature: Colours and Landscape

10 Hours

Importance of plants as natural products, General characteristic features of various plant life forms (Single celled, colonial forms, filamentous forms and multicellular and complex forms). General account of diverse landscaping patterns based on different geographical locations, plant adaptations and ecological interactions, role of plant pigments (diverse forms of alga, leaf coloration, floral pigments) in aesthetic appeal.

Unit 3: Diversity around us - A magnified view

05 Hours

Principles of Microscopy: Dissection and compound microscope, scanning electron microscope. importance of sample preparation for microscopy, staining techniques.

Unit 4: Photographic visualisation of Nature

05 Hours

Sensitization of Biodiversity conservation; Thematic depiction of nature in Art galleries; Eco-tourism: a general account; role of photography in Eco-tourism and ecological discourse.

Practicals: 60 Hours

1. To study the parts of a digital camera.
2. To study the principle and working of digital camera/ smartphone camera.
3. Working and handling of light microscopes (Dissection and Compound).
4. Study of plant forms through microscopic lens (Single celled, colonial forms, filamentous forms, multicellular and complex forms).
5. To study techniques of capturing shots (using light and lenses effectively, macro and micro photography, wide angle and close-ups).
6. Study of plant adaptations through photographs (Aquatic and desert plants).
7. To capture and understand the Ecological Interactions.
8. Identification of different plant life forms through online available tools/ search engines.
9. Outdoor/ Campus Photography: Plants, Environment, Landscapes and cityscape, Mushrooms.
10. Project Work: To make a portfolio of diverse landscaping patterns/ selected theme through outdoor visits.

Suggested Readings:

1. Ang., T. (2008). Fundamentals of modern Photography. London, Mitchell.
2. Patterson, F. (1999). The Art of Seeing. Key Porter Books.
3. Fitzharris, T. (2011). Landscape Photography. Firefly Books.
4. Kelby, S. (2012). The digital photography book. Peachpit Press.
5. Langford, M., Fox, A., Smith, R.S. (2013). Langford basic photography: the guide for serious photographers. Amsterdam: Focal Press/Elsevier.
6. Peterson, B. (2016). Understanding exposure: how to shoot great photographs with any camera. AmPhoto Books.
7. Karp, G. (2010). Cell Biology, 6th edition. New Jersey, U.S.A.: John Wiley & Sons.

Additional Resources:

1. Sharma, P.D. (2010.) Ecology and Environment. Meerut, UP. Rastogi Publications.

2. Wilson, K., Walker, J. (2018). Principles and Techniques of Biochemistry and Molecular Biology, Cambridge University Press

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-8)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--------------------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Agricultural Botany and Weed Science | 4 | 2 | 0 | 2 | 12 th Pass | Nil |

Objectives: To gain the knowledge on

- Requirement of the conditions for seed germination
- Growth hormones, plant development and flowering conditions
- Weeds and the methods to control weeds

Learning Outcomes:

After completion of this course the students would be able to understand:

- how is the quality of seeds judged and how are the suitable conditions for the seed germination created?
- how are the growth, flowering and fruiting in plants managed through the applications of hormones?
- how are weeds managed in commercial crops?

Unit 1: Seed Physiology

04 Hours

Seed dormancy types, factors, mechanism and methods for breaking dormancy, seed viability, seed vigour and seed germination.

Unit 2: Physiology of Crop Growth and Yield

05 Hours

Growth, methods of growth analysis, factors affecting growth, concept of phytotronics and Fertilizers (Nitrogen, Phosphorus, biofertilizers).

Unit 3: Regulation of Growth and Development

04 Hours

Role of hormones in plant growth and development, growth retardant.

Unit 4: Reproductive Physiology and Senescence

06 Hours

Physiology of flowering, Photoperiodism, vernalization, physiology of fruit ripening, senescence and regulation of senescence.

Unit 5: Biology of Weeds

04 Hours

Ecology of weeds, competition, reproduction of weeds. Allelopathy and Invasive Plants.

Unit 6: Crop Management Practices

07 Hours

Mechanical, Cultural, Biological and Chemical Weed control. Some abnoxious weeds and their management, Integrated pest management (IPM).

Practicals: (60 hours)

1. To study the effect of ethylene on shelf life of cut flowers./ To study the effect of cytokinin on leaf senescence.
2. To test the viability of weed seeds.
3. To study the allelopathic effects of weeds on germination of crop seeds.
4. To study the effect of herbicides on seed germination and seedling growth of weeds.
5. Determination of pH and analysis of a soil sample for carbonates, chlorides, sulphates, organic matter and base deficiency by rapid field tests.
6. To perform the qualitative test for Nitrogen (NH_4^+ , NO_3^- , urea) in a fertilizer and the soil sample.
7. Demonstration / photographs for the mechanisms used in herbicide application.
8. Field trip to a crop land to study weeds.
9. Submission of any two properly dried and mounted weed specimens with the herbarium label.

Suggested Readings:

1. Ashton, F. M., Monaco, T. J. (2002). Weed Science: Principles and Practices. New Jersey, U.S.: John Wiley and Sons. Inc.
2. Hopkins, W. G., Huner, N. P. A. (2009). Introduction to Plant Physiology, 4th edition. New Delhi, Delhi: Wiley India Pvt. Ltd.
3. Taiz, L., Zeiger, E., Moller, I. M., Murphy, A. (2018). Plant Physiology and Development International 6th edition. New York, NY: Oxford University Press, Sinauer Associates.
4. Mandal, R.C. (1990). Weeds, weedicides and weed control: Principle and Practice. New Delhi, Delhi: Agro Botanical Publishers.
5. Rao, V. S. (1999). Principles of Weed Science. Oxford and IBH Publishers, New Delhi.
6. Subramanian, S. (2017). All about weed control. New Delhi, Delhi: Kalayani publishers.

GENERIC ELECTIVES (GE-9)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-------------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Intelligent Systems in Plants | 04 | 2 | 0 | 2 | 12 th Pass | Nil |

Learning Objectives

- The course aims to lay the foundations on plant intelligence and develops understanding of the intelligent adaptively variable behaviour of plants.

Learning outcomes

The Learning Outcomes of this course are as follows:

- The students will be learning the concepts of intelligence, distinction between development and intelligent behaviour and morphological /adaptive strategies employed by plants to survive.

SYLLABUS OF GE-09

Unit 1: Introduction

04 Hours

An Introduction to Plant Structure (Morphological and Anatomical details), compartmentalization

Unit 2: Plants and Intelligence

03 Hours

Introduction to Plant Intelligence and Memory - Historical Perspective

Unit 3: Sensory Biology

04 Hours

Cell to cell communication, Self-recognition, Recognition of Neighbours and Relatives.

Unit 4: Learning in Plants

06 Hours

Habituation learning, Learning by association (Rhizosphere and Mycorrhizae), Adaptive Intelligence (Hydrophytes, Xerophytes, Parasites, Carnivorous plants, Thermogenic plants), Response to water, heat, salt, cold stress. Mechanical and chemical defence against predators with special reference to secondary metabolites.

Unit 5: Intelligent Behaviour of Plants

13 Hours

A Guided tour to Plant Movements (Tropic Movements, Movement towards gravity, light, tracking sun movements, prey driven movements, liberation movements), Intelligent response to minerals and light (Seed germination, root cap, response of shoot, leaf morphology and anatomy), Unique pollination and seed dispersal mechanisms, Osmosis, Short and long-distance transport of water and food, Metabolic redundancy, Life Cycle Signaling in response to external stimuli (Reactive Oxygen Species, peptides, receptors, hormones).

Practicals:(60 hours)

1. Study the structure of plant cell using temporary mount
2. Study of the cell as an osmotic system (Plasmolysis and Deplasmolysis).
3. Demonstration of the phenomenon of protoplasmic streaming in *Hydrilla* leaf.
4. Extraction and qualitative analysis of alkaloids, flavonoids, tannins and phenols.
5. To study the phenomenon of seed germination (effect of light).
6. To study light sensitivity and etiolation vs. de-etiolation.
7. Morphology and orientation of chloroplasts in leaves growing in light and dark, plasmodesmata connections and plasma membrane receptors. (through photographs or other digital resources)
8. Estimation of total photosynthetic pigments.
9. Study of (a) Root cap (b) Trichomes: non-glandular and glandular (c) Leaf Morphology and Anatomy. (d) pulvinus anatomy in *Mimosa pudica*. (e) Specialised motor tissue at the base of monocot leaves
10. (a) Study of morphological and anatomical adaptations of hydrophytes, xerophytes. (b). Study of biotic interactions of the following: Stem parasite (*Cuscuta*), Root parasite (*Orobanch*) Epiphytes, Predation (Insectivorous plants).
11. Pollination types (selected) and associated seed dispersal mechanisms

Suggested Readings:

1. Mauseth, J.D. (1988). Plant Anatomy. The Benjamin/Cummings Publisher, USA.
2. Evert, R.F., Eichhorn, S.E. (2012). Raven Biology of Plants, 8th edition, New York, NY: W.H. Freeman and Company.
3. Koller, D. (2011). The Restless Plant. Edited by Elizabeth Van Volkenburgh, Harvard University Press, Cambridge, Massachusetts, and London, England.
4. Crang, R., Lyons-Sobaski, S., Wise, R. (2018) Plant Anatomy- A Concept based approach to the structure of seed plants, Springer Nature, Switzerland.

Additional Resources:

Trewavas A. (2017). The foundations of plant intelligence. Interface Focus 7: 20160098.
<http://dx.doi.org/10.1098/rsfs.2016.0098>

GENERIC ELECTIVES (GE-10)**Credit distribution, Eligibility and Pre-requisites of the Course**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Informatics and Statistics for Biology and Allied Sciences | 4 | 2 | 0 | 2 | 12 th Pass | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

- To build an understanding in silico/computational approaches in various aspects of understanding biology and biological research.

- To build analytical skills and integrate the principles of statistical analyses for robust interpretation of biological observations.

Learning outcomes

The student will understand

- the basics of bioinformatics and develop awareness of the interdisciplinary nature of this field.
- learn about biological databases, sequence retrieval, alignment, and phylogenetic analysis using various tools.
- understand the basic concept of sampling methods, data classification, presentation and statistical analysis.

SYLLABUS OF GE-10

Unit 1: Introduction to Bioinformatics

03 Hours

Historical background, Aims and scope, bioinformatics in Genomics, Transcriptomics, Proteomics, Metabolomics, Systems biology and drug discovery, Applications and Limitations in bioinformatics.

Unit 2: Biological databases

04 Hours

Introduction to biological databases - Primary, secondary and composite databases. Study of following databases: NCBI (GenBank, PubChem, PubMed and its tools (BLAST)), introduction to EMBL, DDBJ, UniProt, PDB and KEGG.

Unit 3: Basic concepts of Sequence alignment

04 Hours

Similarity, identity and homology. Concepts of alignment (gaps and penalty); Alignment – pairwise and multiple sequence alignments

Unit 4: Molecular Phylogeny

04 Hours

Introduction to Molecular Phylogeny, methods of construction of phylogenetic trees: maximum parsimony (MP), maximum likelihood (ML) and distance (Neighbor-joining) methods.

Unit 5: Biostatistics

02 Hours

Biostatistics – definition, Basics of descriptive and inferential statistics; Limitations and applications of biostatistics.

Unit 6: Data types and presentation

03 Hours

Primary and secondary data; Sampling methods (in brief); tabulation and presentation of data;

Unit 7: Descriptive Statistics

04 Hours

Measures of central tendency - mean, median, and mode; Measures of dispersion - range, standard deviation, and standard error.

Unit 8: Correlation and Regression

03 Hours

Types and methods of correlation, Introduction to simple regression equation; similarities and dissimilarities between correlation and regression.

Unit 9: Statistical inference

03 Hours

Hypothesis – (simple hypothesis), student's t test, chi-square test.

(Note: Numerical based questions of unit 7, 8 and 9 should be covered only in practical)

Practicals: 60 Hours

1. Biological databases (NCBI, EMBL, UniProt, PDB)
2. Literature retrieval from PubMed
3. Sequence retrieval (protein and gene) from NCBI (formats - FASTA, GenBank and GenPept formats)
4. Protein Structure retrieval from PDB (in pdb format) and visualization by viewing tools (Ras Mol/ J mol/Mol*/Swiss 3D Viewer/Pymol)
5. Multiple sequence alignment (MEGA/Clustal omega)
6. Construction of phylogenetic tree (PHYLIP/ MEGA/ Clustal omega).
7. Making of Bar diagrams, Pie chart, Histogram, Frequency polygon, Cumulative frequency curve (any four) in the given data set using Microsoft Excel
8. Calculation of mean, mode, median, standard deviation and standard error (through manual calculation and using Microsoft Excel) (use only ungrouped data)
9. Calculation of correlation coefficient values by Karl Pearson's /Spearman Rank methods (through manual calculation and using Microsoft Excel)
10. Student's t-test (using Microsoft Excel only), chi square test (Manual and using Microsoft Excel)

Suggested readings:

1. Ghosh, Z., Mallick, B. (2008). *Bioinformatics – Principles and Applications*, 1st edition. New Delhi, Delhi: Oxford University Press.
2. Baxevanis, A.D., Ouellette, B.F., John (2005). *Bioinformatics: A Practical Guide to the Analysis of Genes and Proteins*, 3rd edition. New Jersey, U.S.: Wiley & Sons, Inc.
3. Roy, D. (2009). *Bioinformatics*, 1st edition. New Delhi, Delhi: Narosa Publishing House.
4. Andreas, D., Baxevanis, B.F., Francis, Ouellette. (2004). *Bioinformatics: A practical guide to the analysis of genes and proteins*, 3rd edition. New Jersey, U.S.: John Wiley and Sons.
5. Khan, I.A., Khanum, A. (2004). *Fundamentals of Biostatistics*, 5th edition. Hyderabad: Ukaaz publications.
6. Campbell, R.C. (1998). *Statistics for Biologists*. Cambridge, U.S.A.: Cambridge University Press

Additional Resources:

1. Pevsner, J. (2009). *Bioinformatics and Functional Genomics*, 2nd edition. New Jersey, U.S.: Wiley Blackwell.
2. Xiong, J. (2006). *Essential Bioinformatics*, 1st edition. Cambridge, U.K.: Cambridge University Press.
3. Mount, D.W. (2004). *Bioinformatics: Sequence and Genome analysis* 2nd edition, Cold Spring Harbor Laboratory Press, USA.
4. Zar, J.H. (2012). *Biostatistical Analysis*, 4th edition. London, London: Pearson Publication.
5. Pandey, M. (2015). *Biostatistics Basic and Advanced*. New Delhi, Delhi: M V Learning.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DEPARTMENT OF ZOOLOGY

Category-I **BSc. (H) Zoology**

DISCIPLINE SPECIFIC CORE COURSE– 4 (DSC-4): Non-Chordata: Coelomates

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------------|----------------|--|-----------------|----------------------------|---|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Non-Chordata: Coelomates | 04 | 02 | 0 | 02 | Class XII pass with Biology/ Biotechnology | NIL |

Learning Objectives

The learning objectives of this course are as follows:

- The course aims to impart in-depth knowledge about the diverse life forms from the taxonomic positions of Annelida to Echinodermata.
- It will help the students to identify the body plan types of complex non-chordates and their systematic organization based on evolutionary relationships, structural and functional affinities.
- The course will help the students to understand the characteristic morphological, adaptive and anatomical features of diverse animals
- The course will help students to understand the economic and ecological significance of various animals in human life.
- The course will create interest among them to explore and appreciate the animal diversity in nature.

Learning Outcomes

By studying this course, students will be able to

- learn about the importance of systematics, taxonomy, and structural organization of non-chordate coelomates.
- recognize the diversity of non-chordates living in varied ecological habitats.
- critically analyse the organization, complexity and characteristic features of non-chordates.
- comprehend the economic importance of non-chordates, their interaction with the environment and their role in the ecosystem.
- enhance collaborative learning and communication skills through practical sessions, teamwork, group discussions, assignments, and projects.

SYLLABUS OF DSC-4

UNIT – I Annelida

07 Hours

General characteristics and classification; Excretion in Annelida; Evolution of coelom and metamerism.

UNIT – II Arthropoda and Onychophora

12 Hours

General characteristics and classification (Special reference to Insecta up to orders); Vision and Respiration in Arthropoda; Metamorphosis in insects; Social life of bees and termite, Evolutionary significance of Onychophora.

UNIT – III Mollusca

06 Hours

General characteristics and classification; Respiration in Mollusca; Torsion and Detorsion in Gastropoda; Pearl formation in bivalves.

UNIT – IV Echinodermata

05 Hours

General characteristics and classification; Water-vascular System in Asteroidea.

Note: Outline classification up to classes to be followed from “Ruppert, Fox and Barnes (2004). Invertebrate Zoology: A Functional Evolutionary Approach”. VII Edition, Cengage Learning, India.

Practical component -60 Hours

1. Study of *Aphrodite*, *Nereis*, *Heteronereis*, *Sabella*, *Serpula*, *Chaetopterus*, *Pheretima*, *Hirudinaria*, Trochophore larva.
2. Study of T.S. through pharynx, gizzard, and typhlosolar intestine of earthworm.
3. Study of *Limulus*, *Palamnaeus*, *Palaemon*, *Daphnia*, *Balanus*, *Sacculina*, *Cancer*, *Eupagurus*, *Scolopendra*, *Julus*, *Bombyx*, *Periplaneta*, termite, *Apis*, *Musca*.
4. Study of *Peripatus*.
5. Study of *Chiton*, *Dentalium*, *Pila*, *Doris*, *Helix*, *Unio*, *Patella*, *Ostrea*, *Pinctada*, *Sepia*, *Octopus*, *Nautilus*.
6. Study of *Pentaceros/Asterias*, *Ophiura*, *Clypeaster*, *Echinus*, *Cucumaria*, *Antedon*; Any two larval forms.
7. Study of mouth parts, digestive system and nervous system of *Periplaneta*. *
8. Study of the digestive system of *Pheretima*. *
9. Submit a Project Report on the larval forms in different phyla OR field study of the insect diversity.

*Subject to UGC approval and guidelines

Essential/recommended readings

1. Ruppert, Fox and Barnes (2004). Invertebrate Zoology. VII Edition, Cengage Learning, India.
2. Pechenik, J. A. (2015). Biology of the Invertebrates. VII Edition, McGraw-Hill Education.
3. Barnes, R.S.K., Calow, P., Olive, P.J.W., Golding, D.W. and Spicer, J.I. (2002). The Invertebrates: A New Synthesis. III Edition, Blackwell Science

Suggestive readings

1. Ruppert, E.E., Fox, R.S., Barnes, R. D. (2003). Invertebrate Zoology: A Functional Evolutionary Approach. VII Edition, Cengage Learning, India
2. Barrington, E.J.W. (2012). Invertebrate Structure and Functions. II Edition, EWP Publishers

DISCIPLINE SPECIFIC CORE COURSE– 5 (DSC-5): Fundamentals of Biomolecules

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-------------------------------------|-----------|-----------------------------------|----------|---------------------|---|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Fundamentals of Biomolecules | 04 | 02 | 0 | 02 | Class XII pass with Biology/ Biotechnology | NIL |

Learning Objectives

The learning objectives of this course are as follows:

- To provide fundamental and precise knowledge of biomolecules that play a crucial role in all processes of life and the development of diseases.
- To make the students understand the fundamental building blocks of living organisms that include carbohydrates, proteins, lipids, nucleic acids
- To apprise the students of the various functions of the molecules like providing structural integrity to the tissue-engineered constructs.
- Through this course, the students would be able to understand the physiological importance of these biomolecules.
- The enzymatic study would enable them to understand the various metabolic pathways and physiological reactions.

Learning Outcomes

By studying this course, students will be able to

- Interpret the structure-functional relationships of carbohydrates, proteins, lipids and nucleic acids.
- Understand the qualitative analysis of functional groups
- understand the properties of various biomolecules.
- appreciate the action of the enzyme and the various factors that affect their action detail.

SYLLABUS OF DSC-5

UNIT – I Carbohydrates

06 Hours

Structure and biological importance: with emphasis on aldose, ketose, chiral centre, polarised Light, Fischer nomenclature, Haworth projection formula, mutarotation of glucose, anomers, pyranose, furanose, glycosidic linkage; reducing and non-reducing sugars: monosaccharides, disaccharides, polysaccharides and glycoconjugates.

UNIT – II Lipids

04 Hours

Structure and Significance: Physiologically important saturated and unsaturated fatty acids, tri-acylglycerols, phospholipids, glycolipids, steroids.

UNIT – III Proteins**08 Hours**

Amino acids: Structure, classification and general properties of α -amino acids; physiological importance of essential and non-essential amino acids; proteins: bonds stabilizing protein structure; Levels of organization in protein motifs, folds and domains; Denaturation.

UNIT – IV Nucleic Acids**04 Hours**

Structure: purines and pyrimidines, nucleosides, nucleotides, nucleic acids; Cot Curves: Base pairing, Denaturation and Renaturation of DNA; Types of DNA and RNA.

UNIT – V Enzymes**08 Hours**

Nomenclature and classification, cofactors; specificity of enzyme action, Isozymes, Mechanism of enzyme action; Enzyme kinetics; factors affecting rate of enzyme-catalysed reactions; derivation of Michaelis-Menten equation, concept of K_m and V_{max} , Lineweaver-Burk plot, multi-substrate reactions, enzyme inhibition; Allosteric enzymes and their kinetics; Regulation of enzyme reaction.

Practical component – 60 Hours

1. Understanding the structures of biomolecules through ball and stick models.
2. To understand the preparation and roles of two important biological buffer systems: phosphate and bicarbonate; Preparation of buffers and determination of pH.
3. Identification of the functional groups by qualitative tests:
 - a. Carbohydrates
 - b. Lipids
 - c. Proteins
4. Separation of amino acids by paper chromatography.
5. Study the action of salivary amylase under optimum conditions.
6. Study the effect of pH, temperature and inhibitors on the action of salivary amylase.

Essential/recommended readings

1. Nelson, D.L., Cox, M.M. (2017). Lehninger: Principles of Biochemistry (7th ed.). New York, WH: Freeman Company.
2. Murray, R.K., Bender, D.A., Botham, K.M., Kennelly, P.J., Rodwell, V.W. and Well, P.A. (2009). Harper's Illustrated Biochemistry. XXVIII Edition, International Edition, The McGraw- Hill Companies Inc.

Suggestive readings

1. Stryer, L., Berg, J., Tymoczko, J., Gatto, G. (2019). Biochemistry (9th ed.). New York, WH: Freeman.
2. Voet, D., Voet, J. G. (2013). Biochemistry (4th ed.). New Jersey, John Wiley & Sons Asia Pvt. Ltd.

DISCIPLINE SPECIFIC CORE COURSE– 6 (DSC-6): Human Physiology-Control and Coordination Systems

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|-----------|-----------------------------------|----------|---------------------|---|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Human Physiology-Control and Coordination Systems | 04 | 02 | 0 | 02 | Class XII pass with Biology/ Biotechnology | NIL |

Learning Objectives

The learning objectives of this course are as follows:

- The course will provide a thorough understanding of the normal body function and helps to determine the cause of disease.
- It will enable the development of new and more effective treatments and guidelines for maintaining good health.
- It will equip the students with an ability to pursue career in medical and healthcare sector, pharmaceuticals and other related areas.
- It will help in understanding how these systems interact among themselves to maintain stability or homeostasis.

Learning Outcomes

By studying this course, students will be able to:

- appreciate human physiology and have its enhanced knowledge.
- recognize and identify principal tissue structures and functions
- understand the functions of important physiological systems including the nervous system, muscular system, endocrine and reproductive system
- learn an integrative approach to understand how these separate systems interact to yield integrated physiological responses to maintain homeostasis in the body along with feedback mechanisms.
- synthesize ideas to make the connection between knowledge of physiology and real-world situations, including healthy lifestyle decisions and problems faced due to homeostatic imbalances
- perform, analyze and report on experiments and observations in physiology
- know the fundamentals and understand advanced concepts so as to develop a strong foundation that will help them to acquire skills and knowledge to pursue an advanced degree.

SYLLABUS OF DSC-6

UNIT – I Nervous System and Sense Organs

08 Hours

Structure of neuron, resting membrane potential, origin and conduction of action potential across

the myelinated and unmyelinated nerve fibers; Types of synapses, synaptic transmission, Neuromuscular junction.

UNIT – II Muscle Physiology

07 Hours

Mechanism of muscle contraction; Characteristics of muscle twitch; Motor unit, summation, and tetanus.

UNIT – III Endocrine System

08 Hours

Hormones secreted by the glands, their physiological action and the disorders related to their secretion; Classification of hormones and their regulation; Mode of hormone action- Signal transduction pathways for peptide and steroid hormones.

UNIT – IV Reproductive System

07 Hours

Physiology of male and female reproduction– spermatogenesis, oogenesis, follicular development, steroidogenesis, implantation, pregnancy, and mammary gland development.

Practical component – 60 Hours

1. Classification, structure and functions of tissues: epithelial, connective, muscular and nervous tissue.
2. Structure, histology, types and function of bones and cartilage.
3. Classification and histological structure of muscle; ultrastructure of striated muscle.
4. Preparation of temporary mounts: Squamous epithelium, Striated muscle fibres, Nerve cells.
5. Demonstration of the unconditioned reflex action (Deep tendon reflex such as knee jerk reflex).
6. Recording of simple muscle twitch with electrical stimulation (Interpretation/ Virtual).
7. Study of permanent slides of Mammalian Skin, Spinal cord, Hypothalamus, Pineal, Pituitary, Thyroid, Parathyroid, Pancreas, Adrenal, Testis and Ovary.
8. Permanent slide preparation from various tissues: Tissue fixation, block preparation, tissue sectioning, H&E staining, microscopy (Minimum three tissues; tissue can be procured from the slaughterhouse).

Essential/recommended readings

1. Tortora, G.J. and Derrickson, B.H. (2012). Principles of Anatomy and Physiology. XIII Edition, John Wiley and Sons, Inc.
2. Widmaier E, Raff H and Strang K. (2013) Vander's Human Physiology: The Mechanism of Body Functions. XIII Edition, McGraw-Hill Education.
3. Guyton, A.C. and Hall, J.E. (2011) Textbook of Medical Physiology. XII Edition, Harcourt Asia Pvt. Ltd/ W.B. Saunders Company.
4. Eroschenko, Victor P. (2012) Di Fiore's Atlas of Histology with Functional Correlations; 12th edition, CBS Publishers and Distributors Pvt. Ltd.

Suggestive readings

1. Chatterjee, C.C. (2021) Human Physiology, 14th Edition, Volume 1 & Volume II, CBS Publishers and Distributors Pvt. Ltd.
2. Kesar, S. and Vashisht, N. (2007) Experimental Physiology. Heritage Publishers.

Category-II
BSc Life Science with Zoology as one of the Core Disciplines

DISCIPLINE SPECIFIC CORE COURSE -6 (Zoo-LS-DSC-06):– Cell and Developmental Biology of Animals

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|-----------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Cell and Developmental Biology of Animals Zoo-LS-DSC-06 | 04 | 02 | 0 | 02 | Class XII pass | NIL |

Learning Objectives

The learning objectives of this course are as follows:

- The course will help the students to learn and develop an understanding of a cell as a basic unit of life.
- The course will enable them to understand the functions of cellular organelles and how a cell carries out and regulates cellular functions.
- The course will provide the students a complete comprehension about the essential vertebrate developmental biology
- The course will help the students to understand the conundrum of **the different levels of biological complexity** by tracing them back to events at the level of genes and genomes.

Learning Outcomes

By studying this course, students will be able to

- Explain the structure and functions of cell organelles involved in diverse cellular processes.
- Know the evolution of different concepts in developmental biology.
- Be able to understand the process of gamete formation from stem cell population to mature ova and sperm. The students will know the differences between Spermatogenesis and Oogenesis.
- Be able to comprehend the sequence of steps leading to the fusion of gametes and learn the contribution of sperm and ova to zygote formation
- Be able to understand how polyspermy is avoided in animal kingdom.
- Learn the mechanisms underpinning cellular diversity and specificity in animals.
- Learn the methods and tools related to developmental biology help to understand different processes of embryogenesis.

SYLLABUS OF Zoo-LS-DSC-06

UNIT - I Cell Division and Differentiation

06 Hours

Types of animal cells and tissues, Mitosis, meiosis, Cell cycle regulation, Cell-cell communication, Stem cells, Differential gene expression.

UNIT- II: Scope and History of Developmental Biology

03 Hours

Historical perspective including contributions by eminent scientists and landmark experiments in the field of Developmental Biology, Concepts of Epigenesis, Preformation, Von Baer laws.

UNIT- III: Early Embryonic Development

15 Hours

Gametogenesis: Spermatogenesis and Oogenesis in mammals; Types of Eggs and Egg membranes Fertilization: External (amphibians) and Internal (mammals), Fast and slow blocks to Polyspermy; Types and Patterns of cleavage; Types of morphogenetic movements; Early development of frog and chick up to gastrulation. Fate maps

UNIT- IV: Late Embryonic Development

04 Hours

Fate of Germ Layers; Formation of neural tube, Extra-embryonic membranes in birds

UNIT- IV: Post Embryonic Development

02 Hours

Metamorphic events and its hormonal regulation in amphibians. Prokaryotic and Eukaryotic cells; Various models of plasma membrane structures, Transport across membranes: active and passive transport, facilitated transport; Cell-cell junctions, structures, and functions: Tight junctions, adherens junctions, gap junctions.

Practical Component – 60 Hours

1. Study of the various stages of meiosis through permanent slides.
2. Frog - Study of developmental stages - whole mounts and sections through permanent slides- cleavage stages, blastula, gastrula, neurula, tail bud stage, tadpole external and internal gill stages.
3. Chick – Study of Whole Mounts of developmental stages of Chick through permanent slides (HH stages)- 13 hrs, 18hrs, 24hrs, 28hrs, 33hrs, 36hrs, 48hrs, 72hrs and 96hrs.
4. Study of the different types of placenta along with its function- through permanent slides / photomicrograph.
5. Study of various developmental stages in the life Cycle of Drosophila using stock culture/ permanent slides/ photomicrograph.
6. Visit to IVF centre/ Poultry Farm.
7. Project report on IVF Centre/ Poultry farm/ Drosophila culture/ Zebra fish culture.

Essential/recommended readings

1. Cooper, G.M., Hausman, R.E. (2019) *The Cell: A Molecular Approach*. VIII Edition, ASM Press and Sinauer Associates.
2. Becker, Kleinsmith, and Hardin (2018) *The World of the Cell*, IX Edition, Benjamin Cummings Publishing, San Francisco.
3. Gilbert, SF (2014) *Developmental Biology* (10th edition). Sinauer Associates, Inc., Publishers, Sunderland, Massachusetts, USA. ISBN : 9780878939787
4. Balinsky, B.I. (2008). *An introduction to Embryology*, International Thomson Computer Press.
5. Freeman and Bracegirdle (1975, 2nd Edition) “*An Atlas of Embryology*”, Published by Heinmann.

Suggestive readings

1. De Robertis, E.D.P. and De Robertis, E.M.F. (2009) *The Cell and Molecular Biology*, Lippincott Williams & Wilkins, Philadelphia.
2. Karp, G. (2015). *Cell and Molecular Biology: Concepts and Experiments*, VIII Edition, John Wiley & Sons Inc
3. Kalthoff Klaus (2001) *Analysis of Biological Development*, 2nd ed. Boston, MA: Mc Graw-Hill, ISBN : 0071180788
4. Wolpert, L & Tickle, C (2011) *Principles of Developmental Biology* (4th edition). Oxford University Press, ISBN: 9780198792918
5. Carlson, Bruce M (1996). *Patten's Foundations of Embryology*, McGraw Hill, Inc. ISBN : 9780070634275

Category-IV

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES OFFERED BY THE DEPARTMENT OF ZOOLOGY

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

GENERIC ELECTIVES (GE-3): Economic Zoology

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Economic Zoology | 04 | 02 | 0 | 02 | Class XII pass | NIL |

Learning Objectives

The learning objectives of this course are as follows:

- It deals with the application of zoological knowledge for the benefit of mankind by understanding the economy, health and welfare of humans.
- It includes culturing organisms for mass production for human use and to control or eradicate harmful ones.
- It will bring to the fore the multidisciplinary nature of Economic Zoology as it includes sericulture, apiculture, aquaculture, pisciculture and insect pests of agriculture.

Learning Outcomes

By studying this course, students will be able to

- develop an understanding of the beneficial higher and lower organisms in terms of economic prospective.
- aquatic organisms and agriculturally important insect pests based on their morphological characteristics/structures.
- develop a critical understanding of the contribution of organisms to the welfare of society.
- examine the diversity of insect pests of different orders in the agro-ecosystem and sustainable pest management strategies.

SYLLABUS OF GE-3

UNIT – I Aquaculture

05 Hours

Definition, scope, and significance of Aquaculture, Prawn culture, Pearl culture, Edible Oyster culture.

UNIT – II Pisciculture

07 Hours

Basic concept on mono and composite fish culture (Carp culture); Fish diseases caused by *Ichthyophthirius multifiliis*, *Trichodinia* sp. and *Ichthyobodo* sp., symptoms and control; Maintenance of aquarium.

UNIT – III Sericulture

05 Hours

Different species and economic importance of silkworm, Mulberry and Non-mulberry Sericulture (Eri, Muga, Tussar), Sericulture techniques.

UNIT – IV Apiculture

05 Hours

Different species of Honeybee, types of beehives - Newton and Langstroth, Bee Keeping equipment, Methods of extraction of honey (Indigenous and Modern) and its processing, Products of apiculture industry (Honey, Bees Wax, Propolis, Royal jelly, Pollen etc.) and their uses.

UNIT – V Agricultural Crop Pest and Management

08 Hours

Bionomics of crop pests of rice (*Leptocorisa acuta*); sugarcane (*Pyrilla perpusilla*); vegetable (*Raphidopalpa foveicollis*); and stored grain (*Corcyra cephalonica*); Pest Management Strategies (Physical, Chemical & Biological)

Practical component – 60 Hours

1. Study of aquatic organisms - prawns, oysters and fishes (*any three*) through museum specimens in the laboratory with details on their classification, distribution and specialized features.
2. Study of different species of aquarium fishes (Goldfish, Guppy, Swordtail fish) and maintenance of aquarium in lab/indoor.
3. Study of major crop pests of rice (*Leptocorisa acuta*), sugarcane (*Pyrilla perpusilla*), vegetable (*Raphidopalpa foveicollis*) and stored grain (*Corcyra cephalonica*) belonging to different orders.
4. Study of *Bombyx mori*, its life cycle and economic importance.
5. Study of the life history of honeybee, *Apis cerana indica* and *Apis mellifera* from specimen/ photographs - egg, larva, pupa, adult (queen, drone, worker)
6. Study of artificial hive (Langstroth/Newton), its various parts and beekeeping equipment.
7. Project report on life cycle of any one crop pest or on a product obtained from apiculture industry.
8. Field study/lab visit to an apiary/honey processing unit/sericulture institute/aquarium shop/fish farm/pisciculture unit.

Essential/recommended readings

1. Atwal, A.S. (1993) Agricultural Pests of India and Southeast Asia. Kalyani Publishers, New Delhi.
2. Shukla, G.S. and Upadhyay, V.B.: Economic Zoology, 4e, 2002, Rastogi.
3. D. B. Tembhare. (2017) Modern Entomology. Published by Himalaya Publishing House (ISO 9001: 2008 Certified).
4. Dawes, J. A. (1984) The Freshwater Aquarium, Roberts Royce Ltd. London.

Suggestive readings

1. S.S. Khanna and H.R. Singh. A Textbook of Fish Biology & Fisheries Published by Narendera Publishing House. 3rd Edition. (ISBN13: 9789384337124)
2. Dokuhon, Z.S. (1998). Illustrated Textbook on Sericulture. Oxford & IBH Publishing Co., Pvt. Ltd. Calcutta.

GENERIC ELECTIVES (GE-4): Lifestyle Disorders

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Lifestyle Disorders | 04 | 02 | 0 | 02 | Class XII pass | NIL |

Learning Objectives

The learning objectives of this course are as follows:

- The course aims to introduce the students to the concept of health, nutrition, and the factors affecting it.
- It will apprise students of the prevalence of emerging health issues affecting the quality of life.
- The course will facilitate the understanding of different physical and psychological associated disorders and their management for a healthy lifestyle.
- It highlights the important lifestyle-related disorders and describes the risks and remedies in relation to adopting a better life.

Learning Outcomes

By studying this course, students will be able to

- have a better understanding of lifestyle choices and the diseases associated with them.
- have an in-depth understanding of making better lifestyle decisions.
- learn about various techniques for preliminary diagnosis of lifestyle disorders

SYLLABUS OF GE-4

UNIT – I Introduction to Lifestyle

05 Hours

Traditional Indian lifestyle vs modern Indian lifestyle, lifestyle diseases – definition, risk factors-erratic sleep patterns, wrong food choices, smoking, alcohol abuse, stress, lack of optimum physical activity, illicit drug use, Obesity, respiratory diseases, diet and exercise.

UNIT – II Diabetes and Obesity

05 Hours

Types of Diabetes mellitus; Blood glucose regulation; Complications of diabetes-paediatric and adolescent obesity-weight control and BMI (Body Mass Index), Prediabetes, PCOS/PCOD.

UNIT – III Cardiovascular Diseases

06 Hours

Coronary atherosclerosis-Coronary artery disease, Causes-Fat and lipid, Alcohol Abuse-Diagnosis, Electrocardiograph, Echocardiograph, Treatment, Exercise and Cardiac rehabilitation.

UNIT – IV Cancer**05 Hours**

Introduction to Cancer and general diagnostic methods to detect cancer; Lung Cancer, Mouth Cancer: associated lifestyle choices, symptoms and treatment.

UNIT – V Hypertension**04 Hours**

Risk factors, complications (brain, heart, eye and kidney) and management of hypertension.

UNIT – VI WHO Global action plan and Monitoring**05 Hours**

WHO Global action plan and Monitoring framework for prevention and control of non-communicable diseases, NPHCE (National Programme for the Health Care of Elderly), Fit India movement (Yoga and meditation).

Practical component – 60 Hours

1. Estimation of blood glucose (GOD/POD) by kit.
2. Calculation of BMI, waist to hip ratio, skin fold test.
3. Imaging techniques for cancer diagnosis. CT Scan, MRI, PET-CT scan. Confirmatory Biopsy.
4. Blood pressure measurement using a sphygmomanometer.
5. Study of cardiac rehabilitation- thrombolytic agents and balloon angioplasty.
6. Project Work based on Case studies related to risk factors of any ONE lifestyle disorder studied.

OR

7. To write a review of personal experience of using any of the available health or lifestyle-related applications over a period of time with some data to correlate.

Essential/recommended readings

1. James M.R, Lifestyle Medicine, 2nd Edition, CRC Press,2013,
2. Tortora, G.J. and Grabowski, S. (2006). Principles of Anatomy & Physiology. XI edition. John Wiley & Sons
3. Cooper, G.M., Hausman, R.E. (2009). The Cell: A Molecular Approach. V Edition, ASM Press and Sinauer Associates

Suggestive readings

1. Guyton, A.C. & Hall, J.E. (2006). Textbook of Medical Physiology. XI Edition. Harcourt Asia PTE Ltd/W.B. Saunders Company.
2. Widmaier E, Raff H and Strang K. (2013) Vander's Human Physiology: The Mechanism of Body Functions. McGraw-Hill Education 13th Edition.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

ACBR

Category-I

BSc. (HONS.) Biomedical Sciences

DISCIPLINE SPECIFIC CORE COURSE– 4 (DSC-4): Biochemistry

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Biochemistry | 04 | 03 | 0 | 01 | Class pass XII | NIL |

LEARNING OBJECTIVES

The objective of this course is to effectively incorporate the fundamentals of metabolism through key biochemical pathways and make learners appreciate the requirement for the stringency of their regulation; introduce various biochemical techniques used in the characterization of the proteins and a detailed account on how enzymes function: their kinetics, regulation and inhibition.

COURSE OUTCOMES

- Students will gain an understanding of fundamental biochemical principles of metabolism of biomolecules (Carbohydrates, Proteins, Lipids and Nucleic acids) and the associated bio- energetics. They will learn the biochemical reactions in metabolic pathways and understand their interrelations, logics and patterns.
- They will also understand the role of enzymes in the biochemical reactions and the connection between biochemical defects and metabolic disorders. Students would additionally gather a firm understanding and relevance of stringent regulation of metabolic pathways.
- Having understood the structural architecture of proteins in earlier semesters, students shall learn how biological molecules (especially proteins) are characterized through various analytical techniques such as types of column chromatography methods, Polyacrylamide Gel Electrophoresis (PAGE) that are used in contemporary biochemistry research laboratories.
- Students will get a grasp on central concepts underlying enzyme catalysis, kinetics and their mechanism of action. Effects of different kinds of enzyme-inhibitors will also be learned.
- Students would learn how coenzymes assist enzymes in catalyzing biochemical reactions and what is the criterion for their classification.
- Having studied the role of enzymes that regulate metabolic pathways in the third unit, students would learn the general properties of regulatory enzymes, their activity and kinetics.

COURSE CONTENT:

| | |
|--|-------------------|
| Unit I: Metabolic pathways and their allosteric regulation | (22 hrs) |
| Carbohydrates - Glycolysis, Gluconeogenesis, Tricarboxylic acid cycle and their regulation, Cori cycle, Hexose monophosphate shunt. Lipids - Mobilization of triglycerides, Metabolism of glycerol, Biosynthesis and β -oxidation of saturated fatty acids (palmitic acid) and their regulation. Significance of ketone bodies. Proteins - General over view, Transamination, Deamination, Glucose-Alanine cycle, Urea cycle and its regulation. Nucleic acid - General overview, an outline of purine and pyrimidine metabolism. Electron transport chain, Oxidative phosphorylation and Substrate-level phosphorylation. | |
| Unit II: Analytical methods in protein characterization | (08 Hours) |
| Introduction to spectrophotometry & Lambert-Beer's law, Column chromatography: Ion exchange chromatography, Gel filtration and Affinity chromatography, SDS-PAGE | |
| Unit III: Enzymes | (07 Hours) |
| Introduction to enzymes, Concept of Lock & key and 'Induced fit theory, Concept of activation energy and binding energy. Enzyme kinetics: Michaelis-Menten equation and its physiological significance. Concept of enzyme inhibition: types of inhibitors (competitive & non-competitive) and their examples. | |
| Unit IV: Coenzymes | (04 Hours) |
| Classification: various types and their function. | |
| Unit V: Regulatory Enzymes | (04 Hours) |
| General properties of allosteric enzymes. Enzyme regulation by covalent modification. Zymogens. | |

PRACTICAL – 30 Hours

(Wherever wet lab experiments are not possible, the principles and concepts can be demonstrated through any other material or medium including videos/virtual labs etc.)

1. Measurement of absorbance & %transmittance of a solution using spectrophotometer/colorimeter.

2. Preparation of standard plot and estimation of protein concentration by any one method: Biuret/Lowry/Bradford.
3. Estimation of glucose concentration by an enzymatic/non-enzymatic method.
4. Separation of biomolecules (sugar/amino acids) by thin-layer chromatography (TLC).
5. Separation of biomolecules by gel filtration/Calculation of void volume of Sephadex G-25 column, using Blue Dextran.
6. Analysis of SDS-PAGE as a separation technique (gel analysis).
7. To perform an assay of an enzyme under optimal conditions.
8. Determination of K_m , V_{max} and K_{cat} value of a given enzyme from the provided experimental data.

SUGGESTED READINGS:

- Nelson, D. L., & Cox, M. M. (2021). *Lehninger: Principles of Biochemistry* (8th ed.). Macmillan. ISBN:9781319322328
- Wilson and Walker's Principles and Techniques of Biochemistry and Molecular Biology (2018). 8th ed. Hofmann A. and Clokie S.(Eds.) Cambridge University Press, Cambridge, U.K.
- Plummer, D.T. (2012). *An Introduction to Practical Biochemistry*. New Delhi, India: McGraw-Hill College.
- S. K. Sawhney / Randhir Singh. (2009): Introductory Practical Biochemistry, Narosa Publishers, ISBN-13 : 978-8173193026
- Donald Voet, Judith G. Voet (2021) Voet's Biochemistry, Adapted ed 2021, ISBN: 9789354243820.

BOOK FOR BASIC CONCEPTUAL READING

- Berg, J., Gatto, G., Stryer, L. and Tymoczko, J. L. (2019). *Biochemistry*. New York, USA: W. H. Freeman and Company.
- Devlin, (2011). *Textbook of biochemistry with clinical correlations*. UK: Wiley T & Sons.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE– 5 (DSC-5): PRINCIPLES OF GENETICS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Principles of Genetics | 04 | 03 | 0 | 01 | Class XII pass | NIL |

LEARNING OBJECTIVES:

The course intends to introduce students to Mendelian principles of inheritance, deviations from Mendelian inheritance and extra-nuclear inheritance, Introduction to pedigree analysis for autosomal and X-linked traits, Understanding of differences between prokaryotic and eukaryotic genome organization, transposons, and basic cytogenetics and Understanding of mechanisms of sex determination.

COURSE OUTCOMES:

- The flavour of genomics as a progression from Mendelian genetics will be introduced to the students. They will learn about classical experiments that led to discovery of the genetic material. They will also learn the structure of DNA.
- Students will be able to explain Mendelian laws of inheritance, deviations from monohybrid ratio (incomplete dominance, codominance, multiple alleles and lethal genes) and deviations from dihybrid ratio (gene-gene interactions, linkage). They must be able to distinguish sex-linked, sex-limited and sex-influenced traits. Students must also be able to interpret patterns of inheritance for autosomal and X-linked traits from pedigrees.
- Students would learn the concept of extra-nuclear inheritance.
- Students would learn the differences in genomes of prokaryotes and eukaryotes. They would also learn about transposable genetic elements with examples from prokaryotes and eukaryotes.
- The lectures will cover details of the structure of the chromosomes, the abnormalities that commonly occur at chromosomal level. Discussion of various types of mutations at the DNA level (deletion, addition, substitution), their consequence on gene structure/product and the diseases associated with these abnormalities.
- Students would gain insights into genetic and environmental sex determination mechanisms.

COURSE CONTENT:

| | |
|---|-----------------|
| Unit I: Overview of Changing Paradigms in Genetics | 05 Hours |
| A brief overview of how genetic principles took shape, leading to the concept of a blueprint of life within the cell to the physical entity of DNA. Basic structure of DNA, salient features of the double helix, semi-conservative replication– Meselson and Stahl experiment. Also mention the surprises we have from genomics such as genetic variation between individuals. There are popular videos/presentations that can be used. The purpose is to ignite the curiosity of the students. | |
| Unit II: Concept of Genetic Inheritance | 15 Hours |
| Concept of alleles, haploid and diploid status, phenotype and genotype, Mendel's laws of inheritance, dominant and recessive inheritance, test, back and reciprocal crosses with two examples each. Chromosomal theory of inheritance. Concept of linkage and crossing over, cytological proof of crossing over, genetic mapping: two and three-point cross over. Distinguishing recombination and complementation. Allelic interactions- dominance relationships- complete, incomplete and co-dominance, gene-gene interactions. Sex linked, sex-limited and sex-influenced traits. Gathering family history, pedigree symbols and construction of pedigrees for autosomal and sex linked traits (dominant and recessive). | |
| Unit III: Extra Nuclear Inheritance | 05 Hours |
| Criteria for extra nuclear inheritance, plastid inheritance in <i>Mirabilis jalapa</i> , kappa particles in <i>Paramecium</i> , maternal effect- snail shell coiling, cytoplasmic inheritance (mitochondria and chloroplast). | |
| Unit IV: Genome Organization | 07 Hours |
| Organization of Genomes in prokaryotes and eukaryotes. Establishing the Central Dogma. Nucleosomes organization and assembly. Euchromatin, heterochromatin- constitutive and facultative heterochromatin. Structure and significance of polytene and lampbrush chromosomes. Transposable genetic elements: Prokaryotic transposable elements- IS elements, Composite transposons; Eukaryotic transposable elements- Ac-Ds system in maize; Uses of transposons. | |
| Unit V: Cytogenetics and Mutations | 08 Hours |

| | |
|---|-----------------|
| Chromosome: Structure- centromere and telomere, types of chromosomes based on centromere. Karyotyping- banding pattern and nomenclature (G and Q banding). Structural abnormalities (Duplication, Insertion, Deletion, Translocation-Reciprocal and Non-Reciprocal) and associated syndromes. Numerical abnormalities (Aneuploidy and Euploidy) and associated syndromes. Spontaneous and induced mutations. Types of mutations: Point (Non-sense, miss-sense, silent, frameshift, insertion, deletion). Effects on the Gene products- loss of function and gain of function. | |
| Unit VI: Introduction to Mechanisms of Sex Determination | 05 Hours |
| Chromosomal theory of sex determination, mechanisms of sex determination, environmental factors and sex determination in human and <i>Drosophila</i> . Barr bodies and dosage compensation. | |

PRACTICAL – 30 Hours

(Wherever wet lab experiments are not possible, the principles and concepts can be demonstrated through any other material or medium including videos/virtual labs etc.)

1. Observation of wild type and mutant phenotypes in *Drosophila*.
2. Preparation of culture media for *Drosophila* and study different stages of the life cycle of *Drosophila*.
3. Verification of Mendelian laws through *Drosophila* seeds – dominant, recessive and sex-linked
4. Study of Barr bodies.
5. Karyotyping with the help of photographs (normal and abnormal karyotypes).
6. Pedigree charts of some common characters like blood group, color blindness and PTC tasting.
7. Study of diploidy in onion root tip.
8. Study of polyploidy in onion root tip by colchicine treatment.
9. Study of polytene chromosomes.

SUGGESTED READINGS:

- Klug, W. S., Cummings, M., Spencer, C. A., Palladino, M. A., Darrell K. (2019). 12th Edition. *Concepts of genetics*. San Francisco, NY:Pearson ISBN-13: 9780134604718.
- Snustad, D.P. and Simmons, M.J. (2019). 7th Asia Edition. *Principles of genetics*. New York, USA: John Wiley and Sons. ISBN-13: 9781119657552.
- Gardner E. J., Simmons M. J. and Snustad D. P. (2006). 8th edition *Principles of genetics*. USA. Wiley. ISBN-13: 978-8126510436.

BOOK FOR BASIC CONCEPTUAL READING

- Cooper, G. M. and Hausman, R. E. (2019). 8th Edition. *The cell: A molecular approach*. Massachusetts, USA: Sinauer Associates. ISBN-13: 978-1605358635.
- Hardin, J., Bertoni, G. P., Becker, W.M. (2017). 9th Edition. *Becker's world of the cell*. NY:Pearso. ISBN-13: 978- 0805393934.
- Karp, G., Iwasa, J., Marshall W. (2018). 8th Edition. *Karp's Cell Biology*. New Jersey, USA: Wiley. ISBN-13: 978-1119456292.
- Kornberg, A. (2005). 2nd Edition. *DNA replication*. California, USA: University Science Books. ISBN-13: 978-1891389443.
- Griffith A. J. F., Wessler S. R., Carroll S. B. and Doebley J. (2011). 9th edition. *Introduction to Genetic Analysis*. W H Freeman & Co. ISBN-13 : 978-0716768876.
- Elrod, S and Stansfield, W. (2010). 5th edition. *Schaum's Outline of Genetics*. McGraw Hill. ISBN-13: 978-0071625036

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE– 6 (DSC-6): Human Physiology and Anatomy II

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Human Physiology and Anatomy II | 04 | 03 | 0 | 01 | Class XII pass | NIL |

LEARNING OBJECTIVES:

- The course curriculum is a systematic presentation of physiological concepts to ensure appropriate depth and breadth of basic functioning of the human body and its interrelations with respect to heart, lung, kidney, gonads, endocrine glands and digestive system.
- It would give students exposure of physiological concepts needed as foundations for further studies in pharmacology, pathology and pathophysiology etc.
- It would provide a base to understand body defenses and the mechanisms of deranged function of human body
- The curricular objectives are focused primarily on normal body function. Accordingly, wherever possible clinical examples have been illustrated to the underlying physiological principles.

COURSE OUTCOMES:

Having successfully completed this course, students shall be able to learn and appreciate:

- The students will learn appreciate the structure and functioning of heart, pattern and significance of blood flow in the blood vessels, heart sounds, ECG and purpose of lymph and lymphatic circulation.
- The students would correlate how structure and function of lungs are so intricately designed and how they function with its blood flow and help giving vital oxygen to body. They would develop understanding for neural control and other regulators of respiration and understand daily phenomenon like coughing, sneezing, yawning etc.
- Kidneys are vital organs and students would learn the functional anatomy of a nephron and how it contributes in removing the toxic waste from our body in form of urine. The curriculum would outline the process of micturition and abnormalities associated with it. It would also highlight the role of kidney in controlling pH of the body and preventing acidosis/alkalosis
- The students would have insight into the anatomy of the female and male reproductive systems, including their accessory structures. The student would understand the role of hypothalamic and pituitary hormones in reproductive system. Trace the route of a sperm mother cell from its production till it can fertilize an oocyte. Explain the events in the ovary prior to ovulation, development and maturation of the sex organs and the emergence of

secondary sex characteristics during puberty.

- The students would be able to integrate the role of the endocrine system to maintain homeostasis in human body. Understand the chemical composition mechanisms of hormone action, their site of production, regulation, and effects of hormones of the pituitary, thyroid, parathyroid and adrenal, glands. Hormonal regulation of the reproductive system. The role of the pancreatic endocrine cells in the regulation of blood glucose In addition the contributions of hormones released by the heart, kidneys, and other organs with secondary endocrine functions. The student would be aware of several common diseases associated with endocrine system dysfunction.
- Students would be able to understand the organs of the alimentary canal from proximal to distal, and understand their function. Identify the accessory digestive organs and their functions. Describe the histology that is four fundamental tissue layers of the digestive tract. Contrast the contributions of the enteric and autonomic nervous systems to alimentary tract functioning. Gain awareness about common dysfunctions of digestive system like constipation, gastritis, ulcers, diarrhea etc.

COURSE CONTENT:

| | |
|---|-----------------|
| Unit-I: Cardiovascular System | 09 Hours |
| Functional Anatomy of heart, The Cardiac Cycle, Electrocardiogram. Circulatory system: Bloodvessels, hemodynamics and regulatory mechanisms, Lymphatic circulation - hemodynamics and regulation, micro-circulation | |
| Unit-II: Respiratory system | 09 Hours |
| Functional Anatomy of the respiratory system. Mechanisms of pulmonary ventilation, alveolarventilation, gaseous exchange, transport of gases, respiratory and nervous control and regulation of respiration | |
| Unit-III: Renal Physiology | 06 Hours |
| Body fluid and electrolytes: their balances and imbalances. Functional Anatomy of kidney,Histology of nephron and its physiology, Urine formation, renal regulation of urine volume and osmolarity, acid-base balance. Urinary bladder: structure, micturition and its regulation | |
| Unit-IV: Reproductive System | 06 Hours |
| Structure and function of male and female reproductive organ. Function and regulation of testicularand ovarian hormones. Gametogenesis (oogenesis and spermatogenesis), fertilization, implantation, parturition and lactation, menopause and basic concepts of infertility. | |
| Unit-V: Endocrine System | 09 Hours |

| | |
|--|-----------------|
| General mechanism of hormone action, Structure, function and regulation of the following glands and their secretions: Pituitary, Hypothalamus, Thyroid, Parathyroid, Adrenal, and Pancreas. Basic concepts about hypo and hyper secretion of hormones. | |
| Unit-VI: Gastrointestinal system | 06 Hours |
| Anatomy and histology of digestive tract, gastrointestinal physiology: General principles of gut motility secretion, digestion, absorption and assimilation. Gastrointestinal hormones: their formation and action. Physiological anatomy and functions of liver and pancreas. | |

PRACTICAL – 30 Hours

(Wherever wet lab experiments are not possible, the principles and concepts can be demonstrated through any other material or medium including videos/virtual labs etc.)

1. Physiological data acquisition based experiments (ECG).
2. Physiological data acquisition-based experiments (EMG).
3. Physiological data acquisition-based experiments (PFT).
4. Blood Pressure recordings in humans.
5. Determination of specific gravity of blood.
6. Determination of osmotic fragility of RBC.
7. To study various types of contraceptives (condoms, IUD's, oral and injectable contraceptives)
8. To study different human organs and their sections through permanent slides. T. S. of thyroid, liver, thymus, spleen, ovary, artery, vein, capillaries, testis, pancreas, esophagus, adrenal, kidney (cortex and medulla), urinary bladder, urethra, fallopian tubes, epididymis, prostate glands, lungs, trachea, bronchioles, pituitary, heart. (Minimum 8 slides covering the systems mentioned in theory.)

SUGGESTED READINGS:

- Guyton and Hall Textbook of Medical Physiology, 14th edition (2020), J. E. Hall; W B Saunders and Company, ebook ISBN: 978-0-3236-4003-9; Hardcover ISBN: 978-0-3235-9712-8
- Human Physiology, 16th edition (2011), Stuart I. Fox; Tata McGraw Hill, ISBN10: 1260720462; ISBN13: 978-1-26-072046-4.
- Principles of Anatomy and Physiology, 16th edition (2020), Gerard J. Tortora and Bryan H. Derrickson; Wiley and Sons, ISBN: 978-1-119-66268-6. (e book), ISBN: 978-1-119-70438-

6 (for print book).

- Textbook of Practical Physiology, 9th edition (2019), CL Ghai; Jaypee Publication, ISBN-9789352705320.

BOOK FOR BASIC CONCEPTUAL READING

- Ganong's Review of Medical physiology, 26th edition (2019), K. E. Barrett, S. M. Barman, S. Boitano and H. Brooks; Tata McGraw Hill, ISBN 978-1-26-012240-4 (for ebook)
ISBN:978-1-26-012241-1 (for print Book)

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category-IV
Common Pool of Generic Electives offered by Department of
Biomedical Sciences

Generic Elective -2 (GE-2): Landmark Discoveries in Science

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Landmark Discoveries in Science | 04 | 03 | 0 | 01 | Class XII pass | NIL |

LEARNING OBJECTIVES:

The objective of the course is to ensure students appreciate the convenience and comfort that they have is all because of discoveries and inventions of the past. Meticulous execution of historical experiments in very little resources would also motivate them towards doing valuable research with enormous facilities that they have. The historical accounts of science provide grounds for interpretation and may be useful in arousing appreciation of science. The course would provide: Detailed analysis of classically designed and executed experiments in Life Sciences over the years. It will provide a foundation of biology by uncovering various players in the machinery of biological processes. It will also be helpful in technical, scientific analysis with historical background for a robust understanding of various discoveries. Critical analysis of the history of biology would surely help students comprehend futuristic scientific discoveries.

COURSE OUTCOMES

- Students will be able to learn how was light manipulated during the past to peer into previously invisible world—those too small or too far away to be seen by the naked eye.
- Students will learn about experiments that had fundamental contribution to our present understanding of key molecular elements of life. They will understand how to examine microbial cells and colonies, using various techniques to manipulate color, size, and contrast in ways that helped Scientists to identify species and diagnose disease.
- Studying this unit, students would come to know that there were three group of Naturalists working simultaneously to find answers to inheritance, evolution and basic composition of life.

Students will be divulged with hereditary aspects of life. They will get familiar with genes and their roles in living organisms.

- Having understood the relationship of genes and inheritance, students would find interesting to learn the mystical molecule that make up these genes. Sequential study of these experiments would step by step unravel the mystery of genetic material.
- Students at this point of course would be curious to know the structure of molecule that forms the genetic material. They would learn how the information present on DNA manifests itself as specific characteristic features and help in diversity among organisms.
- Students will be explained how the in depth knowledge about DNA became the most important tool for *in vitro* research, modification and applications thereof.
- Students will be briefed about some landmark discoveries which helped the field of medicine to grow tremendously and played a significant role in improving the overall health of the human population.
- Students can be given small projects to write discoveries done in conventional way.
- They will be required to provide a descriptive view of the topics assigned to them. Students should highlight the research topic with reference to current understanding.

COURSE CONTENT:

| | |
|---|-----------------|
| Unit I: View of the invisible Biology | 04 Hours |
| Rudimentary microscopes to magnify objects; Use of eye glasses as simplest microscopes - Flea or fly glasses; Observing nature in the new world under lens; Book of Optics; Scientific use of Microscopes; Importance of Malphigi microscope that used field lens; Compound Microscope; Robert Hooke's observations in Micrographia; Foldscope by Manu Prakash | |
| Unit-II: Origin of Life – A question | 03 Hours |
| Spontaneous generation versus biogenesis; Problem of spores; Microbiology and Medicine - Germ theory of Disease; Recognition of agents of infection – Koch's Postulates. | |
| Unit-III: Understanding Biology by observations | 04 Hours |

| | |
|--|-----------------|
| A) Study of evolution of life: Darwins Theory (B) Study of Inheritance of Life: classical era with contributions of Aristotle, Epicurus, and others; Modern genetics: Gregor JohannMendel, his work on pea plants, theory of Mendelian inheritance (C) Study of compositionof Life : Levels of cellular and molecular organization; Cells, tissues and organs in our body; Pioneers of chromosome studies; Discovery of nucleic acids; Nuclein verified as a distinct chemical entity; Early identification of purines and pyrimidines; building blocks of Nucleic acids and proteins; Chemistry of Nucleic acids; Levene's tetranucleotidehypothesis. | |
| Unit-IV: DNA as the hereditary material – An experimental view | 06 Hours |
| Transformation: Classic work of Frederick Griffith; DNA as the Pneumococcal Transforming Factor; <i>In vitro</i> Transformation system; Announcement that the transformingPrinciple was DNA; Mirsky's Criticism; The Avery, MacLeod and McCarty proclamation;Additional experiments that supported DNA as the transforming principle; Hershey and Chase clinched the role of DNA as the Genetic Material | |
| Unit-V: Solving the puzzle of DNA structure | 07 Hours |
| Early studies of diffraction of X Rays by DNA fibers – contributions of Rosalind Franklin; Use of X – rays in medicines and research; Erwin Chargaff's discovery of base complementarity in DNA; Watson and Crick model of DNA; Contribution of Linus Pauling; DNA is replicated in Semi-conservative Fashion; Deciphering the Genetic Code; One Gene One Enzyme Edict. | |
| Unit-VI: Technical advancements in biology | 07 Hours |
| Polymerase Chain Reaction – a revolution in modern biology; DNA Manipulations using Restriction enzymes; Discovery of reverse transcriptase leading to development of RT-PCR for RNA amplification; Work of Stanley Cohen and Herbert Boyer; Advent of gene cloning - History and current applications | |
| Unit-VII: Research as a backbone of modern medicine | 07 Hours |

| | |
|---|-----------------|
| (A) Discovery of antimicrobial agents; Contribution of Joseph Lister and later by Alexander Flemming leading to Discovery of Magic bullets; (B) Control of Infectious Diseases – Variolation, mithridatism and vaccination from the view of Edward Jenner; Vaccine production strategies – with examples of BCG and SARS-CoV2 vaccines; Historical timeline of vaccination strategies;(C) Marie Curie – Use of radiation in medicine. | |
| Unit VIII: Project Work [On any one topic] | 07 Hours |
| Study historical research papers and provide a descriptive view of research that was carried out by Scientists as Minor Project. (A) Ancient system of medicine (B) Contribution of any one Indian Scientists in Biology (C) Contribution of any Physicists or Chemists in Biology (for topics listed above) | |

PRACTICAL – 30 Hours

(Wherever wet lab experiments are not possible, the principles and concepts can be demonstrated through any other material or medium including videos/virtual labs etc.)

1. Comparison of invisible life under the view of microscopes versus foldscope.
2. Cells as a unit of life and observation under the microscopes.
3. How do the cells divide – a view under the microscope: (mount of an onion root tip, onion bud cells or grasshopper testis).
4. Mendel's laws of inheritance – clues from nature.
5. Extraction of genomic DNA
6. Use of electric field to analyse DNA and other biomolecules.
7. Sneak Peek through the discovery of Polymerase chain reaction (PCR): Demonstration of original method and comparison with today's sophistication.
8. To test Flemming's hypothesis that the mold killed the bacteria.
9. Group Discussion on Research Topics assigned to students.

SUGGESTED READINGS:

- Watson, J. D. (2011) *The Double Helix – A personal account of the discovery of the structure of DNA*. Scribner. ISBN 9780743219174.
- Cooper, G. M. and Hausman, R. E. (2013). 6th Edition. *The cell: A molecular approach*. Massachusetts, USA: Sinauer Associates. ISBN-13:978-1605351551
- Karp, G. (2013). 7th Edition. *Cell and molecular biology: Concepts and experiments*. New Jersey,USA: Wiley Publishers. ISBN-978-0470483374.
- Cox, M. M. Doudna J. A. and Donnell, M. O. (2012). 1st Edition. *Molecular Biology: Principles and Practice*. London, United Kingdom: W H Freeman & Co Publishers, ISBN-13: 978-0-716- 7998-8.
- Watson, J. D. Baker T. A. Bell, S. P. Gann, A. Levine, M. and Losick, R. (2013). 7th Edition. *Molecular Biology of the Gene*. New York, United States: Cold Spring Harbor Laboratory Press, ISBN-13: 978-0-321-76243-6.

BOOK FOR BASIC CONCEPTUAL READING

- Alberts, B et al. (2014). 6th edition. *Molecular Biology of the Cell*. W. W. Norton & Company. ISBN-13 : 978-0815345244
- Bryson, B. (2003) *A short history of nearly everything*. Transworld Publishers. London W5 5SA. A Random House Group Company. ISBN: 9780552997041.
- Lodish H et al. (2003). 5th Revised edition. *Molecular Cell Biology*. W.H.Freeman& Co Ltd; ISBN-13 : 978-0716743668
- Green, M. R. and Sambrook, J. (2012). 4th Edition. *Molecular Cloning: A Laboratory Manual*, New York, United States: Cold Spring Harbor Laboratory Press, ISBN-13:978-1936113422.
- Kornberg, A. (2005). 2nd Edition. *DNA Replication*. California, United States: University ScienceBooks, ISBN-13: 978-1891389443.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Note: The Generic Electives courses offered in Semester-I are also open for Semester-II

DEPARTMENT OF GEOLOGY

Category-I **BSc (Hons.) Geology**

DISCIPLINE SPECIFIC CORE COURSE -4 (DSC-4) – : Structural Geology

Credit distribution, eligibility and pre-requisites of the course:

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------------|----------------|--|-----------------|----------------------------|-----------------------------|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Structural Geology (DSC-4) | 4 | 3 | 0 | 1 | 12th Pass | --- |

Learning Objectives

Structural geology essentially deals with the geometry, kinematics and dynamics of deformation of rocks. In response to the instability of the lithosphere produced by complex plate tectonic movements, continuous and discontinuous deformation takes place within the rocks in solid or semi-solid state, at different scales and at different depths, which manifests in a variety of complex structures in these rocks.

Learning outcomes

On completion of the course, the student should be able to:

- Identify the different geometric features of deformation, different types of deformation-induced structures,
- Understand basic techniques of measurement of different parameters in deformed rocks, and
- Understand a glimpse of the underlying deformation processes and mechanisms.

SYLLABUS OF DSC-4

UNIT – I (09 Hours)

Introduction to Structure and Topography: Understanding a topographic map; Effects of topography on structural features: Rule of V; Planar and linear structures; Concept of dip and strike, trend and plunge.

UNIT – II (09 Hours)

Stress and strain in rocks: Concept of rock deformation: Definition of Stress and Strain, Strain ellipses of different types and their geological significance. Mohr circle for stress and its application.

UNIT – III (08 Hours)

Folds: Fold morphology; Geometric and genetic classification of folds; Introduction to the mechanics of folding: Buckling, Bending, Flexural slip and flow folding.

UNIT – IV (08 Hours)

Foliation and lineation: Description and origin of foliations: axial plane cleavage and its tectonic significance; different types of foliations: crenulation cleavage, disjunctive cleavage,

salty cleavage, schistosity, gneissosity etc. Description and origin of lineation and relationship with major structures; stretching lineation and its relationship with strain.

UNIT – V (08 Hours)

Fractures and faults: Geometric and genetic classification of fractures and faults; Effects of faulting on the outcrops; Geologic/geomorphic criteria for recognition of faults and Mechanism of faulting: Anderson theory of faulting. Joints – different types of joints and their geological significance – columnar joint, pinnate joint, plumose structure.

UNIT – VI (03 Hours)

Shear Zones: Introduction, Geometry, strain profile, shear zones rocks and shear sense indicators.

Practical component - 30 Hours

Basic idea of topographic contours, Topographic sheets of various scales.

Structural contouring and 3-point problems of dip and strike

Introduction to Geological maps: Drawing profile sections and interpretation of geological maps of different complexities.

Exercises of stereographic projections

Essential/recommended readings

Fossen, H. (2010) Structural Geology. Cambridge University Press

Park, R. G. (2004) Foundations of Structural Geology. Chapman & Hall.

Suggestive readings

Fossen, H. (2010) Structural Geology. Cambridge University Press.

Davis, G. R. (1984) Structural Geology of Rocks and Region. John Wiley

Billings, M. P. (1987). Structural Geology, 4th edition, Prentice-Hall.

Park, R. G. (2004) Foundations of Structural Geology. Chapman & Hall.

Pollard, D. D. (2005) Fundamental of Structural Geology. Cambridge University Press.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 5 (DSC-5): Igneous Petrology

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------------------|----------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Igneous Petrology (DSC-5) | 4 | 3 | 0 | 1 | 12th Pass | ---- |

Learning Objectives

To develop an understanding of the types of magma as well as types of igneous rocks. Magma generation in relation to different geodynamic settings and its relation with the petrological and geochemical features of the igneous rocks.

Learning outcomes

On completion of the course, the student should be able to:

- a) Identify the igneous rocks using petrographical, mineralogical and geochemical indices
- b) Determine the evolution of igneous rocks in relation to different geodynamic settings

SYLLABUS OF DSC- 5

UNIT – I (09 Hours)

Introduction to Igneous Petrology: Scope of Igneous petrology, classification of Igneous rocks, igneous textures, igneous structures.

UNIT – II (09 Hours)

Introduction to silicate melts and magmas: Physical properties of magma, the ascent of magmas, magmatic differentiation.

UNIT – III (09 Hours)

Introduction to Igneous Phase diagrams. The phase rule, the lever rule, Two Component systems involving melt: Binary system with a Eutectic, Binary system with a peritectic, Binary system thermal barrier, Binary system with solid solution.

UNIT – IV (09 Hours)

The chemistry of igneous rocks. Modal mineralogy, normative mineralogy, variation diagrams based on major elements, trace elements and their significance, application of radioactive isotopes in igneous petrology.

UNIT – V (09 Hours)

Introduction to igneous environments: Basalts and mantle structure, Magma generation and igneous rocks associated with various plate tectonic settings.

Practical component : 30 Hours

Study of important igneous rocks in hand specimens and thin sections- granite, granodiorite, diorite, gabbro, anorthosites, ultramafic rocks, basalts, andesites, trachyte, rhyolite.

Classification of Igneous Rocks.

Plotting and interpretation of variation diagrams.

Igneous rock occurrences in Indian context.

Essential/recommended readings

Winter, J. D. (2014). Principles of igneous and metamorphic petrology. Pearson.

Wilson, M. (1989) Igneous Petrogenesis, Springer-Verlag Berlin Heidelberg.

Frost, B. R. and Frost, C. D., (2013) Essentials of Igneous and Metamorphic Petrology Cambridge University Press.

Suggestive readings (if any)

Frost, B. R. and Frost, C. D., (2013) Essentials of Igneous and Metamorphic Petrology Cambridge University Press.

Philpotts, A., & Ague, J. (2009). Principles of igneous and metamorphic petrology. Cambridge University Press.

Winter, J. D. (2014). Principles of igneous and metamorphic petrology. Pearson.

Rollinson, H. R. (2014). Using geochemical data: evaluation, presentation, interpretation. Routledge.

Sen, G. (2014) Petrology Principles and Practice, Springer-Verlag Berlin Heidelberg

Bose M.K. (1997). Igneous Petrology.

Wilson, M. (1989) Igneous Petrogenesis, Springer-Verlag Berlin Heidelberg.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE– 6 (DSC-6): Elements of Geochemistry

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Elements of Geochemistry DSC-6 | 4 | 3 | 0 | 1 | 12 th Pass | --- |

Learning Objectives

The Learning Objectives of this course are as follows:

- To develop an understanding of the chemical nature of the earth and other planetary material and relate mineralogy, geochemistry and bulk chemistry.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Students will be able to appreciate the field of geochemistry and understand the properties of the elements - Nucleosynthesis; Cosmochemistry; Principles of isotope geochemistry; Solid earth geochemistry: Core, Mantle, Crust. Near-surface geochemical environment, Chemical weathering of minerals and rocks. Examples of instrumentation, data collection and analyses

SYLLABUS OF DSC-6

UNIT – I (09 Hours)

The abundance of elements in the cosmos, solar system and earth. Meteorites, distribution of elements in core, mantle, crust.

UNIT – II (12 Hours)

Introduction to properties of elements: periodic table, chemical bonding, states of matter and atomic environment of elements, geochemical classification of elements, the concept of elemental fractionation.

UNIT – III (12 Hours)

Geochemistry of igneous rocks: geochemical variability of magma and its products. Near-surface geochemical environment: Chemical weathering of minerals and rocks.

UNIT – IV (12 Hours)

Introduction to isotope geology: use of stable and radiogenic isotopes in earth science.

Practical component: - 30 Hours

- Geochemical analysis of geological materials (analytical methods, concept of normalization)
- Geochemical variation diagrams, common geochemical plots, and their interpretations.
- Basic idea about handling and interpretation of isotope data.

Essential/recommended readings

Mason, B (1986). Principles of Geochemistry. 3rd Edition, Wiley New York.

Faure, G., 1986. Principle of Isotope Geology, J. Wiley & Sons.

Suggestive readings

Mason, B (1986). Principles of Geochemistry. 3rd Edition, Wiley New York.

Rollinson H. (2007). Using geochemical data evaluation. Presentation and interpretation. 2nd Edition. Publisher Longman Scientific & Technical.

Walther John, V., 2009 Essentials of geochemistry, student edition. Jones and Bartlett Publishers

Albarede, F, 2003. An introduction to geochemistry. Cambridge University Press.

Faure, G., 1986. Principle of Isotope Geology, J. Wiley & Sons.

Geochemistry by William M White, Wiley-Blackwell (2013).

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

CATEGORY-IV

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES OFFERED BY DEPARTMENT OF GEOLOGY

GENERIC ELECTIVES (GE-2): Physics & Chemistry of Earth

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Physics & Chemistry of Earth (GE-2) | 4 | 3 | 1 | 0 | Class-XII | --- |

Learning Objectives

To develop an understanding of the surface and internal structure of the Earth and its mineralogy and chemistry; To equip the students about the present and past processes operative in shaping the physical and chemical make-up of the planet Earth

Learning outcomes

After completion of this course students will learn about:

- Physical, mineralogical and chemical structure of the earth
- Major surface features and their evolution through time
- Concept of geological time and its determination
- Earth's magnetic field, its short term and long term variation and its application
- Physical and chemical evolution of earth through time

SYLLABUS OF GE-2 – (Lecture- 45 Hours)

UNIT – I

Earth: surface features: Continents, continental margins, oceans

Earth's materials: Rocks and Minerals

UNIT – II

Earth's interior - variation of physical parameters and seismic wave velocity inside the earth, major sub divisions and discontinuities. Depth-wise mineralogical variation in the Earth. Concepts of Isostasy; Airy and Pratt Model. Core and Mantle: Seismological and other geophysical constraints. The geodynamo - Convection in the mantle. Plate Tectonics. Types of plate margins and their Dynamics.

UNIT – III

Elements of Earth's magnetism: Secular variation and westward drift. Solar activity and magnetic disturbance. Paleomagnetism

UNIT – IV

Elements: Origin of elements/nucleosynthesis. Abundance of the elements in the solar system/planet Earth. Geochemical classification of elements. Earth accretion and early differentiation. Isotopes and their applications in understanding Earth processes.

UNIT – V

Isotopes: Radiogenic and Stable. Radiogenic isotopes and their applications
Stable isotope fractionation. Oxygen isotopes. Sublithospheric Mantle (Mineralogy/phase transitions) Concept of mantle heterogeneity

UNIT – VI

Low-temperature geochemistry; surface and near-surface processes

Essential/recommended readings

- Holmes, A. (1992). Principles of Physical Geology, 1992, Chapman and Hall.
- Anderson, G. M. (1996). Thermodynamics of natural systems. John Wiley & Sons Inc.
- Condie, K.C. (2016) Earth as an evolving planetary system (3rd Edn.) Elsevier

Suggestive readings

- Holmes, A., Principles of Physical Geology, 1992, Chapman and Hall
- Condie, K.C. Plate Tectonics and Crustal Evolution, Pargamon Press, 1989.
- Krauskopf, K. B., & Dennis, K. Bird, 1995, Introduction to Geochemistry. McGraw-Hill
- Faure, G. Principles and Applications of Geochemistry, 2/e (1998), Prentice Hall, 600 pp.
- Anderson, G. M. (1996). Thermodynamics of natural systems. John Wiley & Sons Inc.
- Steiner, E. (2008). The chemistry maths book. Oxford University Press.
- Yates, P. (2007) Chemical calculations. 2nd Ed. CRC Press.
- Condie, K.C. (2016) Earth as an evolving planetary system (3rd Edn.) Elsevier

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DEPARTMENT OF PHYSICS & ASTROPHYSICS

**Category-I
BSc. (H) Physics**

**DISCIPLINE SPECIFIC CORE COURSE – 4:
MATHEMATICAL PHYSICS II**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility Criteria | Pre-requisite of the course |
|---|---------|-----------------------------------|----------|-----------|-------------------------|--------------------------------|
| | | Lecture | Tutorial | Practical | | |
| Mathematical Physics II DSC – 4 | 4 | 2 | 0 | 2 | Class XII Pass | ----- |

LEARNING OBJECTIVES

The emphasis of course is on applications in solving problems of interest to physicists. The course will also expose students to fundamental computational physics skills enabling them to solve a wide range of physics problems. The skills developed during course will prepare them not only for doing fundamental and applied research but also for a wide variety of careers.

LEARNING OUTCOMES

After completing this course, student will be able to,

- Use curvilinear coordinates to solve problems with spherical and cylindrical symmetries
- Represent a periodic function by a sum of harmonics using Fourier series
- Obtain power series solution of differential equation of second order with variable coefficient using Frobenius method
- Understand the properties and applications of Legendre polynomials
- Learn about gamma and beta functions and their applications
- In the laboratory course, the students will learn to
 - Apply appropriate numerical method to solve selected physics problems both using user defined and in-built functions from Scilab/ Python
 - Solve non-linear equations
 - Perform least square fitting of the data taken in physics lab by user defined functions.
 - Interpolate a data by polynomial approximations
 - Generate and plot a function by its series representation
 - Generate and plot Legendre polynomials and verify their properties.
 - Numerically integrate a function and solve first order initial value problems numerically.

SYLLABUS OF DSC – 4

UNIT – I

(13 Hours)

Orthogonal Curvilinear Coordinates: Orthogonal Curvilinear Coordinates. Scale factors, element of area and volume in spherical and cylindrical coordinate Systems. Derivation of Gradient, Divergence, Curl and Laplacian in Spherical and Cylindrical Coordinate Systems
Fourier Series: Periodic functions, Orthogonality of sine and cosine functions, Convergence of Fourier series and Dirichlet Conditions (Statement only), Expansion of periodic functions in a series of sine and cosine functions and determination of Fourier coefficients, Even and odd functions and their Fourier expansions (Fourier Cosine Series and Fourier Sine Series), Parseval's Identity.

UNIT – II

(17 Hours)

Frobenius Method and series solution of Differential Equations: Singular Points of Second Order Linear Differential Equations and their importance, Frobenius method for finding series solution and its applications, Legendre Differential Equations and its solution. Properties of Legendre Polynomials: Rodrigues Formula, Generating Function, Orthogonality of Legendre Polynomials, Simple recurrence relations, Expansion of function in a series of Legendre Polynomials.

Some Special Integrals: Beta and Gamma Functions and relation between them, Expression of Integrals in terms of Gamma and Beta Functions.

References:

Essential Readings:

- 1) Mathematical Methods for Scientists and Engineers, D. A. McQuarrie, 2003, Viva Book.
- 2) Advanced Engineering Mathematics, Erwin Kreyszig, 2008, Wiley India.
- 3) Essential Mathematical Methods, K. F. Riley and M. P. Hobson, 2011, Cambridge Univ. Press.
- 4) Vector Analysis and Cartesian Tensors, D. E. Bourne and P. C. Kendall, 3 Ed., 2017, CRC Press.
- 5) Vector Analysis, Murray Spiegel, 2nd Ed., 2017, Schaum's Outlines Series.
- 6) Fourier analysis: With Applications to Boundary Value Problems, Murray Spiegel, 2017, McGraw Hill Education.
- 7) Differential Equations, George F. Simmons, 2006, Tata McGraw-Hill.
- 8) Mathematical Methods for Physicists, G. B. Arfken, H. J. Weber, F. E. Harris, 7 Ed., 2013, Elsevier.

Additional Readings:

- 1) Introduction to Electrodynamics, Chapter 1, David J. Griffiths, 4 Ed., 2017, Cambridge University Press.
- 2) The Feynman Lectures on Physics, Volume II, Feynman, Leighton and Sands, 2008, Narosa Publishing House.
- 3) Advanced Engineering Mathematics, D. G. Zill and W. S. Wright, 5 Ed., 2012, Jones and

Bartlett Learning.

- 4) Introduction to Vector Analysis, Davis and Snider, 6 Ed., 1990, McGraw Hill.
- 5) Mathematical Tools for Physics, James Nearing, 2010, Dover Publications.
- 6) Mathematical Physics, A. K. Ghatak, I. C. Goyal and S. J. Chua, 2017, Laxmi Publications Private Limited.

PRACTICAL COMPONENT –

60 Hours

The aim of this laboratory is not just to teach computer programming and numerical analysis but to emphasize its role in solving problems in Physics. The course will consist of practical sessions and lectures on the related theoretical aspects of the laboratory. Assessment is to be done not only on the programming but also on the basis of formulating the problem.

- Every student must perform at least 12 programs covering each unit.
- The list of recommended programs is suggestive only. Students should be encouraged to do more practice. Emphasis should be given to formulate a physics problem as mathematical one and solve by computational methods.
- The implementation can be either in Python/ C++/ Scilab.

Unit 1: Root Finding: Bisection, Newton Raphson and secant methods for solving roots of equations, Convergence analysis.

Recommended List of Programs (At least two):

- (a) Determine the depth up to which a spherical homogeneous object of given radius and density will sink into a fluid of given density.
- (b) Solve transcendental equations like $\alpha = \tan(\alpha)$.
- (c) To approximate nth root of a number up to a given number of significant digits.

Unit 2: Least Square fitting (At least one): Algorithm for least square fitting and its relation to maximum likelihood for normally distributed data.

- a) Make a function for least square fitting, use it for fitting given data (x, y) and estimate the parameters a, b as well as uncertainties in the parameters for the following cases.
 - i. Linear ($y = ax + b$)
 - ii. Power law ($y = ax^b$)
 - iii. Exponential ($y = ae^{bx}$)
- b) Weighted least square fitting of given data (x, y) with known error/uncertainty-values using user defined function.

Unit 3: Generating and plotting of a function using series representation (At least one):

- a) To approximate the elementary functions (e.g. $\exp(x)$, $\sin(x)$, $\cos(x)$, $\ln(1+x)$, etc.) by a finite number of terms of Taylor's series and discuss the truncation error. To plot the function as well the nth partial sum of its series for various values of n on the same graph and visualise the convergence of series.
- b) Generating and plotting Legendre Polynomials using series expansion and verifying recurrence relation

Unit 4: Interpolation: Concept of Interpolation, Lagrange form of interpolating polynomial,

Error estimation, optimal points for interpolation.

Recommended List of Programs (At least one)

- (a) Write program to determine the unique polynomial of a degree n that agrees with a given set of $(n+1)$ data points (x_i, y_i) and use this polynomial to find the value of y at a value of x not included in the data.
- (b) Generate a tabulated data containing a given number of values $(x_i, f(x_i))$ of a function $f(x)$ and use it to interpolate at a value of x not used in table.

Unit 5: Numerical Integration: Newton Cotes Integration methods (Trapezoidal and Simpson rules) for definite integrals, derivation of composite formulae for these methods and discussion of error estimation.

Recommended List of Programs (At least three)

- (a) Given acceleration at equidistant time values, calculate position and velocity and plot them.
- (b) Use integral definition of $\ln(x)$ to compute and plot $\ln(x)$ in a given range. Use trapezoidal, Simpson and Gauss quadrature methods and compare the results.
- (c) Verify the rate of convergence of the composite Trapezoidal and Simpson methods by approximating the value of a given definite integral.
- (d) Verify the Orthogonality of Legendre Polynomials.
- (e) To evaluate the Fourier coefficients of a given periodic function (e.g. square wave, triangle wave, half wave and full wave rectifier etc.). To plot the function as well the n th partial sum of its series for various values of n on the same graph and visualise the convergence of series. Study of Gibbs phenomenon.
- (f) Verify the properties of Dirac Delta function using its representation as a sequence of functions.

Unit 6: Numerical Solutions of Ordinary Differential Equations: Euler, modified Euler, and Runge-Kutta (RK) second and fourth order methods for solving first order initial value problems (IVP) and system of first order differential equations,

Recommended List of Programs (At least two)

- (a) Solve given first order differential equation (Initial value problems) numerically using Euler RK2 and RK4 methods and apply to the following physics problems:
 - i. Radioactive decay
 - ii. Current in RC and LR circuits with DC source
 - iii. Newton's law of cooling
- (b) Write a code to compare the errors in various numerical methods learnt by solving a first order IVP with known solution.
- (c) Solve a system of first order IVP numerically using Euler and Runge-Kutta methods. Application to physical problems.

References (for Laboratory work):

- 1) Documentation at the Python home page (<https://docs.python.org/3/>) and the tutorials there (<https://docs.python.org/3/tutorial/>).
- 2) Documentation of NumPy and Matplotlib: <https://numpy.org/doc/stable/user/> and <https://matplotlib.org/stable/tutorials/>
- 3) Computational Physics, Darren Walker, 1st Edn., Scientific International Pvt. Ltd (2015).
- 4) Elementary Numerical Analysis, K. E. Atkinson, 3rd Edn., 2007, Wiley India Edition.
- 5) An Introduction to Computational Physics, T. Pang, Cambridge University Press (2010).
- 6) Introduction to Numerical Analysis, S. S. Sastry, 5th Edn., 2012, PHI Learning Pvt. Ltd.
- 7) Applied numerical analysis, Cutis F. Gerald and P. O. Wheatley, Pearson Education, India (2007).
- 8) Numerical Recipes: The art of scientific computing, William H. Press, Saul A. Teukolsky and William Vetterling, Cambridge University Press; 3rd edition (2007)
- 9) Computational Problems for Physics, R. H. Landau and M. J. Páez, 2018, CRC Press.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 5: ELECTRICITY AND MAGNETISM

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility Criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|-----------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical | | |
| Electricity and Magnetism DSC – 5 | 4 | 3 | 0 | 1 | Class XII Pass | ---- |

LEARNING OBJECTIVES

This course reviews the concepts of electromagnetism learnt at school from a more advanced perspective and goes on to build new concepts. The course covers static and dynamic electric and magnetic fields due to continuous charge and current distributions respectively.

LEARNING OUTCOMES

After completing this course, student will be able to,

- Apply Coulomb's law to line, surface, and volume distribution of charges.
- Apply Gauss's law of electrostatics to distribution of charges
- Solve boundary value problems using method of images
- Understand the concept of electric polarization and bound charges in dielectric materials
- Understand and calculate the vector potential and magnetic field of arbitrary current distribution
- Understand the concept of bound currents and magnetic susceptibility in magnetic materials
- Understand the impact of time-varying magnetic and electric fields in order to comprehend the formulation of Maxwell's equations.

SYLLABUS OF DSC – 5

UNIT – I

(15 Hours)

Electric Field and Electric Potential for continuous charge distributions: Electric field due to a line charge, surface charge and volume charge, Divergence of electric field using the Dirac Delta function, Curl of electric field, Electric field vector as negative gradient of scalar potential, Ambiguities of electric potential, Differential and integral forms of Gauss's Law, Application of Gauss's law to various charge distributions having spherical, cylindrical and planar symmetries.

Boundary Value Problems in Electrostatics: Formulation of Laplace's and Poisson equations, First and second uniqueness theorems, Solutions of Laplace and Poisson equations in one

dimension using spherical and cylindrical coordinate systems and solutions in three-dimensional using Cartesian coordinates applying separable variable technique, Electrostatic boundary conditions for conductors and capacitors.

UNIT – II

(11 Hours)

Special techniques for the calculation of Potential and Field: The Method of Images is applied to a system of a point charge and finite continuous charge distribution (line charge and surface charge) in the presence of (i) a plane infinite sheet maintained at constant potential, and (ii) a sphere maintained at constant potential.

Electric Field in Matter: Polarization in matter, Bound charges and their physical interpretation, Field inside a dielectric, Displacement vector **D**, Gauss' law in the presence of dielectrics, Boundary conditions for **D**, Linear dielectrics, electric susceptibility and dielectric constant, Idea of complex dielectric constant due to varying electric field, Boundary value problems with linear dielectrics

UNIT – III

(19 Hours)

Magnetic Field: Divergence and curl of magnetic field **B**, Magnetic field due to arbitrary current distribution using Biot-Savart law, Integral and differential forms of Ampere's law, Vector potential and its ambiguities, Coulomb gauge and possibility of making vector potential divergence less, Vector potential due to line, surface and volume currents using Poisson equations for components of vector potential.

Magnetic Properties of Matter: Magnetization vector, Bound currents, Magnetic intensity, Differential and integral form of Ampere's Law in the presence of magnetised materials, Magnetic susceptibility and permeability of diamagnetic, paramagnetic and ferromagnetic materials.

Electrodynamics: Faraday's law, Lenz's law, Inductance and electromotive force, Ohm's law ($\vec{J} = \sigma \vec{E}$), Energy stored in a magnetic field, Continuity equation, Displacement current and displacement current density, Basic introduction to Maxwell's equations in electromagnetism.

References:

Essential Readings:

- 1) Introduction to Electrodynamics, D. J. Griffiths, 3rd Edn., 1998, Benjamin Cummings
- 2) Schaum's Outlines of Electromagnetics by J. A. Edminister and M. Nahvi
- 3) Fundamentals of Electricity and Magnetism, Arthur F. Kip, 2nd Edn. 1981, McGraw-Hill.
- 4) Electromagnetic Fields and Waves, Paul Lorrain and Dale Corson, 1991, W. H. Freeman.
- 5) Electricity and Magnetism, Edward M. Purcell, 1986 McGraw-Hill Education
- 6) Electricity and Magnetism, Tom Weideman, University of California Davis. [url: https://zhu.physics.ucdavis.edu/Physics9C-C_2021/Physics%209C_EM%20by%20Tom%20Weideman.pdf]

Additional Readings:

- 1) Feynman Lectures Vol. 2, R. P. Feynman, R. B. Leighton, M. Sands, 2008, Pearson Education

- 2) Electricity, Magnetism and Electromagnetic Theory, S. Mahajan and Choudhury, 2012, Tata McGraw
- 3) Electricity and Magnetism, J. H. Fewkes and J. Yarwood, Vol. I, 1991, Oxford Univ. Press.
- 4) Problems and Solutions in Electromagnetics (2015), Ajoy Ghatak, K Thyagarajan and Ravi Varshney.

PRACTICAL

– 30 Hours

Every student must perform at least five experiments.

- 1) Magnetic field variation along the axis of a circular coil and in a Helmholtz coil ($(r > a, r = a \text{ and } r < a)$. Here, 'a' is radius of coil and 'r' is distance between the coils).
- 2) **B-H** curves for soft and hard ferromagnetic materials and comparison of their coercivity, retentivity and saturation magnetization for same applied magnetic field.
- 3) Measurement of field strength **B** and its variation in a solenoid (determine $\frac{dB}{dx}$)
- 4) Measurement of current and charge sensitivity of ballistic galvanometer
- 5) Measurement of critical damping resistance of ballistic galvanometer
- 6) Determination of a high resistance by leakage method using ballistic galvanometer
- 7) Measurement of self-inductance of a coil by Anderson's Bridge
- 8) Measurement of self-inductance of a coil by Owen's Bridge
- 9) To determine the mutual inductance of two coils by the Absolute method

References (for Laboratory Work):

- 1) Advanced Practical Physics for students, B. L. Flint and H. T. Worsnop, 1971, Asia Publishing House
- 2) A Text Book of Practical Physics, I. Prakash and Ramakrishna, 11th Ed., 2011, Kitab Mahal
- 3) Advanced Level Physics Practicals, Michael Nelson and Jon M. Ogborn, 4th Edition, reprinted 1985, Heinemann Educational Publishers
- 4) Engineering Practical Physics, S. Panigrahi and B. Mallick, 2015, Cengage Learning
- 5) Practical Physics, G. L. Squires, 2015, 4th Edition, Cambridge University Press

DISCIPLINE SPECIFIC CORE COURSE – 6: ELECTRICAL CIRCUIT ANALYSIS

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility Criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|-----------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical | | |
| Electrical Circuit Analysis DSC – 6 | 4 | 2 | 0 | 2 | Class XII pass | ---- |

LEARNING OBJECTIVES

This course covers the basic circuit concepts in a systematic manner which is suitable for analysis and design. It aims at study and analysis of electric circuits using network theorems and two-port parameters.

LEARNING OUTCOMES

At the end of the course the student will be able to,

- Understand the basic concepts, basic laws and methods of analysis of DC and AC networks and their difference
- Solve complex electric circuits using network theorems.
- Discuss resonance in series and parallel circuits and also the importance of initial conditions and their evaluation.
- Evaluate the performance of two port networks.

SYLLABUS OF DSC – 6

THEORY COMPONENT

Unit 1: (8 Hours)

Circuit Analysis: Ideal voltage source, real voltage source, current source, Kirchhoff's current law, Kirchhoff's voltage law, node analysis, mesh analysis, Star and Delta conversion

DC Transient Analysis: Charging and discharging with initial charge in RC circuit, RL circuit with initial current, time constant, RL and RC Circuits with source

Unit 2: (12 Hours)

AC Circuit Analysis: Sinusoidal voltage and current, Definitions of instantaneous, peak to peak, root mean square and average values, form factor and peak factor (for half-rectified and full-rectified sinusoidal wave, rectangular wave and triangular wave), voltage-current relationship in resistor, inductor and capacitor, phasor, complex impedance, power in AC circuits, sinusoidal circuit analysis for RL, RC and RLC Circuits, resonance in series and

parallel RLC Circuits (Frequency Response, Bandwidth, Quality Factor), selectivity, application of resonant circuits

Unit 3: (10 Hours)

Network Theorems: Principal of duality, Superposition theorem, Thevenin theorem, Norton theorem, Their applications in DC and AC circuits with more than one source, Maximum Power Transfer theorem for AC circuits, Reciprocity Theorem, Millman's Theorem, Tellegen's theorem

Two Port Networks: Impedance (Z) Parameters, Admittance (Y) Parameters, Transmission Parameters, Impedance matching

References:

Essential Readings:

- 1) Electric Circuits, S. A. Nasar, Schaum's Outline Series, Tata McGraw Hill (2004)
- 2) Essentials of Circuit Analysis, Robert L. Boylestad, Pearson Education (2004)
- 3) Electrical Circuits, M. Nahvi and J. Edminister, Schaum's Outline Series, Tata McGraw-Hill (2005)
- 4) Fundamentals of Electric Circuits, C. Alexander and M. Sadiku, McGraw Hill (2008)
- 5) Principles of Electric Circuits, Thomas L. Floyd, 9/e (2016)

Additional Readings:

- 1) Network analysis, M. E. Van Valkenburg, Third edition, Prentice Hall
- 2) Network, Lines and Fields, John D. Ryder, Pearson Ed. II, 2015.
- 3) Electrical Circuits, K. A. Smith and R. E. Alley, 2014, Cambridge University Press

PRACTICAL COMPONENT – 60 Hours

Every student must perform at least seven experiments from the following list of experiments

- 1) Verification of Kirchhoff's Law.
- 2) Verification of Superposition Theorem by using d.c. and a.c. voltage source
- 3) Verification of Norton's theorem.
- 4) Verification of Thevenin's Theorem and Maximum Power Transfer Theorem by using d.c. and a.c. voltage source
- 5) Determination of unknown capacitance using de Sauty's Bridge
- 6) Determination of time constant of RC and RL circuit
- 7) Study of frequency response of RC circuit
- 8) Study of frequency response of a parallel LCR Circuit and determination of its resonant frequency, impedance at resonance, quality factor and bandwidth.
- 9) Explore electrical properties of matter using Arduino:
 - a. To study the characteristics of a series RC Circuit.
 - b. To study the response curve of a series LCR circuit and determine its resonant frequency, impedance at resonance, quality factor and bandwidth

References (for Laboratory Work):

- 1) A Textbook of Electrical Technology, B. L. Thareja, A. K. Thareja, Volume II, S. Chand
- 2) Fundamentals of Electric Circuits, C. Alexander and M. Sadiku, McGraw Hill (2008)
- 3) Electric Circuits, S. A. Nasar, Schaum's Outline series, Tata McGraw Hill (2004)
- 4) Electrical Circuits, K. A. Smith and R.E. Alley, 2014, Cambridge University Press
- 5) Electrical Circuit Analysis, K. Mahadevan and C. Chitran, 2nd Edition, 2018, PHI Learning Pvt. Ltd.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category II

B. Sc. Physical Science with Physics as one of the Core Discipline

DISCIPLINE SPECIFIC CORE COURSE (PHYSICS DSC - 2): ELECTRICITY AND MAGNETISM

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|---------|--------------------------------------|----------|-----------|-------------------------|--------------------------------|
| | | Lecture | Tutorial | Practical | | |
| Electricity and Magnetism Physics DSC 2 | 4 | 2 | 0 | 2 | Class XII pass | ---- |

LEARNING OBJECTIVES

This course reviews the concepts of electricity and magnetism learnt at school from a more advanced perspective and goes on to build new concepts. The course covers static and dynamic electric and magnetic fields, and the principles of electromagnetic induction. It also includes analysis of electrical circuits and introduction of network theorems. The students will be able to apply the concepts learnt to several real world problems.

LEARNING OUTCOMES

At the end of this course, students will be able to,

- Understand Gauss' law, Coulomb's law for the electric field, and apply them to systems of point charges as well as line, surface, and volume distributions of charges. Also to use the knowledge to solve some simple problems
- Express electric current and capacitance in terms of electric field and electric potential.
- Calculate the force experienced by a moving charge in a magnetic field
- Determine the magnetic force generated by a current carrying conductor
- Have brief idea of magnetic materials, understand the concept of electromagnetic induction, solve problems using Faraday's and Lenz's laws

In the laboratory course, students will be able to measure resistance (high and low), voltage, current, self and mutual inductance, capacitor, strength of magnetic field and its variation, study different electric circuits.

SYLLABUS OF PHYSICS DSC – 2

THEORY COMPONENT

Unit 1: (10 Hours)

Electrostatics: Electric field, electric flux, Gauss' theorem in electrostatics, applications of Gauss' theorem (linear, plane and spherical charge distribution), line integral of electric field, electric potential due to a point charge, electric potential and electric field of a dipole and charged disc, capacitance due to parallel plates and spherical condenser. Electrostatic energy of system of charge (charged sphere), dielectric medium, dielectric polarization, displacement vector, Gauss' theorem in dielectrics, parallel plate capacitor filled with dielectric.

Unit 2: (8 Hours)

Magnetostatics: Magnetic force between current elements and definition of magnetic field **B**, Biot-Savart's law and its applications (current carrying straight conductor, current carrying circular coil, current carrying solenoid), divergence and curl of magnetic field, Ampere's circuital law, magnetic properties of materials (magnetic intensity, magnetic induction, permeability, magnetic susceptibility), brief introduction of dia-, para- and ferro magnetic materials

Unit 3: (7 Hours)

Electromagnetic Induction: Faraday's laws of electromagnetic induction, Lenz's law, self-inductance of single coil, mutual inductance of two coils, energy stored in magnetic field. Maxwell's equations and equation of continuity of current, displacement current

Unit 4: (5 Hours)

DC Circuits: Review of Kirchhoff's Voltage and Current Laws, Thevenin theorem, Norton theorem, Superposition theorem, Maximum Power Transfer theorem.

References:

Essential Readings:

- 1) Fundamentals of Electricity and Magnetism, Arthur F. Kip, 2nd Edn. 1981, McGraw-Hill.
- 2) Electricity and Magnetism, J. H. Fewkes and J. Yarwood. Vol. I, 1991, Oxford Univ. Press
- 3) Electricity and Magnetism, D. C. Tayal, 1988, Himalaya Publishing House.
- 4) Fundamentals of Electromagnetics, M. A. W. Miah, 1982, Tata McGraw Hill
- 5) Introduction to Electrodynamics, D. J. Griffiths, 3rd Edn, 1998, Benjamin Cummings.

Additional Readings:

- 1) Electricity and Magnetism, Berkeley Physics Course, Edward M. Purcell, 1986, McGraw-Hill Education.
- 2) Problems and Solutions in Electromagnetics, Ajoy Ghatak, K Thyagarajan and Ravi Varshney.
- 3) University Physics, Ronald Lane Reese, 2003, Thomson Brooks/Cole.

- 4) Schaum's Outline of Electric Circuits, J. Edminister and M. Nahvi, 3rd Edn., 1995, McGraw Hill.

PRACTICAL COMPONENT – 60 Hours

The teacher is expected to give basic idea and working of various instruments and circuits related to different experiments. Students should also be given knowledge of recording and analyzing experimental data.

Every student should perform at least 06 experiments from the following list of experiments.

- 1) To use a multimeter for measuring resistances, a.c and d.c voltages, d.c. current, capacitance and for checking electrical fuses.
- 2) Ballistic Galvanometer:
 - a) Measurement of charge and current sensitivity
 - b) Measurement of critical damping resistance
 - c) Determine a high resistance by leakage method
 - d) Determine self-inductance of a coil by Rayleigh's Method.
- 3) To compare capacitances using de Sauty's bridge.
- 4) Measurement of field strength B and its variation in a Solenoid
- 5) To study the Characteristics of a Series RC Circuit.
- 6) To study a series LCR circuit and determine its resonant frequency and quality factor.
- 7) To study a parallel LCR circuit and determine its anti-resonant frequency and quality factor
- 8) To determine a low resistance by Carey Foster bridge.
- 9) To verify the Thevenin, superposition and maximum power transfer theorems
- 10) To verify Norton theorem

References (for Laboratory Work):

- 1) Advanced Practical Physics for Students, B. L. Flint and H. T. Worsnop, 1971, Asia Publishing House.
- 2) Engineering Practical Physics, S. Panigrahi and B. Mallick, 2015, Cengage Learning India Pvt. Ltd.
- 3) A Textbook of Practical Physics, Indu Prakash and Ramakrishna, 11th Edition, 2011, Kitab Mahal, New Delhi.
- 4) Practical Physics, G. L. Squires, 2015, 4th Edition, Cambridge University Press
- 5) Advanced Level Physics Practicals, Michael Nelson and Jon M. Ogborn, 4th Edition, reprinted 1985, Heinemann Educational Publishers

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category II

(Physical Science Courses (with Electronics) for Undergraduate Programme of study with Physics and Electronics discipline as Core Disciplines)

DISCIPLINE SPECIFIC CORE COURSE (PHYSICS DSC - 3): ELECTRICITY AND MAGNETISM

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|----------------|--|-----------------|------------------|---------------------------------|--|
| | | Lecture | Tutorial | Practical | | |
| Electricity and Magnetism Physics DSC 3 | 4 | 2 | 0 | 2 | Class XII pass | ---- |

LEARNING OBJECTIVES

This course reviews the concepts of electricity and magnetism learnt at school from a more advanced perspective and goes on to build new concepts. The course covers static and dynamic electric and magnetic fields, and the principles of electromagnetic induction. It also includes analysis of electrical circuits and introduction of network theorems. The students will be able to apply the concepts learnt to several real world problems.

LEARNING OUTCOMES

At the end of this course, students will be able to,

- Understand Gauss' law, Coulomb's law for the electric field, and apply them to systems of point charges as well as line, surface, and volume distributions of charges. Also to use the knowledge to solve some simple problems
- Express electric current and capacitance in terms of electric field and electric potential.
- Calculate the force experienced by a moving charge in a magnetic field
- Determine the magnetic force generated by a current carrying conductor
- Have brief idea of magnetic materials, understand the concept of electromagnetic induction, solve problems using Faraday's and Lenz's laws

In the laboratory course, students will be able to measure resistance (high and low), voltage, current, self and mutual inductance, capacitor, strength of magnetic field and its variation, study different electric circuits.

SYLLABUS OF PHYSICS DSC – 3

THEORY COMPONENT

Unit 1: (10 Hours)

Electrostatics: Electric field, electric flux, Gauss' theorem in electrostatics, applications of Gauss' theorem (linear, plane and spherical charge distribution), line integral of electric field, electric potential due to a point charge, electric potential and electric field of a dipole and charged disc, capacitance due to parallel plates and spherical condenser. Electrostatic energy of system of charge (charged sphere), dielectric medium, dielectric polarization, displacement vector, Gauss' theorem in dielectrics, parallel plate capacitor filled with dielectric.

Unit 2: (8 Hours)

Magnetostatics: Magnetic force between current elements and definition of magnetic field **B**, Biot-Savart's law and its applications (current carrying straight conductor, current carrying circular coil, current carrying solenoid), divergence and curl of magnetic field, Ampere's circuital law, magnetic properties of materials (magnetic intensity, magnetic induction, permeability, magnetic susceptibility), brief introduction of dia-, para- and ferro magnetic materials

Unit 3: (7 Hours)

Electromagnetic Induction: Faraday's laws of electromagnetic induction, Lenz's law, self-inductance of single coil, mutual inductance of two coils, energy stored in magnetic field. Maxwell's equations and equation of continuity of current, displacement current

Unit 4: (5 Hours)

DC Circuits: Review of Kirchhoff's Voltage and Current Laws, Thevenin theorem, Norton theorem, Superposition theorem, Maximum Power Transfer theorem.

References:

Essential Readings:

- 1) Fundamentals of Electricity and Magnetism, Arthur F. Kip, 2nd Edn. 1981, McGraw-Hill.
- 2) Electricity and Magnetism, J. H. Fewkes and J. Yarwood, Vol. I, 1991, Oxford Univ. Press
- 3) Electricity and Magnetism, D. C. Tayal, 1988, Himalaya Publishing House.
- 4) Fundamentals of Electromagnetics, M. A. W. Miah, 1982, Tata McGraw Hill
- 5) Introduction to Electrodynamics, D. J. Griffiths, 3rd Edn, 1998, Benjamin Cummings.

Additional Readings:

- 1) Electricity and Magnetism, Berkeley Physics Course, Edward M. Purcell, 1986, McGraw-Hill Education.
- 2) Problems and Solutions in Electromagnetics, Ajoy Ghatak, K Thyagarajan and Ravi Varshney

- 3) University Physics, Ronald Lane Reese, 2003, Thomson Brooks/Cole.
- 4) Schaum's Outline of Electric Circuits, J. Edminister and M. Nahvi, 3rd Edn., 1995, McGraw Hill.

PRACTICAL COMPONENT – 60 Hours

The teacher is expected to give basic idea and working of various instruments and circuits related to different experiments. Students should also be given knowledge of recording and analyzing experimental data.

Every student should perform at least 06 experiments from the following list of experiments.

- 1) To use a multimeter for measuring resistances, a.c and d.c voltages, d.c. current, capacitance and for checking electrical fuses.
- 2) Ballistic Galvanometer:
 - e) Measurement of charge and current sensitivity
 - f) Measurement of critical damping resistance
 - g) Determine a high resistance by leakage method
 - h) Determine self-inductance of a coil by Rayleigh's Method.
- 3) To compare capacitances using de Sauty's bridge.
- 4) Measurement of field strength B and its variation in a Solenoid
- 5) To study the Characteristics of a Series RC Circuit.
- 6) To study a series LCR circuit and determine its resonant frequency and quality factor.
- 7) To study a parallel LCR circuit and determine its anti-resonant frequency and quality factor
- 8) To determine a low resistance by Carey Foster bridge.
- 9) To verify the Thevenin, superposition and maximum power transfer theorems
- 10) To verify Norton theorem

References (for Laboratory Work):

- 1) Advanced Practical Physics for Students, B. L. Flint and H. T. Worsnop, 1971, Asia Publishing House.
- 2) Engineering Practical Physics, S. Panigrahi and B. Mallick, 2015, Cengage Learning India Pvt. Ltd.
- 3) A Textbook of Practical Physics, Indu Prakash and Ramakrishna, 11th Edition, 2011, Kitab Mahal, New Delhi.
- 4) Practical Physics, G. L. Squires, 2015, 4th Edition, Cambridge University Press
- 5) Advanced level Physics Practicals, Michael Nelson and Jon M. Ogborn, 4th Edition, reprinted 1985, Heinemann Educational Publishers

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE (PHYSICS DSC - 4): LINEAR AND DIGITAL INTEGRATED CIRCUITS

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|---------|-----------------------------------|----------|-----------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical | | |
| Linear and Digital Integrated Circuits Physics DSC 4 | 4 | 2 | 0 | 2 | Class XII pass | ---- |

LEARNING OBJECTIVES

This paper aims to provide the basic knowledge of linear and digital electronics. It discusses about the operational amplifier and its applications. Boolean algebra and combinational logic circuits are also discussed.

LEARNING OUTCOMES

At the end of this course, students will be able to achieve the following learning outcomes.

- To understand Op-Amp basics and its various applications.
- To become familiar with logic gates and boolean algebra theorems.
- To understand the minimization techniques for designing a simplified logic circuit.
- To design a half adder, full adder, half-subtractor, and full-subtractor.
- To understand the working of data processing circuits, multiplexers, de-multiplexers, decoders and encoders.
- To become familiar with the working of flip-flop circuits, its working and applications.

SYLLABUS OF PHYSICS DSC – 4

THEORY COMPONENT

Unit 1: (8 Hours)

Operational Amplifiers (Black box approach): Characteristics of an ideal and practical Operational Amplifier (IC 741), Open and closed loop configuration, CMRR, Slew Rate and the concept of Virtual Ground.

Applications of Op-Amps: (1) Inverting and non-inverting amplifiers, (2) Summing and Difference Amplifier, (3) Differentiator, (4) Integrator, (5) Wein bridge oscillator, (6) Comparator, and (7) Active low pass and high pass Butter worth filter (1st order only).

Unit 2: (6 Hours)

Logic Gates and Boolean algebra: Truth Tables of OR, AND, NOT, NOR, NAND, XOR, XNOR, Basic postulates and fundamental theorems of Boolean algebra.

Combinational Logic Analysis and Design: Standard representation of logic functions (SOP), Minimization Techniques (Karnaugh map minimization up to 4 variables for SOP).

Unit 3: (6 Hours)

Arithmetic Circuits: Half and Full Adder, Half and Full Subtractor, 4-bit binary Adder/Subtractor

Data processing circuits: Multiplexers, De-multiplexers, Decoders, Encoders

Unit 4: (5 Hours)

Sequential Circuits: SR, D, and JK Flip-Flops. Race-around conditions in JK Flip-Flop. Master-slave JK Flip-Flop.

Shift registers: Serial-in-Serial-out, Serial-in-Parallel-out, Parallel-in-Serial-out and Parallel in-Parallel-out Shift Registers (only up to 4 bits). Ring Counter.

Unit 5: (5 Hours)

Counters (4 bits): Asynchronous counter, Synchronous Counter.

D-A and A-D Conversion: 4 bit binary weighted and R-2R D-A converters, A-D conversion characteristics, successive approximation ADC.

References:**Essential Readings:**

- 1) Op-Amps and Linear Integrated Circuit, R. A. Gayakwad, 4th edition, 2000, Prentice Hall
- 2) Operational Amplifiers and Linear ICs, David A. Bell, 3rd Edition, 2011, Oxford University Press.
- 3) Digital Principles and Applications, A. P. Malvino, D. P. Leach and Saha, 8th Ed., 2018, Tata McGraw
- 4) Digital Circuits and systems, Venugopal, 2011, Tata McGraw Hill
- 5) Digital Fundamentals, Thomas L. Floyd, Pearson Education Asia (1994).
- 6) Digital Principles, R. L. Tokheim, Schaum's outline series, Tata McGraw- Hill (1994).

PRACTICAL COMPONENT – 60 Hours

Every student should perform at least 04 experiments each from section A, B and C

Section A: Op-Amp. Circuits (Hardware design)

- 1) To design an inverting and non-inverting amplifier using Op-amp (741,351) for dc voltage of given gain.
- 2) To design inverting and non-inverting amplifier using Op-amp (741,351) and study their frequency responses
- 3) To add two dc voltages using Op-Amp in inverting and non-inverting mode.
- 4) To design a precision Differential amplifier of given I/O specification using Op-amplifier.

- 5) To investigate the use of an op-amp as an Integrator.
- 6) To investigate the use of an op-amp as a Differentiator.
- 7) To design a Wien bridge oscillator for given frequency using an Op-Amplifier.
- 8) Design a Butter-worth Low Pass active Filter (1st order) and study frequency response.
- 9) Design a Butter-worth High Pass active Filter (1st order) and study frequency response.
- 10) Design a digital to analog converter (DAC) of given specifications.

Section B: Digital circuits (Hardware design)

- 1) (a) To design a combinational logic system for a specified Truth Table.
(b) To convert Boolean expression into logic circuit & design it using logic gate ICs.
(c) To minimize a given logic circuit.
- 2) Half Adder and Full Adder.
- 3) Half Subtractor and Full Subtractor.
- 4) 4 bit binary adder and adder-subtractor using Full adder IC.
- 5) To design a seven segment decoder.
- 6) To build Flip-Flop (RS, D-type and JK) circuits using NAND gates.
- 7) To build JK Master-slave flip-flop using Flip-Flop ICs.
- 8) To build a Counter using D-type/JK Flip-Flop ICs and study timing diagram.
- 9) To make a Shift Register (serial-in and serial-out) using D-type/JK Flip-Flop ICs.

Section C: SPICE/MULTISIM simulations for electronic circuits and devices

- 1) To verify the Thevenin and Norton Theorems.
- 2) Design and analyze the series and parallel LCR circuits.
- 3) Design the inverting and non-inverting amplifier using an Op-Amp of given gain.
- 4) Design and Verification of op-amp as integrator and differentiator.
- 5) Design the 1st order active low pass and high pass filters of given cutoff frequency.
- 6) Design a Wein's Bridge oscillator of given frequency.
- 7) Design clocked SR and JK Flip-Flop's using NAND Gates.
- 8) Design 4-bit asynchronous counter using Flip-Flop ICs.

References (For Laboratory Work):

- 1) Fundamentals of Digital Circuits, Anand Kumar, 4th Edn, 2018, PHI Learning.
- 2) Digital Computer Electronics, A. P. Malvino, J.A. Brown, 3rd Edition, 2018, Tata McGraw Hill Education.
- 3) Digital Electronics, S. K. Mandal, 2010, 1st edition, Tata McGraw Hill.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category-IV

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES OFFERED BY THE DEPARTMENTS

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|--------------------------------------|----------|-----------|-------------------------|--------------------------------|
| | | Lecture | Tutorial | Practical | | |
| Electricity and Magnetism GE – 11 | 4 | 3 | 0 | 1 | Class XII pass | NIL |

LEARNING OBJECTIVES

This course begins with theorems of network analysis which are required to perform the associated experiments in the laboratory. Then course delves into the elementary vector analysis, an essential mathematical tool for understanding static electric field and magnetic field. By the end of the course, the student should appreciate Maxwell's equations.

LEARNING OUTCOMES

At the end of this course the student will be able to,

- Apply Coulomb's law to line, surface, and volume distributions of charges.
- Apply Gauss's law of electrostatics to distribution of charges
- Understand the effects of electric polarization and concepts of bound charges in dielectric materials
- Understand and calculate the vector potential and magnetic field of arbitrary current distribution
- Understand the concept of bound currents and ferromagnetism in magnetic materials

SYLLABUS OF GE – 11

THEORY COMPONENT

Unit 1: (15 Hours)

Network Analysis: Superposition, Thevenin, Norton theorems and their applications in DC and AC circuits with more than one source, Maximum Power Transfer theorem for AC circuits
Mathematical Preliminaries: Concept of scalar and vector fields, Gradient of a scalar field, Divergence and curl of vector fields and their physical interpretation, Conservative forces and Laplace and Poisson equations.

Concept of a line integral of a scalar and vector field, surface integral of vector fields and volume integral, Gauss's theorem, Stoke's theorem.

Unit 2: (15 Hours)

Electric Field and Electric Potential for continuous charge distributions: Electric field due to a line charge, surface charge and volume charge distributions, Electric field vector as negative gradient of scalar potential, Ambiguities of Electric potential, Differential and integral forms of Gauss's Law, Applications of Gauss's Law to various charge distributions with spherical, cylindrical and planar symmetries, Uniqueness theorem

Electric Field in Matter: Bound charges due to polarization and their physical interpretation. Average electric field inside a dielectric, Electric Field in spherical and cylindrical cavities of a dielectric, Displacement vector and its boundary conditions, Gauss' Law in the presence of dielectrics, Linear dielectrics: electric susceptibility and dielectric constant, Boundary value problems with linear dielectrics.

Unit 3: (15 Hours)

Magnetic Field: Divergence and curl of magnetic field B, Magnetic field due to arbitrary current distribution using Biot-Savart law, Ampere's law, integral and differential forms of Ampere's Law, Vector potential and its ambiguities.

Magnetic Properties of Matter: Magnetization vector, Bound Currents, Magnetic Intensity, Differential and integral form of Ampere's Law in the presence of magnetised materials, Magnetic susceptibility and permeability, Ferromagnetism (Hund's rule)

Electrodynamics: Faraday's Law, Lenz's Law, inductance, Electromotive force, Ohm's Law ($\vec{J} = \sigma \vec{E}$), Energy stored in a Magnetic Field. Charge Conservation, Continuity equation, Differential and integral forms of Maxwell's equations in matter.

References:**Essential Readings:**

- 1) Introduction to Electrodynamics, D. J. Griffiths, 4th Edn., 2015, Pearson Education India Learning Private Limited.
- 2) Schaum's Outlines of Electromagnetics, M. Nahvi and J. A. Edminister, 2019, McGraw-Hill Education.
- 3) Electromagnetic Fields and Waves, Paul Lorrain and Dale Corson, 1991, W. H. Freeman.
- 4) Electricity and Magnetism, Edward M. Purcell, 1986, McGraw-Hill Education
- 5) Network, Lines and Fields, John D. Ryder, 2nd Edn., 2015, Pearson.
- 6) Introductory Circuit Analysis, R. Boylestead, 2016, Pearson.
- 7) Electricity and Magnetism, Tom Weideman, University of California Davis.
[url: https://zhu.physics.ucdavis.edu/Physics9C-C_2021/Physics%209C_EM%20by%20Tom%20Weideman.pdf]

Additional Readings:

- 1) Feynman Lectures Vol. 2, R. P. Feynman, R. B. Leighton, M. Sands, 2008, Pearson Education
- 2) Electricity, Magnetism and Electromagnetic Theory, S. Mahajan and Choudhury, 2012, Tata McGraw
- 3) Fundamentals of Physics, Resnick, Halliday and Walker 10/e, 2013, Wiley

PRACTICAL COMPONENT- 30 Hours

Learning Outcome:

- To understand working of Arduino Microcontroller System
- To use Arduino to measure time, count events and time between events
- To use Arduino to measure voltage/current/resistance
- To use Arduino to measure various physical parameters like magnetic field

Unit I (Mandatory): Arduino Programming

Introduction to Arduino Microcontroller platform. Getting acquainted with the Arduino IDE and Basic Sketch structure. Digital Input and output. Measuring time and events. Measuring analog voltage. Generating analog voltage using Pulse Width Modulation. Serial communication and serial monitor. Programming using Interrupts.

Unit II: Exploring electrical properties of matter using Arduino (at least one experiment)

- To study the characteristics of a series RC Circuit.
- To study response curve of a Series LCR circuit and determine its (a) Resonant frequency, Impedance at resonance, (c) Quality factor Q, and (d) Band width.
- Diode Characteristics:
 - To study characteristics of diode and estimate Boltzman constant.
 - To study characteristics of LED and estimate Planck's constant

Unit III: Exploring magnetic properties of matter using Arduino

- To verify Faraday's law and Lenz's law by measuring induced voltage across a coil subjected to varying magnetic field. Also, estimate dipole moment of the magnet.

Unit IV: DC and AC Bridges (at least one experiment)

- To compare capacitances using de Sauty Bridge
- To determine a Low Resistance by Carey - Foster Bridge

Unit V: Network Theorems

(at least one experiment)

- To verify the Thevenin and Norton theorems
- To verify the Superposition, and Maximum Power Transfer Theorems

References (for Laboratory Work):

- 1) Advanced Practical Physics for students, B. L. Flint and H. T. Worsnop, 1971, Asia Publishing House.
- 2) Engineering Practical Physics, S. Panigrahi and B. Mallick, 2015, Cengage Learning India Pvt. Ltd.
- 3) A Text Book of Practical Physics, I. Prakash and Ramakrishna, 11th Ed.2011, Kitab Mahal
- 4) Practical Physics, G. L. Squires, 2015, 4th Edition, Cambridge University Press

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVE (GE - 12): THERMAL PHYSICS

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department offering the course |
|--------------------------------|---------|-----------------------------------|----------|-----------|----------------------|-----------------------------|--------------------------------|
| | | Lecture | Tutorial | Practical | | | |
| Thermal Physics GE – 12 | 4 | 3 | 0 | 1 | Class XII pass | NIL | Physics and Astrophysics |

LEARNING OBJECTIVES

This course will review the basic concepts of thermodynamics, kinetic theory of gases with a brief introduction to statistical mechanics. The primary goal is to understand the applications of fundamental laws of thermodynamics to various systems and processes. This coursework will also enable the students to understand the connection between the macroscopic observations of physical systems and microscopic behaviour of atoms and molecule through statistical mechanics.

LEARNING OUTCOMES

At the end of this course, students will,

- Get an essence of the basic concepts of thermodynamics, the first and the second law of thermodynamics, the concept of entropy and the associated theorems, the thermodynamic potentials and their physical interpretations. They are also expected to learn Maxwell's thermodynamic relations.
- Know the fundamentals of the kinetic theory of gases, Maxwell-Boltzman distribution law, mean free path of molecular collisions, viscosity, thermal conductivity and diffusion.
- Learn about the black body radiations, Stefan- Boltzmann's law, Rayleigh-Jean's law and Planck's law and their significances.
- Learn the basics of quantum statistical distributions, viz., the Bose-Einstein statistics and the Fermi-Dirac statistics.

In the laboratory course, the students are expected to measure of Planck's constant using black body radiation, determine Stefan's constant, coefficient of thermal conductivity of a bad conductor and a good conductor, determine the temperature coefficient of resistance, study variation of thermo-emf across two junctions of a thermocouple with temperature etc.

SYLLABUS OF GE – 12

THEORY COMPONENT

Unit 1: (12 Hours)

Laws of Thermodynamics: Fundamental basics of Thermodynamic system and variables, Zeroth Law of Thermodynamics and temperature, First law and internal energy, various thermodynamical processes, Applications of First Law: general relation between C_P and C_V , work done during various processes, Compressibility and Expansion Coefficient, reversible and irreversible processes, Second law: Kelvin-Planck and Clausius statements, Carnot engine, Carnot cycle and theorem, basic concept of Entropy, Entropy changes in reversible and irreversible processes, Clausius inequality, Entropy-temperature diagrams.

Unit 2: (08 Hours)

Thermodynamical Potentials: Enthalpy, Gibbs, Helmholtz and Internal Energy functions, Maxwell's relations and applications - Clausius Clapeyron Equation, Expression for $(C_P - C_V)$, C_P/C_V , TdS equations, energy equations for ideal gases.

Unit 3: (8 Hours)

Kinetic Theory of Gases: Derivation of Maxwell's law of distribution of velocities and its experimental verification, Mean free path (zeroth order only), Transport Phenomena: Viscosity, Conduction and Diffusion (for vertical case).

Unit 4: (7 Hours)

Theory of Radiation: Blackbody radiation, Spectral distribution, Derivation of Planck's law, Deduction of Wien's law, Rayleigh-Jeans Law, Stefan Boltzmann Law and Wien's displacement law from Planck's law.

Unit 5: (10 Hours)

Statistical Mechanics: Macrostate and Microstate, phase space, Entropy and Thermodynamic Probability, Maxwell-Boltzmann law, Fermi-Dirac distribution law - Bose-Einstein distribution law - comparison of three statistics.

References:

Essential Readings:

- 1) A Treatise on Heat, Meghnad Saha, and B. N. Srivastava, 1969, Indian Press.
- 2) Heat and Thermodynamics, M. W. Zemasky and R. Dittman, 1981, McGraw Hill.
- 3) Thermodynamics, Kinetic theory and statistical thermodynamics, F. W. Sears and G. L. Salinger. 1988, Narosa.
- 4) Thermal Physics, A. Kumar and S. P. Taneja, 2014, R. Chand Publications.
- 5) Thermal Physics: S. C. Garg, R. M. Bansal and C.K. Ghosh, 2nd Ed. Tata McGraw-Hill.

Additional Readings:

- 1) Concepts in Thermal Physics: Blundell and Blundell, 2nd Ed. 2009, Oxford Univ. Press.

- 2) An Introduction to Thermal Physics: D. Schroeder 2021, Oxford Univ. Press (earlier published by Pearsons).
- 3) Heat, Thermodynamics and Statistical Physics, Brij Lal, N. Subrahmanyam and P. S. Hemne, S. Chand and Company.

PRACTICAL COMPONENT- 30 Hours

- Sessions on the construction and use of specific measurement instruments and experimental apparatuses used in the thermal physics lab, including necessary precautions.
- Sessions on the review of experimental data analysis, sources of error and their estimation in detail, writing of scientific laboratory reports including proper reporting of errors.
- Application to the specific experiments done in the lab.

Every student must perform at least four experiments from the following list.

- 1) To determine Mechanical Equivalent of Heat, J , by Callender and Barne's constant flow method.
- 2) Measurement of Planck's constant using black body radiation.
- 3) To determine Stefan's Constant.
- 4) To determine the coefficient of thermal conductivity of Cu by Searle's Apparatus.
- 5) To determine the coefficient of thermal conductivity of a bad conductor by Lee and Charlton's disc method by steam or electrical heating.
- 6) To determine the temperature co-efficient of resistance by Platinum resistance thermometer.
- 7) To study the variation of thermos-emf across two junctions of a thermocouple with temperature.

References (For Laboratory Work):

- 1) Advanced Practical Physics for students, B. L. Flint and H. T. Worsnop, 1971, Asia Publishing House.
- 2) A Text Book of Practical Physics, Indu Prakash and Ramakrishna, 11th Edition, 2011, Kitab Mahal.
- 3) A Laboratory Manual of Physics for Undergraduate Classes, D. P. Khandelwal, 1985, Vani Publication.
- 4) Practical Physics, G. L. Squires, 2015, 4th Edition, Cambridge University Press.
- 5) An Advanced Course in Practical Physics: D. Chattopadhyay and P. C. Rakshit, New Central Book Agency

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVE (GE - 13): MODERN PHYSICS

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------------|---------|-----------------------------------|----------|-----------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical | | |
| Modern Physics GE – 13 | 4 | 3 | 0 | 1 | Class XII pass | NIL |

LEARNING OBJECTIVES

The objective of this course is to teach the physics foundation necessary for learning various topics in modern physics which are crucial for understanding atoms, molecules, photons, nuclei and elementary particles. These concepts are also important to understand phenomena in Laser physics, condensed matter physics and astrophysics.

LEARNING OUTCOMES

After getting exposure to this course, the following topics would have learnt,

- Main aspects of the inadequacies of classical mechanics as well as understanding of the historical development of quantum mechanics, laying the foundation of modern physics.
- Formulation of Schrodinger equation and the idea of probability interpretation associated with wave-functions.
- The spontaneous and stimulated emission of radiation, optical pumping and population inversion, Basic lasing action.
- The properties of nuclei like density, size, binding energy, nuclear force and structure of atomic nucleus, liquid drop model and mass formula.
- Radioactive decays like alpha, beta, gamma decay. Neutrino, its properties and its role in theory of beta decay.
- Fission and fusion: Nuclear processes to produce nuclear energy in nuclear reactor and stellar energy in stars.

In the laboratory course, the students will get opportunity to measure Planck's constant, verify photoelectric effect, and determine e/m of electron and work function of a metal. They will also find wavelength of Laser sources by single and double slit experiment, wavelength and angular spread of He-Ne Laser using plane diffraction grating.

SYLLABUS OF GE – 13

THEORY COMPONENT

Unit 1: (10 Hours)

Origin of Modern Physics: Blackbody Radiation: Failure of explanation from classical theory; Planck's idea of a quantum; Quantum theory of Light: Photo-electric effect and Compton scattering, de Broglie wavelength and matter waves; Davisson-Germer experiment; Wave description of particles by wave packets, Group and Phase velocities and relation between them.

Unit 2: (10 Hours)

Problems with Rutherford model: Instability of atoms and observation of discrete atomic spectra; Bohr's quantization rule and atomic stability; calculation of energy levels for hydrogen-like atoms and their spectra.

Uncertainty principle: Gamma ray microscope thought experiment; Wave-particle duality leading to Heisenberg uncertainty principle; Impossibility of an electron being in the nucleus, Energy-time uncertainty principle; origin of natural width of emission lines

Unit 3: (10 Hours)

Basics of quantum Mechanics: Two-slit interference experiment with photons and electrons; Concept of wave functions, linearity and superposition, Time independent Schrodinger wave equation for non-relativistic particles; Momentum and Energy operators; physical interpretation of a wave function, probabilities, normalization and probability current densities in one dimension. Problem: One dimensional infinitely rigid box. An application: Quantum dot.

Unit 4: (05 Hours)

X-rays: Ionizing Power, X-ray Diffraction, Bragg's Law. Critical Potentials, X-rays-Spectra: Continuous and Characteristic X-rays, Moseley's Law.

LASERS: Properties and applications of Lasers. Emission (spontaneous and stimulated emissions) and absorption processes, Metastable states, components of a laser and lasing action.

Unit 5: (10 Hours)

Nuclear Physics: Size and structure of atomic nucleus and its relation with atomic weight; Nature of nuclear force, Stability of the nucleus; N-Z graph, Drip line nuclei, Binding Energy, Liquid Drop model: semi-empirical mass formula.

Radioactivity: Different equilibrium, Alpha decay; Beta decay: energy released, spectrum and Pauli's prediction of neutrino; Gamma ray emission, energy-momentum conservation:

Fission and fusion: Mass deficit and generation of energy; Fission: nature of fragments and emission of neutrons. Fusion and thermonuclear reactions driving stellar evolution (brief qualitative discussions only).

References:**Essential Readings:**

- 1) Concepts of Modern Physics, Arthur Beiser, 2002, McGraw-Hill.
- 2) Modern Physics by R. A. Serway, C. J. Moses and C. A. Moyer, 3rd edition, Thomson Brooks Cole, 2012.
- 3) Modern Physics for Scientists and Engineers by S. T. Thornton and A Rex, 4th edition, Cengage Learning, 2013.
- 4) Concepts of Nuclear Physics by B. L. Cohen, Tata McGraw Hill Publication, 1974.
- 5) Quantum Mechanics: Theory and Applications, Ajoy Ghatak and S. Lokanathan, Laxmi Publications, 2019

Additional Readings:

- 1) Six Ideas that Shaped Physics: Particle Behave like Waves, T.A. Moore, 2003, McGraw Hill.
- 2) Thirty years that shook physics: the story of quantum theory, George Gamow, Garden City, NY: Doubleday, 1966.
- 3) New Physics, ed. Paul Davies, Cambridge University Press (1989).
- 4) Quantum Theory, David Bohm, Dover Publications, 1979.
- 5) Lectures on Quantum Mechanics: Fundamentals and Applications, eds. A. Pathak and Ajoy Ghatak, Viva Books Pvt. Ltd., 2019
- 6) Quantum Mechanics, Robert Eisberg and Robert Resnick, 2nd Edn., 2002, Wiley.
- 7) Basic ideas and concepts in Nuclear Physics: An introductory approach by K Heyde, third edition, IOP Publication, 1999.

PRACTICAL COMPONENT – 30 Hours

- Sessions on the construction and use of specific measurement instruments and experimental apparatuses used in the modern physics lab, including necessary precautions.
- Sessions on the review of experimental data analysis, sources of error and their estimation in detail, writing of scientific laboratory reports including proper reporting of errors.
- Application to the specific experiments done in the lab.

Every student must perform at least 06 experiments from the following list of experiments.

- 1) Measurement of Planck's constant using black body radiation and photo-detector.
- 2) Photo-electric effect: estimate Planck's constant using graph of maximum energy of photo-electrons versus frequency of light.
- 3) To determine work function of material of filament of directly heated vacuum diode.
- 4) To determine the Planck's constant using LEDs, using at least 4 LEDs.
- 5) To determine the wavelength of H-alpha emission line of Hydrogen atom.
- 6) To determine the value of e/m by (a) Magnetic focusing or (b) Bar magnet.
- 7) To setup the Millikan oil drop apparatus and determine the charge of an electron.
- 8) To show the tunneling effect in tunnel diode using I-V characteristics.
- 9) To determine the wavelength of laser source using diffraction of single slit.

- 10) To determine wavelength and angular spread of He-Ne laser using plane diffraction grating.
- 11) To determine the wavelength of laser source using diffraction of double slits.

References (for Laboratory Work):

- 1) Advanced Practical Physics for students, B. L. Flint and H. T. Worsnop, 1971, Asia Publishing House.
- 2) Advanced Level Physics Practicals, Michael Nelson and Jon M. Ogborn, 4th Edition, reprinted 1985, Heinemann Educational Publishers.
- 3) A Text Book of Practical Physics, Indu Prakash and Ramakrishna, 11th Edition, 2011, Kitab Mahal, New Delhi.
- 4) Practical Physics, G. L. Squires, 2015, 4th Edition, Cambridge University Press.
- 5) B. Sc. Practical Physics, Geeta Sanon, R. Chand, 2016.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVE (GE - 14): INTRODUCTORY ASTRONOMY

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------------------------|---------|-----------------------------------|----------|-----------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical | | |
| Introductory Astronomy GE – 14 | 4 | 3 | 1 | 0 | Class XII pass | NIL |

LEARNING OBJECTIVES

This course is meant to introduce undergraduate students to the wonders of the Universe. Students will understand how astronomers over millennia have come to understand mysteries of the universe using laws of geometry and physics, and more recently chemistry and biology. They will be introduced to the Indian contribution to astronomy starting from ancient times up to the modern era. They will learn about diverse set of astronomical phenomenon, from the daily and yearly motion of stars and planets in the night sky which they can observe themselves, to the expansion of the universe deduced from the latest observations and cosmological models. Students will also be introduced to internet astronomy and the citizen science research platform in astronomy. The course presupposes school level understanding of mathematics and physics.

LEARNING OUTCOMES

After completing this course, student will gain an understanding of,

- Different types of telescopes, diurnal and yearly motion of astronomical objects, astronomical coordinate systems and their transformations
- Brightness scale for stars, types of stars, their structure and evolution on HR diagram
- Components of solar system and its evolution
- Current research in detection of exoplanets
- Basic structure of different galaxies and rotation of the Milky Way galaxy
- Distribution of chemical compounds in the interstellar medium and astrophysical conditions necessary for the emergence and existence of life
- Internet based astronomy and the collaborative citizen astronomy projects
- India's contribution to astronomy, both in ancient times and in modern era.

SYLLABUS OF GE – 14 (Lecture-45 hours)

THEORY COMPONENT

Unit 1:

Introduction to Astronomy and Astronomical Scales: History of astronomy, wonders of the Universe, overview of the night sky, diurnal and yearly motions of the Sun, size, mass, density and temperature of astronomical objects, basic concepts of positional astronomy: Celestial sphere, Astronomical coordinate systems, Horizon system and Equatorial system

Unit 2:

Basic Parameters of Stars: Stellar energy sources, determination of distance by parallax method, aberration, proper motion, brightness, radiant flux and luminosity, apparent and absolute magnitude scales, distance modulus, determination of stellar temperature and radius, basic results of Saha ionization formula and its applications for stellar astrophysics, stellar spectra, dependence of spectral types on temperature, luminosity classification, stellar evolutionary track on Hertzsprung-Russell diagram

Unit 3:

Astronomical Instruments: Observing through the atmosphere (Scintillation, Seeing, Atmospheric Windows and Extinction). Basic Optical Definitions for Telescopes: Magnification, Light Gathering Power, Limiting magnitude, Resolving Power, Diffraction Limit. Optical telescopes, radio telescopes, Hubble space telescope, James Web space telescope, Fermi Gamma ray space telescope.

Astronomy in the Internet Age: Overview of Aladin Sky Atlas, Astrometrica, Sloan Digital Sky Survey, Stellarium, virtual telescope

Citizen Science Initiatives: Galaxy Zoo, SETI@Home, RAD@Home India

Unit 4:

Sun and the solar system: Solar parameters, Sun's internal structure, solar photosphere, solar atmosphere, chromosphere, corona, solar activity, origin of the solar system, the nebular model, tidal forces and planetary rings

Exoplanets: Detection methods

Unit 5:

Physics of Galaxies: Basic structure and properties of different types of Galaxies, Nature of rotation of the Milky Way (Differential rotation of the Galaxy), Idea of dark matter

Cosmology and Astrobiology: Standard Candles (Cepheids and SNe Type Ia), Cosmic distance ladder, Olber's paradox, Hubble's expansion, History of the Universe, Chemistry of life, Origin of life, Chances of life in the solar system

Unit 6:

Astronomy in India: Astronomy in ancient, medieval and early telescopic era of India, current Indian observatories (Hanle-Indian Astronomical Observatory, Devasthal Observatory, Vainu Bappu Observatory, Mount Abu Infrared Observatory, Gauribidanur Radio Observatory, Giant Metre-wave Radio Telescope, Udaipur Solar Observatory, LIGO-India) (qualitative discussion), Indian astronomy missions (Astrosat, Aditya)

References:

Essential Readings:

- 1) Seven Wonders of the Cosmos, Jayant V Narlikar, Cambridge University Press
- 2) Fundamental of Astronomy, H. Karttunen et al. Springer
- 3) Modern Astrophysics, B. W. Carroll and D. A. Ostlie, Addison-Wesley Publishing Co.
- 4) Introductory Astronomy and Astrophysics, M. Zeilik and S. A. Gregory, Saunders College Publishing.
- 5) The Molecular Universe, A. G. G. M. Tielens (Sections I, II and III), Reviews of Modern Physics, Volume 85, July-September, 2013
- 6) Astronomy in India: A Historical Perspective, Thanu Padmanabhan, Springer

Useful websites for astronomy education and citizen science research platform

- 1) <https://aladin.u-strasbg.fr/>
- 2) <http://www.astrometrica.at/>
- 3) <https://www.sdss.org/>
- 4) <http://stellarium.org/>
- 5) <https://www.zooniverse.org/projects/zookeeper/galaxy-zoo/>
- 6) <https://setiathome.berkeley.edu/>
- 7) <https://www.radathomeindia.org/>

Additional Readings:

- 1) Explorations: Introduction to Astronomy, Thomas Arny and Stephen Schneider, McGraw

Hill

- 2) Astrophysics Stars and Galaxies K. D. Abhyankar, Universities Press
- 3) Textbook of Astronomy and Astrophysics with elements of cosmology, V. B. Bhatia, Narosa Publication.
- 4) Baidyanath Basu, An introduction to Astrophysics, Prentice Hall of India Private Limited.
- 5) The Physical Universe: An Introduction to Astronomy, F. H. Shu, University Science Books

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DEPARTMENT OF CHEMISTRY
Category-I

B.Sc. (H) Chemistry

DISCIPLINE SPECIFIC CORE COURSE -4 (DSC-4): CHEMISTRY OF S- AND P-BLOCK ELEMENTS

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|--------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Chemistry of s- and p-Block Elements (DSC-4: Inorganic Chemistry -II) | 04 | 03 | 0 | 01 | Class 12 th Pass | ---- |

Learning objectives

The objectives of this course are as follows:

- To develop the general principles of metallurgy and s-, p-block elements.
- To introduce the terms minerals, ores, concentration, benefaction, calcination, roasting, refining, etc. and explain the principles of oxidation and reduction as applied to the extraction procedures.
- To make students ware of different methods of purification of metals, such as electrolytic, oxidative refining, VanArkel-De Boer process and Mond's process are discussed and applications of thermodynamic concepts like that of Gibbs energy and entropy to the extraction of metals.
- To familiarize students with the patterns and trends exhibited by s- and p-block elements and their compounds with emphasis on synthesis, structure, bonding and uses.
- To impart information about the fundamentals of internal and external redox indicators, and iodometric/iodimetric titrations.

Learning outcomes

By studying this course, students will be able to:

- Learn the fundamental principles of metallurgy and understand the importance of recovery of by-products during extraction.
- Applications of thermodynamic concepts like that of Gibbs energy and

entropy to the principles of extraction of metals.

- Learn about the characteristics of s- and p- block elements as well as the synthesis, structure, bonding and uses of their compounds
- Understand the concept and use of internal and external redox indicators
- Comprehend the theory and application of iodometric and iodimetric titrimetric analysis

SYLLABUS OF DSC-4

UNIT – I: General Principles of Metallurgy

(6 Hours)

Chief modes of occurrence of metals based on standard electrode potentials. Ellingham diagrams for reduction of metal oxides using carbon and carbon monoxide as reducing agent. Electrolytic Reduction, Hydrometallurgy with reference to cyanide process for silver and gold. Methods of purification of metals: Electrolytic process, Van Arkel-De Boer process, Zone refining. Brief discussion of metals and alloys used in ancient and medieval India.

UNIT – II: Chemistry of s- Block Elements

(15 Hours)

General characteristics: melting point, flame colouration, reducing nature, diagonal relationships and anomalous behavior of first member of each group. Reactions of alkali and alkaline earth metals with oxygen, hydrogen, nitrogen and water.

Common features such as ease of formation, thermal stability, energetics of dissolution, and solubility of the following alkali and alkaline earth metal compounds: hydrides, oxides, peroxides, superoxides, carbonates, nitrates, sulphates.

Complex formation tendency of s-block elements; structure of the following complexes: crown ethers and cryptates of Group I; basic beryllium acetate, beryllium nitrate, EDTA complexes of calcium and magnesium.

Solutions of alkali metals in liquid ammonia and their properties

UNIT – III: Chemistry of p-Block Elements

(9 Hours)

Electronic configuration, atomic and ionic size, metallic/non-metallic character, melting point, ionization enthalpy, electron gain enthalpy, electronegativity, Catenation, Allotropy of C, P, S; inert pair effect, diagonal relationship between B and Si and anomalous behaviour of first member of each group.

UNIT – IV: Compounds of p-Block Elements

(15 Hours)

Acidic/basic nature, stability, ionic/covalent nature, oxidation/reduction, hydrolysis, action of heat on the following:

- Hydrides of Group 13 (only diborane), Group 14, Group 15 (EH_3 where E = N, P, As, Sb, Bi), Group 16 and Group 17.
- Oxoacids of phosphorus, sulphur and chlorine
- Interhalogen and pseudohalogen compound
- Clathrate compounds of noble gases, xenon fluorides (MO treatment of XeF_2).

Practical component – 30 Hours

1. Redox Titrations

- (i) Estimation of Fe(II) with $K_2Cr_2O_7$ using diphenylamine as internal indicator.
- (ii) Estimation of Fe(II) with $K_2Cr_2O_7$ using N-phenyl anthranilic acid as internal indicator.
- (iii) Estimation of Fe(II) with $K_2Cr_2O_7$ using external indicator.

2. Iodo/Iodimetric Titrations

- (i) Estimation of Cu(II) using sodium thiosulphate solution (Iodometrically).
- (ii) Estimation of $K_2Cr_2O_7$ using sodium thiosulphate solution (Iodometrically).
- (iii) Estimation of antimony in tartaremetic iodimetrically.
- (iv) Estimation of Iodine content in iodized salt.

Essential/recommended readings

Theory:

- 1. Lee, J. D.; (2010), **Concise Inorganic Chemistry**, Wiley India.
- 2. Huheey, J. E.; Keiter, E. A.; Keiter; R.L.; Medhi, O.K. (2009), **Inorganic Chemistry-Principles of Structure and Reactivity**, Pearson Education.
- 3. Atkins, P. W.; Overton, T. L.; Rourke, J. P.; Weller, M. T.; Armstrong, F. A. (2010), **Shriver and Atkins Inorganic Chemistry**, 5th Edition, Oxford University Press.
- 4. Miessler, G. L.; Fischer P. J.; Tarr, D. A. (2014), **Inorganic Chemistry**, 5th Edition, Pearson.
- 5. Housecraft, C. E.; Sharpe, A. G., (2018), **Inorganic Chemistry**, 5th Edition, Pearson.
- 6. Canham, G. R., Overton, T. (2014), **Descriptive Inorganic Chemistry**, 6th Edition, Freeman and Company.
- 7. Greenwood, N. N.; Earnshaw, A., (1997), **Chemistry of Elements**, 2nd Edition, Elsevier.

Practicals:

- 1. Jeffery, G. H.; Bassett, J.; Mendham, J.; Denney, R. C. (1989), Vogel's Text book of **Quantitative Chemical Analysis**, John Wiley and Sons.
- 2. Harris, D. C.; Lucy, C. A. (2016), **Quantitative Chemical Analysis**, 9th Edition, Freeman and Company.
- 3. Day, R. A.; Underwood, A. L. (2012), **Quantitative Analysis**, 6th Edition, PHI Learning Private Limited.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

**DISCIPLINE SPECIFIC CORE COURSE – 5 (DSC-5): HALOALKANES, ARENES,
HALOARENES, ALCOHOLS, PHENOLS, ETHERS AND EPOXIDES**

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Haloalkanes, Arenes, Haloarenes, Alcohols, Phenols, Ethers and Epoxides (DSC-5: Organic Chemistry-II) | 04 | 02 | 0 | 02 | Class Pass 12 th | --- |

Learning Objectives

The Learning Objectives of this course are as follows:

- To impart understanding of the chemistry of organic functional groups, which include haloalkanes, aromatic hydrocarbons, haloarenes and some oxygen containing functional groups, along with their reactivity patterns.
- To develop understanding of detailed reactions and mechanistic pathways for each functional group to unravel the spectrum of organic chemistry and the extent of organic transformations.
- To aid in the paramount learning of the concepts and their applications.

Learning outcomes

On completion of the course, the student will be able to:

- Understand reactions of arenes, haloarenes and some oxygen containing functional groups.
- Understand the concept of protection and deprotection
- Use the synthetic chemistry learnt in this course to do functional group transformations.
- Propose plausible mechanisms for the reactions under study.

SYLLABUS OF DSC-5

Unit - 1: Haloalkanes

(10 Hours)

Alkyl halides: Methods of preparation and properties, nucleophilic substitution reactions – S_N1 , S_N2 and S_Ni mechanisms with stereochemical aspects and effect of solvent; nucleophilic substitution v/s elimination.

Organometallic compounds of Mg (Grignard reagent) – Use in synthesis of organic compounds.

Unit - II: Aromatic Hydrocarbons

(06 Hours)

Concept of Aromaticity and anti-aromaticity; Electrophilic aromatic substitution: halogenation, nitration, sulphonation, Friedel Crafts alkylation/acylation with their mechanism. Directing effects of groups in electrophilic substitution.

Unit - III: Aryl halides

(04 Hours)

Preparation (including preparation from diazonium salts) and properties, nucleophilic aromatic substitution; S_NAr , Benzyne mechanism. Relative reactivity of alkyl, allyl, benzyl, vinyl and aryl halides towards nucleophilic substitution reactions.

Unit - IV: Alcohols, Phenols, Ethers & Epoxides

(10 Hours)

Alcohols: Relative reactivity of 1° , 2° , 3° alcohols, reactions of alcohols with sodium, HX (Lucas test), esterification, oxidation (with PCC, alkaline $KMnO_4$, acidic dichromate, conc. HNO_3). Oppenauer oxidation; Diols: oxidation of diols by periodic acid and lead tetraacetate, Pinacol-Pinacolone rearrangement.

Phenols: Preparation using Cumene hydroperoxide, Acidity and factors affecting it, Kolbe's–Schmidt reactions, Riemeier-Tiemann reaction, Houben–Hoesch condensation, Schotten–Baumann reaction, Fries and Claisen rearrangements and their mechanism.

Ethers and Epoxides: Acid and Base catalyzed cleavage reactions.

Practical

-

60 Hours

1. Acetylation of any one of the following compounds: amines (aniline, *o*-, *m*-, *p*-toluidines and *o*-, *m*-, *p*-anisidine) and phenols (β -naphthol, salicylic acid) by any one method:
 - i. Using conventional method ii. Using green approach
2. Benzoylation of one of the following amines (aniline, *o*-, *m*-, *p*-toluidines and *o*-, *m*-, *p*-anisidine) or one of the following phenols (β -naphthol, resorcinol, *p*-cresol) by Schotten-Baumann reaction.
3. Bromination of acetanilide/aniline/phenol by any one of the following:
 - (a) Green method b) Conventional method
4. Nitration of nitrobenzene/chlorobenzene.
5. Haloform reaction of ethanol.
6. Oxidation of benzyl alcohol to benzoic acid
7. Estimation of the given sample of phenol/amine by:

- a) Acetylation b) Bromate-Bromide method
8. Functional group tests for alcohols, phenols, carboxylic acids, phenols, carbonyl compounds, esters.

Essential/recommended readings

Theory:

1. Morrison, R. N., Boyd, R. N., Bhattacharjee, S.K. (2010), **Organic Chemistry**, 7th Edition, Dorling Kindersley (India) Pvt. Ltd., Pearson Education.
2. Finar, I.L. (2002), **Organic Chemistry**, Volume 1, 6th Edition, Dorling Kindersley (India) Pvt. Ltd., Pearson Education.
3. Ahluwalia, V.K.; Bhagat, P.; Aggarwal, R.; Chandra, R. (2005), **Intermediate for Organic Synthesis**, I.K. International.
4. Solomons, T.W.G., Fryhle, C.B., Snyder, S.A. (2017), **Organic Chemistry**, 12th Edition, Wiley.

Practical:

1. Mann, F.G., Saunders, B.C. (2009), **Practical Organic Chemistry**, 4th Edition, Pearson Education.
2. Furniss, B.S., Hannaford, A.J., Smith, P.W.G., Tatchell, A.R. (2005), **Vogel's Textbook of Practical Organic Chemistry**, Pearson.
3. Ahluwalia, V.K., Aggarwal, R. (2004), **Comprehensive Practical Organic Chemistry: Preparation and Quantitative Analysis**, University Press.
4. Ahluwalia, V.K., Dhingra, S. (2004), **Comprehensive Practical Organic Chemistry: Qualitative Analysis**, University Press.
5. Pasricha, S., Chaudhary, A. (2021), **Practical Organic Chemistry: Volume–I**, I K International Publishing house Pvt. Ltd, New Delhi
6. Pasricha, S., Chaudhary, A. (2021), **Practical Organic Chemistry: Volume–II**, I K International Publishing house Pvt. Ltd, New Delhi

Suggestive readings

1. Carey, F.A., Sundberg, R. J. (2008), **Advanced Organic Chemistry: Part B: Reaction and Synthesis**, Springer.
2. Bruice, P.Y. (2020), **Organic Chemistry**, 3rd Edition, Pearson.
3. Patrick, G. (2012), **BIOS Instant Notes in Organic Chemistry**, Viva Books.
4. Parashar, R.K., Ahluwalia, V.K. (2018), **Organic Reaction Mechanism**, 4th Edition, Narosa Publishing House.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 6 (DSC-6): Thermodynamics and its Applications

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Chemical Thermodynamics and its Applications (DSC – 6: Physical Chemistry – II) | 04 | 03 | - | 01 | Class Pass XII | ---- |

Learning Objectives

The Learning Objectives of this course are as follows:

- To make students understand thermodynamic concepts, terminology, properties of thermodynamic systems, laws of thermodynamics and their correlation with other branches of physical chemistry and make them able to apply thermodynamic concepts to the system of variable compositions, equilibrium and colligative properties.

Learning outcomes

On completion of the course, the student will be able to:

- Understand the three laws of thermodynamics, concept of State and Path functions, extensive and intensive properties.
- Derive the expressions of ΔU , ΔH , ΔS , ΔG , ΔA for an ideal gas under different conditions.
- Explain the concept of partial molar properties.

SYLLABUS OF DSC-6

UNIT – I: Basic Concepts of Chemical Thermodynamics (06 Hours)

Intensive and extensive variables; state and path functions; isolated, closed and open systems.

Mathematical treatment - Exact and inexact differential, Partial derivatives, Euler's reciprocity rule, cyclic rule.

UNIT – II: First law and Thermochemistry (15 Hours)

Concept of heat, Q , work, W , internal energy, U , and statement of first law; enthalpy, H , relation between heat capacities, Joule Thompson Porous Plug experiment, Nature of Joule Thompson coefficient, calculations of Q , W , ΔU and ΔH for reversible, irreversible and free expansion of gases (ideal and van der Waals) under isothermal and adiabatic conditions.

Enthalpy of reactions: standard states; enthalpy of neutralization, enthalpy of hydration, enthalpy of formation and enthalpy of combustion and its applications, bond dissociation energy and bond enthalpy; effect of temperature (Kirchhoff's equations) on enthalpy of reactions.

UNIT – III: Second Law (15 Hours)

Concept of entropy; statement of the second law of thermodynamics, Carnot cycle. Calculation of entropy change for reversible and irreversible processes (for ideal gases). Free Energy Functions: Gibbs and Helmholtz energy; variation of S , G , A with T , V , P ; Free energy change and spontaneity (for ideal gases). Relation between Joule-Thomson coefficient and other thermodynamic parameters; inversion temperature; Gibbs-Helmholtz equation; Maxwell relations; thermodynamic equation of state.

UNIT – IV Third Law (03 Hours)

Statement of third law, unattainability of absolute zero, calculation of absolute entropy of molecules, concept of residual entropy, calculation of absolute entropy of solid, liquid and gases.

UNIT – V Systems of Variable Composition (06 Hours)

Partial molar quantities, dependence of thermodynamic parameters on composition; Gibbs Duhem equation, chemical potential of ideal mixtures, Change in thermodynamic functions on mixing of ideal gases.

**Practical – 30 Hours
Thermochemistry:**

- (a) Determination of heat capacity of a calorimeter for different volumes using change of enthalpy data of a known system (method of back calculation of heat capacity of calorimeter from known enthalpy of solution of sulphuric acid or enthalpy of neutralization).
- (b) Determination of heat capacity of a calorimeter for different volumes using heat gained equal to heat lost by cold water and hot water.
- (c) Determination of enthalpy of neutralization of hydrochloric acid with sodium hydroxide.

- (d) Determination of the enthalpy of ionization of ethanoic acid.
 - (e) Determination of integral enthalpy solution of endothermic salts.
 - (f) Determination of integral enthalpy solution of exothermic salts.
 - (g) Determination of basicity of a diprotic acid by the thermochemical method in terms of the changes of temperatures observed in the graph of temperature versus time for different additions of a base. Also calculate the enthalpy of neutralization of the first step.
 - (h) Determination of enthalpy of hydration of salt.
 - (i) Study of the solubility of benzoic acid in water and determination of ΔH .
- Any other experiment carried out in the class.

Essential/recommended readings

Theory

1. Peter, A.; Paula, J. de. (2011), **Physical Chemistry**, 9th Edition, Oxford University Press.
2. Castellan, G. W. (2004), **Physical Chemistry**, 4th Edition, Narosa.
3. Kapoor, K.L. (2015), **A Textbook of Physical Chemistry**, Vol 2, 6th Edition, McGraw Hill Education.
4. Kapoor, K.L., **A Textbook of Physical Chemistry**, Vol 3, 5th Edition, McGraw Hill Education.
5. McQuarrie, D. A.; Simon, J. D. (2004), **Molecular Thermodynamics**, Viva Books Pvt. Ltd.

Practical:

1. Khosla, B.D.; Garg, V.C.; Gulati, A. (2015), **Senior Practical Physical Chemistry**, R. Chand & Co, New Delhi.
2. Kapoor, K.L. (2019), **A Textbook of Physical Chemistry**, Vol.7, 1st Edition, McGraw Hill Education.
3. Garland, C. W.; Nibler, J. W.; Shoemaker, D. P. (2003), **Experiments in Physical Chemistry**, 8th Edition, McGraw-Hill, New York.

Suggestive readings

1. Levine, I.N. (2010), **Physical Chemistry**, Tata Mc Graw Hill.
2. Assael, M. J.; Goodwin, A. R. H.; Stamatoudis, M.; Wakeham, W. A.; Will, S. (2011), **Commonly asked Questions in Thermodynamics**. CRC Press.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category II

BSc. Life Science with Chemistry as one of the Core Discipline

DISCIPLINE SPECIFIC CORE COURSE – 4:

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Chemical Bonding and Elements in Biological System CHEM-DSC-02 | 4 | 2 | 0 | 2 | Class XII Pass | ---- |

Learning Objectives

The Learning Objectives of this course are as follows:

- Students gain basic knowledge of chemical bonding in compounds which is a necessary pre-requisite in understanding the general properties of the compound.
- Unit 2 reviews the importance of inorganic chemical species, especially metals in biological systems, their classification and detailed discussion of toxic metals.
- The discussions also provide them the details of sodium-potassium pump, role of some metal ions such as calcium, magnesium and the role of iron in transport and storage system

Learning outcomes

By the end of the course, the students will be able to:

- Understand the concept of lattice energy using Born-Landé and Born Haber Cycle and their applications
- Rationalize the conductivity of metals, semiconductors and insulators based on the Band theory.
- Understand the importance and application of chemical bonds, inter-molecular and intramolecular weak chemical forces and their effect on melting points, boiling points, solubility and energetics of dissolution.
- Know about the essential, non-essential, trace and toxic metal ions and their role in biological system and effects of their deficiency. They will also learn their dose response relationship curves.
- Understand active and Passive transport and diagrammatically explain the working of

the sodium-potassium pump in organisms and the factors affecting it

- Explain the sources and consequences of excess and deficiency of trace metals and learn about the toxicity of certain metal ions, the reasons for toxicity
- Storage and transport of iron in bio-systems

SYLLABUS OF DSC-4

Unit I: Chemical Bonding

(18 Hours)

Ionic Bonding: General characteristics of ionic bonding, Lattice Enthalpy and Solvation Enthalpy and their relation to stability and solubility of ionic compounds, Born-Landé equation for calculation of Lattice Enthalpy (no derivation), Born-Haber cycle and its applications, polarizing power and polarizability, Fajan's rules, ionic character in covalent compounds, bond moment, dipole moment and percentage ionic character.

Covalent Bonding: Valence Bond Approach, Hybridization and VSEPR Theory with suitable examples, Concept of resonance and resonating structures in various inorganic and organic compounds, Molecular Orbital Approach: Rules for the LCAO method, bonding, nonbonding and antibonding MOs and their characteristics for s-s, s-p and p-p combinations of atomic orbitals, MO treatment of homonuclear diatomic molecules of 1st and 2nd periods (including idea of s-p mixing) and heteronuclear diatomic molecules such as CO, NO and NO⁺.

Brief introduction to Metallic Bonding, Hydrogen Bonding, van der Waals forces

Unit II: Elements in Biological System

(12 Hours)

Classification of elements in biological system, Geochemical effect on the distribution of metals, Metal ions present in biological systems with special reference to Na⁺, K⁺, Ca²⁺, Mg²⁺, Fe²⁺, Cu²⁺ and Zn²⁺, Sodium / K-pump, Role of Ca²⁺ (blood clotting and structural), Role of Mg²⁺ in chlorophyll and energy production, Excess and deficiency of some trace metals, Toxicity of metal ions (Hg, Pb, Cd and As), reasons for toxicity, Dose response relationship curves of metal ions, Iron and its application in bio-systems, Storage and transport of iron.

PRACTICALS:

60 Hours

1. Preparation of standard solutions.
2. Estimation of Sodium carbonate using HCl by acid base titration.
3. Estimation of carbonate and hydroxide present together in a mixture.
4. Estimation of carbonate and bicarbonate present together in a mixture.
5. Estimation of free alkali present in different soaps/detergents
6. Estimation of oxalic acid using KMnO₄ by redox titration.
7. Estimation of Mohr's salt using KMnO₄ by redox titration.
8. Determination of dissolved oxygen in water.
9. Estimation of Fe (II) ions by titrating it with K₂Cr₂O₇ using internal and external indicators.
10. Estimation of Cu (II) ions iodometrically using Na₂S₂O₃
11. Paper Chromatographic separation of mixture of metal ions

- a. Cu^{2+} , Cd^{2+}
- b. Ni^{2+} , Co^{2+} .

12. Any suitable experiment (other than the listed ones) based upon neutralisation/redox reactions.

References:

Theory:

1. Lee, J.D.; (2010), **Concise Inorganic Chemistry**, Wiley India.
2. Huheey, J.E.; Keiter, E.A.; Keiter; R. L.; Medhi, O.K. (2009), **Inorganic Chemistry- Principles of Structure and Reactivity**, Pearson Education.
3. Douglas, B.E.; McDaniel, D.H.; Alexander, J.J. (1994), **Concepts and Models of Inorganic Chemistry**, John Wiley & Sons.
4. Atkins, P.W.; Overton, T.L.; Rourke, J.P.; Weller, M.T.; Armstrong, F.A. (2010), Shriver and Atkins **Inorganic Chemistry**, 5th Edition, Oxford University Press.
5. Crichton, R.; (2019), **Biological inorganic chemistry: a new introduction to molecular structure and function**, third edition, Elsevier, Academic Press.
6. Kaim, W; Schwederski, B.; Klein, A. (2013), **Bioinorganic Chemistry - Inorganic Elements in the Chemistry of Life: An Introduction and Guide**, 2nd Edition, Wiley.

Practical:

1. Jeffery, G.H.; Bassett, J.; Mendham, J.; Denney, R.C. (1989), **Vogel's Textbook of Quantitative Chemical Analysis**, John Wiley and Sons.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category II

BSc. Physical Science with Chemistry as one of the Core Disciplines

DISCIPLINE SPECIFIC CORE COURSE – 4:

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Periodic Properties and Chemical Bonding DSC-4 Chemistry-II | 4 | 2 | 0 | 2 | Class Pass 12 th | ---- |

Learning Objectives

The Learning Objectives of this course are as follows:

- The course discusses the periodicity in properties with reference to the s, p and d block, which is necessary in understanding their group chemistry.
- It provides basic knowledge about ionic, covalent and metallic bonding underlining the fact that chemical bonding is best regarded as a continuum between the three cases.
- It provides an overview of hydrogen bonding and van der Waal's forces which influence the melting points, boiling points, solubility and energetics of dissolution of compounds

Learning outcomes

By the end of the course, the students will be able to:

- Understand periodicity in ionization enthalpy, electron gain enthalpy, electronegativity and enthalpy of atomization.
- Understand variability in oxidation state, colour, metallic character, magnetic and catalytic properties and ability to form complexes
- Understand the concept of lattice energy using Born-Landé expression.
- Draw Born Haber Cycle and analyse reaction energies.
- Draw the plausible structures and geometries of molecules using VSEPR theory.
- Understand and draw MO diagrams (homo- & hetero-nuclear diatomic molecules). Understand the importance and applications of hydrogen and van der Waal bonding

SYLLABUS OF DSC-4

Unit I: Periodic Properties

(12 Hours)

Electronic configurations of the atoms. Stability of half-filled and completely filled orbitals, concept of exchange energy, inert pair effect.

General group trends of s, p and d block elements with special reference to Ionization Enthalpy, Electron Gain Enthalpy, Electronegativity, Enthalpy of Atomization, oxidation state, colour, metallic character, magnetic and catalytic properties, ability to form complexes

UNIT II: Chemical Bonding

(18 Hours)

Ionic Bonding: General characteristics of ionic bonding, Lattice Enthalpy and Solvation Enthalpy and their relation to stability and solubility of ionic compounds, Born-Landé equation for calculation of Lattice Enthalpy (no derivation), Born-Haber cycle and its applications, polarizing power and polarizability, Fajan's rules, ionic character in covalent compounds, bond moment, dipole moment and percentage ionic character.

Covalent Bonding: Valence Bond Approach, Hybridization and VSEPR Theory with suitable examples, Concept of resonance and resonating structures in various inorganic and organic compounds, Molecular Orbital Approach: Rules for the LCAO method, bonding, nonbonding and antibonding MOs and their characteristics for s-s, s-p and p-p combinations of atomic orbitals, MO treatment of homonuclear diatomic molecules of 1st and 2nd periods (including idea of s-p mixing) and heteronuclear diatomic molecules such as CO, NO and NO⁺.

Brief introduction to Metallic Bonding, Hydrogen Bonding, van der Waal's Forces

PRACTICALS:

60 Hours

1. Preparation of standard solutions.
2. Estimation of Sodium carbonate with HCl
3. Estimation of oxalic acid by titrating it with KMnO₄.
4. Estimation of Mohr's salt by titrating it with KMnO₄.
5. Estimation of water of crystallization in Mohr's salt by titrating with KMnO₄.
6. Estimation of Fe (II) ions by titrating it with K₂Cr₂O₇ using internal and external indicators.
7. Estimation of Cu (II) ions iodometrically using Na₂S₂O₃.
8. Chromatographic separation of mixture of metal ions Cu²⁺, Cd²⁺ or Ni²⁺, Co²⁺.
9. Estimation of Fe (II) ions by titrating it with K₂Cr₂O₇ using
 - a). internal indicator
 - b). external indicator
10. Estimation of Cu (II) ions iodometrically using Na₂S₂O₃.
11. Paper Chromatographic separation of mixture of metal ions
 - a). Cu²⁺, Cd²⁺
 - b). Ni²⁺, Co²⁺
12. Any suitable experiment (other than the listed ones) based upon neutralisation/redox reactions.

References:

Theory:

1. Huheey, J.E.; Keiter, E.A., Keiter; R. L.; Medhi, O.K. (2009), **Inorganic Chemistry- Principles of Structure and Reactivity**, Pearson Education
2. Shriver, D.D.; Atkins, P.; Langford, C.H. (1994), **Inorganic Chemistry** 2nd Ed., Oxford University Press.
3. Atkins, P.W.; Overton, T.L.; Rourke, J.P.; Weller, M.T.; Armstrong, F.A. (2010), **Inorganic Chemistry**, 5th Edition, W. H. Freeman and Company.
4. Lee, J.D.; (2010), **Concise Inorganic Chemistry**, Wiley India
5. Douglas, B.E.; McDaniel, D.H.; Alexander, J.J. (1994), **Concepts and Models of Inorganic Chemistry**, John Wiley & Sons.
6. Wulfsberg, G (2002), **Inorganic Chemistry**, Viva Books Private Limited.
7. Miessler, G.L.; Fischer P.J.; Tarr, D. A. (2014), **Inorganic Chemistry**, 5th Edition, Pearson.

Practical:

- Jeffery, G.H.; Bassett, J.; Mendham, J.; Denney, R.C. (1989), **Vogel's Textbook of Quantitative Chemical Analysis**, John Wiley and Sons.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category-I
B.Sc. (H) Analytical Chemistry

DISCIPLINE SPECIFIC CORE COURSE – 4: DSC-4:AC-2

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|-----------|-----------------------------------|-----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Course Title: SEPARATION METHODS-I Course Code: Analytical Chemistry-2 (DSC4:AC-2) | 04 | 02 | 00 | 02 | Class XII Pass | --- |

Learning Objectives

The Learning Objectives of this course are as follows:

- To acquire basic knowledge of the analytical chemistry of important techniques that will provide the basis for their industrial production methods.
- To provide an adequate mastery of analytical methods used for the determination of commercial/domestic raw materials and finished product quality.

Learning outcomes

By the end of this course, students will be able to:

- Become familiar with fundamental concepts of partition coefficients and their role in achieving separations across different types of chromatography.
- Develop the core skills to parse existing chromatographic protocols and identify the key factors influencing a chromatography experiment.
- Understand the underlying assumptions of the most common chromatographic separation techniques and approaches to method validation.
- Understand the concept of solubility and their application in separation using distribution law.

SYLLABUS OF Analytical Chemistry-2 (DSC-4: AC-2)

Theory Component

UNIT – I: Chromatography (08 Hours)

Classification of chromatographic methods: Principles of differential migration, description of chromatographic process, distribution coefficients, modes of chromatography. the chromatography (elution time and volume) capacity factor, column efficiency and resolution, sample preparation.

UNIT – II: Techniques of paper chromatography (06 Hours)

Experimental modifications, various modes of developments, nature of paper, detections of spots, retardation factors, factors that affect reproducibility of R_f values (due to paper, solvent system, sample, development procedures), selection of solvent, quantitative analysis, applications.

UNIT – III: Thin Layer Chromatography (06 Hours)

Stationary phase, adsorbents, liquid phase support, plate preparation, mobile phase, sample application, development, saturation of chamber, detection of spot, R_f values (effect of adsorbent, solvent, solute, development process), quantitative analysis, applications.

UNIT – IV: Solvent Extraction (04 Hours)

Distribution law, determination of distribution ratio, batch extraction, continuous extraction, discontinuous extraction, counter-current extraction.

UNIT –V: Dialysis and membrane filtration (06 Hours)

General laboratory methods, filters-nitrocellulose, fiberglass and polycarbonates.

Practical component – 60 Hours

1. Separation and identification of amino acids present in the given mixture by **radial** and **ascending** paper Chromatography (*Perform both*).
2. Separation of ortho-nitrophenol & para-nitrophenol and *o*- and *p*-amino phenol by thin layer chromatography (TLC) and calculation of their R_f values.
3. Separation of constituents of leaf pigments by thin layer chromatography and paper chromatography (*radial & ascending both*).
4. Separation of a mixture of compounds by solvent extraction.
5. Separation of a mixture of naphthalene, benzoic acid and 2-naphthol.
6. Separation of a mixture of 1,4-dimethoxybenzene, 2-chloro benzoic acid and *p*-cresol.
7. Analysis of soil samples (at least three soil samples to be collected for analysis) collected from college nursery, sports ground Delhi villages/ Yamuna River bank.
 - (a) Determination of pH of soil samples.
 - (b) Determination of total soluble salts.
 - (c) Determination of carbonate and bicarbonate.
 - (d) Determination of calcium, magnesium and iron.

- (e) Determination of conductance of the soil samples.
8. Industrial visit to STP plant.

Essential/recommended readings

- Fifeild,F.W.; Kealey, D. (2000), Principles and Practice of Analytical Chemistry, Wiley.
- Harris, D. C. (2007), Exploring Chemical Analysis, W.H. Freeman and Co.
- Harris, D. C. (2007), Quantitative Chemical Analysis, 6th Edition, Freeman
- Mikes, O. (2000), Laboratory Handbook of Chromatographic methods, D.Van Nostrand Company Inc.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 5: DSC5:C2

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| PERIODIC PROPERTIES AND CHEMICAL BONDING CHEMISTRY-2 (DSC5-C2) | 04 | 02 | 0 | 02 | Class XII Pass | ---- |

Learning Objectives

The Learning Objectives of this course are as follows:

- The course discusses the periodicity in properties with reference to the s, p and d block, which is necessary in understanding their group chemistry.
- It provides basic knowledge about ionic, covalent and metallic bonding underlining the fact that chemical bonding is best regarded as a continuum between the three cases.
- It provides an overview of hydrogen bonding and van der Waal forces which influence the melting points, boiling points, solubility and energetics of dissolution of compounds.

Learning outcomes

By the end of this course, students will be able to:

- Understand periodicity in ionization enthalpy, electron gain enthalpy, electronegativity and enthalpy of atomization.
- Understand variability in oxidation state, colour, metallic character, magnetic and catalytic properties and ability to form complexes
- Understand the concept of lattice energy using Born-Landé expression.
- Draw Born Haber Cycle and analyse reaction energies.
- Draw the plausible structures and geometries of molecules using VSEPR theory.
- Understand and draw MO diagrams (homo- & hetero-nuclear diatomic molecules).
- Understand the importance and applications of hydrogen and van der Waal bonding.

SYLLABUS OF Chemistry-2 (DSC-5:C2)

UNIT – I: Periodic Properties

(12 Hours)

Electronic configurations of the atoms. Stability of half-filled and completely filled orbitals, concept of exchange energy, inert pair effect.

General group trends of s, p and d block elements with special reference to Ionization Enthalpy, Electron Gain Enthalpy, Electronegativity, Enthalpy of Atomization, oxidation state, colour, metallic character, magnetic and catalytic properties, ability to form complexes.

UNIT – II: Bonding in Coordination Compounds

(18 Hours)

Ionic Bonding: General characteristics of ionic bonding, Lattice Enthalpy and Solvation Enthalpy and their relation to stability and solubility of ionic compounds, Born-Landé equation for calculation of Lattice Enthalpy (no derivation), Born-Haber cycle and its applications, polarizing power and polarizability, Fajan's rules, ionic character in covalent compounds, bond moment, dipole moment and percentage ionic character.

Covalent Bonding: Valence Bond Approach, Hybridization and VSEPR Theory with suitable examples, Concept of resonance and resonating structures in various inorganic and organic compounds, Molecular Orbital Approach: Rules for the LCAO method, bonding, nonbonding and antibonding MOs and their characteristics for s-s, s-p and p-p combinations of atomic orbitals, MO treatment of homonuclear diatomic molecules of 1st and 2nd periods (including idea of s-p mixing) and heteronuclear diatomic molecules such as CO, NO and NO⁺.
Metallic Bonding, Hydrogen Bonding, van der Waals Forces.

Practical –

60 Hours

1. Preparation of standard solutions of different normality and molarity of Mohr's salt and oxalic acid.
2. Estimation of free alkali present in different soaps and detergents (*At least two samples to be taken*).
3. Estimation of oxalic acid by titrating it with KMnO₄ (*Provide at least two unknown solutions*).
4. Estimation of Mohr's salt by titrating it with KMnO₄ (*Provide a least two unknown solutions*).
5. Estimation of water of crystallization in Mohr's salt by titrating with KMnO₄.
6. Estimation of Fe (II) ions by titrating it with K₂Cr₂O₇ using internal and external indicators.
7. Estimation of Cu (II) ions iodometrically using Na₂S₂O₃.
8. Chromatographic separation of mixture of metal ions Cu²⁺, Cd²⁺ and Ni²⁺, Co²⁺.

Essential/recommended readings

1. Huheey, J.E.; Keiter, E.A., Keiter; R. L.; Medhi, O.K. (2009), Inorganic Chemistry- Principles of Structure and Reactivity, Pearson Education
2. Shriver, D.D.; Atkins, P.; Langford, C.H. (1994), Inorganic Chemistry 2nd Ed., Oxford University Press.
3. Atkins, P.W.; Overton, T.L.; Rourke, J.P.; Weller, M.T.; Armstrong, F.A. (2010), Inorganic Chemistry, 5th Edition, W. H. Freeman and Company.

4. Lee, J.D.; (2010), Concise Inorganic Chemistry, Wiley India
5. Douglas, B.E.; McDaniel, D.H.; Alexander, J.J. (1994), Concepts and Models of Inorganic Chemistry, John Wiley & Sons.
6. Wulfsberg, G (2002), Inorganic Chemistry, Viva Books Private Limited.
7. Miessler, G.L.; Fischer P.J.; Tarr, D. A. (2014), Inorganic Chemistry, 5th Edition, Pearson.
8. Jeffery, G.H.; Bassett, J.; Mendham, J.; Denney, R.C. (1989), Vogel's Textbook of Quantitative Chemical Analysis, John Wiley and Sons.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 6: Mathematics-1:DSC6

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Topics in Calculus Mathematics-1 (DSC6) | 04 | 03 | 01 | 0 | Class 12 th Pass | ---- |

Course Objectives

The Learning Objectives of this course are as follows:

- The primary objective of this course is to introduce the basic tools of calculus which are helpful in understanding their applications in many real-world problems.
- Students will be able to understand/create various mathematical models in everyday life.

Course Learning Outcomes: This course will enable the students to:

- Understand continuity and differentiability in terms of limits and graphs of certain functions.
- Describe asymptotic behaviour in terms of limits involving infinity.
- Use of derivatives to explore the behaviour of a given function locating and classify its extrema and graphing the function.
- Apply the concepts of asymptotes, and inflexion points in tracing of Cartesian curves.
- Compute the reduction formulae of standard transcendental functions with applications.

Syllabus: Theory Component

Unit 1: Limits, Continuity and Differentiability –

20 Hours

Limit of a function, $\varepsilon - \delta$ definition of a limit, Infinite limits, Continuity and types of discontinuities; Differentiability of a function, Successive differentiation: Calculation of the n th derivatives, Leibnitz theorem; Partial differentiation, Euler's theorem on homogeneous functions.

Unit 2: Mean Value Theorems and its Applications –

20 Hours

Rolle's theorem, Mean value theorems and applications to monotonic functions and inequalities; Taylor's theorem, Taylor's series, Maclaurin's series expansions of e^x , $\sin x$, $\cos x$, $\log(1+x)$ and $(1+x)^m$; Indeterminate forms.

Unit 3: Tracing of Curves and Reduction Formulae – 20 Hours

Asymptotes (parallel to axes and oblique), Concavity and inflexion points, Singular points, Tangents at the origin and nature of singular points, Curve tracing(cartesian and polar equations). Reduction formulae for $\int \sin^n x \, dx$, $\int \cos^n x \, dx$, and $\int \sin^m x \cos^n x \, dx$ and their applications.

Practical Component (if any): NIL

Essential/recommended readings

- Prasad, Gorakh (2016). *Differential Calculus* (19th ed.). Pothishala Pvt. Ltd. Allahabad.
- Prasad, Gorakh (2015). *Integral Calculus*. Pothishala Pvt. Ltd. Allahabad.

Additional Readings:

- Apostol, T. M. (2007). *Calculus: One-Variable Calculus with An Introduction to Linear Algebra* (2nd ed.). Vol. 1. Wiley India Pvt. Ltd.
- Ross, Kenneth. A. (2013). *Elementary Analysis: The Theory of Calculus* (2nd ed.). Undergraduate Texts in Mathematics, Springer. Indian reprint.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category I

BSc. (Hons.) Industrial Chemistry

DISCIPLINE SPECIFIC CORE COURSE – 4: (DSC-4) Fossil Fuels and Cleansing Agents

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Fossil Fuels and Cleansing Agents (DSC-4: Industrial Chemistry -II) | 04 | 02 | 0 | 02 | Class 12 th Pass | ---- |

Learning Objectives

- After studying this course, student shall be able to understand the different aspects of industrial processes of fossil fuels in detail.
- Optimised use of limited resources of non-renewable energy and technology investment in improving the production of renewable cleaner energy sources and biofuels.
- The analytical approach of this course is to enhance the reasoning and to understand the mechanical part of the industry.

Learning outcomes

By the end of the course, the students will be able to:

- Know about fuels, composition, carbonization of coal, liquefaction, and coal tar based chemicals and layout for key processes in oil refining.
- Understand the role of petroleum and petrochemical industry, composition, applications, process-cracking. Increasing demand for non-petroleum fuels, synthetic fuels.
- Understand different fossil fuel products and processes
- Know types of oils, familiarized with rancidity, saponification value, iodine number, Superiority of synthetic detergents, gain knowledge about surfactants.

SYLLABUS OF DSC-4

UNIT – I: Fuel Chemistry and Introduction to Coal

(10 Hours)

Review of energy sources (renewable and non-renewable). Classification of fuels and their calorific value. Introduction of coal, uses of coal (fuel and non-fuel) in various industries (at least three examples), its types and composition, carbonization of coal. Coal gas, producer gas

and water gas—composition and their uses, uses of coal-tar based chemicals, Requisites of a good metallurgical coke, Coal liquefaction and Solvent refining.

UNIT – II: Petroleum and Petrochemical Industry (12 Hours)

Composition of crude petroleum, Refining and different types of petroleum products and their applications. Fractional distillation (principle and process), Cracking (thermal and catalytic cracking), Reforming petroleum and non-petroleum fuels (LPG,CNG,LNG, bio-gas, biofuels derived from biomass), fuel from waste, synthetic fuels (gaseous and liquids), clean fuels

UNIT – III: Oils and Fats (8 Hours)

Classification of oils, hydrogenation of oils, rancidity, saponification value, iodine number, acid value, soap and synthetic detergent, preparation of soap and detergent, different types of soap and their composition, surfactants (LAS, ABS, LABS).

Practical component- 60 Hours

Industrial Chemistry-II

1. Determination of alkali in water samples and soaps.
2. Determination of iodine value of the oils/ fats.
3. Determination of saponification value of the oils/ fats.
4. Determination of acid value of the oils/ fats.
5. To determine the moisture content of different fuels.
6. Estimation of hardness of water by titration with soap solution.
7. Preparation of soap.
8. Preparation of biodiesel from waste cooking oil and its characterization.
9. To compare the viscosity of biodiesel and vegetable oil.
10. To determine the density of the given fuel sample.
11. Characterization of different petroleum products using UV and IR.

Essential/recommended readings

Theory:

1. Vermani, O. P.; Narula, A. K. (2004), **Industrial Chemistry**,Galgotia Publications Pvt. Ltd., New Delhi.
2. Bhatia, S. C. (2004), **Chemical Process Industries**, Vol. I & II, CBS Publishers, New Delhi.
3. Jain, P. C.; Jain, M. (2013), **Engineering Chemistry**, DhanpatRai& Sons, Delhi.
4. Gopalan, R. Venkappayya, D.; Nagarajan, S. (2004), **Engineering Chemistry**, Vikas Publications.
5. Sharma, B. K. (1997), **Engineering Chemistry**, Goel Publishing House, Meerut.

Practical:

1. Verma, S. and Goyal, R. K. (2021) **Fuel Chemistry Theory and Practical**,1st Edition Aaryush Publications, Muzaffarnagar (U.P.)
2. Ahluwalia, V. K. and Aggarwal, R. **Comprehensive Practical Organic Chemistry, Preparation and Quantitative Analysis** ,University Press, New Delhi.

3. Sharma, R.K., Sidhwani, I.T., Chaudhari, M.K. (2013), **Green Chemistry Experiments: A monograph**, I.K. International Publishing House Pvt Ltd. New Delhi.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE –DSC 5: Periodic Properties and Chemical bonding

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Periodic Properties and Chemical bonding (DSC-5: Chemistry -II) | 04 | 02 | 0 | 02 | Class XII Pass | --- |

Learning Objectives

- The course discusses the periodicity in properties with reference to the s, p and d block, which is necessary in understanding their group chemistry.
- It provides basic knowledge about ionic, covalent and metallic bonding underlining the fact that chemical bonding is best regarded as a continuum between the three cases.
- It provides an overview of hydrogen bonding and van der Waal's forces which influence the melting points, boiling points, solubility and energetics of dissolution of compounds

Learning outcomes

By the end of the course, the students will be able to:

- Understand periodicity in ionization enthalpy, electron gain enthalpy, electronegativity and enthalpy of atomization.
- Understand variability in oxidation state, colour, metallic character, magnetic and catalytic properties and ability to form complexes
- Understand the concept of lattice energy using Born-Landé expression.
- Draw Born Haber Cycle and analyse reaction energies.
- Draw the plausible structures and geometries of molecules using VSEPR theory.
- Understand and draw MO diagrams (homo- & hetero-nuclear diatomic molecules).
- Understand the importance and applications of hydrogen and van der Wall bonding.

SYLLABUS OF DSC- 5

UNIT – I: Periodic Properties

(12 Hours)

Electronic configurations of the atoms. Stability of half-filled and completely filled orbitals, concept of exchange energy, inert pair effect.

General group trends of s, p and d block elements with special reference to Ionization Enthalpy, Electron Gain Enthalpy, Electronegativity, Enthalpy of Atomization, oxidation state, colour, metallic character, magnetic and catalytic properties, ability to form complexes

UNIT – II: Chemical bonding

(18 Hours)

Ionic Bonding: General characteristics of ionic bonding, Lattice Enthalpy and Solvation Enthalpy and their relation to stability and solubility of ionic compounds, Born-Landé equation for calculation of Lattice Enthalpy (no derivation), Born-Haber cycle and its applications, polarizing power and polarizability, Fajan's rules, ionic character in covalent compounds, bond moment, dipole moment and percentage ionic character.

Covalent Bonding: Valence Bond Approach, Hybridization and VSEPR Theory with suitable examples, Concept of resonance and resonating structures in various inorganic and organic compounds, Molecular Orbital Approach: Rules for the LCAO method, bonding, nonbonding and antibonding MOs and their characteristics for s-s, s-p and p-p combinations of atomic orbitals, MO treatment of homonuclear diatomic molecules of 1st and 2nd periods (including idea of s-p mixing) and heteronuclear diatomic molecules such as CO, NO and NO⁺.

Brief introduction to Metallic Bonding, Hydrogen Bonding, van der Waal's Forces

Practical component – 60 Hours

Chemistry-II,

1. Preparation of standard solutions.
2. Estimation of Sodium carbonate with HCl.
3. Estimation of oxalic acid by titrating it with KMnO₄.
4. Estimation of Mohr's salt by titrating it with KMnO₄.
5. Estimation of water of crystallization in Mohr's salt by titrating with KMnO₄.
6. Estimation of Fe (II) ions by titrating it with K₂Cr₂O₇ using internal and external indicators.
7. Estimation of Cu (II) ions iodometrically using Na₂S₂O₃.
8. Chromatographic separation of mixture of metal ions Cu²⁺, Cd²⁺ or Ni²⁺, Co²⁺.
9. Estimation of Fe (II) ions by titrating it with K₂Cr₂O₇ using
 - a. internal indicator
 - b. external indicator
10. Estimation of Cu (II) ions iodometrically using Na₂S₂O₃.
11. Paper Chromatographic separation of mixture of metal ions
 - a. Cu²⁺, Cd²⁺
 - b. Ni²⁺, Co²⁺
12. Any suitable experiment (other than the listed ones) based upon neutralisation/redox reactions.

Essential/recommended readings

Theory:

9. Huheey, J.E.; Keiter, E.A., Keiter; R. L.; Medhi, O.K. (2009), **Inorganic Chemistry- Principles of Structure and Reactivity**, Pearson Education
10. Shriver, D.D.; Atkins, P.; Langford, C.H. (1994), **Inorganic Chemistry** 2nd Ed., Oxford University Press.

11. Atkins, P.W.; Overton, T.L.; Rourke, J.P.; Weller, M.T.; Armstrong, F.A. (2010), **Inorganic Chemistry**, 5th Edition, W. H. Freeman and Company.
12. Lee, J.D.; (2010), **Concise Inorganic Chemistry**, Wiley India
13. Douglas, B.E.; McDaniel, D.H.; Alexander, J.J. (1994), **Concepts and Models of Inorganic Chemistry**, John Wiley & Sons.
14. Wulfsberg, G (2002), **Inorganic Chemistry**, Viva Books Private Limited.
15. Miessler, G.L.; Fischer P.J.; Tarr, D. A. (2014), **Inorganic Chemistry**, 5th Edition, Pearson.

Practical:

1. Jeffery, G.H.; Bassett, J.; Mendham, J.; Denney, R.C. (1989), **Vogel's Textbook of Quantitative Chemical Analysis**, John Wiley and Sons.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – DSC 6: Mechanics

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------------------|----------|-----------------------------------|----------|---------------------|---|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Mechanics DSC - 6 | 4 | 2 | 0 | 2 | Class XII pass with Physics and Mathematics as main subjects | Physics and Mathematics syllabus of class XII |

Learning Objectives

This course reviews the concepts of mechanics learnt at school from a more advanced perspective and goes on to build new concepts. It begins with a review of vector algebra and ordinary differential equations. The students will learn Newton's laws of motion, conservation of momentum, conservation of energy, concept of simple harmonic motion, Newton's laws of gravitation, elasticity and the Special Theory of Relativity. They will be able to apply the concepts learnt to several real world problems.

Learning Outcomes

Upon completion of this course, students will be able to,

- Learn the laws of motion and their application to various dynamical situations.
- Understand the concept of conservation of momentum, angular momentum and energy. Their application to basic problems.
- Understand the motion of simple pendulum
- Understand the laws of gravitation and basic idea of global positioning system
- Understand the elastic properties
- Postulates of special theory of relativity, inertial and non-inertial frame of reference and their transformation, relativistic effects on the mass and energy of a moving body.

SYLLABUS OF DSC – 1

Vectors: Review of vector algebra. Scalar and vector product

(2 Hours)

Ordinary Differential Equations: First order homogeneous differential equations, second order homogeneous differential equation with constant coefficients

(4 Hours)

Brief review of Newton's laws of motion, dynamics of a system of particles, centre of mass, determination of centre of mass for continuous systems having spherical symmetry. Conservation of momentum and energy, work – energy theorem for conservative forces, force as a gradient of potential energy, angular momentum, torque, conservation of angular

momentum

(9 Hours)

Idea of simple harmonic motion, differential equation of simple harmonic motion and its solution, kinetic energy and potential energy, total energy and their time average for a body executing simple harmonic motion

(4 Hours)

Newton's law of gravitation, motion of a particle in a central force field, Kepler's laws, weightlessness, geosynchronous orbit, basic idea of global positioning system

(4 Hours)

Elasticity: Concept of stress and strain, Hooke's law, elastic moduli, twisting torque on a wire, tensile strength, relation between elastic constants, Poisson's ratio, rigidity modulus

(3 Hours)

Postulates of special theory of relativity, Lorentz transformation relations, length contraction, time dilation, relativistic transformation of velocity

(4 Hours)

PRACTICAL COMPONENT (60 Hours)

Every student should perform at least 06 experiments from the following list.

- 1) Measurements of length (or diameter) using vernier calliper, screw gauge and travelling microscope.
- 2) Determination of height of a building using a sextant.
- 3) Study of motion of the spring and calculate (a) spring constant and, (b) acceleration due to gravity (g)
- 4) Determination of moment of inertia of a flywheel.
- 5) Determination of Young's modulus of a wire by Optical Lever Method.
- 6) Determination of modulus of rigidity of a wire using Maxwell's needle.
- 7) Determination of elastic constants of a wire by Searle's method.
- 8) Determination of value of g using bar pendulum.
- 9) Determination of value of g using Kater's pendulum.

References (for Laboratory Work):

- 1) Advanced practical physics for students, B. L. Flint and H. T. Worsnop, 1971, Asia Publishing House.
- 2) Engineering practical physics, S. Panigrahi and B. Mallick, 2015, Cengage Learning India
- 3) Practical physics, G. L. Squires, 2015, 4/e, Cambridge University Press.
- 4) A text book of practical physics, I. Prakash and Ramakrishna, 11/e, 2011, Kitab Mahal.
- 5) B. Sc. practical physics, Geeta Sanon, R. Chand, 2016

Essential Readings:

FOR THEORY COMPONENT

- 1) Schaum's Outline of Vector Analysis, 2nd Edn., Murray Spiegel, Seymour Lipschutz, Tata McGraw-Hill, (2009)
- 2) An Introduction to Mechanics (2/e), Daniel Kleppner and Robert Kolenkow, 2014, Cambridge University Press.
- 3) Mechanics Berkeley Physics Course, Vol. 1, 2/e, Charles Kittel, et. al., 2017, McGraw Hill Education
- 4) Mechanics, D. S. Mathur and P. S. Hemne, 2012, S. Chand.

Suggestive Readings:

- 1) University Physics, Ronald Lane Reese, 2003, Thomson Brooks/Cole.
- 2) University Physics, H. D. Young and R. A. Freedman, 14/e, 2015, Pearson Education.
- 3) Fundamentals of Physics, Resnick, Halliday and Walker 10/e, 2013, Wiley.
- 4) Engineering Mechanics, Basudeb Bhattacharya, 2/e, 2015, Oxford University Press.

**COMMON POOL OF GENERIC ELECTIVES
OFFERED BY DEPARTMENT OF CHEMISTRY**

GENERIC ELECTIVES -12: Coordination and Organometallic Compounds

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Coordination and Organometallic Compounds (GE-2) | 4 | 2 | 0 | 2 | Class XII Pass | --- |

Learning Objectives

The Learning Objectives of this course are as follows:

- To introduce students to some important d-block metals and their compounds which they are likely to come across.
- To make students learn about organometallic compounds, a frontier area of chemistry providing an interface between organic and inorganic chemistry.
- To familiarize students with coordination compounds which find manifold applications in diverse fields.

Learning outcomes

By the end of the course, the students will be able to:

- Familiarize with different types of organometallic compounds, their structures and bonding involved.
- Understand the nature of Zeise's salt and compare its synergic effect with that of carbonyls.
- Identify important structural features of tetrameric methyl lithium and understand the concept of multicenter bonding in these compounds
- Apply 18-electron rule to rationalize the stability of metal carbonyls and related species
- Use IR data to explain the extent of back bonding in carbonyl complexes
- Understand the terms, ligand, denticity of ligands, chelate, coordination number and use standard rules to name coordination compounds
- Use Valence Bond Theory to predict the structure and magnetic behaviour of metal complexes and understand the terms inner and outer orbital complexes
- Understand the properties of coordination compounds and VBT and CFT for bonding in coordination compounds

- Explain the meaning of the terms Δ_o , Δ_t , pairing energy, CFSE, high spin and low spin and how
- CFSE affects thermodynamic properties like lattice enthalpy and hydration enthalpy

Theory:

Unit 1: Coordination Chemistry

4 Hours

Brief discussion with examples of types of ligands, denticity and concept of chelate. IUPAC system of nomenclature of coordination compounds (mononuclear and binuclear) involving simple monodentate and bidentate ligands.

Unit 2: Bonding in coordination compounds

14 Hours

Valence Bond Theory (VBT): Salient features of theory, concept of inner and outer orbital complexes of Cr, Fe, Co and Ni. Drawbacks of VBT.

Crystal Field Theory: Splitting of d orbitals in octahedral symmetry. Crystal field effects for weak and strong fields. Crystal field stabilization energy (CFSE), concept of pairing energy. Factors affecting the magnitude of Δ_o .

Spectrochemical series. Splitting of d orbitals in tetrahedral symmetry. Comparison of CFSE for octahedral and tetrahedral fields, tetragonal distortion of octahedral geometry. Jahn-Teller distortion, square planar coordination.

Unit 3: Organometallic Compounds

12 Hours

Definition and classification with appropriate examples based on nature of metal-carbon bond (ionic, s, p and multicentre bonds). Structure and bonding of methyl lithium and Zeise's salt. Structure and physical properties of ferrocene. 18-electron rule as applied to carbonyls. Preparation, structure, bonding and properties of mononuclear and polynuclear carbonyls of 3d metals. π -acceptor behaviour of carbon monoxide (MO diagram of CO to be discussed), synergic effect and use of IR data to explain extent of back bonding.

Practicals:

60 Hours

1. Gravimetry

Discuss basic principles of gravimetry (precipitation, co-precipitation and post precipitation, digestion, washing etc)

- Estimation of Ni(II) using dimethylglyoxime (DMG).
- Estimation of copper as CuSCN.
- Estimation of Al(III) by precipitating with oxine and weighing as Al(oxine)₃ (aluminium oxinate).

2. Inorganic Preparations

- (i) Schiff's base involving ethylenediamine and salicylaldehyde (or any other amine and aldehyde/ketone) and to check its purity using TLC.
- (ii) Nickel/ Copper complex of the above prepared Schiff's base and its characterisation using UV/Vis spectrophotometer. The IR spectra also to be interpreted
- (iii) tetraamminecopper (II) sulphate
- (iv) potassium trioxalatoferrate (III) trihydrate.
- (v) tetraamminecarbonatocobalt(III) nitrate

References:

Theory:

1. Atkins, P.W.; Overton, T.L.; Rourke, J.P.; Weller, M.T.; Armstrong, F.A. (2010), **Shriver and Atkins Inorganic Chemistry**, W. H. Freeman and Company.
2. Miessler, G. L.; Fischer P.J.; Tarr, D.A. (2014), **Inorganic Chemistry**, Pearson.
3. Huheey, J.E.; Keiter, E.A., Keiter; R.L., Medhi, O.K. (2009), **Inorganic Chemistry- Principles of Structure and Reactivity**, Pearson Education.
4. Pfennig, B. W. (2015), **Principles of Inorganic Chemistry**. John Wiley & Sons.
5. Cotton, F.A.; Wilkinson, G. (1999), **Advanced Inorganic Chemistry** Wiley-VCH.

Practicals:

1. Jeffery, G.H.; Bassett, J.; Mendham, J.; Denney, R.C. (1989), **Vogel's Textbook of Quantitative Chemical Analysis**, John Wiley and Sons.
2. Schiff Base Complex of Cu (II) with Antibacterial and Electrochemical Study, Arjun C. Bhowmick, Majharul I. Moim, Miththira Balasingam , **American Journal of Chemistry** 2020, 10(2): 33-37, DOI: 10.5923/j.chemistry.20201002.03

Keywords: Organometallic compounds, metal carbonyls, synergistic effect, Coordination compounds, VBT, Crystal field theory, Splitting of d levels, Dq

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

**GENERIC ELECTIVES -13: – CHEMISTRY OF OXYGEN CONTAINING
FUNCTIONAL GROUPS AND THEIR APPLICATIONS TO BIOLOGY**

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Chemistry of Oxygen containing Functional Groups and their Applications to Biology (GE-5) | 4 | 2 | 0 | 2 | Class XII Pass | ---- |

Learning Objectives

- To teach the fundamental chemistry of oxygen containing functional groups.
- To establish these concepts typical reactions of alcohols, phenols, aldehydes, ketones, carboxylic acids and their derivatives.
- To make students understand the relevance of oxygen containing functional groups to biology and the importance of these compounds in real world.

Learning outcomes

By the end of the course, the students will be able to:

- Understand and explain the differential behavior of organic compounds based on reaction chemistry.
- Formulate the mechanism of organic reactions by recalling and correlating the fundamental properties of the reactants involved.
- Understand the applications of functional group chemistry to biology.

Syllabus - Theory:

Unit 1: Alcohols (upto 5 Carbon)

5 Hours

Structure and classification of alcohols as 1°, 2° & 3°, Reactions: Acidic character of alcohols and reaction with sodium, with HX (Lucas Test), esterification, oxidation (with PCC, alkaline KMnO₄, acidic K₂Cr₂O₇ and conc. HNO₃), Oppeneauer Oxidation, Biological oxidation Reactions

Unit 2: Phenols**4 Hours**

Acidity of phenols and factors affecting their acidity, Reactions: Electrophilic substitution reactions, viz. nitration, halogenation, sulphonation, Reimer-Tiemann reaction, Gattermann-Koch reaction, Houben-Hoesch condensation; Reaction due to OH group: Schotten-Baumann reaction

Unit 3: Aldehydes and Ketones (Aliphatic and Aromatic)**12 Hours**

Reactions: Nucleophilic addition, nucleophilic addition-elimination reaction including reaction with HCN, ROH, NaHSO₃, NH₂-G derivatives. Iodoform test, Aldol condensation and its biological application, Cannizzaro's reaction, Wittig reaction, Benzoin condensation, Clemmensen reduction, Wolff Kishner reduction, Meerwein-Ponndorf Verley reduction, enzyme-catalyzed additions to α,β -unsaturated carbonyl compounds.

Unit 4: Carboxylic acids and their derivatives (Aliphatic and Aromatic)**9 Hours**

Reactions: Hell-Volhard Zelinsky reaction, acidity of carboxylic acids, effect of substitution on acid strength, Claisen condensation and its biological applications, decarboxylation in biological systems, relative reactivities of acid derivatives towards nucleophiles, activation of carboxylate ions for nucleophilic acyl substitution reactions in biological systems, Reformatsky reaction, Perkin condensation.

Practicals: :**60 Hours**

Preparations: (Mechanism of various reactions involved to be discussed) (Recrystallization, determination of melting point and calculation of quantitative yields to be done in all cases)

1. Oxime of aldehydes and ketones
2. 2,4-Dinitrophenylhydrazone of aldehydes and ketones
3. Aldol condensation using green method.
4. Benzoin condensation using Thiamine Hydrochloride as a catalyst.
5. Alkaline hydrolysis of amide/ester.
6. Benzoylation of one of the following amines (aniline, *o*-, *m*-, *p*-toluidines and *o*-, *m*-, *p*-anisidine) or one of the following phenols (β -naphthol, resorcinol, *p*-cresol) by Schotten-Baumann reaction.
7. Identification of functional group for monofunctional organic compounds (Alcohols, phenols, aldehydes, ketones, carboxylic acids).

References:**Theory:**

1. Sykes, P. (2005), **A Guide Book to Mechanism in Organic Chemistry**, Orient Longman.
2. Eliel, E. L. (2000), **Stereochemistry of Carbon Compounds**, Tata McGraw Hill.
3. Morrison, R. N.; Boyd, R. N., Bhattacharjee, S.K. (2010), **Organic Chemistry**, 7th Edition, Dorling Kindersley (India) Pvt. Ltd. (Pearson Education).
4. Mehta B.; Mehta M. (2015), **Organic Chemistry**, PHI Learning Private Limited Bahl,
5. Bahl, A., Bahl, B. S. (2012), **Advanced Organic Chemistry**, S. Chand.
6. Bruice, Paula Y. (2020), **Organic Chemistry**, 8th Edition, Pearson.

Practicals:

1. Furniss, B.S.; Hannaford, A.J.; Smith, P.W.G.; Tatchell, A.R. (2012), **Vogel's Textbook of Practical Organic Chemistry**, Pearson.
2. Mann, F.G.; Saunders, B.C. (2009), **Practical Organic Chemistry**, Pearson Education.

Keywords: Alcohols, Lucas Test, Phenol, Aldehydes, Ketones, Nucleophilic addition, nucleophilic addition – elimination, Cannizzaro's reaction, Wittig reaction, Benzoin condensation, Enzyme-catalysed reaction, Carboxylic acid, Claisen condensation

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES-14: MOLECULES OF LIFE

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-----------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Molecules of Life (GE-6) | 4 | 2 | 0 | 2 | Class XII Pass | ---- |

Learning Objectives

- To deliver information about the chemistry of carbohydrates, proteins & enzymes and its relevance in the biological system using suitable examples.
- To place key emphasis on understanding the structural principles that govern reactivity/physical /biological properties of biomolecules as opposed to learning structural details.

Learning outcomes

By the end of the course, the students will be able to:

- Learn and demonstrate how the structure of biomolecules determines their chemical properties, reactivity and biological uses.
- Gain an insight into the mechanism of enzyme action and inhibition.
- Understand the basic principles of drug-receptor interaction and SAR.

Syllabus - Theory:

Unit 1: Carbohydrates

12 Hours

Classification of carbohydrates, reducing and non-reducing sugars, biological functions, general properties and reactions of glucose and fructose, their open chain structure, epimers, mutarotation and anomers, reactions of monosaccharides, determination of configuration of glucose (Fischer proof), cyclic structure of glucose. Haworth projections. Cyclic structure of fructose. Linkage between monosaccharides: structure of disaccharides (sucrose, maltose, lactose) and polysaccharides (starch and cellulose) excluding their structure elucidation.

Unit 2: Amino Acids, Peptides and Proteins

10 Hours

Classification of amino acids and biological uses of amino Acids, peptides and proteins. Zwitterion structure, isoelectric point and correlation to acidity and basicity of amino acids. Determination of primary structure of peptides, determination of N-terminal amino acid (by

Edman method) and C– terminal amino acid (with carboxypeptidase enzyme). Synthesis of simple peptides (up to dipeptides) by N-protection (t-butyloxycarbonyl) & C-activating groups (only DCC) and Merrifield solid phase synthesis, Overview of primary, secondary, tertiary and quaternary structure of proteins, denaturation of proteins.

Unit 3: Enzymes and correlation with drug action

08 Hours

Classification of enzymes and their uses (mention Ribozymes). Mechanism of enzyme action, factors affecting enzyme action, Coenzymes and cofactors and their role in biological reactions, specificity of enzyme action (including stereospecificity), enzyme inhibitors and their importance, phenomenon of inhibition (Competitive and non-competitive inhibition including allosteric inhibition). Drug action-receptor theory. Structure – activity relationships of drug molecules, binding role of –OH group, -NH₂ group, double bond and aromatic ring.

Practicals:

(60 Hours)

1. Estimation of glucose by Fehling's solution.
2. Determination of total sugar content by ferricyanide method (volumetric/colorimetric method).
3. Study of the titration curve of glycine.
4. Estimation of proteins by Lowry's method.
5. Study of the action of salivary amylase on starch under optimum conditions.
6. Qualitative tests for amino acids, proteins and carbohydrates.
7. Separation and identification of mixture of sugars by paper chromatography.

References:

Theory:

1. Finar, I. L. **Organic Chemistry** (Volume 1 & 2), Dorling Kindersley (India) Pvt. Ltd. (Pearson Education).
2. Morrison, R. N.; Boyd, R. N., Bhattacharjee, S.K. (2010), **Organic Chemistry**, 7th Edition, Dorling Kindersley (India) Pvt. Ltd. (Pearson Education).
3. Berg, J. M.; Tymoczko, J. L.; Stryer, L. (2019), **Biochemistry**, 9th Ed., W. H. Freeman Co Ltd.

Practicals:

1. Furniss, B.S.; Hannaford, A.J.; Smith, P.W.G.; Tatchell, A.R. (2012), **Vogel's Textbook of Practical Organic Chemistry**, Pearson.
2. **Manual of Biochemistry Workshop**, 2012, Department of Chemistry, University of Delhi.

Teaching Learning Process:

- Chalk and black board method. Along with pedagogy of flipped classroom

- Certain topics like mechanism of enzyme action and enzyme inhibition can be taught through audio-visual aids.
- Students should be encouraged to participate actively in the classroom through regular presentations on curriculum-based topics, peer assessment, designing games based on specific topics etc.
- As the best way to learn something is to do it yourself, practicals are planned in such a way so as to reinforce the topics covered in theory.

Assessment Methods:

- Graded assignments
- Class tests and Quizzes
- Class seminars by students on course topics with a view to strengthening the content through width and depth
- Continuous evaluation for the practicals
- End semester university theory and practical examination.

Keywords: Carbohydrates, protein, Amino acids, Enzymes, SAR, Drug Receptor Theory

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES -15 : CHEMICAL KINETICS AND PHOTOCHEMISTRY

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Chemical Kinetics and Photochemistry (GE-8) | 4 | 2 | 0 | 2 | Class XII Pass | ----- |

Learning Objectives

- To make students learn about the fundamentals of chemical kinetics, rates of chemical reactions, complex reactions, theories of reaction rate and the laws of photochemistry aimed at understanding electronic transitions upon irradiation of electromagnetic radiation in UV-Vis region.

Learning outcomes

By the end of the course, the students will be able to:

- Understand the concept of rate of a reaction, order and molecularity of a reaction, various factors affecting the rate and theories of reaction rates.
- Students will be able to apply the learnt concepts in studying the reaction kinetics of various reactions.
- Understand the basic concepts of photochemistry, photochemical and photosensitized reactions and their role in biochemical systems.

Syllabus - Theory:

Unit 1: Chemical Kinetics

20 Hours

The concept of reaction rates, effect of temperature, pressure, catalyst and other factors on reaction rates. Order and molecularity of a reaction, derivation of integrated rate equations for zero, first and second order reactions (both for equal and unequal concentrations of reactants), half-life of a reaction, general methods for determination of order of a reaction. kinetics of complex reactions (integrated rate expressions up to first order only): (i) Opposing reactions (ii) parallel reactions and (iii) consecutive reactions and their differential rate

equations (steady-state approximation in reaction mechanisms). Concept of activation energy and its calculation from Arrhenius equation. Theories of reaction rates: Collision theory and activated complex theory of bi-molecular reactions. Comparison of the two theories (qualitative treatment only)

Unit 2: Photochemistry

10 Hours

Characteristics of electromagnetic radiation, Jablonski Diagram. Lambert-Beer's law and its limitations, physical significance of absorption coefficients. Laws of photochemistry, quantum yield, actinometry, examples of low and high quantum yields, photochemical equilibrium and the differential rate of photochemical reactions, photosensitized reactions, quenching. Role of photochemical reactions in biochemical processes.

Practicals:

(60 Hours)

Chemical Kinetics

Study the kinetics of the following reactions by integrated rate method:

- a) Acid hydrolysis of methyl acetate with hydrochloric acid.
- b) Compare the strength of HCl and H₂SO₄ by studying the kinetics of hydrolysis methyl acetate.
- c) Initial rate method: Iodide-persulphate reaction
- d) Integrated rate method: Saponification of ethyl acetate.
- e) Study the reaction kinetics of Iodination of acetone.

References:

Theory:

1. Castellan, G.W. (2004), **Physical Chemistry**, Narosa.
2. Kapoor, K.L. (2015), **A Textbook of Physical Chemistry**, Vol 5, 6th Edition, McGraw Hill Education.
3. Kapoor, K.L. (2013), **A Textbook of Physical Chemistry**, Vol 6, 3rd Edition, McGraw Hill Education.

Practicals:

1. Khosla, B.D.; Garg, V.C.; Gulati, A. (2015), **Senior Practical Physical Chemistry**, R. Chand & Co.

Teaching Learning Process:

- Teaching Learning Process for the course is visualized as largely student-focused
- Transaction through an intelligent mix of conventional and modern methods
- Engaging students in cooperative learning.
- Learning through quiz design.
- Problem solving to enhance comprehension.

Assessment Methods: Assessment will be done on the basis of regular class test, presentations and assignments as a part of internal assessment during the course as per the curriculum. End semester university examination will be held for both theory and practical. In practical,

assessment will be done based on continuous evaluation, performance in the experiment on the date of examination and viva voce.

Keywords: Rate Law, Rate constant. Arrhenius Equation, Lambert-Beer's law, Jablonski Diagram

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES -16: BASICS OF POLYMER CHEMISTRY

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basics of Polymer Chemistry (GE-10) | 4 | 2 | 0 | 2 | Class XII Pass | ----- |

Learning Objectives

- To help the student to know about the synthesis, properties and applications of polymers.

Learning outcomes

By the end of the course, the students will be able to:

- Know about classification of polymeric material.
- Learn about different mechanisms of polymerization and polymerization techniques
- Evaluate kinetic chain length of polymers based on their mechanism
- Differentiate between polymers and copolymers
- Learn about different methods of finding out average molecular weight of polymer.
- Differentiate between glass transition temperature (T_g) and crystalline melting point (T_m)
- Learn properties and applications of various useful polymers in our daily life

Syllabus Theory:

Unit 1: Introduction to polymers

10 Hours

Different schemes of classification of polymers, Polymer nomenclature, configuration and conformation of polymers, Molecular forces and chemical bonding in polymers, Texture of Polymers

Functionality and its importance:

Criteria for synthetic polymer formation, basic methods of polymerization processes and their mechanism: addition, condensation, Relationships between functionality, extent of reaction and degree of polymerization.

Unit 2: Properties of Polymers**10 Hours**

Glass transition temperature (T_g) and determination of T_g , Free volume theory, WLF equation, Factors affecting glass transition temperature (T_g).

Crystallization and crystallinity: Determination of crystalline melting point and degree of crystallinity,

Morphology of crystalline polymers, Factors affecting crystalline melting point.

Molecular weight distribution and determination of molecular weight of polymers (M_n , M_w , etc.) by end group analysis, viscometry and osmotic pressure methods. Molecular weight distribution and its significance.

Unit 3: Preparation, properties and applications**10 Hours**

Brief introduction to preparation, structure, properties and application of the following polymers: polyolefins, polystyrene and styrene copolymers, poly(vinyl chloride), poly(vinyl acetate), acrylic polymers, fluoro polymers, polyamides and related polymers. Phenol formaldehyde resins (Bakelite, Novolac), polyurethanes, silicone polymers, polydienes, Polycarbonates, Conducting Polymers: polyacetylene, polyaniline, poly(p-phenylene sulphide), polypyrrole, polythiophene

Practicals:**(60 Hours)****Polymer Synthesis**

1. Free radical solution polymerization of styrene (St) / Methyl Methacrylate (MMA)/MethylAcrylate (MA).
2. Preparation of nylon 6,6
3. Redox polymerization of acrylamide
4. Precipitation polymerization of acrylonitrile
5. Preparation of urea-formaldehyde resin
6. Preparations of novalac resin/resole resin.
7. Microscale Emulsion Polymerization of Poly(methylacrylate).

Polymer characterization

1. Determination of molecular weight of polyvinyl propylidene in water by viscometry.
2. Determination of the viscosity-average molecular weight of poly(vinyl alcohol) (PVOH) and the fraction of head-to-head monomer linkages in the polymer.
3. Determination of molecular weight by end group analysis of polymethacrylic acid.

Polymer analysis

1. Estimation of the amount of HCHO in the given solution by sodium sulphite method.
2. Determine the melting point of crystalline polymer.
3. Measurement of glass transition temperature, T_g s

References:**Theory:**

1. Carraher, C. E. Jr. (2013), **Seymour's Polymer Chemistry**, Marcel Dekker, Inc.
2. Odian, G. (2004), **Principles of Polymerization**, John Wiley.
3. Billmeyer, F.W. (1984), **Text Book of Polymer Science**, John Wiley.
4. Ghosh, P. (2001), **Polymer Science & Technology**, Tata Mcgraw-Hill.
5. Lenz, R.W. (1967), **Organic Chemistry of Synthetic High Polymers**, Interscience (Wiley).

Practical:

1. Allcock, H.R.; Lampe, F. W.; Mark, J. E. (2003), **Contemporary Polymer Chemistry**, Prentice-Hall.
2. Fried, J.R. (2003), **Polymer Science and Technology**, Prentice-Hall.
3. Munk, P.; Aminabhavi, T. M. (2002), **Introduction to Macromolecular Science**, John Wiley & Sons.
4. Sperling, L.H. (2005), **Introduction to Physical Polymer Science**, John Wiley & Sons.

Teaching Learning Process:

- Student centred teaching Learning process.
- Blend of conventional blackboard teaching and modern teaching learning tools
- Focus on real life applications of concepts
- Problem solving and quizzes for enhanced understanding of the concepts
- Engaging students in collaborative learning.
- Pre-lab learning of theoretical concept of the experiment.
- Performing the experiment, recording the data, calculating the result.
- Interpreting the result.
- Comparing the results of the class.
- Discussing the sources of error.

Assessment Methods:

- Class Tests at Periodic Intervals.
- Written assignment(s)
- Continuous evaluation of laboratory work and record file.
- Oral assessment, quizzes.
- Mock practical examination.
- Semester end University examination.

Keywords: Bonding, Texture, Polymerization, Crystallization, Properties, Applications.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

**GENERIC ELECTIVES 17: CHEMISTRY: MOLECULAR MODELLING,
ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING**

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Chemistry: Molecular Modelling, Artificial Intelligence and Machine Learning (GE-14) | 4 | 2 | 0 | 2 | Class XII Pass | ---- |

Learning Objectives

- To make students familiar with modern scientific machine (programming) language i.e., Python, Artificial Intelligence (AI) & Machine Learning (ML) and their potential applications in chemistry.
- To provide elementary ideas of the techniques prevailing in the field of AI and ML and their applications to research problems especially related to research and development of new materials and pharmaceutical compounds with desired properties.

Learning outcomes

By the end of the course, the students will be:

- Conversant with the Python Programming Language.
- Familiar with Elementary techniques of AI and ML
- Able to apply techniques of AI & ML in basic problems of research in some important areas of research in Chemistry.

Syllabus Theory:

Part A: Molecular Modelling

Introduction to computational chemistry:

7 Hours

Overview of Computational Methods in Chemistry (Ab initio, DFT, Semi-empirical, Molecular Mechanics)

Potential Energy Surfaces

4 Hours

The concept of Potential energy surface, Intrinsic Reaction Coordinates, Stationary points,

Equilibrium points – Local and Global minima, Geometry optimization and energy minimization.

Molecular Mechanics

4 Hours

Force Fields (A brief idea of a basic force field), Elementary idea of MM1, MM2, MM3, MM4, MM+, AMBER etc. A brief Idea of Molecular Docking

Part B: Artificial Intelligence & Machine learning in Chemistry

15 Hours

An overview of computationally readable and processible representation of molecules, e.g., SMILES, mol files. Chemical space and access to chemical databases. Statistical treatment of data: regression analysis and types of regression. Elementary Idea of Quantitative structure-activity relationship (QSAR).

An insight into Artificial Intelligence & Machine learning and potential areas of applications in chemistry. Dimensional reduction; Principal Component Analysis (PCA) and the importance and necessity of nonlinearity in Artificial Intelligence.

Genetic algorithm, basics of random mutation hill climbing (RMHC) and simulated annealing.

Practicals:

(60 hours)

Molecular Modeling based Exercise

- 1) Write the Z-Matrix of a given set of molecules.
- 2) Carry out geometry optimisation on H₂O, H₂S, H₂Se molecules and compare the optimized bond angles and dipole moments from the results obtained. Obtain the ESP-mapped density surfaces and interpret the results obtained with reference to bonding in these molecules.

Suggestive: A comparative analysis of results of the above exercise may be carried out using different quantum mechanical methods.

- 3) Calculate the energy of the following chemical species and arrange them in order of increasing stability.

1-hexene, 2-methyl-2-pentene, (E)-3-methyl-2-pentene, (Z)-3-methyl-2-pentene, and 2,3-dimethyl-2-butene in order of increasing stability.

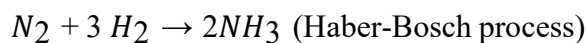
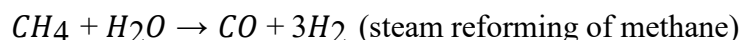
- 4) Carry out the geometry optimisation on the following chemical species and compare the shapes and dipole moments of the molecules.

1-butanol, 2-butanol, 2-methyl-1-propanol, and 2-methyl-2-propanol.

Correlate the computationally obtained values of the dipole moments with the experimental values of the boiling points: (118 °C, 100 °C, 108 °C, 82 °C, of 1-butanol, 2-butanol, 2-methyl-1-propanol, and 2-methyl-2-propanol respectively).

- 5) Based on the implicit electronic structure calculations, determine the heat of hydrogenation of Ethene.
- 6) Based on the calculations of enthalpies of the participating chemical species on

optimized geometry of the molecules, calculate the reaction enthalpy at 298 K for the following, industrially important reactions:



- 7) Carry out geometry optimisation and determine the energy of the participating chemical species in the following reactions. Using these results calculate the resonance energy of thiophene.
- 8) Carry out geometry optimization & energy calculations on the following species and obtain Frontier Molecular Orbitals. Visualize the Molecular Orbitals of these species and interpret the results for bonding in these molecules.

Benzene, Naphthalene, and Anthracene.

- 9) Compare the gas phase basicities of the methylamines by comparing the enthalpies of the following reactions:
- 10) On the basis of results of geometry optimization and energy calculations, determine the enthalpy of isomerization of cis and trans 2-butene.
- 11) QSAR based exercise on problems of interest to chemist.
- 12) Perform a conformational analysis of butane. Plot the graph between the angle of rotation and the energy of the conformers using spreadsheet software.
- 13) Compute the resonance energy of benzene by comparison of its enthalpy of hydrogenation with that of cyclohexene.
- 14) Perform a geometry optimization followed by a frequency assessment (opt+freq keyword) using the B3LYP method and 6-31-G(d) basis set on a given set of small molecules i.e. BH_3 , CH_4 .

Suggestive: A greater number of molecules may be studied as per instructions received from the concerned teacher.

- 15) Based on the fundamentals of conceptual DFT calculate the ionization potential (IP), electron affinity (EA), electronegativity and electron chemical potential of a given set of molecules.
- 16) Perform molecular docking of Sulfonamide-type D-Glu inhibitor into MurD active site using Argus lab.

Artificial Intelligence (AI) and Machine Learning (ML) based exercise on problems of interest to chemist

17. Travelling salesman problem and electrical circuit design (minimization of path-length).
- 18 Genetic algorithm, in solving matrix form of linear equations
- 19 Non-linear least-square fitting problem.
- 20 Particle Swarm Optimization on the sphere function.

Important Instruction Note on working approach:

- A student is required to perform/investigate a minimum of 10 exercises in total.
- The exercises mentioned above will be performed by the student strictly in accordance with the instructions received and only under the supervision of the teacher concerned.
- Any other exercise may be carried out with prior permission, input, discussion and instructions received from the teacher concerned.

References:

1. Lewars, E. (2003), **Computational Chemistry**, Kluwer academicPublisher.
2. Cramer, C.J. (2004), **Essentials of Computational Chemistry**, John Wiley & Sons.
3. Cartwright C.; Kharma N., (2008), **Using artificial intelligence in chemistry and biology**, First Edition, CRC Press Taylor & Francis Group
4. Hippe; Z., **Artificial Intelligence in Chemistry: Structure Elucidation and Simulation of Organic Reactions**, (1991) Academic Press, Elsevier
5. Soft Computing in Chemical and Physical Sciences A Shift in Computing Paradigm (Kanchan Sarkar, Sankar Prasad Bhattacharyya) (z-lib.org)
6. Understanding Properties of Atoms, Molecules and Materials (PRANAB. SARKAR, Sankar Prasad Bhattacharyya) (z-lib.org)

Web Resources:

1. https://www.afs.enea.it/software/orca/orca_manual_4_2_1.pdf
2. <https://dasher.wustl.edu/chem430/software/avogadro/learning-avogadro.pdf>
3. <http://www.arguslab.com/arguslab.com/ArgusLab.html>
4. <https://barrett-group.mcgill.ca/tutorials/Gaussian%20tutorial.pdf>
5. <https://gaussian.com/techsupport/>
6. <https://gaussian.com/man/>
7. <https://gaussian.com/wp-content/uploads/dl/gv6.pdf>
8. <https://dasher.wustl.edu/chem478/software/spartan-manual.pdf>
9. <http://www.mdtutorials.com/gmx/>
10. <https://vina.scripps.edu/manual/>

Teaching Learning Process: Hands-on laboratory exercises Conventional teaching learning method. Engaging students in collaborative learning

Keywords: Molecular Modeling, Potential Energy Surface (PES), Geometry Optimization, Frequency calculation, Artificial Intelligence, Machine Learning, Neural Networks, Genetic Algorithm.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES 18: ROLE OF METALS IN MEDICINES

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Role of Metals in Medicines (GE-16) | 4 | 2 | 0 | 2 | Class XII Pass | ---- |

Learning Objectives

- To make the learners familiar about role of metal ions in some commercially available medicines.

Learning outcomes

By the end of this course student will be able to learn:

- Role of metal ions in various biomolecules and their functions.
- Role of metals in commercially available medicines and their functions

Syllabus Theory:

Unit 1: Bio role of Metals

04 Hours

Brief introduction of following metals in biological system

Fe, Cu, Zn, Mn, Cr(III), V, Mo, W, Co, Ni, Na, K, Mg and Ca

Chemical structure, Commercial name, Name of the disease it is made for and its brief mechanism of action shall be taught for all the mentioned metals below.

Unit 2: Diagnostic and therapeutic agents

08 Hours

Diagnostic and therapeutic agents with Pt (Cisplatin) and Ga for cancer, Au (auranofin) for arthritis and V for diabetes.

Unit 3: Metals in drugs

06 Hours

Li₂CO₃ (Camcolit) for manic-depressive illness, NaHCO₃ (Alka-seltzer) for heartburn, Al(OH)₃ (Gaviscon) for heartburn, As (melarsoprol) for sleeping sickness, Bi subsalicylate (pepto-Bismol) for heartburn and diarrhea, Bi subcitrate (De-nol) peptic ulcer, Zinc oxide with Fe₂O₃ (Calamine lotion) as antimicrobial agent.

Unit 4: Metals in Multivitamins**06 Hours**

Cyanocobalamin (Co), Ferrous fumerate (Fe), Magnesium oxide (Mg), Zinc Sulfate (Zn), Manganese sesulphate (Mn), Copper Sulfate (Cu), Sodium selenite (Se) and Chromium trichloride (Cr).

Unit 5: Radiopharmaceuticals and MRI contrast agents**06 Hours**

^{99m}Tc for heart, brain and bone imaging, ^{123}I radiopharmaceuticals, BaSO_4 for X-ray contrast agent, Gd (III) for MRI contrast agents.

Practicals:**(60 hours)****Volumetric titrations:**

1. To estimate the acidity of commercially available antacids.
2. To estimate the concentration of Fe in commercially available medicines.
3. To estimate the concentration of Ca in commercially available medicines.
4. To estimate the strength of carbonate in tablets containing Li_2CO_3
5. To estimate the sodium bicarbonate in synthetic/commercially available drug.
6. To estimate the zinc and iron present in Calamine lotion.
7. To estimate the Mg present in multivitamins.

References:

1. **Metals in Medicine**, John Wiley & Sons Ltd, Nov 2009
2. Chapter-9, **Metals in Medicine**, Stephen J. Lippard
3. Jones, Chris and Thornback, John, **Medicinal applications of coordination chemistry**, Cambridge, UK: Royal Society of Chemistry, 2007

Teaching Learning Process:

- Hands-on laboratory exercises
- Conventional teaching learning method. Engaging students in collaborative learning

Assessment Methods:

- Continuous evaluation of laboratory work and record file. Oral assessment, quizzes.
- Presentation on lab practices.
- Semester end examination.

Key words: Diagnostic, therapeutic agents, multivitamins, radiopharmaceuticals and MRI contrast agents.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES -19: ENERGY AND THE ENVIRONMENT

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Energy and the Environment (GE-17) | 4 | 3 | 0 | 1 | Class XII Pass | --- |

Learning Objectives

- To develop basic understanding of energy, issues related to energy, importance of energy in terms of economy, health and the environment.
- To understand different sources of energies, renewable and non-renewable sources of energy. To understand the importance of green fuels.
- To make the students understand the adverse effect of pollution, and possible remediations.

Learning Outcomes

By the end of this course student will be able to learn:

- Describe basic energy concepts
- Account for conventional and renewable energy technologies and their application
- Reflect and evaluate the environmental impact of energy production and the relationship between energy production, consumption and climate change
- Reflect on energy costs, analyse the consequences of today's energy consumption
- Efficient use of energy, water and other resources, Use of renewable energy, such as solar energy
- Pollution and waste reduction measures, and the enabling of re-use and recycling
- Good indoor environmental air quality, Use of materials that are non-toxic, ethical and sustainable
- Consideration of the environment in design, construction and operation

Syllabus Theory:

Unit 1:

13 Hours

Introduction, chemistry and energy, conversion of chemical energy to electrical energy, Carbon cycle, Greenhouse gases, Global warming and climate change, Carbon footprint, zero-carbon or low-carbon energy. Electrical energy and steam energy, Energy Alternatives, Hidden Costs of Energy.

Unit 2:

10 Hours

Production methods for electric power: Non-Renewable (conventional) sources of energy: Fossil fuels: Coal, petroleum and Natural gas. Energy transformation. Renewable energy sources: solar, hydropower, wind, geothermal, wave, ocean thermal, tidal, ocean currents, nuclear energy, biomass.

Unit 3:

12 Hours

Production methods for electric power: Renewable (green) energy, conversion and storage systems. Nuclear fusion, Hydrogen fuels, photovoltaic solar cells, hydroelectric. Sustainable energy, biomass, Biofuels, production of biofuels, advantages, blending of biofuels with conventional fuels, Carbon Capture and Reuse, Waste to Energy Technologies.

Unit 4:

10 Hours

Air Pollution, Urban and Indoor Air Pollution, Pollution and waste reduction measures, chemical remediation of air pollution. Effect of pollution on health and economy.

Practicals:

(30 Hours)

Tutorials

1. Conversion of biomass to biofuels (2-3 different biofuels)
2. Working on solar cell model.
3. Working on wind turbine model.
4. Working on geothermal energy model.
5. Working on hydroelectric plant model.
6. Presentations by students

References:

Theory

1. Rao, C S., **Environment pollution control Engineering**, New Age International reprint 2015, 2nd edition
2. Bharucha, E., **Textbook of Environmental Studies**, Universities Press (2005)
3. Wright, R.T., **Environmental Science-Towards a sustainable Future**, Prentice Hall (2008) 9th edition.
4. Ahluwalia, V. K., **Energy and Environment**, The Energy and Resources Institute (TERI) (2019).

References:**Practicals**

- Challapalli Narayan Rao, **Practical approach to implementation of Renewable Energy Systems**, Evincepub Publishing, 2022

Keywords: Energy, Renewable and non-renewable energy resources, Synthetic fuels, Biofuels, Carbon footprint, air pollution, remediation, pollution related health and economy.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

**GENERIC ELECTIVES -20 : CHEMISTRY OF FRAGRANCES AND FLAVOURS:
AN INDUSTRY'S PERSPECTIVE**

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Chemistry of Fragrances and Flavours: An Industry's Perspective (GE-18) | 4 | 3 | 0 | 1 | Class XII Pass | ---- |

Learning Objectives

- To make the students understand the applications of chemistry in the world of flavours and fragrances. The use of fragrance is ubiquitous and is a global human phenomenon. Over the course of time, countless numbers of flavors and fragrances have found their way into everyday life, notably into foods, beverages and confectionery items; into personal care products (soaps, toothpastes, mouthwashes, deodorants, bath lotions and shampoos), perfumes, and other cosmetics as well as pharmaceutical formulations. Indeed, flavors and aromas are added to make such products more attractive or to mask the taste or smell of less pleasant ones.

Learning Outcomes

By the end of this course student will be able to learn:

- Synthesis of various fragrance and flavour ingredients
- Formulation methods, how different factors affects the formulation process in Fragrance and Flavour industry
- Uphold safety regulation and execute quality processes
- Quality control in manufacturing process, legal aspects, classification of odour and odorants.
- Different methods used for separation, purification and isolation of perfumes and flavours like distillation, extraction, crystallization, etc.

Syllabus Theory:

Unit 1: Fragrances

18 Hours

- Introduction to fragrances, types of fragrances (Fragrance families and classification)
- History of perfumes, Perfumery raw materials, classification of odour, odour type and odorants
- India in the context of Fragrance Industry
- ABCs of perfumery, odour aspects of perfumes, fragrance pyramid, fragrance families
- Some basic chemical knowledge to provide a better understanding of the structure of molecules possessing a sensory power, The volatility and solubility of sensory molecules
- Chemistry of aromatic compounds in perfume making, Composition of fragrances
- Current trends in fragrances, sensory analysis of different products
- Study of the raw materials used in perfumery (origin, extraction method, and olfaction)
- Key chemical reactions for conversion of raw materials to fragrances
- Extraction of essential oils used in perfumery
- Difference between alcohol and oil-based perfumes
- Outline of health, safety and sustainability parameters in perfumer

Unit 2: Sustainable Fragrance by Design

4 Hours

- The challenges of sustainability and how it impacts the industry
- Sustainability charter
- Green chemistry principles
- Commitment to Biodiversity

Unit 3: Flavours

18 Hours

- Introduction to flavours, types of flavours, flavour raw materials
- Understanding of terms like, Flavour and Flavouring agents. Attributes of flavour, taste, odour, odour stimulation, basic tastes and the human olfactory system.
- Stability of flavour in food, sensory evaluation of flavours in foods, Various flavour formulation
- Systematic approach to understanding flavour formation during food processing, food matrix, interaction of added flavours
- Flavour enhancers, modifiers, precursors, suppressors, solvents.
- Key chemical reactions for conversion of raw materials to flavours
- Forms of flavour and the manufacturing processes involving all types of flavours. Aroma recovery during processing.
- Biogenesis of flavours in fruits and vegetables, reaction flavours, off flavours.
- Stability of flavor in food, sensory evaluation of flavours in foods
- Selection and application of flavours in foods and beverages
- Legal aspects (natural flavours and natural flavouring substances, nature identical flavouring substances, artificial flavouring substances), and the FSSA act.

Unit 4: Extraction, Isolation and Purification of Perfumes and Flavour Compounds

05 Hours

- Extraction techniques for the separation of volatile oils from natural source- including. Distillation, Evaporation, Crystallization and Adsorption, supercritical fluid extraction methods of isolation of important ingredients

Practicals:

(30 hours)

1. Extraction of D-limonene from orange peel using liquid CO₂.
2. Extraction of caffeine from coffee beans using liquid CO₂.
3. Extraction of essential oils from lemon using steam distillation
4. Extraction of essential oils from lemon using liquid CO₂.
5. Extraction of essential oils from fragrant flowers.
6. Determination of esters by Thin Layer Chromatography
7. Memorisation of different raw materials used in perfumery, perfume language, Memorisation of perfumes
8. Testing up of different flavours
9. Analysis of spectra of perfume formulations.

References:

1. Arctander, S. (2008), **Perfume and flavour materials of Natural origin**, Allured Publishing Corporation, USA
2. Arctander, S. (2017), Volume I and II, **Perfume and Flavour Chemicals**, (Aroma Chemicals), Allured Publishing Corporation, USA
3. Curtis, T.; Williams, D. C. (2001) 2nd Edition, **An Introduction to Perfumery**, Micelle Press, USA.
4. Sell, C. (2008), **Understanding Fragrance Chemistry**, Allured Publishing Corporation, USA
5. Calkin, R.R., Jellinek, J.S., **Perfumery: Practice and Principles**, John Wiley & Sons Inc.
6. Gimelli, S.P. (2001), **Aroma Science**, Micelle Press, USA
7. Arctander, S. (2019), **Perfume and Flavour Materials of Natural Origin**, Orchard Innovations
8. <https://www.beyondbenign.org/lessons/essential-oil-extraction-using-liquid-co2/>

Keywords: Fragrances, Flavours, pharmaceutical formulation, distillation, extraction techniques

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES -21 : GREEN CHEMISTRY

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|----------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Green Chemistry (GE-20) | 4 | 2 | 0 | 2 | Class XII Pass | ---- |

Learning Objectives

Huge rise in environmental pollution, depleting resources, climate change, ozone depletion, heaps and heaps of landfills piling up has forced the society to become more and more environmentally conscious. Future chemists and innovators are compelled to work towards sustainable practices. Green chemistry has arisen from these concerns. It is not a new branch of chemistry but helps to improve the creative and innovative thinking in undergraduate students. Green chemistry is a way to boost profits, increase productivity and ensure sustainability with absolute zero waste. Innovations and applications of green chemistry in education have helped companies to gain environmental benefits as well as to achieve economic and societal goals also. Undergraduate students are the ultimate scientific community of tomorrow. Training them to practice chemistry in the safest way possible is key towards safe working conditions in the laboratories as well as the chemical industry and extends to society in a sustainable future for the planet.

Learning Outcomes:

By the end of this course, students will be able to:

- Understand the twelve principles of green chemistry and also build the basic understanding of toxicity, hazard and risk related to chemical substances.
- Calculate atom economy, E-factor and relate them in all organic synthesis
- Appreciate the use of catalyst over stoichiometric reagents
- Learn to use green solvents, renewable feedstock and renewable energy sources for carrying out safer chemistry
- Appreciate the use of green chemistry in problem solving skills and critical thinking to innovate and find solutions to environmental problems.
- Learn to design safer processes, chemicals and products through understanding of inherently safer design (ISD)
- Appreciate the success stories and real-world cases as motivation for them to practice green chemistry

Syllabus :

Unit 1: Introduction

08 Hours

Definition of green chemistry and how it is different from conventional chemistry and environmental chemistry.

- Need of green chemistry
- Importance of green chemistry in- daily life, Industries and solving human health problems (four examples each).
- A brief study of Green Chemistry Challenge Awards (Introduction, award categories and study about five last recent awards).

Unit 2: Twelve Principles of Green Chemistry

12 Hours

The twelve principles of the Green Chemistry with their explanation, Special emphasis on the following:

- Prevention of waste / byproducts, pollution prevention hierarchy.
- Green metrics to assess greenness of a reaction: environmental impact factor, atom economy and calculation of atom economy.
- Green solvents-supercritical fluids, water as a solvent for organic reactions, ionic liquids, solvent less reactions, solvents obtained from renewable sources.
 - Catalysis and green chemistry- comparison of heterogeneous and homogeneous catalysis, biocatalysis, asymmetric catalysis and photocatalysis.
- Green energy and sustainability.
- Real-time analysis for pollution prevention.
- Prevention of chemical accidents, designing greener processes, inherent safer design, principle of ISD "What you don't have cannot harm you", greener alternative to Bhopal Gas Tragedy (safer route to carcarbaryl) and Flixiborough accident (safer route to cyclohexanol) subdivision of ISD, minimization, simplification, substitution, moderation and limitation

Unit 3:

10 Hours

The following Real-world Cases in green chemistry should be discussed: Surfactants for carbon dioxide – replacing smog producing and ozone depleting solvents with CO₂ for precision cleaning and dry cleaning of garments. Designing of environmentally safe marine antifoulant. Rightfit pigment: Synthetic azo pigments to replace toxic organic and inorganic pigments. An efficient, green synthesis of a compostable and widely applicable plastic (polylactic acid) made from corn.

Practical:

(60 Hours)

Characterization by melting point, UV-Visible spectroscopy, IR spectroscopy and any other specific method should be done (wherever applicable).

1. Preparation and characterization of nanoparticles of gold using tea leaves/silver nanoparticles using plant extracts.

2. Preparation of biodiesel from waste cooking oil and characterization (TLC, pH, solubility, combustion test, density, viscosity, gel formation at low temperature and IR can be provided).
3. Benzoin condensation using thiamine hydrochloride as a catalyst instead of cyanide.
4. Extraction of D-limonene from orange peel using liquid CO₂ prepared from dry ice.
5. Mechanochemical solvent free, solid-solid synthesis of azomethine using *p*-toluidine and *o*-vanillin/*p*-vanillin.
- 6 Microwave-assisted Knoevenagel reaction using anisaldehyde, ethylcyanoacetate and ammonium formate.
7. Photoreduction of benzophenone to benzopinacol in the presence of sunlight.
8. Photochemical conversion of dimethyl maleate to dimethyl fumarate (*cis-trans* isomerisation)
9. Benzil- Benzilic acid rearrangement: Preparation of benzilic acid in solid state under solvent-free condition.

References:

Theory:

1. Anastas, P.T., Warner, J.C. (2014), **Green Chemistry, Theory and Practice**, Oxford University Press.
2. Lancaster, M. (2016), **Green Chemistry: An Introductory Text**, 3rd Edition, RSC Publishing.
3. Cann, M. C., Connely, M.E. (2000), **Real-World cases in Green Chemistry**, American Chemical Society, Washington.
4. Matlack, A.S. (2010), **Introduction to Green Chemistry**, 2nd Edition, Boca Raton: CRC Press/Taylor & Francis Group publisher.
5. Alhuwalia, V.K., Kidwai, M.R. (2005), **New Trends in Green chemistry**, Anamalaya Publishers.
6. Sidhwani, I.T, Sharma, R.K. (2020), **An Introductory Text on Green Chemistry**, Wiley India Pvt Ltd.

Practical:

1. Kirchoff, M.; Ryan, M.A. (2002), **Greener approaches to undergraduate chemistry experiment**, American Chemical Society, Washington DC.
2. Sharma, R.K.; Sidhwani, I.T.; Chaudhari, M.K. (2013), **Green Chemistry Experiments: A monograph**, I.K. International Publishing House Pvt Ltd. New Delhi.
3. Pavia, D.L.; Lamponam, G.H.; Kriz, G.S.W. B. (2012), **Introduction to organic Laboratory Technique- A Microscale approach**, 4th Edition, Brooks-Cole Laboratory Series for Organic chemistry.
4. Sidhwani I.T. (2015), Wealth from Waste: A green method to produce biodiesel from waste cooking oil and generation of useful products from waste further generated. **DU Journal of Undergraduate Research and Innovation**, 1(1),131-151. ISSN: 2395-2334.
5. Sidhwani, I.T; Sharma, R.K. (2020), **An Introductory Text on Green Chemistry**, Wiley India Pvt Ltd.

6. **Monograph on Green Chemistry Laboratory Experiments**, Green Chemistry Task Force Committee, Department of Science and Technology, Government of India.

Keywords: Green chemistry, Twelve principles of green chemistry, Atom economy, Waste minimization, green metric, green solvents, Solvent free, Catalyst, Bio-catalyst, Renewable energy sources, Hazardous, Renewable feedstock, Ionic liquids, Supercritical fluids, Inherent safer design, green synthesis, combinatorial, Sustainable development, Presidential green chemistry awards.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BHASKARACHARYA COLLEGE OF APPLIED SCIENCE

Category I

B.Sc. (Honours) Polymer Science

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|---------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Chemistry and Engineering of Polymer Reactions (CEPR) | 4 | 3 | 0 | 1 | 12 th with PCM | -- |

Learning Objectives

- To learn about the different polymerizations
- To study kinetics of chain growth and step growth polymerization
- To understand general concepts, principles, kinetics and methodology of polymerization

Learning outcomes

The Learning Outcomes of this course are as follows:

- Know about overview of aspects of polymer engineering
- Understand essential fundamentals and chemistry of the polymerization processes.
- Learn about various terms such as reaction initiation, propagation and termination

SYLLABUS OF DSC-4

UNIT – I

06 Hours

INTRODUCTION

Introduction to polymerization process, control of polymer synthesis; thermodynamic and kinetic control, diffusion control, polymer end chain control & control strategies, Introduction to reactor design, Interpretation of batch reactor data; design equations for ideal reactors, namely batch, CSTR, plug flow, design equation for single reaction systems using batch and semi batch, CSTR, PFR, Multiple reactor system; reactor in series and parallel, preference of type of reactor used

UNIT – II

09 Hours

RADICAL CHAIN POLYMERIZATION

Introduction, thermodynamic and kinetic aspect of radical chain polymerization, rate of polymerization, kinetic chain length, Mayo's equation, cage efficiency, selection criteria of initiators, ceiling temperature, Tromsdorff effect, inhibition and retardation Ziegler-Natta catalyst and stereoregular polymerizations, Radical chain copolymerization (reactivity ratio, copolymer equations)

UNIT – III

06 Hours

REDOX & OTHER INITIATIONS

Initiation in aqueous media, initiation in non-aqueous media, rate of redox polymerization, photochemical initiation, rate of photo-polymerization, initiation by ionizing radiation, electrolytic polymerization, plasma polymerization.

UNIT – IV

09 Hours

IONIC CHAIN & CONTROLLED POLYMERIZATIONS

Classification of ionic species, effect of solvents, initiation, propagation and termination in ionic polymerization, cationic polymerization, anionic polymerization, introduction of Atom Transfer Radical Polymerization (ATRP), Reversible Addition-Fragmentation Chain Transfer Polymerization (RAFT) and Nitroxide mediated polymerization (NMP)

UNIT – V

09 Hours

STEP GROWTH POLYMERIZATION

Reaction engineering of step growth polymerization: basic properties & examples of commercially important polymers, reactivity of functional groups kinetics of step polymerization, self-catalyzed & external catalysis of polymerization, molecular weight distribution in linear & nonlinear polymerization, effect of non-equivalence of functional groups, equilibrium considerations,

UNIT – VI

06 Hours

POLYMERIZATION TECHNIQUES

Bulk, solution, precipitation, suspension & emulsion polymerization.

Practical -

30 Hours

- To prepare polystyrene/poly(methyl methacrylate) by bulk polymerization and determine the rate of polymerization.
- To study the effect of reaction temperature on free radical polymerization of styrene/MMA.
- To study the effect on initiator concentration of free radical polymerization of styrene/MMA.
- Redox initiated polymerization of MMA & investigate the effect of viscosity on polymerization kinetics
- Redox polymerization of acrylamide
- To investigate Trommsdorff effect in bulk polymerization of MMA
- Solution polymerization of methyl methacrylate/styrene.
- Suspension polymerization of styrene/MMA.
- Emulsion polymerization of styrene/ methyl methacrylate.
- Preparation of Poly (vinyl butyral).

Essential/recommended readings

- Odian, G., (2004) Principles of Polymerization, Wiley-interscience.
- Billmeyer F.A., (2011) Textbook of Polymer Science, John-Wiley & Sons.
- Seymour R.B., Carraher C.E., (2003) Polymer Chemistry, Marcel Dekker.
- Flory P.J., (2007) Principles of Polymer Chemistry, Asian Books Private Limited.
- Levenspiel, O. (1998). Chemical reaction engineering. John Wiley & Sons.

Suggestive readings

- Brydson J.A., (2016) Plastics Materials, Butterworth Heinemann, 8th Edition.
- Lenz, R. W. (1967). Organic chemistry of synthetic high polymers.
- Gowarikar V.R., (2019) Polymer Science, New Age International Publishers Ltd, 3rd Edition

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 5: POLYMER RHEOLOGY (PR)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| POLYMER RHEOLOGY (PR) | 4 | 3 | 0 | 1 | 12 th Pass | --- |

Learning Objectives

- To enhance fundamental knowledge of flow behaviour of polymer melts
- To understand the concept of mixing of polymers

Learning outcomes

The Learning Outcomes of this course are as follows:

- Apply the knowledge of measurement of viscosity in handling of rheological instruments
- Interpret rheology of polymer melts by mechanical models

SYLLABUS OF DSC- 5

UNIT – I

(12 Hours)

RHEOLOGICAL PRINCIPLES

Viscosity and polymer processing, rheological properties of fluids, shear stress in polymers, Newtonian & non-Newtonian flow, polymer melt viscosities (ideal molten chains, microscopic studies of melts), flow in channels, simple shear flow, melt-flow index, Weissenberg effect, die swell, melt fracture, creep & creep compliance, stress relaxation, isochronous stress-strain curves

UNIT – II

(15 Hours)

MELT FLOW ANALYSIS

Types of fluid & rheological models, rheological measurements by capillary, parallel plate and cone & plate viscometers, simple elongational flow and its significance, dynamic flow behavior, time dependent fluid behavior

UNIT – III

(09 Hours)

RHEOLOGICAL MODELS

The elastic and viscoelastic state of polymers – viscoelasticity, viscoelastic models: Maxwell model, Voigt-Kelvin model, Boltzmann superposition principle, dynamic mechanical testing

UNIT – IV

(09 Hours)

MIXING OF POLYMERS

Types of mixing, concept and importance of master batches, mixing of additives with the polymers, melt compounding

Practical -

30Hours

- Determination of melt flow index of a polymer such as PP, PS, LDPE etc.
- Determination of intrinsic viscosity by Ubbelohde viscometer.
- Determination of rheological properties of polymer melts by rheometers.
- Measurement of resin/paint viscosity by Ford cup 4.
- Measurement of dynamic viscosity by Brookfield Viscometer.
- Compounding of polymers and investigation of their rheological behavior.
- Industry/R&D organization visit.

Essential/recommended readings

- Gupta B.R., (2004) Applied Rheology in Polymer Processing, Asian Books.
- Rosen S.L., (2012) Fundamental Principles of Polymeric Materials, Wiley-Interscience.
- Ghosh P., (2010) Polymer Science and Technology of Plastic and Rubber, Tata McGraw Hill.
- Aklonis J., Macknight W.J., (2005) Introduction to Polymer Viscoelasticity, John Wiley & Sons
- Middleman, S. (1968). Flow of high polymers; continuum and molecular rheology.

Suggestive readings

- Bird R.B., Armstrong R.C., Hassager O., (1977) Dynamics of Polymeric Liquids (volume 1), John Wiley & Sons, New York.
- Shaw M.T., (2012) Introduction to Polymer Rheology, John Wiley & Sons.
- Dealy, J. M., & Wissbrun, K. F. (2012). Melt rheology and its role in plastics processing: theory and applications. Springer Science & Business Media.
- Hiemenz, P. C., & Lodge, T. P. (2007). Polymer chemistry. CRC press.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 6: POLYMER TECHNOLOGY(PT)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| POLYMER TECHNOLOGY(PT) | 4 | 3 | 0 | 1 | 12 th Pass | - |

Learning Objectives

- To learn about the production, properties and applications of thermoset and thermoplastic polymers
- To learn about the chemistry and manufacturing of flexible and rigid polyurethane foams
- To understand the modification of unsaturated polymers

Learning outcomes

The Learning Outcomes of this course are as follows:

- Learn preparation of thermoplastic polymers
- Learn preparation of thermosetting polymers
- Apply the knowledge of polymer synthesis to obtain polymers with desired properties

SYLLABUS OF DSC-6

UNIT – I

(27 Hours)

THERMOPLASTIC POLYMERS

Manufacturing process, properties and applications of the following polymers:

- Polyethylene (LDPE,LLDPE,VLDPE, HDPE)
- Polypropylene and related copolymers
- Polystyrene ABS, HIPS and related copolymers
- Poly (vinyl chloride) and related copolymers
- Poly (vinyl acetate) and related polymers
- Acrylic polymers (PMMA,PEA, PAA, PAN, Polyacrylamide)
- Aliphatic polyamides (Nylon 6, Nylon 66, Nylon 6,10)
- Polyester (PET, PBT)

UNIT – II

(18 Hours)

Manufacturing process, curing, properties, and applications of the following polymers:

- Unsaturated polyester resins

- Phenol formaldehyde resins (resols and novolacs)
- Urea and melamine formaldehyde resins
- Epoxides
- Polyurethanes (Flexible & Rigid foams)

Practical -

30 Hours

- Preparation of PMMA bone cement.
- Preparation and testing of epoxy resins
- Preparation of Nylon 6,10 by interfacial polymerization
- Preparation of phenolic resin for adhesive applications.
- Preparation of unsaturated polyester resin and determination of molecular weight by acid value/hydroxyl value.
- Synthesis of copolymer of styrene & maleic anhydride, and styrene & MMA and determination of reactivity ratios.
- To prepare melamine formaldehyde product viz. crockery etc.
- Synthesis of Polyurethane Foams
- Preparation of sodium polyacrylate salt and poly(acrylic acid) from polyacrylamide.

Essential/recommended readings

- Brydson J.A., (2016) *Plastics Materials*, Butterworth Heinemann, 8th Edition.
- Mittal Vikas, (2011) *High Performance Polymers and Engineering Plastics*, Wiley.
- Seymour R.B., Carraher C.E., (2003) *Polymer Chemistry*, Marcel Dekker.
- Billmeyer F.A., (2011) *Textbook of Polymer Science*, John-Wiley & Sons.
- Gowarikar V.R., (2019) *Polymer Science*, New Age International Publishers Ltd, 3rd Edition

Suggestive readings

- Flory P.J., (2007) *Principles of Polymer Chemistry*, Asian Books Private Limited.
- Mark J.E. Erman B., Eirich F.R., (2005) *The Science and Technology of Rubber*, Elsevier Academic Press.
- Sperling, L. H. (2005). *Introduction to physical polymer science*. John Wiley & Sons.
- Crompton R.T., (1989) *Molecular Motions in High Polymers*, Pergamon Press N.Y.
- Crompton T.R., (1989) *Analysis of Polymers*, Pergamon Press N.Y.
- Treloar, L. R. G. (1983). *Mechanical Properties of Solid Polymers*, IM Ward, John Wiley & Sons Ltd, Chichester.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category-IV

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES OFFERED BY THE DEPARTMENTS

GENERIC ELECTIVES (GE-4): BIOMEDICAL APPLICATIONS OF POLYMERS(BAP)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| BIOMEDICAL APPLICATIONS OF POLYMERS (BAP) | 4 | 2 | 0 | 2 | 12 th Pass | --- |

Learning Objectives

- To acquire knowledge of biopolymer and biodegradation
- To gain knowledge of applications and testing of biopolymers

Learning outcomes

The Learning Outcomes of this course are as follows:

- Understand the basic concepts and requirement of biomaterials and biocompatibility
- Apply the knowledge of various biomaterials for a desired bio-application

SYLLABUS OF GE-4

UNIT – I

(06 Hours)

BASICS OF BIOMATERIALS

Concept of biocompatibility and biodegradability, responsiveness, estimations of degradation and biocompatibility, Important biomaterials: hydrogel, fibres, bio-ceramics, bio-elastomers and membranes

UNIT – II

(04 Hours)

POLYMERS AS BIOMATERIALS

Polyester and polysaccharides, natural gums, biodegradable polymers, polymers and hydrogels

UNIT – III **(10 Hours)**
BIOMATERIALS FOR ORGAN TRANSPLANTS AND TISSUE ENGINEERING

Properties and applications of polymers for organ transplant e.g. dental cement, orthopedic, skin, artificial kidney etc., basic concepts of tissue engineering, Important polymers for tissue engineering: cellulose, chitosan and alginates

UNIT – IV **(10 Hours)**
DRUG DELIVERY AND WOUND CARE

Introduction to drug delivery, polymers in controlled drug delivery, dressing strips, polymer drug vessels, core shell and nanogels, polymers for antimicrobial activity, bio-conjugates

Practical **- 60 Hours**

- Evaluate the biocompatibility of polymeric samples.
- Determination of the degradation behavior of polymers such as thermal, hydrolytic degradation etc.
- Preparation of membranes and measurement of absorption behavior.
- Preparation and characterization of dental cement.
- Preparation of a hydrogel and its characterization.
- Determination of tensile strength of biopolymers.
- Determine the swelling rate of biopolymers
- Preparation of nanogel and find its water absorption
- preparation and characterization of membrane for skin transplant

Essential/recommended readings

- Tiwari A., Tiwari A., (2013) Nanomaterials in drug delivery, Imaging and Tissue Engineering, Wiley.
- Pilla S., (2011) Handbook of Bioplastics and Biocomposites Engineering Applications, Wiley.
- Ratner, Buddy D., Allan S. Hoffman, Frederick J. Schoen, and Jack E. Lemons. "Biomaterials science: an introduction to materials in medicine." San Diego, California (2004): 162-4.
- Park, J. B., & Bronzino, J. D. (2002). Biomaterials: principles and applications. crc press.

Suggestive readings

- Ratner D., Hoffman A.S., (1996) An Introduction to Materials in Medicine, Academic Press.
- Saltzman W.M., (2001) Drug delivery–Engineering principles for drug therapy, Oxford University Press.
- Kalia S., Averous L., (2011) Biopolymers: Biomedical and Environmental Applications, John Wiley & Sons.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-5): POLYMERS FOR PACKAGING (PP)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-----------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| POLYMERS FOR PACKAGING (PP) | 4 | 2 | 0 | 2 | 12 th Pass | --- |

Learning Objectives

- To learn about the basic necessities and importance of packaging
- To acquire knowledge of various types of packaging materials

Learning outcomes

The Learning Outcomes of this course are as follows:

- Apprehend the basic concepts of packaging and its utilization for desired applications
- Assess the quality of packaging material and packaged product

SYLLABUS OF GE-5

UNIT – I

(06 Hours)

PACKAGING SYSTEMS

Types of packaging systems: box, bottle, tetra, pouch, shrink, vacuum, gas, controlled atmosphere packaging (CAP), modified atmosphere packaging (MAP), and aseptic packaging

UNIT – II

(08 Hours)

POLYMERS IN PACKAGING

Properties and applications: LLDPE, LDPE, HDPE, HMHDPE, PP, PVC, nylons, polyester, polycarbonate, PS, EPS, PLA, PVA and Starch

UNIT – III

(08 Hours)

PACKAGING PROCESS TECHNIQUES

Preparation of packaging materials by thermoforming, co-extrusion, extrusion-stretch blow molding, injection molding, BOPP films

UNIT – IV

(08 Hours)

TESTING OF POLYMER PACKAGING MATERIAL

Bursting strength, tensile strength, tear strength, puncture test, impact test (Drop, falling dart), permeability test (water vapour, oxygen), biodegradability, sealing strength

Practical -**60 Hours**

- To identify packaging materials with the help of FT-IR, DSC, TGA etc.
- Determination of physico-mechanical properties (density, burst strength, tensile strength, tear strength, puncture test strength, impact strength etc).
- Determination of water vapor transmission rate of packaging material.
- To test sealing strength integrity of packaging materials.
- To check biodegradability of packaging material.
- Preparation biodegradable packaging film
- Determination of water vapor transmission rate of packaging material.
- To test seal strength integrity of packaging materials.
- To check biodegradability of packaging material.
- To determine compatibility of film.

Essential/recommended readings

- Robertson G.L., (2005) Food Packaging Principles and Practice, CRC press.
- Paine F.A. and Paine H.Y., (1992) A Handbook of Food Packaging, Blackie Academic and Professional.
- Sharma S., Aggarwal M., Sharma D., (2019), Food Frontiers, New Delhi Publisher
- N. C. Saha, M. Garg, S. Dey Sadhu, A. K. Ghosh(2022) Food Packaging-Materials, Techniques and Environmental Issues” by published by Springer.
- Garg, M., Meena, P.L., Sadhu, S.D., Alam, T. (2019). Food Packaging: A Practical Guide : Viba Press Pvt. Ltd.

Suggestive readings

- Robertson G.L., (2012) Food Packaging–Principles and Practice, CRC Press.
- Coles R, McDowell D., Kirwan M.J., (2003) Food Packaging Technology, Blackwell.
- Sukhareva L.A., Yakolev V.S., Legonkova O.A., (2008) Polymers for packaging materials for preservation of foodstuffs, VSP.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-6): POLYMERS FOR ELECTRICAL AND ELECTRONIC APPLICATIONS (PEEA)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| POLYMERS FOR ELECTRICAL AND ELECTRONIC APPLICATIONS (PEEA) | 4 | 2 | 0 | 2 | 12 th Pass | ---- |

Learning Objectives

- To learn about basic concepts of polymer electrical and electronic properties
- To gain knowledge of electrical and electronics applications of polymers

Learning outcomes

The Learning Outcomes of this course are as follows:

- Synthesize a conducting polymer for a specific application
- Apply the knowledge of properties of polymers required for electrical and electronics applications

SYLLABUS OF GE-6

UNIT – I

(08 Hours)

INTRODUCTION TO POLYMERS

Petro polymers, conducting polymers, biopolymers, composites, Band diagram, processing of polymers, doping (chemical and ion), advantages and disadvantages of conducting polymers, limitations

UNIT – II

(08 Hours)

PREPARATION OF CONDUCTING POLYMERS

Synthetic methods: chemical, electrochemical, photochemical etc. (polyaniline, polypyrrole, polythiophene, polyacetylene, etc.), methods to enhance the processability of conducting polymers

UNIT – III

(08 Hours)

PROPERTIES

Dielectric strength, dielectric loss, charge storage capacity, electrical conductivity, heat capacity, magnetism, hysteresis loop, shape memory, mechanical properties, EMI shielding

UNIT – III**(06 Hours)****ELECTRONIC APPLICATIONS**

Semiconducting organic materials, polymer based electronic devices, organic field effect transistor, organic transistors, plastic solar cell, light emitting diode, supercapacitor, sensors etc.

Practical -**60 Hours**

- Preparation of conducting polyaniline and measurement of their conductivity.
- Preparation of polypyrrole and measurement of their conductivity.
- Preparation of polythiophene and measurement of their surface resistivity.
- Preparation and testing of conducting polymers for sensor applications.
- Measurement of multilayer insulation of a thin film.
- Measurement of dielectric strength of a polymer film.
- Measurement of mechanical properties of insulating cable
- Preparation polymer sample and analyzed its dielectric strength
- Preparation of a conducting polymer nanocomposites.
- Preparation polymeric semiconductor

Essential/recommended readings

- Skotheim T.A., Elsenbaumer R.L., Reynolds J.R., (1998) Handbook of conducting polymers, Vol. 1 and Vol. 2, Marcel Dekker.
- Nalwa H.S., (1977) Organic Conductive Molecules and Polymers, John Wiley & Sons.
- Bredas J.L., Silbey R., (1991) Conjugated Polymers: The Novel Science and Technology of Highly Conducting and Nonlinear Optically Active Materials, Kluwer Academic Publishers.
- Bikales M., Menges O.B., (1986) Encyclopedia of Polymer science and Engineering, Second Edition, Vol.5, John Wiley & Sons.

Suggestive readings

- Lyons M.E.O., (1994) Electroactive polymers, Plenum Press.
- Margolis J., (1993) Conducting Polymers and Plastics, Chapman & Hall.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DEPARTMENT OF ANTHROPOLOGY

Category-I

BSc. (Hons.) Environmental Science

DISCIPLINE SPECIFIC CORE COURSE -4 (DSC-4) – : Human Origins and Evolution

Credit distribution, eligibility and pre-requisites of the course:

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------------------|----------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Human Origins and Evolution | 4 | 3 | 0 | 1 | 12th Pass | ---- |

Learning Objectives

1. The course will enhance students understanding of human variation in the light of human origins.
2. The course will help students to develop concepts pertaining to the relation of modern humans with living and non-living primates.

Learning Outcomes

Students will learn on evolutionary relationships of different extinct/hominids in the context of emergence of modern human beings. Students will also learn the gradual biological and behavioral processes of becoming human.

Syllabus:

Unit-1 (12 Hours)

Primate origins and radiation: phylogenetic relationships of living primates with special reference to Miocene hominoids

Unit-2 (12 Hours)

Australopithecines: distribution, features and their phylogenetic relationships. Appearance of genus Homo: Homo habilis
Homo erectus from Asia, Europe and Africa: Distribution, features and their phylogenetic status

Unit-3 (12 Hours)

The origin of Homo sapiens: Fossil evidences of Neanderthals.
Origin of modern humans (Homo sapiens sapiens): Archaic and Modern humans, Distribution and features

Unit-4**(9 Hours)**

Hominization process: Bio-cultural Evolution

Practical –**30 Hours****Craniometry:**

- a) Maximum Cranial Length
- b) Maximum Cranial Breadth
- c) Maximum Bizygomatic Breadth
- d) Maximum Frontal Breadth
- e) Minimum (Least) Frontal Breadth
- f) Nasal Height
- g) Nasal Breadth
- h) Bi-Mastoid Breadth
- i) Greatest Occipital Breadth
- j) Upper Facial Height
- k) Cranial Index
- l) Nasal Index

Osteometry: Measurements of Human long bones (6)

Identification of casts of fossils of family hominidae: Drawing and comparison of cranial characteristics.

References

1. Indera P. Singh and Bhasin, M.K. (1968) Anthropometry. Kamla-Raj Enterprises, Chawri Bazar, Delhi.
2. Buettner-Janusch, J. (1966). Origins of Man: Physical Anthropology. John Wiley & Sons, Inc., New York, London, Sydney.
3. Craig Stanford et al. (2013). Biological Anthropology. Pearson, New York. [Unit-1: Page-261-300; Unit-2: Page-324-335; Unit-3: Page-342-375; Unit-4: Page-382-412; Unit-5 and 6: Page-418-441]
4. Nystrom P. and Ashmore P. (2011). The Life of Primates. PHI Learning Private Limited, New Delhi.
5. Seth P. K. and Seth S. (1986). The Primates. Northern Book Centre, New Delhi, Allahabad.
6. Singh I. P. and Bhasin M.K. (1989). Anthropometry: A Laboratory Manual on Biological Anthropology.
7. Stanford C.; Allen J.S. and Anton S.C. (2012). Biological Anthropology: The Natural History of Mankind.
8. Swindler D. R. (2009). Introduction to the Primates. Overseas Press India Pvt. Ltd., New

Keywords

Human origin, Primates, Australopithecine, Homo erectus and evolution

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE -5 (DSC-5) – : Fieldwork Traditions and Ethnography

Credit distribution, eligibility and pre-requisites of the course:

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Fieldwork Traditions and Ethnography | 4 | 3 | 0 | 1 | 12th Pass | ---- |

Learning Objectives:

- How ethnographers conceptualize, conduct, and analyse their research;
- The types of research practices for generating data
- The ethics of ethnographic research, in relationship to disciplinary history

Learning Outcomes:

- Ability to conduct ethnographic research
- Generate data and write field notes
- Analyse and interpret ethnographic data

Syllabus:

Unit 1 Fieldwork Tradition

(12 Hours)

The emergence of fieldwork tradition in Anthropology; Ethnography, its Nature, Trajectories, Genres; Ethnography: Process and Product

Unit 2 Idea of Field

(12 Hours)

Concept of field: Idea of Place and Space, and its changing contours, Multi-sited Ethnography and Virtual Spaces.

Unit 3 Doing ethnography

(12 Hours)

Doing ethnographic Fieldwork: Fieldwork Identity; Rapport and Relations; Representation and Emotions; Ethical issues.

Unit 4 Field Methods and Writing

(09 Hours)

Observation, Interview, Case Study, Life History, Genealogy, Sensory Ethnography, Reflexivity and Ethnographic Writing

Practical –

30 Hours

Designing Ethnographic Research: Identifying a problem, Defining the universe, Literature Review, selecting appropriate methods; doing Fieldwork: field diaries and field notes; Analysis and Writings.

1. Students are required to visit different field sites and come up with observational and experiential learnings
2. Presentations based on a Research Project

References

1. Clifford, J., & Marcus, G. E. (2011). *Writing culture: The poetics and politics of ethnography*. Berkeley, California: University of California Press.
2. O'Reilly, K. (2009). *Key Concepts in Ethnography (SAGE key concepts)*. Sage Publications.
3. Narayan, K. (2012). *Alive in the writing: Crafting ethnography in the company of Chekhov*. Chicago: University of Chicago Press.
4. Robben, C.G.M. and Jeffrey A. Sluka. (2012). *Ethnographic Fieldwork: An Anthropological Reader*. Oxford: Wiley-Blackwell.
5. Srinivasa, M. N., Shah, A. M., & Ramaswamy, E. A. (2008). *The fieldworker and the field*. New Delhi: Oxford University Press.
6. Srivastava, V. K. (2005). *Methodology and fieldwork*. New Delhi: Oxford University Press.

Keywords: Fieldwork, Ethnography, Ethics, Writing, Reflexivity

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE -6 (DSC-6) – : Human ecology and biological adaptation

Credit distribution, eligibility and pre-requisites of the course:

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Human ecology and biological adaptation | 4 | 3 | 0 | 1 | 12 th Pass | ---- |

Learning Objectives

1. To introduce human ecology through biological perspectives where impetus will be laid on building a sense of awareness, empathy and understanding of existing environmental problems at various subsistence levels.
2. The course focuses on environmental matters that need attention on imperative basis.

Learning Outcomes

1. The students will be trained to identify biological adaptation strategies that can throw light on the resilient measures in different environmental stresses.
2. The students can be better equipped to understand the impact of various environments on everyday human life and can critically reflect on adoption of a healthy and sustainable environment.
3. The students can be encouraged to come up with innovative strategies to reduce the environmental menace created by humankind and aim towards a sustainable future.

Syllabus:

Unit I: Fundamentals of Human ecology (12 Hours)

- Human ecology and its interdisciplinary approaches
- Complexity and diversity of human population with respect to environment
- Concepts of human ecology and adaptation with special emphasis on biological dimensions

Unit II: Tools to understand human ecology (12 Hours)

- Methods of studying human ecology
- Indigenous knowledge for sustainability in various environments

Unit III: Human adaptation: Population and environment (12 Hours)

- Adaptation to various ecological stresses
- Ecological rules and their applicability to human populations

Unit IV: Human health and environment (09 Hours)

- Impact of various environments on human health
- Impact of urbanization and industrialization on humans

Practical –

30 Hours

A. Size and Shape Measurements:

1. Stature
2. Sitting Height
3. Body Weight
4. Total Upper Extremity Length
5. Total Lower Extremity Length
6. Nasal Breadth
7. Nasal Height

B. Size and Shape Indices:

1. Body Mass Index
2. Relative Sitting Height
3. Relative Upper Extremity Length
4. Relative Total Lower Extremity Length
5. Nasal Index

C. 1-2 public talks/workshops/project over the academic semester on research topics on human ecology and biological adaptation. These talks would bring students with brainstorming discussion on current issues.

References

1. H. Schutkowski. (2006) Human Ecology: Biocultural adaptations in Human communities, Springer Verlag, Germany (Unit 1).
2. Wilk. Richard and Haenn Nora (2006). The environment in Anthropology. New York University Press. NY. (Unit 2).
3. Ember and Ember (2014) Anthropology, Pearson publication, Hudson Avenue, New Jersey. (Unit 3)
4. Wilk. Richard and Haenn Nora (2006): The environment in Anthropology. New York University Press. NY. (Unit 4)

Teaching Learning Process

1. Classroom teachings
2. Seminars and presentations
3. Practical classes
4. Workshop

Keywords: adaptation, human ecology, ecological stresses, health

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

CATEGORY-IV

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES OFFERED BY DEPARTMENT OF ANTHROPOLOGY

Credit distribution, Eligibility and Pre-requisites of the Course

GENERIC ELECTIVES (GE-7): Physical fitness, Activity and Performance

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Physical fitness, Activity and Performance | 4 | 3 | 0 | 1 | 12 th Pass | --- |

Learning Objectives:

The course is structured around the relevance of being physically fit in today's environment. It will further focus on increasing one's performance and activity through anthropological knowledge.

Learning Outcomes:

1. The students will learn about various components of health-related and skill related physical fitness.
2. The students will learn about the importance of physical fitness in performing and sustaining daily activities.
3. They will also learn about the relevance of physical fitness and performance in sports science and how it helps in designing the most appropriate athletic training program.
4. They will learn how anthropological knowledge is of immense importance in fitness and performance.

Syllabus

Unit I: Introduction to physical fitness and performance (12 Hours)

Definition, scope, and relevance of physical fitness and performance, ways to improve physical fitness and performance, various types of physical fitness and performance test

Unit II: Measure of physical fitness and performance (12 Hours)

Cardiovascular endurance, Muscular strength, Muscular endurance, Flexibility, Body composition, skill related components of physical fitness

Unit III: Physical fitness and performance in sports and health science (12 Hours)

Importance of physical fitness and performance in preventing chronic and lifestyle disease, talent identification in sport science by determining an athlete's strengths and weaknesses, doping and performance.

Unit IV: Anthropological knowledge in physical fitness and performance (09 Hours)

Relevance of anthropology in studying physical fitness, activity and performance, understanding physical fitness and performance by taking into consideration the ethnic and racial differences

Practical – 30 Hours

1. Physical fitness and performance test
2. **Physiological Measurements-** Blood pressure, Heart rate, Pulse rate
3. **Somatometric Measurements-** Height, weight, skinfolds, hip circumference, waist circumference, mid-upper arm circumference, neck circumference, calf circumference, thigh circumference

1-2 workshops/projects over the academic semester on topics related to anthropology. It would bring students to brainstorming discussions on current issues and help them develop innovative ideas.

References:

1. Physical working capacity and physical fitness; relationship of body measurements with cardio-vascular and respiratory functions- Physical Activity and Health by C. Bouchard, S.N Blair, W.L Haskell Chapter 3 (Page 37-42)
2. Irurtia, Alfredo, Víctor M. Torres-Mestre, Álex Cebrián-Ponce, Marta Carrasco-Marginet, Albert Altarriba-Bartés, Marc Vives-Usón, Francesc Cos, and Jorge Castizo-Olier. "Physical Fitness and Performance in Talented & Untalented Young Chinese Soccer Players." In *Healthcare*, vol. 10, no. 1, p. 98. MDPI, 2022.
3. Vaara, Jani P., Heikki Kyröläinen, Jaakko Niemi, Olli Ohrankämmen, Arja Häkkinen, Sheila Kocay, and Keijo Häkkinen. "Associations of maximal strength and muscular endurance test scores with cardiorespiratory fitness and body composition." *The Journal of Strength & Conditioning Research* 26, no. 8 (2012): 2078-2086.
4. Pate, Russell, Maria Oria, and Laura Pillsbury. "Health-related fitness measures for youth: flexibility." In *Fitness Measures and Health Outcomes in Youth*. National Academies Press (US), 2012.
5. Chen, W., Hammond-Bennett, A., Hypnar, A., & Mason, S. (2018). Health-related physical fitness and physical activity in elementary school students. *BMC public health*, 18(1), 195. <https://doi.org/10.1186/s12889-018-5107-4>

6. Donnelly, J. E., Hillman, C. H., Castelli, D., Etnier, J. L., Lee, S., Tomporowski, P., Lambourne, K., Szabo-Reed, A. N., & This summary was written for the American College of Sports Medicine by (2016). Physical Activity, Fitness, Cognitive Function, and Academic Achievement in Children: A Systematic Review. *Medicine and science in sports and exercise*, 48(6), 1223–1224.
<https://doi.org/10.1249/MSS.0000000000000966>
7. Eston, R. and Reilly, T. (2009). KINANTHROPOMETRY AND EXERCISE PHYSIOLOGY LABORATORY MANUAL Volume One: Anthropometry. Tests, procedures and data. Routledge.

Teaching Learning Process

- Classroom teachings
- Seminars and Interactive sessions
- Practical classes/ Field work

Keywords: Physical fitness, performance, health science

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-8): CUSTOMARY LAW

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Customary Law | 4 | 3 | 0 | 1 | 12 th Pass | --- |

Learning objectives:

The course is designed to help students understand the approaches to the study of different types of law, particularly customary law. It will also help students to learn the contradictions, inconsistencies inherent in the interface between customary law and the state law.

Learning Outcomes: On completion of the course, students will be able to:

- Locate nuances of diverse customs from around the world based on ethnographic works.
- Make critical evaluation of gendered laws which are intricately enmeshed within the social fabric.
- Gain insights into the workings of state agency that blurs the boundary of customary law and the state.

Syllabus:

Unit 1: Understanding Customary Law (12 Hours)

Customary Law: Concepts and Approaches; Types of Customary Law: Restitutive, Repressive; Anthropological literature: Bronislaw Malinowski, Evans-Pritchard, Meyer Fortes, Max Gluckman, Leopold Pospisil

Unit 2: Custom, Crime and Justice (12 Hours)

Law and Justice in simple societies; Classification of Crimes among indigenous communities; Oath taking and Ordeal; modes of dispute settlement

Unit 3: Gender and Customary Law (12 Hours)

Gendered laws, Inheritance, Succession, Custody of Children and Properties, Political Representation

Unit 4: Customary Law and the State Law (09 Hours)

Interface between customary law and state law; Codification of customary law and its implications

Practical – 30 Hours

- Review of ethnographic works and find out: (i) types of crime, (ii) modes of dispute settlement, (iii) rationale behind ordeals/oaths.
- Project report on (i) customary law and the state law interface, or (ii) Cultural context of a dispute and search for its settlement in one or other legal domains.

References:

1. Evans-Pritchard, E. E and Meyer Fortes. 1940. *African Political Systems*. London: Oxford University Press.
2. Gluckman, Max. 1956. *Custom and Conflict in Africa*. Basil Blackwell Ltd.
3. Malinowski, B. 1926. *Crime and Custom in Savage Society*. London: Routledge & Kegan Paul Ltd.
4. Pospisil, Leopold. 1971. *Anthropology of Law: A comparative theory*. New York: Harper and Row Publishers.
5. Srivastava, Vinay Kumar. 2021. *India's Tribes: Unfolding Realities*. New Delhi: Sage Publications Indian Pvt. Ltd.
6. Zhimo, A.G. 2019. 'Indigenous system of Governance and its implication: The case of Sumi Naga. *Indian Anthropologist*. 49 (2): 41-56.

Keywords:

Customary law, oath taking, custom, dispute, state law

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-9): Ethics and Legality in Human Research

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Ethics and Legality in Human Research | 4 | 3 | 0 | 1 | 12 th Pass | --- |

Learning Objectives

1. To understand bio-social ethical aspects of human research
2. To understand aspects of health research from ethical and legal perspectives

Learning Outcomes

The students will learn the basic understanding of ethics in different types of human research and learn the skills to assess ethical dimensions of research works based on human populations

Syllabus:

Unit 1: Introduction to the ethical dimensions of human research; history of ethics in human research; Ethical vs legal regulations **(12 Hours)**

Unit 2: Research Disclosure; Importance of Truth telling; Participant Information sheet; Participant's Capacity to understand human research, Voluntariness and Consent, **(12 Hours)**

Unit 3: Human rights; Confidentiality of participant's information; Risks and benefits, Vulnerability, research integrity **(12 Hours)**

Unit 4: Ethical guidelines of Indian Council of medical Research; Regulatory framework **(9 Hours)**

Practical: (30 Hours)

Report of ethical assessment based on research work related to human research.

References

Macklin R. Ethics in global health: research, policy, and practice [1 ed.]. Oxford University Press, 2012
 Stephen Garrard Post Encyclopedia of bioethics [Volume 3, 3rd ed]. Macmillan Reference USA, 2004
 Alastair V. Campbell. Bioethics: The Basics [1 ed.]. Routledge, 2013

Keywords

Ethics, human, participants, consent, confidentiality

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-10): Quality of life and well-being

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--------------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Quality of life and well-being | 4 | 3 | 0 | 1 | 12 th Pass | ---- |

Learning Objectives:

- To understand the concept of QoL and well-being.
- To learn about various domains and indicators related to QoL and well-being.
- To know the measures of QoL and well-being as per different community or geographical setting.
- To identify the similarity and differences in these two concepts.
- To understand the change in QoL and well-being as per disease severity and duration of symptoms in different age group and gender.

Learning outcomes:

- Learner will be able to understand the basic concept of QoL and well-being.
- Information about measures of well-being and QoL will be instilled.
- Learners will get to know about indicators and theoretical models of well-being and QoL
- Knowledge about evaluation of chronic illness treatment through wellbeing and HRQoL will be imparted.

Syllabus:

Unit 1: Fundamentals of quality of life and well being (12 Hours)

Concept of Quality of life (QoL), subjectivity and multidimensionality models, standard of living, life satisfaction, philosophical foundation, definitions and measures of QoL and well being

Unit 2: QoL and Chronic illness (12 Hours)

Quality of life as an evaluation tool for the treatment (HRQoL), functioning domains under QoL: physical, mental, emotional, intellectual, spiritual, and social functioning, impact of Covid-19 on QoL and well-being

Unit 3: Theories and indicators of QoL and well-being (12 Hours)

Hedonic and Eudaimonic well-being, objective, subjective and relational well-being, integrative theories of subjective QoL. Effect of technology, economic, political, socio-cultural, resource, domain dynamics on QoL and well-being.

Unit 4: Types of well-being

(09 Hours)

Work, residential, material, social, family, marital, health, leisure. quality of life and well-being of Women, older adults, children, youth, geographic population segments etc.

Practical:

(30 Hours)

To assess QoL and wellbeing of different population at different age groups.

1-2 workshops/projects over the academic semester on topics related to quality of life and wellbeing in anthropology. It would bring students to brainstorming discussions on current issues and help them develop innovative ideas.

References:

1. An Interdisciplinary Perspective edited by Shruti Tripathi, Rashmi Rai, Ingrid Van Rompay-Bartels, 1st edition, 2021, CRC press, Boca Raton
<https://doi.org/10.1201/9781003009139>
2. <https://www.springer.com/series/8365>
3. Handbook of Active Ageing and Quality of Life, 2021, ISBN: 978-3-030-58030-8
4. Well-Being as a Multidimensional Concept: Understanding Connections among Culture, Community, and Health, 2019, EDITED BY JANET M. PAGE-REEVES
5. Upton, D., Upton, P. (2015). Quality of Life and Well-Being. In: Psychology of Wounds and Wound Care in Clinical Practice. Springer, Cham.
https://doi.org/10.1007/978-3-319-09653-7_4
6. <https://www.cdc.gov/hrqol/wellbeing.htm>

Teaching Learning Process

1. Classroom teachings
2. Seminars and Interactive sessions
3. Practical classes/ Field work

Keywords: Quality of life, wellbeing, Hedonic, Eudaimonic

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-11): Tribes of India

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Tribes of India | 4 | 3 | 0 | 1 | 12 th Pass | --- |

Learning Objectives: The course is designed to help students understand the contested and problematic nature of the term ‘tribe’ and its definitional attributes. It also seeks to elucidate pressing issues faced by the tribes in India by focus on the contemporary issues, challenges and crisis that confront the rural and tribal communities in India.

Learning outcomes: At the end of the course, the student will be able to:

1. Comprehend the problematic nature of the concepts of tribe and indigenous; how it differs from caste.
2. Understand critical issues, problems and challenges related to tribal societies both in historical and contemporary perspectives.
3. Evaluate, plan and implement any project work in rural and tribal areas and be able to suggest remedial measures for critical issues.

Syllabus:

Unit 1: On the concept of tribe (12 Hours)

Concept and approaches to the study of tribes; classification, distribution and cosmogeny of tribes in India; Scheduled Tribe and Indigenous people; Particularly Vulnerable tribal groups

Unit 2: Tribes and institution (12 Hours)

Tribal kinship system, types of family, rules of marriage, tribal polity and governance, subsistence economy and tribal market, tribal religion: nature-man-spirit complex, witchcraft

Unit 3: Tribes, Development, and Globalization: (12 Hours)

Impact of development schemes on tribal societies; Displacement caused by large infrastructure projects; Globalization and the shift from isolation to integration.

Unit 4: Tribes and Policy (09 Hours)

National Tribal Policy; Forest Rights, Food security, land acquisition, mining, tribal migrants

Practical –**30 Hours**

Practical would involve examination of material culture including technologies used by the hunter and gatherers, horticulturalist pastoral and agriculture communities. Functional analysis of traps for fishing, hunting, digging stick, sickle and different types of knives and other equipment used for hunting. Different types of house forms, dress patterns etc. and their ecological adaptation in different climatic zones will also be required to be studied functionally as well structural point of view. Student would also prepare a project report based upon empirical data collected on tribal issues

References:

Bailey, F.G. 1960. Tribes, caste and Nations: A study of political activity and political change in Orissa.

Béteille, André. 1998. The Idea of Indigenous People. *Current Anthropology*, Vol. 39, No. 2 (April 1998), pp. 187-192.

Bhandari, J. S., and Subhadra Channa. 1997. Tribes and government policies. New Delhi: Cosmo Publications

Channa, Subhadra Mitra. 2020. Anthropological Perspectives on Indian Tribes. New Delhi: Orient Blackswan Private Limited

Chaudhury, Sukant K., and Patnaik, Soumendra Mohan. 2008. Indian Tribes and the 'Mainstream'. New Delhi. Rawat Publisher

Fürer-Haimendorf, Christoph von. 1985. Tribal populations and cultures of the Indian subcontinent. *Handbuch der Orientalistik*, Bd. Leiden: E.J. Brill.

Miri, Mrinal. 2003. Identity and the moral life. New Delhi: Oxford University Press.

Vidyarthi, L.P. 1977. Tribal Culture of India: concept publishing company.

Xaxa, Virginius. 2008. State, society, and tribes: issues in post-colonial India. New Delhi: Dorling Kindersley (India)

Teaching Learning Process

Lectures and Discussions

Seminars and Presentations

Keywords: Scheduled Tribe, Caste, Tribal Development, Tribal Policy, Indigenous People

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-12): Environment and Health

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Environment and Health | 4 | 3 | 0 | 1 | 12 th Pass | ---- |

Learning Objectives

1. To understand basic concepts of environmental health
2. To assess environmental pollutant classes
3. To assess the risk of environmental exposures and health impacts

Learning Outcomes

The students will learn the basic concepts of environmental and health, various exposures and pollutant classes, burden of disease and health impacts of ecological exposures

Syllabus:

Unit 1: Introduction to environment health. Epidemiological studies related to environmental health **(12 Hours)**

Unit 2: Water, Sanitation and Hygiene; impact of air pollution (ambient and indoor), water pollution and noise pollution on human health **(12 Hours)**

Unit 3: Human health under different socio-cultural environment, Built environment, Urban environment, Green spaces and occupational hazards, hygiene and health **(12 Hours)**

Unit 4: Food safety, toxins and waste management, chemicals and heavy metals **(09 Hours)**

Practical: **30 Hours**

Project report based on data collection related to environmental health

References

1. Hermen Koren. Handbook of environmental health and safety [volume_II, 4th ed.]. CRC Press, 2002
2. Morton Lippmann. Environmental toxicants: human exposures and their health effects [3rd ed]. John Wiley & Sons, 2009
3. B. Wisner J. Adams. Environmental Health in Emergencies and Disasters [1 ed.]. World Health Organization, 2003
4. Bernard J. Healey, Kenneth T. Walker. Introduction to Occupational Health in Public Health Practice (Public Health Environmental Health) [1 ed.]. Jossey-Bass;2009

Teaching Learning Process

The process of learning will involve acquisition of domain knowledge and understanding of skills required for conducting research in environmental health. Process will involve lectures and presentations and report submission.

Keywords

Pollutants, Environment, Exposure, Assessment, Water and Air pollution, social environment.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category I

BSc. (Honours) Biological Science (Sri Venkateswara College)

DISCIPLINE SPECIFIC CORE COURSE – 4:

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------|---------|-----------------------------------|----------|---------------------|--|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Cell Biology (BS-DSC-201) | 4 | 2 | 0 | 2 | Class XII pass with Biology and chemistry, as one of the papers in Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To introduce the students to the basic concepts and processes in cyto-biology.
- To understand the structure and function of cell organelles, how they communicate with each other and how division and regulation takes place in cells.
- The practical content of this course is designed to understand the cell measurement methods, cell division, staining procedure and tonicity through different laboratory exercises.

Learning outcomes

On successful completion of course, the student will:

- Understand the cell and its biology which will help them to get an insight into the origin of cells, cellular structure, various components of cells and functions.
- Understand the chemical composition, physicochemical and functional organization of organelle.
- Demonstrate the knowledge of common and advanced laboratory practices in cyto-biology.
- Acquire knowledge about how cells divide by means of meiosis and mitosis and will be able to correlate different factors which control cell cycle progression.

SYLLABUS OF DSC-1

UNIT – I Overview of Cell and Cell membrane

(07 Hours)

History of cell biology, cell theory, Structure and functions of membrane, models of membrane structure, transport across membranes (with examples): simple diffusion, facilitated diffusion, active transport (Na^+/K^+ pumps, Co-transport, proton pumps) and passive transport. Phagocytosis, pinocytosis, exocytosis.

UNIT – II Cell Organelles

(13 Hours)

Mitochondria, chloroplast and nucleus: Ultrastructural organization and functions, marker enzymes, transport mechanisms in mitochondria and chloroplasts (Tim/Tom; Tic/Toc); and transport via nuclear pore complex.

Endomembrane system: Ultrastructural organization and functions of Rough and smooth endoplasmic reticulum, Golgi apparatus and lysosomes (GERL complex), tonoplast.

Glyoxysomes and Peroxisomes: Structure and function.

UNIT – III Cytoskeletal System

(03 Hours)

Structure and organization of microfilaments, intermediate filaments, microtubules, their functions in plants and animals (in brief).

UNIT – IV Cell wall and extracellular matrix

(04 Hours)

Cell wall organization (Primary and secondary cell wall), components of cell wall, Extracellular Matrix and Cell junctions, adhesive junctions, gap junctions and tight junctions, plasmodesmata. Function of cell wall.

UNIT – V Cell Division

(03 Hours)

Overview of cell cycle. Regulation: Various checkpoints and the role of cyclins and Cdks (Cyclin dependent kinases). Overview of mitosis and meiosis and their significance

Practical component – 60 Hours

1. Estimation of cell size by micrometry/ camera lucida
2. To study plasmolysis and deplasmolysis in a cell/ Isolation of protoplast from tomato and its survival in hypo, hyper and isotonic solution
3. Study the effect of organic solvent/temperature on membrane permeability.
4. Demonstrate the phenomenon of protoplasmic streaming.
5. Study of ultrastructure of a cell (Plasma membrane, Nucleus, Nuclear Pore Complex, Chloroplast, Mitochondrion, Golgi bodies, Endoplasmic reticulum, Lysosomes) through electron micrographs.

6. Study of cytoskeletal structures through photographs.
7. Study of different stages of mitosis by temporary preparation of onion root tips.
8. Study of different stages of meiosis by temporary preparation /permanent slides.
9. Staining and visualisation of mitochondria by Janus green stain

Essential/recommended readings

1. Becker, W. M., Kleinsmith, L. J., Bertni, G. P. (2009). *The World of the Cell* (7thEd.). Pearson Benjamin Cummings Publishing, San Francisco.
2. Cooper, G.M. and Hausman, R.E., (2009). *The Cell: A Molecular Approach*. (7th ed.). ASM Press & Sunderland (Washington DC), Sinauer Associates, MA.
3. Karp, G., (2010). *Cell and Molecular Biology: Concepts and Experiments* (8th ed.). John Wiley & Sons
A Guidebook to mechanism in organic chemistry (2003) 6 th ed., Sykes, P. New York: John Wiley & Sons. Inc

Suggested readings

1. EDP De Robertis, and RE De Robertis (2009). *Cell and Molecular Biology* (8th Ed.). Lippincott Williams and Wilkins, Philadelphia.
2. Nelson, D.L. and Cox, M.M. (2017). *Lehninger: Principles of Biochemistry* (7th ed.). W.H. Freeman & Company (New York).

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 5

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|--|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Diversity of Life Forms-II (BS-DSC-202) | 4 | 2 | 0 | 2 | Class XII pass with Biology and chemistry, as one of the papers in Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- Designed with an aim to provide scope and historical background of evolution and diversity in plants and animals.
- impart knowledge regarding basic concepts of origin of chordates and make the students understand the characteristics and classification of animals with notochord.
- Outline various mechanisms involved in thriving/survival of the animals within their geographic realms.
- Understand important aspects of Gymnosperm classification, structure and economic importance.
- Provide an adequate exposure to fundamentals of plant systematics and most practiced classification systems.
- Emphasis will be on developing interest and invoking a sense of responsibility among students toward sustenance of plant and animal biodiversity.

Learning outcomes

Upon completion of the course, the students will be able to:

- Understand different characteristic features of different plant and animal life forms, classes of chordates, level of organization and evolutionary relationship between different subphyla and classes, within and outside the phylum.
- Study about diversity in animals and plants making students understand about their distinguishing features.
- Appreciate similarities and differences in life functions among various groups of animals and plants.
- Know about the habit and habitat of animals in marine, freshwater and terrestrial ecosystems.
- Understanding of systematics its importance in biodiversity management, nomenclature and classification systems of the plants.

SYLLABUS OF DSC- 2

UNIT – I Gymnosperms

(04 Hours)

Position of Gymnosperms in five kingdom classification. General characteristics, Outline classification and economic importance. Morphology, structure and reproduction of *Pinus* and *Ginkgo*. Evolutionary tendencies in Gymnosperms-a comparative study

UNIT – II Plant taxonomy

(07 Hours)

Angiosperm systematics: Fundamental concept of Plant Taxonomy (Identification, nomenclature, classification); Taxonomic resources; Herbarium- functions and important herbaria of India and world, Botanical gardens, Flora, monographs and keys (Single-access and multi-access) herbaria of India and world, Botanical gardens, Flora, monographs and keys (Single access and multiple access)

UNIT – III Classification

(04 Hours)

Historical background of plant classification; Artificial (Linnaeus), Natural (Bentham and Hooker), Phylogenetic system of classification; APG system.

UNIT – IV Diversity of Chordates

(11 Hours)

Introduction to Biodiversity, types of Biodiversity, General characteristics and Classification of chordates (upto order): Protochordata, Aganatha, Pisces: Osteichthyes, Chondrichthyes, Amphibia, Reptilia, Aves and Mammals.

UNIT – V Biogeography

(04 Hours)

Zoogeographical realms, Distribution of vertebrates in different realms

Practical component: 60 Hours

FLORA

1. *Cycas*: T.S (temporary mount) leaf, specimen: male cone and megasporophyll; T.S.corolloid root (temporary mount), T.S. microsporophyll, L.S. ovule (permanent slides).
2. *Pinus*: Study of morphology, dwarf and long shoots, male and female cone, T.S. needle(temporary mount), L.S. male and female cone (permanent slides).
3. Study the characteristic features of **any one** member of the family:
 - (a) Malvaceae
 - (b) Fabaceae/Lamiaceae
 - (c) Euphorbiaceae
 - (d) Asteraceae
 - (e) Liliaceae
4. Mounting of a properly dried and pressed specimen of any wild plant with herbariumlabel (to be submitted on the herbarium sheet with appropriate label)

FAUNA

5. Study of following specimens: Balanoglossus, Amphioxus, Petromyzon, Pristis, Hippocampus, Labeo, Ichthyophis/Uraeotyphlus, Salamander, Draco, Naja, any two common birds.
6. Slide/ Virtual demonstration of Placoid, Ctenoid and Cycloid scales
7. Identification and classification of one endangered amphibian, reptile, bird and mammal of any one zoogeographical region in Indian.
8. Report on: Biodiversity Park/reserve/ NBPGR.

Essential/recommended readings

1. Young, J. Z., (2004). The Life of Vertebrates. III Edition. Oxford university press.

2. Parker T.J. and Haswell W.A. Textbook of Zoology Vertebrates. VII Edition, Volume II
3. Darlington P.J. The Geographical Distribution of Animals, R.E. Krieger Pub. Co.
4. Kaur I., Uniyal P.L. (2019). *Text Book of Gymnosperms*. New Delhi, Delhi: Daya Publishing House.
5. Vashistha, B.R., Sinha, A.K., Kumar, A. (2010). *Botany For Degree Students, Gymnosperms*. New Delhi, Delhi: S Chand Publication.
6. Bhatnagar, S.P., Moitra, A. (1996). *Gymnosperms*. New Delhi, Delhi: New Age International (P) Ltd Publishers.
7. Singh, G., (2018). *Plant Systematics: Theory and Practice*. Oxford & IBH Publishing Co. Pvt. Ltd.

Suggested readings

1. Ennos, R., & Sheffield, E., (2000). Plant Life. UK: University Press, Cambridge.
2. Ingrowille, M., (1992). Diversity and Evolution of land plants. Chapman and Hall
3. Wilson, E. O., (1998). Biodiversity. National Academic Press.
4. Pough H. Vertebrate life. VIII Edition, Pearson International.
5. Simpson, M.G. (2010). *Plant Systematics*. Elsevier Academic Press, San Diego, CA, U.S.A

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE –6 :

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|--|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Chemical Energetics, Ionic Equilibria and Nanomaterials, (BS-DSC-203)) | 4 | 2 | 0 | 2 | Class XII pass with Biology and chemistry, as one of the papers in Class XII | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

- To introduce materials at nanoscale, their preparation, characterization techniques and applications in real life.
- Develops basic understanding of the chemical energetics, laws of thermodynamics, chemical and ionic equilibrium.
- It provides basic understanding of the behaviour of electrolytes and their solutions.
- The course will also cover thermodynamic studies with the calculation of energies and interaction of biomolecules with their neighbouring environment.

Learning outcomes

By the end of the course, the student will be able to:

- Understand the concept of nano-dimensions.
- Know the various methods of preparation of nanomaterials.
- Know the different characterization techniques used for the analysis of nanomaterials and understand the basic principle behind these techniques.
- Understand the diverse properties of nanostructures.
- Appreciate the real-world applications of nanomaterials.
- Understand the laws of thermodynamics, basic principles of thermochemistry and equilibria and successfully extend the concepts learnt in this course to biological systems.
- Understand concept of pH and its effect on the various physical and chemical properties of the compounds.
- Use the concepts learnt to predict feasibility of chemical reactions and to study the behaviour of reactions in equilibrium.
- Explain the concept of ionization of electrolytes with emphasis on weak acid and base and hydrolysis of salt.
- Apply the concepts of pH and electrolytes while studying other chemistry courses and everyday life.

SYLLABUS OF DSC-3

UNIT – I Nanomaterials of Biological importance

(15 Hours)

Overview of nanomaterials, classification, properties, role of size, methods of synthesis (Chemical methods: chemical reduction, coprecipitation, sol-gel, microemulsions or reverse micelles, solvothermal synthesis, Green or biological methods using bacteria, Fungi, etc, Plants based methods using tea leaves, cinnamon bark, etc), characterization techniques (UV-Vis, IR, SEM, TEM, XRD), optical properties of gold and silver metallic nanoparticles, concept of surface plasmon resonance, carbon nanotubes, inorganic nanowires, quantum dots & semiconductor nanoparticles, metal-based nanostructures (Iron Oxide & ZnO nanoparticles), polymer-based nanostructures, protein-based Nanostructures, natural and artificial nanomaterials, bionanomaterials and bio-nanocomposites, bioinorganic nanomaterials, DNA and its nanomaterials, biomimetics, self-assembled nanostructures, control of nanoarchitecture, Applications of nanomaterials in drug delivery, tissue engineering,

medicine, orthopaedics, bioimaging, dental implants and biosensors

UNIT – II Chemical energetics

(05 Hours)

Review of laws of thermodynamics, important principles and definitions of thermochemistry, concept of standard state and standard enthalpies of formations, enthalpy of neutralization, integral and differential enthalpies of solution and dilution, calculation of bond energy, bond dissociation energy and resonance energy from thermochemical data, Statement of third law of thermodynamics and calculation of absolute entropies of substances.

UNIT – III Ionic Equilibria

(10 Hours)

Strong, moderate and weak electrolytes, degree of ionization, factors affecting degree of ionization, Ostwald's dilution law, ionization constant and ionic product of water, ionization of weak acids and bases, pH scale, common ion effect, salt hydrolysis-calculation of hydrolysis constant, degree of hydrolysis and pH for different salts. Buffer solutions and their applications in biological systems, Henderson-Hasselbalch equation. Solubility and solubility product of sparingly soluble salts – applications of solubility product principle.

Practical component: TOTAL HOURS: 60

1. Synthesis of silver nanoparticles (AgNPs) by chemical reduction method and their spectroscopic characterization using UV-visible spectrophotometer.
2. Green synthesis of silver nanoparticles (AgNPs) using soluble starch or cinnamon bark and their characterization using UV-visible spectroscopy.
3. Phytochemicals mediated synthesis of gold nanoparticles (AuNPs) using tea leaves and to study the effect of size on color of gold nanoparticles.
4. Preparation of magnetic nanoparticles (MNPs) of Fe_3O_4 using green tea leaf extract.
5. Synthesis of pure ZnO and Cu-doped ZnO nanoparticles by precipitation method and its characterization using UV-visible spectroscopy.
6. XRD pattern of nanomaterials and estimation of particle size. (Students can be provided with XRD patterns of known materials and asked to interpret the data.)
7. Determination of enthalpy of neutralization of hydrochloric acid with sodium hydroxide.
8. Determination of integral enthalpy (endothermic and exothermic) solution of salts.
9. Preparation of buffer solutions: (i) Sodium acetate-acetic acid or (ii) Ammonium chloride-ammonium acetate.
10. Measurement of the pH of buffer solutions and comparison of the values with theoretical values.

11. pH metric titration of (i) strong acid with strong base, (ii) weak acid with strong base and determination of dissociation constant of a weak acid.

Essential/recommended readings

1. Atkins, P., Overton, T., Rourke, J., Weller, M. & Armstrong, F. (2011-12).
2. Shriver and Atkins' Inorganic Chemistry. Oxford, UK: Oxford University Press.
3. Poole Jr.; Charles P.; Owens, Frank J. (2003), Introduction to Nanotechnology, John Wiley and Sons.
4. Malhotra, P.; Gulati, S., Novel Inorganic Solids and Nanomaterials, (2022) I.K. International Pvt Ltd.
5. Gulati, S., Sharma, J. L., Manocha, S. (2017). Practical Inorganic Chemistry. New Delhi, India: CBS publishers and distributors Pvt. Ltd.
6. Orbaek, W.; McHale, M.M.; Barron, A. R.; Synthesis and Characterization of Silver Nanoparticles for An Undergraduate Laboratory, J. Chem. Educ. 2015, 92, 339–344.
7. Gulati, S.; Shukla, S.; Kumar, S., Practical Green Chemistry, Strategies, Tools & Experiments, SKP Publishers and Distributors, 2019.
8. Shukla, S.; Gulati, S.; Kumar, S., A textbook of Green Chemistry, Benign by Design, SKP Publishers and Distributors, 2019.
9. Ghorbani H.R.; Mehr, F.P; Pazoki, H; Rahmani, B.M.; Synthesis of ZnO Nanoparticles by Precipitation Method, Orient J Chem 2015, 31(2).
10. Kumar, S., Kapoor, V, Gulati, S, Experiments in Physical Chemistry, (2017), Book Age Series.
11. Kapoor, K.L. (2017). A Textbook of Physical Chemistry, Thermodynamics and Chemical Equilibrium, Vol. 2. India: McGraw-Hill Education.
12. Khosla, B. D., Garg, V. C., Gulati, A. (2011). Senior Practical Physical Chemistry. New Delhi, India: R. Chand & Co.
13. Rastogi, R. P., Mishra, R. R. (2009). *An Introduction to Chemical Thermodynamics*. India: Vikas Publication.
14. Atkins, P.W.; Paula, J.de. (2014), Atkin's Physical Chemistry Ed., 10th Edition, Oxford University Press.
15. Ball, D. W. (2017), Physical Chemistry, 2nd Edition, Cengage Learning, India.
16. Castellan, G. W. (2004), Physical Chemistry, 4th Edition, Narosa.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DEPARTMENT OF ENVIRONMENTAL SCIENCE

Category-I BSC (H) ENVIRONMENTAL SCIENCE

DISCIPLINE SPECIFIC CORE COURSE – 4 (DSC-EVS-4): WATER AND WATER RESOURCES

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------------------|----------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| WATER AND WATER RESOURCES | 4 | 2 | 0 | 2 | Class XII pass | NIL |

Learning objectives

The Learning Objectives of this course are as follows:

- Gain insights into the hydrological cycle, properties of water, physico-chemical and biological
- Understand parameters and indices of water quality
- Classify types of water resources and thus develop practices for their sustainable use and management
- Investigate problems associated with water shortages in India and familiarize with case studies on international and national conflicts on water.

Learning outcomes

After this course, students will be able to learn the following skills.

- Acquire skills to identify potential water resources in a given region and manage existing water resources
- Analyze data on water resources to understand the current environmental challenge and prevent the future ones
- Make informed decisions on using and choosing appropriate methods for water resource management and develop nature-based methods to improve the health of water bodies
- Develop low-cost methods for purifying drinking and natural water
- Correlate water resource management practices with socio-economic challenges and prospects
- Relate and interpret the data on water resources data with other related sustainability challenges

SYLLABUS OF DSC-4

Theory (02 Credits: 30 lectures)

UNIT – I Introduction (2 Hours)

Sources and types of water; hydrological cycle; precipitation, runoff, infiltration, evaporation, evapo- transpiration; classification of water resources (oceans, rivers, lakes and wetlands).

UNIT – II Properties of water (4 Hours)

Physical: temperature, colour, odour, total dissolved solids and total suspended solids; Chemical: major inorganic and organic constituents, dissolved gases, DO, COD, BOD, acidity and alkalinity, electrical conductivity, sodium adsorption ratio; Biological: phytoplankton, phytobenthos, zooplankton, macro-invertebrates and microbes.

UNIT – III Surface and subsurface water (6 Hours)

Introduction to surface and ground water; surface and ground water pollution; water table; vertical distribution of water; formation and properties of aquifers; techniques for ground water recharge; river structure and patterns; watershed and drainage basins; importance of watershed and watershed management; rain water harvesting in urban settings.

UNIT – IV Wetlands and their management (4 Hours)

Definition of a wetland; types of wetlands (fresh water and marine); ecological significance of wetlands; threats to wetlands; wetland conservation and management; Ramsar Convention, 1971; major wetlands of India.

UNIT – V Marine resource management (3 Hours)

Marine resources; commercial use of marine resources; threats to marine ecosystems and resources; marine ecosystem and resource management (planning approach, construction techniques and monitoring of coastal zones).

UNIT – VI Water resources in India (4 Hours)

Demand for water (agriculture, industrial, domestic); overuse and depletion of surface and ground water resources; water quality standards in India; hot spots of surface water; role of state in water resources management.

UNIT – VII Water resource conflicts (4 Hours)

Water resources and sharing problems, case studies on Kaveri and Krishna River water disputes; Multipurpose River valley projects in India and their environmental and social impacts; case studies of dams; Narmada and Tehri dam – social and ecological losses versus economic benefits; International conflicts on water sharing between India and her neighbours; agreements to resolve these conflicts.

UNIT – VIII Major laws and treaties (3 Hours)

National water policy; water pollution (control and prevention) Act 1972; Indus water treaty; Ganges water treaty; Teesta water treaty; National River linking plan: ecological and economic impacts.

Practicals/Hands-on Exercises – based on theory (02 Credits: 60 hours)

1. Estimate water quality based on physico-chemical parameters, such as pH, electrical conductivity, salinity, total dissolved and suspended solids, iron contents, and dissolved oxygen
2. Classify and characterize aquifers of Indian states and analyse “Safe” and “Over-exploited” zones of two states based on groundwater use.

3. Determine alkalinity, alkalinity hazard and SAR of water samples and recommend their use for various purposes.
4. Identify and map water resources in NCT Delhi and correlate its current status with changing land use in past 60 years
5. Estimate sediment load in Yamuna River at different sections of its course in Delhi regions
6. Assess water quality (pH, TDS, TH, EC, BOD, Heavy Metals) and determine the water portability of samples collected from different sites of NCT Delhi.
7. Conduct an online survey to assess people's knowledge, perception and attitude towards water quality issues and their impact on the environment and health.
8. Analyze water conservation strategies in North-eastern and Western states of India from the data available from State Government Agencies.
9. Document and compare water conservation strategies in different agroclimatic zones of India
10. Analyze watershed management strategies in selected river basins of India.
11. Develop integrated water management strategies for two contrasting river basin of India.

Essential/recommended readings

- McNabb, D.E., 2017. *Water Resource Management: Sustainability in An Era of Climate Change*. Springer.
- Loucks, D.P., Stedinger, J.R. & Haith, D. A. 1981. *Water Resource Systems Planning and Analysis*. Englewood Cliffs, NJ, Prentice Hall.
- Brebbia, C.A. 2013. *Water Resources Management VII*. WIT Press.
- CEA. 2011. *Water Resources and Power Maps of India*. Central Board of Irrigation & Power.
- Bogardi, J.J., Gupta, J., Nandalal, K.W., Salamé, L., van Nooijen, R.R., Kumar, N., Tingsanchali, T., Bhaduri, A. and Kolechkina, A.G. eds., 2021. *Handbook of Water Resources Management: Discourses, Concepts and Examples*. Springer International Publishing.
- de Oliveira Vieira, E., Sandoval-Solis, S., de Albuquerque Pedrosa, V. and Ortiz-Partida, J.P., 2020. *Integrated Water Resource Management*. Springer International Publishing.
- Garg, V., Singh, V.P. and Raj, V. eds., 2017. *Development of Water Resources in India*. Springer International Publishing.
- Grigg, N.S., 2016. *Integrated Water Resource Management: An interdisciplinary Approach*. Springer.
- Mimikou, M.A., Baltas, E.A. and Tsihrintzis, V.A., 2016. *Hydrology and Water Resource Systems Analysis*. CRC Press.
- Vickers, A. 2001. *Handbook of Water Use and Conservation*. WaterPlow Press.

Suggested readings

- Bansil, P.C. 2004. *Water Management in India*. Concept Publishing Company, India.
- Hidalgo, M.E.A., 2013. A Decision Framework for Integrated Wetland-River Basin Management in a Tropical and Data Scarce Environment: UNESCO-IHE PhD Thesis. CRC Press.
- Information Resources Management Association (Editor) (2017). *Hydrology and Water Resource Management: Breakthroughs in Research and Practice*, 1st edition IGI Global.

- Mays, L.W. 2006. *Water Resources Sustainability*. The McGraw-Hill Publications.
- McNabb, D.E., 2017. *Water Resource Management: Sustainability in An Era of Climate Change*. Springer.
- Schward & Zhang, 2003. *Fundamentals of Groundwater*. John Willey and Sons.
- Souvorov, A.V. 1999. *Marine Ecogonomics: The Ecology and Economics of Marine Natural Resource Management*. Elsevier Publications.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

**DISCIPLINE SPECIFIC CORE COURSE – 5 (DSC-EVS-5): LAND AND SOIL:
CONSERVATION AND MANAGEMENT**

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| LAND AND SOIL: CONSERVATION AND MANAGEMENT | 4 | 2 | 0 | 2 | Class XII pass | NA |

Learning objectives

The Learning Objectives of this course are as follows:

- Gain insights into fundamentals of land and soil degradation
- Understand deeply the properties of soil and how the quality of land and soil degrades due to anthropogenic activities
- Develop solutions to combat land and soil degradation based on natural processes

Learning outcomes

After this course, students will be able to

- Acquire skills in managing soil and land sustainably
- Analyze data on soils and land use to identify the principal factor(s) governing sustainability
- Develop methods to address environmental issues related to soil health and changing land use
- Correlate positive or negative impacts of soil and land use on ecosystems and society
- Relate and interpret the soil and land use data with the sustainability of a region
- Use soil and land use data to develop evidence-based land use guidelines

SYLLABUS OF DSC-2

Theory (02 Credits: 30 lectures)

UNIT – I Introduction (3 Hours)

Land as a resource, soil health; ecological and economic importance of soil; types and causes of soil degradation; impact of soil loss and soil degradation on agriculture and food security; need for soil conservation and restoration of soil fertility.

UNIT – II Fundamentals of soil science (5 Hours)

Soil formation; classification of soil; soil architecture; physical properties of soil; soil texture; soil water holding capacity; soil temperature; soil colloids; soil acidity and alkalinity; soil salinity and sodicity; soil organic matter; micronutrients of soil; nitrogen, sulphur, potassium and phosphorus economy of soil; soil biodiversity; soil taxonomy maps.

UNIT – III Soil degradation – causes (5 Hours)

Soil resistance and resilience; nature and types of soil erosion; non-erosive and erosive soil degradation; losses of soil moisture and its regulation; nutrient depletion; soil pollution due to mining and mineral extraction, industrial and urban development, toxic organic chemicals, and organic contaminants in soils; fertilizers and fertilizer management; recycling of soil nutrients.

UNIT – IV Land use changes and land degradation (7 Hours)

Land resources: types and evaluation; biological and physical phenomena in land degradation; visual indicators of land degradation; drivers of land degradation - deforestation, desertification; habitat loss, loss of biodiversity; range land degradation; land salinization; human population pressure, poverty, socio-economic and institutional factors; drivers of land use and land cover change in major geographic zones and biodiverse regions with particular reference to the Himalaya and the Western Ghats.

UNIT – V Costs of land degradation (7 Hours)

Economic valuation of land degradation; onsite and offsite costs of land degradation; loss of ecosystem services; effects on farming communities; effects on food security; effects on nutrient cycles; future effects of soil degradation; emerging threats of land degradation to developing countries.

UNIT – VI Controlling land degradation (3 Hours)

Sustainable land use planning; role of databases and data analysis in land use planning control and management; land tenure and land policy; legal, institutional and sociological factors; participatory land degradation assessment; integrating land degradation assessment into conservation.

Practicals/Hands-on Exercises – based on theory (02 Credits: 60 hours)

1. Determine and assess soil texture, color, structure, water, and temperature using the jar test and soil textural triangle. Discuss and describe the soil profiles for different types of ecosystems.
2. Characterize the given soil samples for the proportion of soil particle size fractions.
3. Determine bulk density, moisture content, and water holding capacity of garden soil and compare it with other soil types

4. Estimate variations in pH, alkalinity, acidity, and salinity of the given soil sample. Establish the relationship between soil quality and crop productivity.
5. Evaluate given soils samples for soil organic matter contents and comment on their productivity
6. Calculate permeability of soil samples and comment on its impact on plant growth
7. Separate minerals using the selective dissolution method
8. Estimate $\text{PO}_4\text{-P}$ of soils using ammonium molybdate reactions by spectrophotometric analysis
9. Estimate $\text{SO}_4\text{-S}$ contents of soils by titrating with the barium chloride solution
10. Extract, investigate and interpret soil health data (micronutrient status, macronutrient status, and pH) for Northern, Western, and North-Eastern states of India. For the selected states, discuss the various soil types, agriculture practices, cropping patterns, crop production, conservation, and management strategies.
11. Extract, investigate and interpret the available datasets on soil maps, soil databases, and land degradation maps for India and draw suitable inferences. Conduct a perception-based study on the importance of soils and various impacts of soil and land degradation through an online survey.
12. Assessment of fertilizer management and integrated nutrient management practices for selected crops in India.

Essential/recommended readings

- Brady, N.C. & Well, R.R. 2007. *The Nature and Properties of Soils* (13th edition), Pearson Education Inc.
- Hazelton, P. and Murphy, B., 2021. *Understanding Soils in Urban Environments*. CSIRO publishing.
- Johnson, D.L. 2006. *Land Degradation* (2nd edition). Rowman & Littlefield Publishers.
- Kutz, M., 2018. *Handbook of Environmental Degradation of Materials*. William Andrew.
- Mir, B.A., 2021. *Manual of Geotechnical Laboratory Soil Testing*. CRC Press.
- Pansu, M. and Gautheyrou, J., 2007. *Handbook of Soil Analysis: Mineralogical, Organic and Inorganic Methods*. Springer Science & Business Media.
- Peterson, G. D., Cumming, G. S. & Carpenter, S. R. 2003. Scenario planning: a tool for conservation in an uncertain world. *Conservation Biology* 17: 358-366.

Suggested readings

- Fahad, S., Sonmez, O., Saud, S., Wang, D., Wu, C., Adnan, M. and Turan, V. eds., 2021. *Sustainable Soil and Land Management and Climate Change*. CRC Press.
- Jones, J.B., 2001. *Laboratory Guide for Conducting Soil Tests and Plant Analysis*. CRC press.
- Loconto, P.R., 2022. *Laboratory Experiments in Trace Environmental Quantitative Analysis*. CRC Press.
- Marsh, W. M. & Dozier, J. 1983. *Landscape Planning: Environmental Applications*. John Wiley and Sons.
- Patnaik, P., 2017. *Handbook of Environmental Analysis: Chemical Pollutants in Air, Water, Soil, and Solid Wastes*. CRC Press.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 6 (DSC-EVS-6): ECOLOGY AND ECOSYSTEMS**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-------------------------------|----------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| ECOLOGY AND ECOSYSTEMS | 4 | 2 | 0 | 2 | Class XII pass | NIL |

Learning objectives

The Learning Objectives of this course are as follows:

- Develop an understanding of ecosystems and their structural and functional aspects
- Reveal interconnectedness and interdependentness among all the biotic and abiotic components of the environment
- Gain insights into the dynamic nature of the ecological processes in maintaining equilibrium in nature.

Learning outcomes

After this course, students will be able to

- Acquire skills in ecological census techniques
- Analyze the status of biodiversity and ecosystem structure
- Develop methods to assess the changes in ecosystems with time and space
- Correlate effects of anthropogenic factors on ecosystem stability
- Relate and interpret the connections between environmental factors and ecosystem changes
- Use ecological data to predict the impact of a given factor on ecosystem and biodiversity

SYLLABUS OF DSC-6

Theory (02 Credits: 30 lectures)

UNIT – I Introduction (3 Hours)

Basic concepts and definitions: ecology, landscape, habitat, ecozones, biosphere, ecosystems, ecosystem stability, resistance and resilience; autecology; synecology; major terrestrial biomes.

UNIT – II Ecology of individuals (5 Hours)

Ecological amplitude; Liebig's Law of the Minimum; Shelford's Law of Tolerance; phenotypic plasticity; ecotypes; ecoclines; acclimation; ecological niche; types of niches: Eltonian niche, Hutchinsonian niche, fundamental niche, realized niche; niche breadth; niche partitioning; niche differentiation; thermoregulation; strategies of adaptation in plants and animals.

UNIT – III Ecology of populations (5 Hours)

Concept of population and meta-population; r- and K-selection; characteristics of population: density, dispersion, natality, mortality, life tables, survivorship curves, age structure; population growth: geometric, exponential, logistic, density-dependent; limits to population growth; deterministic and stochastic models of population dynamics; ruderal, competitive and stress-tolerance strategies.

UNIT – IV Ecology of communities (5 Hours)

Discrete versus continuum community view; community structure and organization: physiognomy, sociability, species associations, periodicity, biomass, stability, keystone species, ecotone and edge effect; species interactions: mutualism, symbiotic relationships, commensalism, amensalism, protooperation, predation, competition, parasitism, mimicry, herbivory; ecological succession: primary and secondary successions, models and types of successions, climax community concepts, examples of succession.

UNIT – V Ecosystem ecology (5 Hours)

Types of ecosystem: forest, grassland, lentic, lotic, estuarine, marine, desert, wetlands; ecosystem structure and function; abiotic and biotic components of ecosystem; ecosystem boundary; ecosystem function; ecosystem metabolism; primary production and models of energy flow; secondary production and trophic efficiency; ecosystem connections: food chain, food web; detritus pathway of energy flow and decomposition processes; ecological efficiencies; ecological pyramids: pyramids of number, biomass, and energy.

UNIT – VI Biogeochemical cycles and nutrient cycling (4 Hours)

Carbon cycle; nitrogen cycle; phosphorus cycle; sulphur cycle; hydrological cycle; nutrient cycle models; ecosystem input of nutrients; biotic accumulation; ecosystem losses; nutrient supply and uptake; role of mycorrhizae; decomposition and nutrient release; nutrient use efficiency; nutrient budget; nutrient conservation strategies.

UNIT – VII Biological invasions (3 Hours)

Concept of exotics and invasives; natural spread versus man-induced invasions; characteristics of invaders; stages of invasion; mechanisms of invasions; invasive pathways; impacts of invasion on ecosystem and communities; invasive ecogenomics – role of polyploidy and genome size in determining invasiveness; economic costs of biological invasions.

Practicals/Hands-on Exercises – based on theory (02 Credits: 60 hours)

1. Using and choosing quadrat types for vegetation analyses
2. Carry out vegetation analysis using line-transect techniques
3. Estimate the populations of aquatic beetles and bugs in ponds by the mark-capture method
4. Conduct bird surveys in your college/nearby garden using the point transect method
5. Determine the variations in abundance of micro-, meso-, and macrofauna in soils of different land use
6. Estimate the diversity of species within a community or habitat and comment

- on alpha diversity
7. Analyze the rate and extent of change in species along a gradient from one habitat to others and comment on beta diversity
 8. Considering the analyses of practicals 6 and 7, estimate the gamma diversity and comment.
 9. Prepare and interpret the species accumulation curve for the total species richness of an area
 - 10-13 Compare and classify communities for (a) similarity and differences, (b) influential environmental variables, (c) interspecific association

Essential/recommended readings

- Gurevitch, J., Scheiner, S. M., & Fox, G. A. 2020. *The Ecology of Plants*. 3rd Ed. Sinauer associates incorporated.
- Henderson, P.A., 2009. *Practical Methods in Ecology*. John Wiley & Sons.
- Jorgensen, S.E. ed., 2009. *Ecosystem Ecology*. Academic press.
- Morin, P.J., 2009. *Community Ecology*. John Wiley & Sons.
- Odum, E.P. 1971. *Fundamentals of Ecology*. W.B. Saunders.
- Rockwood, L.L., 2015. *Introduction to Population Ecology*. John Wiley & Sons.
- Sutherland, W.J. ed., 2006. *Ecological Census Techniques: A Handbook*. Cambridge university press.

Suggested readings

- Groom. B. & Jenkins. M. 2000. *Global Biodiversity: Earth's Living Resources in the 21st Century*. World Conservation Press, Cambridge, UK.
- Loreau, M. & Inchausti, P. 2002. *Biodiversity and Ecosystem Functioning: Synthesis and Perspectives*. Oxford University Press, Oxford, UK.
- Pastor, J., 2008. *Mathematical Ecology of Populations and Ecosystems*. John Wiley & Sons.
- Pimentel, D. (Ed.). 2011. *Biological invasions: Economic and Environmental Costs of Alien Plant, Animal, and Microbe Species*. CRC Press.
- Ranta, E., Lundberg, P. and Kaitala, V., 2005. *Ecology of Populations*. Cambridge University Press.
- Wilson, E. O. 1985. The biological diversity crisis. *BioScience* **35**: 700-706.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-EVS-05): CIRCULAR ECONOMY AND ENVIRONMENTAL SUSTAINABILITY

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|----------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| CIRCULAR ECONOMY AND ENVIRONMENTAL SUSTAINABILITY | 4 | 2 | 0 | 2 | Class XII pass | NIL |

Learning objectives

The Learning Objectives of this course are as follows:

- Critically evaluate five mega trends involving climate, development, ecology, economy, and technology and their linkages with energy and resources
- Inculcate principles and methods of circular economy and design resource-efficient, low carbon paradigm.
- Analyze business models/institutes/communities and associated processes and services and develop recommendations for integrating principles of circular economy
- Adopt routes of circular economy in personal, family, community, and institutional settings.

Learning outcomes

After the course, the students will be

- Equipped with tools and techniques of circular economy to develop a sustainable institute or community
- Acting as a consultant to industries and international organizations aiming for a circular economy
- Serving as a catalyst in evolving an ecoliterate society and industry and promoting sustainable policies

SYLLABUS OF GE-1

Theory (02 Credits: 30 lectures)

UNIT – I Circular economy (3 Hours)

Concept and definitions; Closed loop ecosystems; Systems thinking; Benefits to environment, economy and society (03 lecture)

UNIT – II Principles of circular economy (4 Hours)

Sustainable procurement; Ecodesign; Industrial and territorial ecology; Economics of functionality; Responsible consumption; Extending the duration of use; Recycling (04 lecture)

UNIT – III Steps for transition towards a circular economy (7 Hours)

Large-scale transition to non-polluting sources of energy; Durable products requiring less materials and energy; Incentivization of recycling, re-use, and repair; Replacement of hazardous materials with safer alternatives (07 lecture)

UNIT – IV Circular economy implementation (7 Hours)

Micro-level: Firm-level engineering and managerial level; Meso-level: Industrial ecology, Industrial symbiosis, Eco-clusters, Eco-industrial parks; and Macro level: General policies, Plans, Green and sustainable entrepreneurship. (07 lecture)

UNIT –V Challenges in implementing circular economy (7 Hours)

Achievability and desirability; Disrupting consumer's convenience; Local regulations versus the circular economy concept; Lack of infrastructure for waste treatment; Lack of recycling technology; Poor business model plan (07 lecture)

UNIT –VI Case studies from India and other parts of the world (2 Hours)

Practicals/Hands-on Exercises – based on theory (60 hours)

1. Evaluate the status of your institute with respect to efforts on circular economy using qualitative and quantitative surveys
2. Survey your institute and depict the journey of waste in your institute highlighting the factors/actors that are barrier to and facilitator of complete waste recycling
3. Collect spatial and temporal data on types of wastes being generated and identify the recycling hotspots and the gap in adopting circular economy principles
4. Based on activities 1 – 3, develop a consolidated waste recycling plan highlighting targets for Institute and each Department
5. Recycle and reuse the waste clothes produced at home and make a presentation in the class to increase their lifecycle and estimate its impact on ecological footprint of the family/institute
6. Coordinate with different groups working on waste recycling focusing on different types of wastes segregated at home/institute, for example, plastics/ glass/furniture/ metal/cans/paper waste and present as group activity
7. Visit an industrial area to analyse the status of circular economy concepts being practiced and give recommendations to improve the industrial sustainability (submit the report)
8. Conduction workshop in the Institute to educate students of other courses for converting wastes into useful products
9. Run a repair café where students and staff bring their broken stuff and get it repaired with the help of experts available at the Institute
10. Conduct a swap shop and swap party where people bring their old clothes for exchange
11. Estimate the impact of activities 8–10 reduction in ecological footprints
12. Conduct a drive to collect e-waste from the institute and the neighbourhood localities and donate it to the recycling facilities and estimate its impact on environment.
13. Based on the activities 1–12, plan and conduct awareness camps in the neighbourhood to educate and motivate people about importance of reuse and recycling and empower them with recycling methods

Essential/recommended readings

- Charter, M. ed., 2018. *Designing for the Circular Economy*. Routledge, London, UK.
- Hawken, P., Lovins, A.B. and Lovins, L.H., 2013. *Natural Capitalism: The Next Industrial Revolution*. Routledge.
- Lacy, P. and Rutqvist, J., 2015. *Waste to Wealth: The Circular Economy Advantage*. London: Palgrave Macmillan.
- Mavropoulos, A. and Nilsen, A.W., 2020. *Industry 4.0 and Circular Economy: Towards a Wasteless Future or A Wasteful Planet?* John Wiley & Sons.
- Stahel, W.R. and MacArthur, E., 2019. *The Circular Economy: A User's Guide*. Routledge, NY, USA.

Suggested readings

- Crocker, R., Saint, C., Chen, G. and Tong, Y. eds., 2018. *Unmaking Waste in Production and Consumption: Towards the Circular Economy* (pp. 1-353). Bingley, UK: Emerald Publishing Limited.
- Delchet-Cochet, K. ed., 2020. *Circular Economy: From Waste Reduction to Value Creation*. John Wiley & Sons.
- Frodermann, L., 2018. *Exploratory Study on Circular Economy Approaches*. Springer, Fachmedien Wiesbaden.
- Ghosh, S.K., Samanta, S., Hirani, H. and da Silva, C.R.V. eds., 2022. *Effective Waste Management and Circular Economy: Legislative Framework and Strategies*. CRC Press.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Credit distribution, Eligibility and Pre-requisites of the Course

GENERIC ELECTIVES (GE-EVS-6): WETLANDS FOR INDUSTRIES AND ENVIRONMENT

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|----------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| WETLANDS FOR INDUSTRIES AND ENVIRONMENT | 4 | 2 | 0 | 2 | Class XII pass | NIL |

Learning objectives

The Learning Objectives of this course are as follows:

- Delineate, and classify the target wetland
- Identify common wetland plants and indicators of wetlands
- Assess landscape for wetland management and conservation
- Evolve a wetland construction and restoration plan
- Suggest appropriate changes for effective wetland regulation law and policy

Learning outcomes

After successful completion of this course, students will be able to:

- Apply basic principles of wastewater treatment for environmental and industrial applications
- Develop plans for monitoring wetland health and designing a constructed wetland
- Assess the feasibility of constructed wetlands for wastewater treatment
- Operate and maintain wetlands in nature and industries

SYLLABUS OF GE-EVS-6

Theory (02 Credits: 30 lectures)

UNIT – I Ecology and socio-economy of wetlands (11 Hours)

Wetland types and functions; Ramsar Convention, Vegetation type and dynamics; Soil types; Geology and geomorphology; Hydrological regimes: Water quality and balance, Sedimentation; Indicators; Biodiversity and its significance; Ecological and economic benefits: Provisioning, Regulating, Cultural and Supporting services, Socio-economic and cultural diversity in human society living in and around wetlands; Income and employment generation by wetlands; Community resource use and management practices. (11 lectures)

UNIT – II Wetlands and water treatments (8 Hours)

Principles and efficacy of natural wetlands; Economics of treatment; Case studies from India and other countries; Types of constructed wetlands and their principles; Potential of constructed wetlands for treating different types of wastewaters (agriculture, domestic,

industry, municipal, runoff, and sludge); Operation and maintenance; Case studies from India and other countries (8 lectures)

UNIT – III Wetland management (11 Hours)

Delineation and mapping; Features and associated factors; Monitoring ecosystem health; Major threats; Setting up goals and objectives; Institutional arrangements, Wetlands ecosystem services maps; Ecosystem services trade-offs; Landscape-scale Management; Interventions to sustain biodiversity and ecosystem services; Mobilizing community participation and generating finance; Cross-sectoral integration; Integration of wetland conservation in development plans, acts, and rules; Adaptive management. (11 lectures)

Practicals/Hands-on Exercises – based on theory (02 Credits: 60 hours)

1. Identify a potential area for wetland construction, propose its purpose and goal, and develop the construction plan giving details of location, type, current land use, biodiversity, and hydrologic regime
1. Prepare water budgets and hydrographs of the selected area based on the data on water inputs and outputs collected from concerned institutes
2. Field surveys and analyze vegetation characteristics of a pristine wetland present in the nearby location of the study site
3. Analyze adaptive strategies of selected native plants to hydrologic regime suitable for wetland construction and develop planting strategies of species assemblage
4. Analyze soil type and determine its physico-chemical properties (pH, TDS, EC, CEC, Redox potential, etc.)
5. Evolve soil amendment method to improve texture, percolation, and nutrient composition. suitable for the hydrogeomorphic model and selected plant species
6. Surveying wetlands to identify suitable indicators for mapping and delineating wetlands zone of influence and evaluate anthropogenic activities as major threats to wetlands
7. Develop wetlands ecosystem services (ES) potential maps and evaluate ES trade-offs
8. Analyze different models for wetland construction and, based on the nature of the water regime and basic methods of wetland construction, recommend the hydrogeomorphic model suitable for the selected landscape

Essential/recommended readings

- Aber, J.S., Pavri, F. and Aber, S., 2012. *Wetland Environments: A Global Perspective*. John Wiley & Sons.
- Keddy, P.A., 2010. *Wetland Ecology: Principles and Conservation*. Cambridge University Press.
- Shuqing, An., and Jos, T.A. Verhoeven (Eds.), 2019. *Wetlands: Ecosystem Services, Restoration and Wise Use Series: Ecological Studies*, Volume 238, Springer, Cham.
- Stefanakis, A.I. ed., 2018. *Constructed Wetlands for Industrial Wastewater Treatment*, Wiley, Blackwell.
- Tiner, R.W., 2016. *Wetland Indicators: A Guide to Wetland Formation, Identification, Delineation, Classification, and Mapping*. CRC Press.

Suggested readings

- Austin, G. and Yu, K., 2016. *Constructed Wetlands and Sustainable Development*. Routledge.
- Lopez, R.D., Lyon, J.G., Lyon, L.K. and Lopez, D.K., 2013. *Wetland Landscape Characterization: Practical Tools, Methods, and Approaches for Landscape Ecology*. CRC Press.
- Windham-Myers, L., Crooks, S. and Troxler, T.G. eds., 2018. *A Blue Carbon Primer: The State of Coastal Wetland Carbon Science, Practice and Policy*. CRC Press.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-EVS-7): CORPORATE, SOCIAL, AND ENVIRONMENTAL RESPONSIBILITIES FOR CONSERVATION AND SUSTAINABLE DEVELOPMENT

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|----------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| CORPORATE, SOCIAL, AND ENVIRONMENTAL RESPONSIBILITIES FOR CONSERVATION AND SUSTAINABLE DEVELOPMENT | 4 | 2 | 0 | 2 | Class XII pass | NIL |

Learning objectives

The Learning Objectives of this course are as follows:

- Inculcate interdependent and interrelated theories of corporate branding, environmental sustainability, and social equity
- Understand the working and driving forces of CSR and its significance as a stepping stone to Sustainable Business Models
- Gain insights into CSR as a tool to ensure social justice and adopt environmental wisdom from industries
- Empower with emerging frameworks and practices in CSR for environmental sustainability and improve quality of life

Learning outcomes

After the course, students will be able to:

- Explain the concept of CSR from an environmental sustainability perspective and its significance in next-generation marketing strategies
- Apply concepts of CSR to develop strategies for responsible marketing, business success, and environmental protection.
- Develop systems thinking and evolve as a responsible consumer
- Decipher linkages between concepts of circular economy, sharing economy, and carbon/ecological footprints, and identify opportunities and challenges to specific businesses and target consumers.
- Gain insights into five dimensions of sustainability performance: economic, environmental, governance, social and ethical
- Practice sustainability management, implement cleaner technologies, and argue in favour of environmental protection.

SYLLABUS OF GE-EVS-7

Theory (02 Credits: 30 lectures)

UNIT – I Sustainable Development (8 Hours)

Definitions, goals and frameworks; Sustainability: Definition and concept, Bottom of the pyramid and fairtrade; Evolution of concepts, Socio-ethical and environmental aspects, Benefits in strategic planning; Associated world's leaders and corporations, Financial, social and reputational benefits, Circular and share economy (8 lectures)

UNIT – II Corporate social responsibility (CSR) (6 Hours)

CSR: Definition and concept, Philosophy and practices of CSR; Measuring CSR; Impact of CSR on rural livelihoods, natural resources management, biodiversity conservation; Carbon footprint; Cleaner technologies; Emerging CSR policies in India

UNIT – III CSR and Sustainability (9 Hours)

Why and when to apply CSR activities, Competitiveness vs Ethical, Green markets and budget, Bottlenecks of being sustainable, Public-private partnerships for socio-ecological entrepreneurship, Vocal for local embedding sustainability; Business strategies for sustainable individuals, firms, and industries, Power-Inequality-Environment-CSR nexus, Managing, Monitoring, and Reporting CSR, Beyond framing CSR as strategic, political or utopian (9 lectures)

UNIT – IV Case studies (7 Hours)

CSR applications for improving livelihoods, enhancing soil health and crop productivity in stress environment, adaptation to climate change, and diversification of crop patterns improving rural wastewater management (7 lectures)

Practicals/Hands-on Exercises – based on theory (02 Credits: 60 hours)

1. Analyze variations in CSR efforts in saving the environment by countries differing in biodiversity and ecosystem diversity
2. Critically analyze OECD Guidelines for Multinational Enterprises on corporate responsibility
3. Select a company/business organization and, based on its activities and products, identify the environmental issues that need to be addressed for societal need
4. Evaluate diverse environmental issues based on their impact on society and organizational brand value and develop its vision document and a CSR plan for environmental conservation
5. Determine priorities and evolve a code of conduct document for the selected company to maximize its CSR for environmental issues
6. Based on the activities of the target business organization, develop an action plan and policies to suit the international guidelines and standards of CSR for environmental conservation

7. Identify the constraints to implement the guidelines and standards set based on dialogue with different stakeholders and surveying the local circumstances
8. Analyze the variations in guidelines and standards to meet the CSR in countries differing in biodiversity and cultural values
9. Identify the environmental indicators to formulate a monitoring and reporting system for CSR success
10. Evolve the appropriate communication style for different internal and external stakeholders
11. Field surveys and lab-based assays for monitoring the targeted ecosystem, biodiversity, environmental compartment, and socio-ecological systems for the impact of CSR

Essential/recommended readings

- Bachnik, K., Kaźmierczak, M., Rojek-Nowosielska, M., Stefańska, M. and Szumniak-Samolej, J. (eds.), 2022. *Corporate Social Responsibility and Sustainability: From Values to Impact*. Routledge.
- Camilleri, M.A., 2017. *Corporate Sustainability, Social Responsibility and Environmental Management*. Cham, Switzerland: Springer International Publishing.
- Geoffrey H., 2010. *When Principles Pay: Corporate Social Responsibility and the Bottom Line*, Columbia University Press.
- McKenna, K., 2015. *Corporate Social Responsibility and Natural Resource Conflict*. Routledge.

Suggested readings

- Roberts, L., Georgiou, N. and Hassan, A.M., 2022. Investigating biodiversity and circular economy disclosure practices: Insights from global firms. *Corporate Social Responsibility and Environmental Management*. DOI: 10.1002/csr.2402
- Ringham, K., 2017. *CSR and Sustainability: From the Margins to the Mainstream: A Textbook*, Routledge
- Rendtorff, J.D., 2019. *Philosophy of Management and Sustainability: Rethinking Business Ethics and Social Responsibility in Sustainable development*. Emerald Group Publishing.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-EVS-8): E-WASTES: LEGISLATION, TRADE AND MANAGEMENT

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|----------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| E-WASTES: LEGISLATION, TRADE AND MANAGEMENT | 4 | 2 | 0 | 2 | Class XII pass | NIL |

Learning objectives

The Learning Objectives of this course are as follows:

- Define and explain e-waste and its category
- Learn effective mechanisms to regulate the generation, collection, storage, transport, import, and export,
- Empower with methods of recycling, treatment, and disposal of e-waste
- Current legislative rules for managing e-waste in the environment

Learning outcomes:

After the course, students will be able to

- Apply various concepts for e-waste management hierarchy with a holistic understanding of the environmental impacts of e-waste
- Decipher the roles of the various national and internal acts and laws applicable for e-waste management
- Evolve plans for handling e-waste to comply with its management proposed under national and global legislation
- Develop a holistic understanding of environmental impacts of e-waste, application of

SYLLABUS OF GE-EVS-8

Theory (02 Credits: 30 lectures)

UNIT – I E-waste Composition, Generation and Management (8 Hours)

Definition, Composition and generation, Global and national perspective, Co-pollutants, Hazardous properties, Effects on human health and environment, Domestic e-waste disposal, E-waste Management: Basic principles, Components, Resource recovery potential, Technologies for recovery of resources, Steps in recycling and recovery of materials-mechanical processing, Occupational and environmental health effects (8 Lectures)

UNIT – II Global trade of E-waste (7 Hours)

Factors in global waste trade economy, Waste trading and electronic recycling, Free trade agreements as a means of waste trading. Import of hazardous e-waste in India; India's stand on

liberalizing import rules, E-waste economy in the organized and unorganized sector, Production and recycling of e-wastes in Indian metro cities.

UNIT – III Control measures (7 Hours)

Need for stringent health safeguards and environmental protection laws in India, Extended Producers Responsibility (EPR), Import of e-waste permissions, Producer-Public-Government cooperation, Administrative Controls & Engineering controls, monitoring of compliance of Rules, Effective regulatory mechanism strengthened by manpower and technical expertise, Reduction of waste at source.

UNIT – IV Relevant legislation (8 Hours)

Hazardous Waste Rules, 2008, E-waste (Management and Handling) Rules, 2011; and E-Waste (Management) Rules, 2016 - Salient Features and its likely implication. Government assistance for TSDFs. The international legislation: The Basel Convention; The Bamako Convention. The Rotterdam Convention. Waste Electrical and Electronic Equipment (WEEE) Directive in the European Union, Restrictions of Hazardous Substances (RoHS) Directive. (8 Lectures)

Practicals/Hands-on Exercises – based on theory (02 Credits: 60 hours)

1. Prepare inventory and estimate the magnitude of electrical and electronic waste from the home, college, or the selected site (hospitals/company/manufacturing facilities) (example, air conditioners, heaters, microwaves, batteries, digital cameras, calculators, circuit boards, monitors, VCRs/DVD players, telephone equipment, etc.)
2. Categorize e-waste into different types as per international and national guidelines
3. Prepare a list of certified electronics recyclers in your city and transport e-waste to it, and have an interactive session to learn from the processes being followed.
4. Find out the composition of e-waste and segregate it from the given materials. Recommend the internationally acceptable shredding processes for each type of e-waste.
5. Prepare a poster showing salient features of the e-waste management act of India
6. Sort electronics and prepare a list of valuables that can be extracted from electronics, such as fluorescent light and toner cartridges (metals, plastics, glass, compounds, and other elements). Identify and remove e-waste that may carry hazardous materials (like cathode ray tubes) before sending the objects for recycling.
7. Visit a nearby e-waste handling facility and learn about the dismantling of e-waste and the handling process
8. Discuss with students in groups the plausible ways and implementation of e-waste reduction at the source and how regulatory mechanisms can be utilized in the management of e-waste in educational institutions.
9. Evaluate the status of e-waste handling at your institution. Suggest potential solutions as per the existing norms of E-Waste (Management) Rules, 2016 and beyond.
10. Decipher the methods of dust extractions, magnetic and water separation, purification, and preparation for sale. Identify the material that can be repurposed.
11. Study the evolutionary history of e-waste management rules and their implementation- Hazardous Waste Rules, 2008; E-waste (Management and Handling) Rules, 2011; and E-Waste (Management) Rules, 2016
12. Compare and analyze international laws on e-waste management- the international legislations: The Basel Convention; The Bamako Convention; The Rotterdam

- Convention; Waste Electrical and Electronic Equipment (WEEE) Directive in the European Union; Restrictions of Hazardous Substances (RoHS) Directive
13. Develop an understanding and itinerary of the process for procuring e-waste import permissions and inventory of the e-waste disposal mechanisms.

Essential/recommended readings

- Hester, R.E. and Harrison, R.M., 2009. Electronic Waste Management: Design. Analysis and Application. Royal Society of Chemistry Publishing. Cambridge, UK.
- Fowler, B.A., 2017. Electronic Waste: Toxicology and Public Health Issues. Academic Press.
- Eduljee, G.H. and Harrison, R.M. eds., 2019. Electronic Waste Management. Royal Society of Chemistry.

Suggested readings

- Janyasuthiwong, S., 2020. Metal Removal and Recovery from Mining Wastewater and E-waste Leachate. CRC Press.
- Gaidajis, G., Angelakoglou, K. and Aktsoglou, D., 2010. E-waste: environmental problems and current management. Journal of Engineering Science and Technology Review, 3(1), pp.193-199.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DEPARTMENT OF HOME SCIENCE

Category I

B.Sc. (Hons.) Home Science

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE

DISCIPLINE SPECIFIC CORE COURSE – 4 (DSC HS 204): FASHION STUDIES

COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------------|----------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| FASHION STUDIES DSC HS 204 | 4 | 3 | 0 | 1 | 12th Pass | NIL |

Learning Objectives

1. To understand the basics of fashion and the fashion industry.
2. To impart knowledge about functions and theories of clothing.
3. To develop sensitivity towards selection of garments and garment design.

Learning Outcomes

The student will be able to:

1. Identify the role and functions of clothing and recognize the factors affecting the selection and evaluation of clothing.
2. Explain the concept of fashion, its terminology, sources and factors affecting it.
3. Being aware of global fashion centres.
4. Apply the knowledge of elements and principles in design interpretation.

SYLLABUS OF DSC-4

Unit I: Clothes and us

(12 Hours)

This unit introduces the student to key concepts of how and why people started to wear clothes, and what factors are at play in the current times for selecting clothing for the individual.

- Clothing functions and theories of origin
- Clothing terminology
- Individuality and conformity, conspicuous consumption and emulation
- Body shapes
- Selection and Evaluation of quality of ready-made garments
- Selection of clothes for self

**Unit II: Understanding fashion
Hours)**

(12

This unit will deal with the basic concepts in understanding fashion, from key terms to the why and how of fashion and more contemporary knowledge of fast and slow fashions.

- Fashion cycle
- Terminology
- Theories of fashion adoption
- Sources of fashion research
- Factors favoring and retarding fashion
- Role of a Designer
- Fast Fashion: Characteristics of Fast Fashion, Fast Fashion and Consumer
- Slow Fashion: Characteristics, Slow Fashion as a process, importance of changing from fast to slow fashion

Unit III: Design in Garments**(09 Hours)**

This unit orients the student from a design perspective in garments; the various elements that comprise a garment and the various principles that govern and guide in developing a good design.

- Structural and Decorative Design
- Elements of Design
- Principles of Design

Unit IV: Fashion**(12 Hours)**

This unit will apprise the student on the forecasting process for fashions, functioning of the industry and various garment categories for production.

- Structure and Functioning of Fashion Industry
- Forecasting: Fashion seasons
- Garment Categories
- Fashion Centers
- Careers in Fashion

ESSENTIAL READINGS

- Brown, Patty, Rice J., 1998, *Ready to Wear Apparel Analysis*. Prentice Hall.
- Marshall S G, Jackson H O, Stanley MS, Kefgen M & Specht T, 2009, *Individuality in Clothing & Personal Appearance*, 6th Edition, Pearson Education, USA.
- Tate S.L., Edwards M.S., 1982, *The Complete Book of Fashion Design*, Harper and Row Publications, New York.
- Fringes G.S., 1994, *Fashion From Concept to Consumer*, 6th edition, Prentice Hall, New Jersey.

SUGGESTED READINGS:

- R. Andrew, 2018, *Key Concepts for Fashion Industry*, Bloomsbury Publishing, India

PRACTICAL **(30 Hours)**

Unit I: Hand stitches (14 Hours)

This unit will impart hands-on skill for making small products using upcycling of used articles of clothing or home textiles and how value addition may be achieved in garments by using popular embroidery stitches.

- Prepare samples of –
 - Basic hand stitches for creating a seam and edge finishing.
 - Decorative Hand Stitches
- Develop an upcycled product

Unit II: Elements & Principles of Design (16 Hours)

This unit will train the students to identify the various elements of a design that a garment uses and the principles that are creating an aesthetic design. Eventually a student will be able to effectively use these elements and principles of design to create well designed garments.

- Create a collection of garments for analysis from print and visual media.
- Analyze the various elements that comprise the garments.
Identify the various principles of design used in the selected garments

Essential Readings

- Fringes G.S., 1994, *Fashion From Concept to Consumer*, 6th edition, Prentice Hall, New Jersey.
- Marshall S G, Jackson H O, Stanley MS, Kefgen M & Specht T, 2009, *Individuality in Clothing & Personal Appearance*, 6th Edition, Pearson Education, USA.

Suggested Readings:

- Reader's Digest (Eds.). 2002, *New Complete Guide to Sewing*, (Canada) Ltd. Montreal.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 5 (DSC HS 205): FUNDAMENTALS OF RESOURCE MANAGEMENT

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| FUNDAMENTALS OF RESOURCE MANAGEMENT DSC HS 205 | 4 | 3 | 0 | 1 | 12th Pass | NIL |

Learning Objectives

1. To enable students to understand the fundamentals of resource management in changing scenario and available resources, their uses and conservation.
2. To understand the processes of management in a scientific manner for the judicious use of resources.

Learning Outcomes

Students will be able to:

1. Comprehend the fundamentals of resource management in the changing scenario.
2. Familiarize with the available resources, their uses and conservation.
3. Utilize resources optimally in a prudent manner.
4. Understand the processes of management in a scientific manner for the use of resources.

THEORY

Unit I: Introduction to management

(12 Hours)

Unit Description: The focus of this unit would be on understanding the concept of management, scope and approaches of management in context to changing scenario.

Subtopics:

- Concept, nature, universality and scope of management
- Theories and Approaches to management.
- Ethics in management
- Motivation in management

UNIT II: Understanding resources**(09 Hours)**

Unit Description: This unit attempts to acquaint the students with the available resources, their uses and conservation approaches.

Subtopics:

- Meaning, classification and characteristics of resources.
- Resource conservation- maximizing use of resources, factors affecting utilization of resources.
- Family life cycle in context to resource use: Time, energy, money.

Unit III: Functions of management: An overview**(12 Hours)**

Unit Description: This unit will orient the students in understanding the functions and processes of management in a scientific manner for the optimization of resources.

- Decision Making: Concept, significance and steps involved in decision-making process.
- Planning: Nature and characteristics, classification of plans & steps in planning.
- Organizing: Concept, significance and steps involved in organizing process.
- Supervision: Types of supervision (directing & guiding), factors of effective supervision.
- Controlling: Types of control, steps in controlling, requirements of effective control.
- Evaluation: Types and steps of evaluation.

Unit IV: Management of time and energy resources**(12 Hours)**

This unit will familiarize students with effective management of time and energy resources and their functional use in day-to-day life.

- Time Management: Concept, tools of time management, types of time plans, steps in making a time plan.
- Energy Management: Concept, principles of body mechanics, types of fatigue.
- Work Simplification: Techniques, Classes of Change.

PRACTICAL -30 Hours**Unit I: Identification and Development of managerial competencies****(14 Hours)**

Activities:

- Micro Lab and Who am I
- SWOC analysis
 - Self
 - Case studies: Individuals
 - Case studies: Organizations
- Building Decision making abilities
- Team building management games
- Decision Making: Case Analysis

Unit II: Management of Time and Energy**(16 Hours)**

Activities:

- Time Management:
 - Evaluation of time plans through case analysis:
 - Case Study-1
 - Case Study-2
 - Analysis of time use pattern of self
 - Preparation and evaluation of time plans
- Work improvement using time and motion study techniques
 - pathway chart or travel chart / process chart - observe, record, and analyze an activity.
 - pathway chart or travel chart / process chart - observe, record, and analyze an activity with improvement.

Essential Readings

- Combe, C. (2014). *Introduction to management*. Oxford University Press.
- Drucker, P. F. (2007). *Management: Tasks, responsibilities, practices*. Transaction Pub, ISBN-13: 978-0750643894.
- Goel, S. Ed. (2016). *Management of resources for sustainable development*. New Delhi: Orient Blackswan Pvt. Ltd, ISBN: 9788125063490, 9788125063490.
- Griffin, R. W. (2013). *Management: Principles and practices (11th ed.)*. South-Western Cengage Learning, ISBN: 9788131530917, 8131530914.
- Hill, C. W., & Stevenane. (2006). *Principles of management (1st ed.)*. McGraw-Hill/Irwin. ISBN: 9780073530123.
- Koontz, H., & O' Donnel, C. (2005). *Management: A systems and contingency analysis of managerial functions*. New York: McGraw-Hill Book Company, ISBN-13: 978-0070853775.
- Moore, T. J. (2021). *Family resource management (4th ed.)*. ISBN-13: 978-1544370620.
- Rao, V.S.P. (2008). *Principles & practice of management*. Konark Publishers Pvt. Ltd, ISBN-13: 978-8122000283.

For Practicals

- Goel, S. Ed. (2016). *Management of resources for sustainable development*. New Delhi: Orient Blackswan Pvt. Ltd, ISBN: 9788125063490, 9788125063490.
- Arora, R., Magu, P., Singh, P., Meghna, Gupta, S. (2013). *Resource Management: An Introductory Manual*. R. Gangadharan of Elite Publishing House Pvt. Ltd., Daryaganj, ISBN No: 978-81-88-901-50-0.
- Drucker, P. F. (2007). *Management: Tasks, responsibilities, practices*. Transaction Pub, ISBN-13: 978-0750643894

Suggested Readings:

- Jyoti, A. (2009). *Principles of management*. Gennext Publication. ISBN-13: 9789380222127.
- Kreitner, R. (2009). *Management*. Canada: Houghton Mifflin Harcourt Publishing Company.
- Nickel, D. (2002). *Management in family living*, 4e (4th ed.), ISBN-13: 978-8123908519.
- Robbin, S.P. (2009). *Fundamentals of management*, 11th edition, Pearson Education.
- Steidl, R. & Bratton, E. (1968). *Work in the Home*. USA: John Wiley & Sons, Inc, ISBN-13: 9780471820857.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 6 (DSC HS 206): LIFE SCIENCE FOR HOME SCIENCE

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|------------------------|-----------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| LIFE SCIENCE FOR HOME SCIENCE DSC HS 206 | 4 | 2 | 0 | 2 | 12th Pass | NIL |

Learning Objectives

- To impart the basic knowledge of animal diversity, plant diversity and its significance for human life.
- To make students aware of the fundamental process of plant growth and its regulation.
- To enable students to learn about methods of sustainable agriculture, plant conservation and propagation.
- To make students aware of immunology, genetics and biotechnology.

Learning Outcomes

- The students would be able to identify and appreciate some common plant and animal diversity in their vicinity.
- The students would understand the fundamentals of genetics and its significance in human life.
- The students would gain hands-on experience and training on gardening and plant propagation techniques along with the artificial methods of vegetative propagation.
- The students would acquire the basic knowledge of biotechnology along with recent trends and its applications in agriculture, animal husbandry and human welfare and associated ethical and social issues.
- The students would acquire knowledge about various zoonotic diseases, pandemics and learn about its control and management.
- The students would understand the importance prenatal screening and natal health.

THEORY

Section A – Botany

Unit I: Introduction to Plant Kingdom

(08 Hours)

Plant kingdom, plant growth and regulation, Economically Important Plants

- Introduction to Plant Diversity
- Economic importance of Microbes (Industrial & Household Products, Sewage treatment, Biogas production, Biocontrol agents, Bio-fertilizers)
- Angiosperm plants: Morphology (Parts of plants with modifications and Life cycle)
- Plant Nutrition and Soil: Essential Elements and Functions, Nutrient cycles, Human Impact on nutrient cycles and effects of pollution
- Plant growth and Development- Regulation and control (Hormones)
- Enzymes: principles and biotechnological applications
- Introduction to Economically important plants: Food Crops, Fibre Crops, Medicinal Plants, Oil Crops, Timber Plants

Unit II: Propagation, Gardening and Conservation of Plants

(06 Hours)

Plant propagation methods, Sustainable Agriculture, Biotechnology in Agriculture

- Seed Propagation
- Vegetative Propagation: Cuttings – stem leaf and root, Layering, Grafting, Tissue Culture
- Gardening: Concept and Types with example of Kitchen Garden, Green Roofs, Maintenance of plants
- Sustainable Agriculture: Concept of Organic farming, IPM, Biopesticides, Climate smart agriculture, Seed bank, Urban Agriculture
- Concept of Sustainable development with Sustainability Indicators
- Role of Plants in Air Pollution Control
- Principles and Applications of biotechnology in agricultural crops

Section B – Zoology

Unit III: Animal Diversity and Human Needs

(08 Hours)

Animal diversity and its importance to humans

- Types, Structure and Function of Animal Cell and its components (Chromosomes and Nucleus)
- Animal diversity and its distribution
- Animals and their ecosystem services: role of animals in soil health, pollination, biological control of pests, food security
- Threatened species of animals and their conservation
- Zoonotic and Parasitic diseases- Life cycle, pathogenesis and control. (*Plasmodium*, *Giardia*, *Entamoeba*, *Taenia*, *Ascaris*, *Covid-19*, *malaria*, *tuberculosis*)
- Animals as economic resources: sericulture, apiculture, aquaponics (concept and applications)

Unit IV: Immunity, Genetics and Biotechnology

(08 Hours)

Basics of human immunity, Pandemics, genetic diseases, application of biotechnology, developmental biology

- Basics of Human Immunity: introduction to humoral and cell mediated immunity; Vaccination
- Introduction to Pandemics and its management
- Genetic diseases and importance of Genetic counselling
- Birth defects and its causes (genetic and environmental factors)
- Application of biotechnology: Stem cells, cloning and animal improvements

PRACTICAL – 60 Hours

SECTION A- BOTANY

1. Preparation of soil mixture, potting and re-potting
2. Raising of healthy seedlings in a nursery bed
3. Assessment of soil quality: determination of soil pH, test for nitrates, nitrites
4. Propagation of plants through stem cutting, air layering and underground layering
5. Propagation of plants by approach grafting and veneer grafting
6. Identification and classification of economically important Food crops, Medicinal plants
7. Identification and classification of economically important plants: Fibre crops, Timber plants and Oil crops
8. Identification, Care and maintenance of important plants in controlling air pollution
9. A visit to Home Garden/ Organic farm/ Tissue culture Lab
10. Demonstration of Urban Home Gardens/ Kitchen Garden / Nutrition Garden
11. Study of techniques of biotechnology through audio visual aids

SECTION B- ZOOLOGY

1. Study of cell Structure through temporary slides: Blood Cells
2. Study of cell Structure through temporary slides: Neurons
3. Study of cell cycle stages through permanent slides: Mitosis
4. Study of cell cycle stages through permanent slides: Meiosis
5. Identification of few common animals and birds in the human environment
6. Estimation of species richness and abundance of animal/ birds in the human environment using point count method
7. Estimation of species richness and abundance of animal/ birds in the human environment using transect method
8. Soil biomonitoring using Burlese-Tullgren method: concept and importance of micro and macrofauna in soil health
9. Detection of chromosomal abnormalities: concepts and interpretation of diagnostic tests: Karyotyping
10. Detection of chromosomal abnormalities: concepts and interpretation of diagnostic tests: Dual marker test
11. Visit to any one of the following: Aquaponic facility/organic farm/ bee farm
12. Case study of a zoonotic/ parasitic disease: COVID-19 pandemics/ bird flu

Essential Readings

- Jordan E. L. and Verma P. S., 2009. Invertebrate Zoology, S. Chand and Co. Ltd, New Delhi.
- Park K., 2016. Textbook of preventive and social medicine. Banarsidas Bhanot Publishers.
- Raven P. and Johnson G., 2010. Biology. Tata McGraw Hill Publication, New Delhi.
- Singh J. S, Singh S. P. and Gupta S. R., 2017. Ecology, Environment Science and Resource Conservation. S. Chand (G/L) & Company Ltd, India.
- Soni N. K. and Soni V., 2010. Fundamentals of Botany. Tata McGraw Hill Publication, New Delhi.

Suggested Readings

- Chadha K. L. 2012. Handbook of Horticulture. ICAR Publication, New Delhi.
 - Gopalaswamianger K.S. 1991. Complete gardening in India, Messers Nagaraj and Co., Madras.
 - Gupta R. 2015. Fundamentals of Zoology: Theory and Practice. Elite Publishing House Pvt. Ltd., New Delhi.
 - Hartman H.T and Kester D. 1986. Plant Propagation: Principles and Practices Prentice Hall of India Pvt. Ltd., New Delhi.
 - Kotpal R. L. 2000. Modern Textbook of Zoology, Rastogi Publications, Meerut.
 - Magurran, A. E. 1988. Ecological Diversity and Measurement. Croom Helm Limited, Australia.
 - Upadhyay R. 2017. Elements of Plant Science, Elite Publishing House, New Delhi.
- Vij, U. and Gupta, R. 2011. Applied Zoology Phoenix Publishing House, New Delhi

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category-II
B.Sc (Prog.) Home Science

DISCIPLINE SPECIFIC CORE COURSE – 1 (DSC HP 204) –: Lifespan Development I: Prenatal and Early Years

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Lifespan Development I: Prenatal and Early Years | 4 | 3 | 0 | 1 | 12 th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To acquire an understanding of lifespan development as a discipline
- To appreciate the role of heredity, context, family and community in Lifespan development
- To understand developmental progression across stages and domains of the lifespan

Learning outcomes

The Learning Outcomes of this course are as follows:

- The student will develop an understanding about the discipline of Lifespan development
- The student will appreciate principles of growth and development
- The student will understand the concept of stages and domains in lifespan development
- The student will become aware of optimal practices in child rearing and child stimulation

SYLLABUS OF DSC HP 204

Unit I: Understanding Lifespan Approaches and Perspectives – 09 Hours

The unit provides a foundational view on Life Span development.

Subtopics:

- Definitions, nature, scope and multidisciplinary nature of Lifespan Development
- Developmental stages and domains
- Principles of growth and development
- Optimizing development in early years

Unit II: Pregnancy, Birth and the Neonate – 12 Hours

The unit focuses on pregnancy and safe motherhood, understanding prenatal development and birthing techniques and the newborn.

Subtopics:

- Stages of prenatal development
- Influences on prenatal development and safe motherhood
- Birthing process and the high-risk newborns
- Newborn capacities and care

Unit III: Development during Infancy – 12 Hours

Understanding the period of infancy through the framework of developmental domains

Subtopics:

- Developmental Norms and Milestones
- Physical- motor development
- Sensory Perceptual development
- Cognitive development
- Language development
- Social development

Unit IV: Development during Preschool – 12 Hours

Understanding the domains of language, cognitive and socio-emotional development preschool period. Interlinkages between developmental domains for strong foundations.

Subtopics:

- Developmental Norms and Milestones during preschool
- Physical and motor development
- Language development
- Cognitive development
- Social and emotional development: Family, Play and Learning

PRACTICAL -30 Hours

- Introduction to research methods in Lifespan development
- Documentation of methods: Interview, Observation and Narrative
- Prepare interviews to explore cultural practices and conceptions related to pregnancy, infancy and early childhood
- Conduct early childhood observations using specimen description and checklist in *any two* domains of development
- Using audio and video resources to study prenatal development, infancy and early childhood
- Preparation of activities and learning aids for parents using locally available materials
- Mapping resources in children's ecology by community survey
- Psychological tests- Developmental assessment of Indian children, WPPSI

Essential Readings

- Berk, L. (2013). Child development. 9th ed. Boston: Pearson.
- Rice, F. P. (1998). Human Development: A Life-span Approach. New Jersey: Prentice Hall.
- Santrock, J. W. (2011). Life-span development. New York: McGraw-Hill.
- Singh, A. (Ed.) 2015. Foundations of Human Development. New Delhi: Tata McGraw-Hill.
- Snow, C. W., & McGaha, C. G. (2003). Infant development (3rd ed.). Upper Saddle River, NJ: Prentice Hall.

Suggested Readings

- Childhood in south Asia: A critical look at issues, policies and programmes. Conn.USA:Information Age.
- Hospital walls. In T.S. Saraswathi (Ed.). Culture, socialization and human development. New Delhi: Sage.
- Singhi, P. (1999). Child health & well-being: Psychological care within & beyond
- Sriram, R. (2004). Ensuring infant and maternal health in India. In J. Pattnaik (Ed.).
- Verma, P, Srivastava, D.N. and Singh, A. (1996). *Bal manovigyan and bal vikas*. Agra: Chapter 3: Indian women: Traditional and modern: pages 52-70.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Foundation of Food Science and Nutrition | 4 | 3 | 0 | 1 | 12 th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand functions of food and the relationship between food, nutrition and health.
- To describe the functions of various nutrients, their sources and clinical manifestations of excess/ deficiency of nutrients.
- To learn about various methods of cooking and to understand the selection, nutritional contribution of and effect of cooking on different food groups.
- To describe ways of reducing nutrient losses during cooking.
- To be able to prepare dishes using principles of food science.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Comprehend the relationship between food, nutrition and health.
- Understand the selection, nutritional contribution and changes during cooking of the commonly consumed foods.
- Understand the importance of various nutrients and their dietary sources.
- Develop understanding about the methods of preparing food with better nutrient retention and improving quality of diets.

SYLLABUS OF DSC HP 205**Unit I: Basic Concepts in Food and Nutrition -12 Hours**

Basic terminology used in the sciences of food and nutrition and understanding the relationship between what we eat and health.

Subtopics

- Basic terms used in study of food and nutrition
- Understanding relationship between food, nutrition and health

- Functions of food-Physiological, psychological and social

Unit II: Nutrients -12 Hours

Functions, dietary sources and clinical manifestations of deficiency/ excess of the nutrients

Subtopics

- Energy, carbohydrates, lipids and proteins
- Fat soluble vitamins
- Water soluble vitamins
- Minerals

Unit III: Food Groups – 12 Hours

Selection, nutritional contribution and changes during cooking of various food groups.

Subtopics

- Cereals and pulses
- Fruits and vegetables
- Milk & milk products
- Eggs
- Meat, poultry and fish
- Fats and oils

Unit IV: Methods of Cooking and Preventing Nutrient Losses- 09 Hours

Different methods of cooking and how nutrients can be retained

Subtopics

- Dry, moist, frying and microwave cooking
- Advantages, disadvantages and the effect of various methods of cooking on nutrients
- Minimize nutrient losses

Practical -30 Hours

- Weights and measures; preparing market order and table setting
 - Food preparation, understanding the principles involved, nutritional quality and portion size
- Cereals: Boiled rice, pulao, chapati, paratha-plain/stuffed, poori, pastas
 - Pulses: Whole, dehusked, pulse curry
 - Vegetables: Dry preparation, vegetable curry
 - Milk preparations: Kheer, porridge, custard
 - Egg preparations: Boiled, poached, fried, scrambled, omelettes, egg pudding
 - Soups: Plain and cream soups
 - Baked products: cakes, biscuits/cookies
 - Snacks and Breakfast Cereals: pakoras, cutlets, samosas, cheela, upma/poha, sandwiches
 - Salads: salads and salad dressings

Essential Readings

1. Chadha R and Mathur P (eds)(2015). Nutrition: A Lifecycle Approach. Hyderabad: Orient Blackswan.
2. Khanna K, Gupta S, Seth R, Mahna R, Rekhi T (2004). The Art and Science of Cooking: A Practical Manual, Revised Edition. New Delhi: Elite Publishing House Pvt Ltd.
3. Raina U, Kashyap S, Narula V, Thomas S, Suvira, Vir S, Chopra S (2010). Basic Food Preparation: A Complete Manual, Fourth Edition. Hyderabad: Orient Black Swan.
4. Rekhi T and Yadav H (2014). Fundamentals of Food and Nutrition. New Delhi: Elite Publishing House Pvt Ltd.
5. Srilakshmi B (2014). Food Science, 6th Edition. Delhi: New Age International Ltd.

Suggested Readings

1. Bamji MS, Krishnaswamy K, Brahman GNV (2016). Textbook of Human Nutrition, 4th edition. New Delhi: Oxford and IBH Publishing Co. Pvt. Ltd.
2. Byrd-Bredbenner C, Moe G, Beshgetoor D, Berning J. (2013). Wardlaw's Perspectives in Nutrition, International Edition, 9th edition, New York: McGraw- Hill.
3. Sethi P, Lakra P. Aahar Vigyan, Poshan evam Suraksha (Hindi); First Ed; 2015; Delhi: Elite Publishing House (P) Ltd.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course(if any) |
|-------------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|-------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Fundamentals of Communication | 4 | 3 | 0 | 1 | 12 th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To learn about the concept, nature, and scope of communication.
- To understand the process of communication with the help of theories, models, and elements of communication.
- To recognize and appreciate the role of Perception, Empathy, Persuasion, Culture and listening in communication.
- To be able to comprehend the various communication transactions and their role in day-to-day life with special reference to public communication.
- To understand the relationship between culture and communication and its applications in real life settings.

Learning outcomes

The Learning Outcomes of this course are as follows:

The students would be able to:

- Develop a clear understanding of the concepts of human communication.
- Comprehend the elements and models governing the process of effective communication.
- Gain understanding about the related concepts of communication such as Perception, Empathy, Persuasion and Listening
- Understand the various communication transactions as well as the qualities and skills required of an effective public speaker.
- Appreciate the role and application of factors for effective communication.

SYLLABUS OF DSC HP 206

Unit I: Communication: Core Concepts-12 Hours

The Unit explores the fundamentals of Human Communication tracing the history of communication from the olden times to the present times. It highlights the concept, nature, types, scope, and postulates of communication and discusses the functions performed through communication.

Subtopics:

- Historical background, concept, nature, functions, and scope of communication
- Types of Communication – Formal and informal communication; Verbal and Non-verbal communication; Digital and Non-digital communication
- Verbal communication- Principles, types, effective use of verbal messages for communication
- Non-verbal communication- functions, types, skills, channels of non-verbal communication, inter-relationship between culture and non-verbal skills
- Elements of communication - Source, Message, Channel, Receiver, Feedback, Context, Noise & Effects

Unit II: Communication Models and Theories- 09 Hours

The Unit emphasizes the models and theories of the communication process. The further delves on the importance of these models and theories for understanding the effectiveness of communication as a process.

Subtopics:

- Models of Communication: Types of models- Linear, Interaction and Transaction models, (Models by Aristotle, Harold Laswell, Shannon & Weaver, Charles Osgood, Wilbur Schramm, Helical model)
- Theories of Communication: Mass Society, Propaganda, Limited Effects, Individual Difference and Personal Influence

Unit III: Factors for Effective Communication – 12 Hours

The Unit delves with intricate concepts such as Empathy, Persuasion, Perception and Listening that are associated with communication. The unit also discusses the relationship between culture and communication.

- Factors for effective communication: Definitions, goals and principles of Empathy, Perception, and Persuasion
- Empathy: Concept and Theories
- Perception: Concept and Theories
- Listening in Human Communication-Listening process, significance of good listening, styles of listening, barriers to listening, culture and listening, listening theories
- Culture and communication- Relationship between culture and communication, signs, symbols and codes in communication

Unit IV: Communication Transactions and Learning – 12 Hours

The Unit III elucidates upon the various levels of communication transactions. This Unit in particular lays thrust on the Public communication and ‘need and importance’ of communication for learning. The unit also highlights the concept of communication for development.

Subtopics:

- Levels of communication transactions
- Public communication- Concept, types, techniques and skills in public speaking, qualities of an effective public speaker, overcoming speaker apprehension
- Communication, and Learning: Learning as Communication Process, Domains of Learning. Theories of learning
- Audio-Visual Aids in communication- definitions, functions, classification including Edgar Dale’s Cone of Experience
- Communication for Development- Concept and approaches

PRACTICAL – 30 Hours

- Exercises to understand visual communication: Elements of Art and Principles of Design
- Exercises to explore dimensions of non-verbal communication
- Hands on practice with different types of public speaking
- Exercises in effective listening skills
- Exercises on building empathy for effective communication
- Analysis and designing of IEC materials

ESSENTIAL READINGS

- Devito, J. (2012). *Human Communication*. New York: Harper & Row.
- Barker, L. (1990). *Communication*, New Jersey: Prentice Hall, Inc; 171.
- Anand, S. & Kumar, A. (2016). *Dynamics of Human Communication*. New Delhi: Orient Black Swan.
- Vivian, J. (1991). *The Media of Mass Communication*. Pearson College Div; 11th edition (19 March 2012).

SUGGESTED READINGS:

- Patri, V. R. and Patri, N. (2002). *Essentials of Communication*. Greenspan Publications
- Baran, S. (2014). *Mass Communication Theory*. Wadsworth Publishing.
- Stevenson, D. (2002). *Understanding Media Studies: Social Theory and Mass Communication*, Sage Publications.
- McQuail, D. (2000). *Mass Communication Theories*. London: Sage Publications.
- Zeuschner, R. (1997). *Communicating Today*. California State University, USA.

PRACTICAL WORK:

- Punhani & Aggarwal (2014). *Media for Effective Communication*. Elite Publishers, New Delhi.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BSC. (HONS.) FOOD TECHNOLOGY

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| PRINCIPLES OF FOOD PROCESSING | 4 | 3 | 0 | 1 | XII with PCM/PCB | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand freezer, dryer types and functioning
- To understand the material handling, separation processes and thermal processing

Learning outcomes

The Learning Outcomes of this course are as follows:

- Understand cold preservation, Freezer types and functioning
- Understand Dehydration, Dryer types and functioning
- Understand the material handling in food industry, conveyer types, separation processes by distillation, extraction, filtration
- Understand thermal processing and fundamentals of thermal process calculations

SYLLABUS OF DSC-04

Unit1: Cold Preservation and Freezers (12 Hours)

- Refrigeration and Freezing: requirements of refrigerated storage - controlled low temperature, air circulation and humidity, modified gas atmosphere. Changes in food during refrigerated and frozen storage, Refrigeration load, factors determining freezing rate: food composition and non-compositional.
- Freezing methods -direct and indirect, still air sharp freezer, blast freezer, fluidized freezer, plate freezer, spiral freezer and cryogenic freezing.

Unit2: Dehydration**(12 Hours)**

Changes in food during drying, drying methods and equipments air convection dryer, tray dryer, tunnel dryer, continuous belt dryer, fluidized bed dryer, spray dryer, drum dryer, vacuum dryer, freeze drying, foam mat drying.

Unit3: Thermal processing**(9 Hours)**

Principles of thermal processing, Thermal resistance of microorganisms, Thermal Death Time, Lethality concept, characterization of heat penetration data, Thermal process Calculations, Aseptic processing of food

Unit4: Material handling and Separation processes (12 Hours)

Elementary concept of material handling in food industry, equipment and functioning of belt conveyor, screw conveyor, bucket elevator and pneumatic conveyor.

Distillation principles and methods: steam, batch, continuous distillation with rectification and stripping.

Extraction : Hildebrandt, Bollman, SCF extraction Filtration : Plate and frame, pressure leaf, continuous rotary vacuum, batch and continuous filtration

Practical Exercises: 30 Hours

The learners are required to:

- Preservation of food by freezing
- Drying of food using Tray dryer/other dryers
- Preservation of food by canning (Fruit/Vegetable/meat)
- Cut-out analysis of canned food
- Osmotic dehydration
- Minimal Processing
- Perform distillation of any food sample/by product
- Processing of ready to eat frozen products
- Study of Thawing Characteristics of frozen food

Essential/recommended readings

- Potter, N.N. and Hotchkiss, J.H. (2007). Food Science 5th Ed. New York: Chapman & Hall
- Ramaswamy, H. and Marcott, M. (2006). Food Processing Principles and Applications. CRC Press.
- Rao, P.G. (2010). Fundamentals of Food Engineering. New Delhi: PHI Learning Pvt Ltd.
- Desrosier, N.W. and Desrosier, J.N. (1998). The Technology of Food Preservation. New Delhi: CBS Publication.
- Toledo, Romeo T. (2007). Fundamentals of Food Process Engineering. Aspen Publishers.

• **Note: Learners are advised to use the latest edition of readings.**

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DSC 05 : TECHNOLOGY OF FOOD PRESERVATION

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| TECHNOLOGY OF FOOD PRESERVATION | 4 | 3 | 0 | 1 | XII with PCM/PCB | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To learn science behind various preservation/processing technologies.
- Technological application of concepts on conventional Indian foods.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Understanding of the concept of different processing and preservation technologies
- Appreciate significance of various preservation methods used in food industries.

SYLLABUS OF DSC-05

Unit1: Introduction to Technology of Food Preservation (6 Hours)

Introduction to historical evolution to food preservation techniques- Conventional to recent technologies Classification of foods based on pH, concept of shelf life, perishable foods, semi perishable foods, shelf stable foods.

Unit2: Food Preservation by Low temperature (14 Hours)

Introduction to refrigeration, chilling, freezing as a means of preservation, cold storage Principle of freezing, freezing curve, changes occurring during freezing, types of freezing i.e. slow freezing, quick freezing, Introduction to thawing, changes during thawing and its effect on food

Unit3: Food Preservation by Thermal Processing and Irradiation (10 Hours)

Introduction to Thermal Processing- Blanching, pasteurization, sterilization, commercial sterilization. Introduction, units of radiation, concept of cold sterilization, kinds of ionizing radiations, application in food industry.

Unit4: Food Preservation by Moisture control (15 Hours)

Introduction to Drying and Dehydration -Drying as a means of preservation, differences between sun drying and dehydration (i.e. mechanical drying), normal drying curve, heat and mass transfer, factors affecting rate of drying and its application in food industry. Introduction to Evaporation as a means of preservation – Definition, factors affecting evaporation, and its application in food industry.

Practical Exercises: 30 Hours

The learners are required to:

- To study methods of sampling.
- To study the concept of shelf life of different foods.
- To perform blanching of plant foods.
- To study the concept of sterilization
- To perform pasteurization of fluids- juices/ milk/ squashes etc using different methods.
- To determine the pH of different foods.
- To evaluate the quality characteristics of foods preserved by solar drying/ dehydration/ freezing.

Essential/recommended readings

- Potter, N. N., & Hotchkiss, J. H. (2012). Food Science. Springer Science & Business Media.
- Fellows, P. J. (2009). Food Processing Technology: Principles and Practice. Elsevier.
- Bawa. A.S., Chauhan, O.P, Raju. P.S. (2013) ed. Food Science. New India Publishing agency.
- Stewart, G.F., & Amerine, M.A. (2012). Introduction to Food Science and Technology. Elsevier, 2nd Edition.
- Rao, E.S. (2019) Fundamentals of Food Technology and Preservation, Variety Books, New Delhi.
- Frazier, W.C. & West Hoff, D.C. 2004. Food Microbiology. TMH Publication, New Delhi,.
- Rao, D.G. 2010. Fundamentals of Food Engineering, PHI Learning Pvt Ltd, New Delhi,

- **Note: Learners are advised to use the latest edition of readings.**

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DSC 06 : FRUITS, VEGETABLES & PLANTATION CROPS PROCESSING TECHNOLOGY
DSC 04 PRINCIPLES OF FOOD PROCESSING

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| FRUITS, VEGETABLES & PLANTATION CROPS PROCESSING TECHNOLOGY | 4 | 3 | 0 | 1 | XII with PCM/PCB | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To impart knowledge of different methods of fruits and vegetables processing.
- To learn about processing of various spices, tea, coffee and cocoa.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Understand the concept of quality of fruits and vegetables for developing good quality end products.
- Understand the processing and preservation of fruits and vegetables using various techniques.
- Understand processing of plantation crops.

SYLLABUS OF DSC-06

Unit1: Introduction to Fruits and Vegetables (6 Hours)

Importance of Fruits & Vegetables

History & need of preservation

Reasons of spoilage, method of preservation (Short & Long Term)

Post harvest physiological & biochemical changes in fruits & vegetables

Unit2: Canning & Dehydration

(11 Hours)

Process of canning, factors affecting the process- time and temperature

Containers of packing, lacquering, syrups and brines for canning.

Spoilage in canned foods.

Sun drying & mechanical dehydration

Process variation for fruits and vegetables packing and storage. Case hardening

Unit3: Fruits Beverages & Tomato Products

(13 Hours)

Introduction & Processing of fruit juices (selection, juice extraction, deaeration, straining, filtration and clarification)

Preservation of fruit juices (pasteurization, preservation with chemical, sugar & salt, freezing, drying, tetra-packing, carbonation)

Processing of squashes, cordials, nectars, concentrates and powder

Tomato Products : processing of tomato juice, tomato puree, paste, ketchup, sauce and soup

Unit4: Products preserved with class I & class II preservatives (7 Hours)

Processing & Technology of Jam, Jelly, Marmalade & Pickles (Essential constituents, Role of pectin), Theory of jelly formation, defects in jelly,

Marmalade - Types, defects.

Pickles-- Processing , Types, Causes of spoilage in pickling

Unit5: Technology of Plantation Crops (8 Hours)

Spices

Processing and properties of major and minor spices

Essential oils & oleoresins, adulteration Tea, Coffee and Cocoa

Processing, Variety and Products

Practical Exercises: 30 Hours

The learners are required to:

- Estimation of total soluble solids (TSS), pH, acidity of various products.
- Estimation of brix: acidity ratio of various products.
- Estimation of ascorbic acid and effect of heat treatment on it.
- To study the steps of can making process.
- Preparation & evaluation of pectin based product. (Jam)
- Preparation & evaluation of tomato puree.
- Dehydration of fruits and vegetables
- Rehydration of fruits and vegetables
- Extraction & estimation of polyphenols from fruit & Vegetable wastes.

Essential/recommended readings

- Girdharilal., Siddappaa, G.S and Tandon, G.L.(2009). Preservation of fruits & vegetables. ICAR, New Delhi.
- Thompson, A.K., (2003). Fruits and vegetables; Harvesting, handling and storage. Blackwell Publishing.
- Verma L.R. & Joshi VK. 2000. Post Harvest Technology of Fruits & Vegetables. Indus Publication.
- Crusess, W.B. (2004). Commercial Unit and Vegetable Products. W.V. Special Indian Edition. Agrobios India.
- Manay, S. and Shadaksharaswami, M. (2004). Foods: Facts and Principles. New Age Publishers.
- Ranganna S.(2007). Handbook of analysis and quality control for fruits and vegetable products. Tata Mc Graw-Hill publishing company limited, Second edition.
- Srivastava, R.P. and Kumar, S. (2006). Fruits and Vegetables Preservation- Principles and Practices. 3rd Ed. International Book Distributing Co.
- Somogyi, L.P., Ramaswamy, H.S. and Hui, Y.H. (1996). Biology, Principles and Applications. Volume 1. Technomic Publishing Company, Inc.

• **Note: Learners are advised to use the latest edition of readings.**

- **Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.**

GE 02: CHEMISTRY OF FOOD

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------|---------|-----------------------------------|----------|------------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| CHEMISTRY OF FOOD | 4 | 3 | 0 | 1 | XII with PCM/PCB | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand the chemistry of foods - composition of food, role of each component
- To understand the different macromolecules and micro molecules in food
- To understand how food components contribute to overall quality of foods

Learning outcomes

The Learning Outcomes of this course are as follows:

- To understand the chemistry of foods - composition of food
- To understand the role of each component, their properties and reactions in food
- To comprehend how dietary components influence total food quality

SYLLABUS OF GE 02

Unit1: Introduction to chemistry of Food (5 Hours)

Introduction to Food Chemistry

Brief composition of food (Carbohydrates, fats, proteins, vitamins, minerals and pigments)

Unit2: Chemistry of Macromolecules (20 Hours)

Water: Definition of water in food, Structure of water and ice, Types of water, Role of water activity in shelf life and packaging Carbohydrates: Introduction, Classification, and Chemical reactions of carbohydrates Protein: Introduction, classification and structure, types of food protein (meat, egg, milk and wheat)

Lipids: Introduction, classification and structure of triglycerides, types of fatty acid, deterioration of fats and oils. (Autooxidation and lipolysis)

Unit3: Chemistry of Micro molecules (10 Hours)

Vitamins: Introduction, types (water soluble and fat soluble vitamins)

Minerals: Introduction, major and minor minerals, Toxic minerals in food

Unit4: Flavors and Pigments (10 Hours)

Definition and basic tastes

Description of some common food flavors

Introduction and classification of pigments

Practical Exercises: 30 Hours

The learners are required to:

- Preparation of primary and secondary solutions
- Estimation of moisture content
- Determination of gelatinization temperature range (GTR) of different starches
- Determination of effect of additives on GTR of starches
- Estimation of total nitrogen content by Kjeldahl method
- Estimation of fat
- Estimation of total ash and acid insoluble ash
- Estimation of reducing sugar

Essential/recommended readings

- DeMan, John M. (1995). Principles of Food Chemistry. 3rd Ed., Springer.
- Fennema, Owen R. (2008). Fennema's Food Chemistry-CRC Press (2008) - 4th Edition.
- Potter, N.N. and Hotchkiss, J.H. (2007). Food Science 5th Ed. New York: Chapman & Hall.
- Richard Owusu-Apenten. (2002) Introduction to Food Chemistry. CRC press
- Hans-Dieter Belitz, Werner Grosch, Peter Schieberle. (2009) Food Chemistry. Springer link

- **Note: Learners are advised to use the latest edition of readings.**

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

B.A (Prog.) with Nutrition and Health Education (NHE) as Major
Category-II

**DISCIPLINE SPECIFIC CORE COURSE – DSC-3-NHE: DIET PLANNING THROUGH
THE LIFE SPAN**

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility Criteria | Prerequisite of the course |
|--|---------|-----------------------------------|----------|---------------------|----------------------|----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Diet Planning Through the Life Span | 4 | 3 | 0 | 1 | Class XII Pass | DSC-1-NHE and DSC-2-NHE |

Learning Objectives:

1. To introduce students to the basic concepts of meal planning.
2. To equip them with knowledge of physiological changes, nutritional requirements, nutritional concerns and healthy food choices during the life cycle.

Learning Outcomes:

After completion of the course, the students will be able to:

1. Describe physiological changes and nutritional requirements across the lifespan.
2. Understand the factors affecting meal planning.
3. Understand the importance of food exchange list and use them for meal planning.
4. Plan and prepare balanced meals and nutritious snacks for various age groups.

SYLLABUS OF DSC-3

Theory:

Unit 1: Nutrient Requirements and Recommendations (5 Hours)

- *Unit Description:* This unit will introduce the concept of dietary reference intake.
- *Subtopics:*
 - Nutrient requirement - concept and background
 - Dietary reference intake
 - EAR and RDA
 - Reference man and reference woman

Unit 2: Fundamentals of Menu Planning (6 Hours)

- *Unit Description:* This unit will introduce essential requirements for planning of

meals.

- *Subtopics:*
 - Introduction and use of food exchange list
 - Concept and importance of meal planning
 - Factors affecting meal planning

Unit 3: Nutrition during Childhood Hours)

(16

- *Unit Description:* This unit will introduce nutritional requirement, physiological changes, nutritional concerns and healthy eating practices during childhood.
- *Subtopics:*
 - Infancy
 - Preschoolers
 - School- going children
 - Adolescents

Unit 4: Nutrition during Adulthood and Old Age Hours)

(18

- *Unit Description:* This unit will introduce nutritional requirement, physiological changes, nutritional concerns and healthy food choices during adulthood and old age.
- *Subtopics:*
 - Adulthood
 - Pregnancy
 - Lactation
 - Old age

Practical: 30 Hours

Unit 1: Introduction to Meal Planning Hours)

(10

- *Subtopics:*
 - Use of comprehensive food exchange list in meal planning
 - Meal distribution and menu planning
 - Nutrient calculations

Unit 2: Planning and Preparation of Diets/Dishes/Snacks Hours)

(20

- *Subtopics:*
 - Infant- complementary feeding
 - Preschooler child

- School aged child
- Adolescent
- Adult
- Pregnant and lactating woman
- Elderly

Essential/recommended readings:

1. Chadha, R., & Mathur, P. (2015). *Nutrition: A life cycle approach*. Delhi: Orient Blackswan.
2. Sethi, P., & Lakra, P. (2015). *Aahar Vigyan, Poshan Evam Suraksha*. Delhi: Elite Publishing House Pvt. Ltd.
3. Mudambi, S. R., & Rajagopal M. V. (2012). *Fundamentals of food, nutrition and diet therapy* (6th ed.). Delhi: New Age International (P) Ltd.
4. Siddhu, A., Bhatia, N., Singh, K., Gupta, S. (Eds.). (2017). *Lady Irwin College Technical series 6: Compilation of food exchange list*. Delhi: Global books organisation.
5. Puri, S. et al (2020). *Food exchange list- A tool for meal planning*. New Delhi: Elite publishing house.
6. Longvah, T. et al (2017). *Indian food composition tables*. Hyderabad, Telangana: National Institute of Nutrition.

Suggested readings:

1. Wardlow, G. M., & Hampl, J. S. (2019). *Perspectives in nutrition*. (11th ed.). New York, NY: McGraw Hill.
2. Khanna, K. et al. (2013). *Textbook of nutrition and dietetics*. Delhi: Elite Publishing house (P) Ltd.
3. Shubhangini, A., & Joshi, S. (2021). *Nutrition and Dietetics* (5th ed.). McGraw Hill Education (India) Private Limited. ISBN: 978-93-90727-82-7.
4. Edelstein, S., & Sharlin, J. (Eds.). (2009). *Life cycle nutrition – an evidence based approach* Burlington, MA: Jones and Barlett Publishers.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – DSC-4-NHE: DIETARY GOALS AND GUIDELINES FOR INDIANS

Credit distribution, Eligibility and Pre-requisites of the Course

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility Criteria | Prerequisite of the course |
|--|---------|-----------------------------------|----------|---------------------|----------------------|----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Dietary Goals and Guidelines for Indians | 4 | 3 | 1 | 0 | Class XII Pass | NIL |

Learning Objectives:

1. To introduce the concept of nutritionally adequate diets and healthy lifestyles from conception till old age.
2. To equip the students with the knowledge of dietary goals and guidelines for Indians relating to nutritional requirements, deficiency diseases and chronic diet-related disorders.

Learning Outcomes:

After completion of the course, the students will be able to:

1. Describe food groups, food pyramid and the concept of a balanced diet.
2. Understand the physiological changes throughout the lifespan.
3. Acquaint themselves with the dietary goals and dietary guidelines for Indians across the life cycle.

SYLLABUS OF DSC-4

Theory:

Unit 1: Basic Concepts of Food (Hours)

(9

- *Unit Description:* This unit will introduce various food groups, concept of balanced diet, food pyramid and other aspects regarding diet.
- *Subtopics:*
 - Food groups: basic classification and nutritional contribution
 - Food pyramid
 - Balanced diet and My food plate
 - Food facts, fads and fallacies

Unit 2: Dietary Guidelines I (15 Hours)

- *Unit Description:* This unit will introduce basic dietary goals for healthy living and dietary guidelines.
- *Subtopics:*
 - Dietary goals
 - Guidelines to ensure nutritional adequacy and prevent deficiency diseases
 - Guidelines related to various stages of life

Unit 3: Dietary Guidelines II (13 Hours)

- *Unit Description:* This unit will introduce dietary guidelines to deal with health concerns and healthy food practices.
- *Subtopics:*
 - Guidelines to maintain an ideal body weight and prevent chronic diet-related disorders
 - Guidelines regarding food-related practices

Unit 4: Practical Application of Dietary Guidelines (8 Hours)

- *Unit Description:* This unit will introduce practical aspects with suitable examples to attain all dietary guidelines for Indians.
- *Subtopics:*

Sample eating patterns/ menus for the following meals/ snacks:

 - Breakfast
 - Lunch/packed lunch
 - Dinner
 - Snacks

Essential/recommended readings:

1. Damyanthi, K. et al. (2011). *Dietary guidelines for Indians- A manual*. (2nd ed.) Hyderabad. National Institute of Nutrition.
2. Chadha, R., & Mathur, P. (2015). *Nutrition: A life cycle approach*. Delhi: Orient Blackswan.
3. Agarwal, A., & Udipi. S. (2014). *Textbook of human nutrition*, Jaypee Brothers Medical Publishers (P) Ltd, New Delhi.
4. Sethi, P., & Lakra, P. (2015). *Aahar Vigyan, Poshan Evam Suraksha*. Delhi: Elite Publishing House Pvt. Ltd.

Suggested readings:

1. Mudambi, S. R., & Rajagopal M. V. (2012). *Fundamentals of food, nutrition and diet therapy* (6th ed.). Delhi: New Age International (P) Ltd.
2. Wardlow, G. M., & Hampl, J. S. (2019). *Perspectives in nutrition*. (11th ed.). New York, NY: McGraw Hill.
3. Shubhangini, A., & Joshi, S. (2021). *Nutrition and Dietetics* (5th ed.). McGraw Hill Education (India) Private Limited. ISBN: 978-93-90727-82-7.
4. Khanna, K. et al. (2013). *Textbook of nutrition and dietetics*. Delhi: Elite Publishing house (P) Ltd.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

B.A (Prog.) with Nutrition and Health Education (NHE) as Non-Major
Category-III

DISCIPLINE SPECIFIC CORE COURSE – DSC-4-NHE: DIETARY GOALS AND GUIDELINES FOR INDIANS

Credit distribution, Eligibility and Pre-requisites of the Course

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility Criteria | Prerequisite of the course |
|---|---------|-----------------------------------|----------|---------------------|----------------------|----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Dietary Goals and Guidelines for Indians | 4 | 3 | 1 | 0 | Class XII Pass | NIL |

Learning Objectives:

1. To introduce the concept of nutritionally adequate diets and healthy lifestyles from conception till old age.
2. To equip the students with the knowledge of dietary goals and guidelines for Indians relating to nutritional requirements, deficiency diseases and chronic diet-related disorders.

Learning Outcomes:

After completion of the course, the students will be able to:

1. Describe food groups, food pyramid and the concept of a balanced diet.
2. Understand the physiological changes throughout the lifespan.
3. Acquaint themselves with the dietary goals and dietary guidelines for Indians across the life cycle.

SYLLABUS OF DSC-2

Theory:

**Unit 1: Basic Concepts of Food
Hours)**

(9

- *Unit Description:* This unit will introduce various food groups, concept of balanced diet, food pyramid and other aspects regarding diet.
- *Subtopics:*
 - Food groups: basic classification and nutritional contribution

- Food pyramid
- Balanced diet and My food plate
- Food facts, fads and fallacies

Unit 2: Dietary Guidelines I (15 Hours)

- *Unit Description:* This unit will introduce basic dietary goals for healthy living and dietary guidelines.
- *Subtopics:*
 - Dietary goals
 - Guidelines to ensure nutritional adequacy and prevent deficiency diseases
 - Guidelines related to various stages of life

Unit 3: Dietary Guidelines II (13 Hours)

- *Unit Description:* This unit will introduce dietary guidelines to deal with health concerns and healthy food practices.
- *Subtopics:*
 - Guidelines to maintain an ideal body weight and prevent chronic diet-related disorders
 - Guidelines regarding food-related practices

Unit 4: Practical Application of Dietary Guidelines (8 Hours)

- *Unit Description:* This unit will introduce practical aspects with suitable examples to attain all dietary guidelines for Indians.
- *Subtopics:*
Sample eating patterns/ menus for the following meals/ snacks:
 - Breakfast
 - Lunch/packed lunch
 - Dinner
 - Snacks

Essential/recommended readings:

1. Damyanthi, K. et al. (2011). *Dietary guidelines for Indians- A manual*. (2nd ed.) Hyderabad. National Institute of Nutrition.
2. Chadha, R., & Mathur, P. (2015). *Nutrition: A life cycle approach*. Delhi: Orient Blackswan.
3. Agarwal, A., & Udipi. S. (2014). *Textbook of human nutrition*, Jaypee Brothers Medical Publishers (P) Ltd, New Delhi.

4. Sethi, P., & Lakra, P. (2015). *Aahar Vigyan, Poshan Evam Suraksha*. Delhi: Elite Publishing House Pvt. Ltd.

Suggested readings:

1. Mudambi, S. R., & Rajagopal M. V. (2012). *Fundamentals of food, nutrition and diet therapy* (6th ed.). Delhi: New Age International (P) Ltd.
2. Wardlow, G. M., & Hampl, J. S. (2019). *Perspectives in nutrition*. (11th ed.). New York, NY: McGraw Hill.
3. Shubhangini, A., & Joshi, S. (2021). *Nutrition and Dietetics* (5th ed.). McGraw Hill Education (India) Private Limited. ISBN: 978-93-90727-82-7.
4. Khanna, K. et al. (2013). *Textbook of nutrition and dietetics*. Delhi: Elite Publishing house (P) Ltd.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

CATEGORY-II
B.A (Prog.) with Human Development and Family
Empowerment (HDFE) as Major

DISCIPLINE SPECIFIC CORE COURSE – DSC-3-HDFE: ADULTHOOD AND AGEING THROUGH A LIFE SPAN PERSPECTIVE

Credit distribution, Eligibility and Pre-requisite of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (If any) |
|--|---------|-----------------------------------|----------|---------------------|----------------------|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Adulthood and Ageing through a Lifespan perspective | 4 | 2 | 0 | 2 | Class XII Pass | DSC-1-HDFE and DSC-2-HDFE (both as Major) |

Learning Objectives:

1. To understand the developmental patterns in early, middle and late adulthood.
2. To understand the needs and challenges of the older adults.
3. To use research tools to investigate the ageing process and develop critical thinking skills, necessary to do research in the field of ageing.

Learning Outcomes:

After completion of the course, the students will be able to:

1. Understand the characteristics of Adulthood and old age.
2. Understand the challenges of adulthood and ageing and the coping strategies.
3. Students will develop awareness about the developmental patterns in adulthood.
4. Sensitizing students towards the concerns of adulthood and ageing.

THEORY
(Credits:2, Periods: 30)

Unit 1: Adulthood and Ageing
hours)

(10

- *Unit Description:* This unit will introduce the concept of adulthood and ageing
- *Subtopics:*
 - Understand definition
 - Concept and scope of ageing as a field of study

- Theoretical perspectives on ageing
- Developmental Tasks of Adulthood

Unit 2: Early & Middle Adulthood hours)

(10

- *Unit Description:* This unit will introduce the concept of early and middle adulthood.
- *Subtopics:*
 - Characteristics
 - Developmental milestones - Physical, cognitive, social and emotional development

Unit 3: Late Adulthood hours)

(10

- *Unit Description:* This unit will introduce the concept of Late adulthood.
- *Subtopics:*
 - Definition
 - Characteristics
 - Developmental milestones
 - Physical changes in males and females
 - Psychological implications of physical changes. Social – Emotional Development. Cognitive Development

PRACTICAL (Credits: 2, Periods: 60)

- **Unit 1: Conduct Case profile of a senior citizen** **(30 hours)**
- **Unit 2: Visit to a senior citizen home and /or Movie review** **(30 hours)**

Essential / recommended readings:

1. Berk, L. E. (2017). *Development through the lifespan* (7rd edition). US: Pearson Education.
2. Rice, F.P. (1998). *Human Development: A Life-span Approach* (3rd edition). US: Prentice Hall.
3. Santrock, J. W. (2011). *Life-span development* (13th ed.). McGraw-Hill Education.
4. Verma, P., Srivastava D. N. and Singh, A. (1996). *Bal manovigyan and bal vikas*. Agra: Agrawal Publication

Suggested Readings:

1. Patrick, J.H., Hayslip Jr. B., Sawyer, L.H. (2000). *Adult Development and aging: Growth, longevity and challenges* (1st edition). Sage Publications
2. Singh, A. (2015). *Foundation of Human development: A lifespan approach*. Hyderabad: Orient Blackswan Pvt.
3. Singh, V. (2007). *Bal vikas avam bal manovigyan*. Jaipur: Panchsheel Prakashan

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – DSC-4-HDFE: INTRODUCTION TO HUMAN DEVELOPMENT

Credit distribution, Eligibility and Pre-requisite of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|----------|-----------------------------------|----------|---------------------|----------------------|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction to Human Development | 4 | 2 | 0 | 2 | Class XII Pass | DSC-1-HDFE and DSC-2-HDFE (both as Major) |

Learning Objectives:

1. To create an understanding of various stages of lifespan development.
2. To understand developmental changes occurring during infancy, childhood, adolescence.
3. To understand the conflicts during various stages of lifespan development and ways to deal with it.

Learning Outcomes:

After completion of the course, the students will be able to:

1. Understand developmental changes occurring during the lifespan with respect to infancy, childhood, adolescence
2. Understand various stages of lifespan development with respect to conflicts and ways to deal with it.
3. Learn the basic skills of research and documentation and apply the knowledge of methods of data collection in real life situations.

THEORY

(Credits: 2; Periods: 30)

Unit 1: Development in early years: The new-born and stage of infancy (10 Hours)

- *Unit Description:* This unit will discuss about the development in early years
- *Subtopics:*
 - New-born: Characteristics.
 - Reflexes
 - Infant developmental milestones

Unit 2: Childhood- Early & Middle Hours) (10

- *Unit Description:* This unit will introduce all domains of development with regard to early and middle childhood period.
- *Subtopics:*
 - Physical Development.
 - Socio-emotional Development.
 - Cognitive and Language Development

Unit 3: Adolescence Hours) (10

- *Unit Description:* This unit will introduce regarding adolescent age group
- *Subtopics:*
 - Definition.
 - Characteristics.
 - Developmental milestones.
 - Physical changes in males and females.
 - Psychological implications of physical changes.
 - Social – Emotional Development.
 - Cognitive Development.

**PRACTICAL
(Credit: 2, Periods: 60)**

Unit 1: Understand Methods and techniques of child study. (15 hours)

Unit 2: Conduct any 2 interviews. (30 hours)

Unit 3: Conduct any 1 observation. (15 hours)

Essential / recommended readings:

1. Bee, H. L (2011). *The developing child*. London: Pearson.
2. Berk, L. E. (2017). *Development through the lifespan* (7rd edition). US: Pearson Education.
3. Santrock, J. W. (1996). *Child development*. New York: Tata McGraw Hill
4. Verma, P., Srivastava D. N. and Singh, A. (1996). *Bal manovigyan and bal vikas*. Agra: Agrawal Publication.

Suuggested readings:

1. Papilla, D.E., Olds, S. W. and Feldman, R. D (2004). *Human development*. New York: Mcgraw Hill.
2. Singh, A. (2015). *Foundation of Human development: A lifespan approach*. London: Orient Longman.

3. Singh, V. (2007). *Bal vikas avam bal manovigyan*. Jaipur: Panchsheel Prakashan.
4. Sapra, R. (2007). *Manav vikas: Ek parichaya*. New Delhi: Vishwa Bharti Publications.
Chapter 1, pg 1-6

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

CATEGORY-III

B.A (Prog.) with Human Development and Family Empowerment (HDFE) as Non-Major

DISCIPLINE SPECIFIC CORE COURSE – DSC-4-HDFE: INTRODUCTION TO HUMAN DEVELOPMENT

Credit distribution, Eligibility and Pre-requisite of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction to Human Development | 4 | 2 | 0 | 2 | Class XII Pass | DSC-2-HDFE (Non-Major) |

Learning Objectives:

1. To create an understanding of various stages of lifespan development.
2. To understand developmental changes occurring during infancy, childhood, adolescence.
3. To understand the conflicts during various stages of lifespan development and ways to deal with it.

Learning Outcomes:

After completion of the course, the students will be able to:

1. Understand developmental changes occurring during the lifespan with respect to infancy, childhood, adolescence
2. Understand various stages of lifespan development with respect to conflicts and ways to deal with it.
3. Learn the basic skills of research and documentation and apply the knowledge of methods of data collection in real life situations.

THEORY

(Credits: 2; Periods: 30)

Unit 1: Development in early years: The new-born and stage of infancy (10 Hours)

- *Unit Description:* This unit will discuss about the development in early years
- *Subtopics:*
 - New-born: Characteristics.
 - Reflexes
 - Infant developmental milestones

Unit 2: Childhood- Early & Middle Hours) (10

- *Unit Description:* This unit will introduce all domains of development with regard to early and middle childhood period.
- *Subtopics:*
 - Physical Development.
 - Socio-emotional Development.
 - Cognitive and Language Development

Unit 3: Adolescence Hours) (10

- *Unit Description:* This unit will introduce regarding adolescent age group
- *Subtopics:*
 - Definition.
 - Characteristics.
 - Developmental milestones.
 - Physical changes in males and females.
 - Psychological implications of physical changes.
 - Social – Emotional Development.
 - Cognitive Development.

**PRACTICAL
(Credit: 2, Periods:60)**

Unit 1: Understand Methods and techniques of child study. (15 hours)

Unit 2: Conduct any 2 interviews. (30 hours)

Unit 3: Conduct any 1 observation. (15 hours)

Essential / recommended readings:

1. Bee, H. L (2011). *The developing child*. London: Pearson.
2. Berk, L. E. (2017). *Development through the lifespan* (7rd edition). US: Pearson Education.
3. Santrock, J. W. (1996). *Child development*. New York: Tata McGraw Hill
4. Verma, P., Srivastava D. N. and Singh, A. (1996). *Bal manovigyan and bal vikas*. Agra: Agrawal Publication.

Suuggested readings:

1. Papilla, D.E., Olds, S. W. and Feldman, R. D (2004). *Human development*. New York: Mcgraw Hill.
2. Singh, A. (2015). *Foundation of Human development: A lifespan approach*. London: Orient Longman.
3. Singh, V. (2007). *Bal vikas avam bal manovigyan*. Jaipur: Panchsheel Prakashan.

4. Sapra, R. (2007). *Manav vikas: Ek parichaya*. New Delhi: Vishwa Bharti Publications. Chapter 1, pg 1-6

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category-II

**B.A (Prog.) with Apparel Design and Construction (ADC) as
Major**

**DISCIPLINE SPECIFIC CORE COURSE – DSC-3-ADC:
GARMENT DETAILING**

Credit Distribution, Eligibility and Pre-requisites of the Course

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility Criteria | Prerequisite of the course |
|------------------------|---------|-----------------------------------|----------|------------------------|-------------------------|-------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Garment Detailing | 4 | 2 | 0 | 2 | Class XII Pass | DSC-1-ADC and DSC-2-ADC |

Learning Objectives:

1. To impart basic knowledge required for layout planning on fabrics requiring special attention
2. To familiarise the students about the concepts related to the handling of special fabrics
3. To create an understanding of designing clothes for people with special needs.
4. To develop pattern making and construction skills for various garments and their components
5. To impart skills for developing design variations through dart manipulations

Learning Outcomes:

After completion of the course, the students will be able to:

1. Plan pattern layout on fabrics with special requirements
2. Calculate the fabric requirement per garment
3. Make use of different marker making methods
4. Use design variations of garment components in garment construction
5. Carry out dart manipulation according to design variations
6. Handle special fabrics during pattern layout and sewing
7. Design clothes for people with special needs

SYLLABUS OF DSC-3

Theory:

Unit 1: Layout planning

(8 Hours)

- *Unit Description:* This unit deals with planning on special fabrics, assessing fabric requirement per garment and marker making.
- *Sub Topics:*
 - Pattern Layouts on special fabrics- unidirectional, bold and large prints, stripes and checks, border design, irregular design fabric, napped fabric
 - Calculation of material requirement for garment construction
 - Marker Making – Factors influencing marker making, Methods of marker making.

Unit 2: Design variations in Garment Components

(12 Hours)

- *Unit Description:* This unit focuses on the study of garment components and their design variations. It also covers dart manipulation and creating design variations.
- *Sub Topics:*
 - Study of Garment components – terms, types and Styles, evaluation criteria – Necklines, Collars, Sleeves, Cuff, Yokes, Pockets, Plackets
 - Design variations in bodice, skirts, silhouettes, trousers
 - Dart manipulation: Definition, Principles, Methods, dart equivalents

Unit 3: Handling of Special Fabrics

(10 Hours)

- *Unit Description:* This unit provides the basic knowledge relating to special fabrics and their handling. It also deals with the concepts and requirements of self-help garments and maternity wear.
- *Sub Topics:*
 - Definition and features of Special fabrics
 - Handling of fabrics with reference to designing, layout, marking, cutting, stitching, needle sizes, stitch sizes, threads used, seams and other special considerations – Sheer and slippery fabrics, napped and pile fabrics, lace, silk & crepe, velvet, wool, knits, plaids and stripes. Preparation of a sample file.
 - Garment designing for special needs: basic principles and design requirements – Self-help, maternity wear

Practical:

Unit 1: Basic Blocks and Dart Manipulation

(20 Hours)

- *Sub Topics:*
 - Dart manipulation techniques - Single and double dart series, style lines, Yokes, adding fullness
 - Hip length/ Torso Draft
 - Trousers Block
 - Men's Bodice Block

Unit 2: Construction of Garments and their Components

(40 Hours)

- *Sub Topics:*

- Preparation of Samples of any three styles of Sleeves
- Preparation of Samples of any three styles of Collars
- Preparation of Samples of any three styles of pockets
- Preparation of Samples of Plackets - continuous bound, even hem, zipper, tailored placket
- Designing and stitching of one upper and one lower garment

Essential/ Recommended Readings:

1. Armstrong, H.J., (2009), Pattern Making for Fashion Design, Harper Collins Publishers Inc., New York.
2. Liechty, E.G., Potterberg, D.N., Rasband, J.A., (2010), Fitting and Pattern Alteration: A Multimethod Approach, Fairchild Publications, New York
3. Macdonald Nora M., (2009), Principles of Flat-Pattern Design, Fairchild Books, New York.
4. Shaeffer Claire, (2003), Sew any Fabric, Krause Publications

Suggested Readings:

1. Brown, P. and Rice, J., (1998), Ready-to-wear Apparel Analysis, Prentice Hall
2. Kallal, M. J., (1985), Clothing Construction, Macmillan Publishing Company, New York
3. Mansfield, E. A. & Lucas, E. L., (1974), Clothing Construction, Houghton Mifflin
4. Stamper, A.A., S. H. Sharp and L.B. Donnell, (1986), Evaluating Apparel Quality, Fairchild Publications, US

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

**DISCIPLINE SPECIFIC CORE COURSE – DSC-4-ADC:
BASIC PATTERN MAKING AND CLOTHING CONSTRUCTION**

**Credit Distribution, Eligibility and Pre-requisites of the
Course**

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility Criteria | Prerequisite of the course |
|---|---------|-----------------------------------|----------|------------------------|-------------------------|-------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Pattern Making and Clothing Construction | 4 | 2 | 0 | 2 | Class XII Pass | Nil |

Learning Objectives:

1. To introduce students to basic concepts of Body measurements and pattern making
2. To equip the students with the knowledge of pattern layout, fabric cutting, garment sewing and assessing fit in a garment.

Learning Outcomes:

After completion of the course, the students will be able to:

1. Take measurements from body and garments accurately.
2. Create patterns of simple women's clothes and apply the pattern information correctly.
3. Operate a sewing machine for simple sewing tasks using the correct thread, needle and stitch length for various fabrics.
4. Use various types of seams and seam techniques during garment construction
5. Apply concept of fit, evaluate garment fit and do pattern alterations as necessary.

SYLLABUS OF DSC-4

Theory:

Unit 1: Body Measurements and Pattern Making

(10 Hours)

- *Unit Description:* This unit introduces the students to the process of taking measurements from body or garment and developing basic blocks for creating garment patterns. It also provides an understanding of the different types of patterns as well as using the symbols and markings mentioned on a pattern correctly.
- *Sub Topics:*
 - Importance of Body measurements, Body Landmarks, Correct procedure of taking body measurements, size charts, Taking measurements from Garments
 - Garment Ease - type and amount in different garments

- Basic Blocks and their importance
- Methods of pattern development: Drafting, Flat pattern making, Draping
- Types of paper pattern - Commercial pattern, Graded pattern, Production pattern
- Pattern information and marking symbols and their importance

Unit 2: Sewing Machines

(8 Hours)

- *Unit Description:* This unit provides the essential knowledge required for operating and maintaining a sewing machine for garment construction.
- *Sub Topics:*
 - Classification of Sewing machines
 - Components of a Basic Sewing machine and their functions
 - Introduction to Industrial sewing machines- single needle lock stitch, overlock, blind stitching, button hole and button stitching, bartacking
 - Sewing defects and remedies
 - Care and maintenance of a sewing machine, precautions while working on a sewing machine
 - Selection of threads, needles and stitch length for various fabrics

Unit 3: Sewing Techniques and Garment Fit

(12 Hours)

- *Unit Description:* This unit imparts knowledge of seam categories and seam techniques. It also deals with the concept of garment fit and correcting fitting problems through pattern alteration.
- *Sub Topics:*
 - Garment Support Fabrics (Lining, Underlining, Interlining, Interfacing) – their use and selection
 - Basic seam categories- super imposed seam, lapped seam, bound seam, flat seam, decorative seam, ridge seam
 - Additional seam techniques: clipping, notching, grading, trimming, easing, under stitching, stay stitching, trimming a corner
 - Finishing of straight & curved edges- self finish, crossway strips, bias facing, bias binding, shaped facing, self-finishing, casings and finishing with trims
 - Elements of Fit: line, ease, grain, set and balance
 - Fit evaluation, Common fitting problems and pattern correction

Practical: 60 Hours

Unit 1: Development of Basic Blocks and design variations

(20 Hours)

- *Subtopics:*
 - Adult women's bodice block, sleeve block, skirt block
 - Developing design variations in adult skirt- A-line, flared, wrap-around, pleated, skirt with yoke

Unit 2: Seams and Garment Construction

(40 Hours)

- *Subtopics:*

- Samples of Seams – Plain Seam, French seam, Run-n-fell seam, Lapped seam, Top stitching, Bound/Piped seam, Slot seam, Curved and Corner seam
- Necklines and their finishing: bias facing, bias binding, shaped facing
- Adaptation of basic blocks to construct Saree blouse, Kurti/Kameez, Skirt
- Construction of lower garments: Salwar/ Churidar, Palazzo

Essential Readings:

1. Armstrong, H.J., (2009), Pattern Making for Fashion Design, Harper Collins Publishers Inc., New York.
2. Brown, P. and Rice, J., (1998), Ready-to-wear Apparel Analysis, Prentice Hall
3. Colton V. (1995). Reader's Digest- Complete Guide to Sewing. New York: The Reader's Digest Association, Inc.
4. Knowles A. (2006). Patternmaking for Fashion Designers. New York: Fairchild Publications Inc.
5. Liechty, E.G., Potterberg, D.N., Rasband, J.A., (2010), Fitting and Pattern Alteration: A Multimethod Approach, Fairchild Publications, New York

Suggested Readings:

1. Kallal, M. J., (1985), Clothing Construction, Macmillan Publishing Company, New York
2. Kindersley D. (1996). The Complete Book of Sewing. London: Dorling Kindersley Limited.
3. MacDonald M. (2009). Principles of Flat Pattern Design (4th Edition). New York: Fairchild Publications Inc
4. Stamper, A.A., S. H. Sharp and L.B. Donnell, (1986), Evaluating Apparel Quality, Fairchild Publications, America

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category-III

B.A (Prog.) with Apparel Design and Construction (ADC) as Non-Major

DISCIPLINE SPECIFIC CORE COURSE – DSC-4-ADC: BASIC PATTERN MAKING AND CLOTHING CONSTRUCTION

Credit Distribution, Eligibility and Pre-requisites of the Course

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility Criteria | Prerequisite of the course |
|--|---------|-----------------------------------|----------|---------------------|----------------------|----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Pattern Making and Clothing Construction | 4 | 2 | 0 | 2 | Class XII Pass | NIL |

Learning Objectives:

1. To introduce students to basic concepts of Body measurements and pattern making
2. To equip the students with the knowledge of pattern layout, fabric cutting, garment sewing and assessing fit in a garment.

Learning Outcomes:

After completion of the course, the students will be able to:

1. Take measurements from body and garments accurately.
2. Create patterns of simple women's clothes and apply the pattern information correctly.
3. Operate a sewing machine for simple sewing tasks using the correct thread, needle and stitch length for various fabrics.
4. Use various types of seams and seam techniques during garment construction
5. Apply concept of fit, evaluate garment fit and do pattern alterations as necessary.

SYLLABUS OF DSC-2

Theory:

Unit 1: Body Measurements and Pattern Making

(10 Hours)

- *Unit Description:* This unit introduces the students to the process of taking measurements from body or garment and developing basic blocks for creating garment patterns. It also provides an

understanding of the different types of patterns as well as using the symbols and markings mentioned on a pattern correctly.

- *Sub Topics:*
 - Importance of Body measurements, Body Landmarks, Correct procedure of taking body measurements, size charts, Taking measurements from Garments
 - Garment Ease - type and amount in different garments
 - Basic Blocks and their importance
 - Methods of pattern development: Drafting, Flat pattern making, Draping
 - Types of paper pattern - Commercial pattern, Graded pattern, Production pattern
 - Pattern information and marking symbols and their importance

Unit 2: Sewing Machines

(8 Hours)

- *Unit Description:* This unit provides the essential knowledge required for operating and maintaining a sewing machine for garment construction.
- *Sub Topics:*
 - Classification of Sewing machines
 - Components of a Basic Sewing machine and their functions
 - Introduction to Industrial sewing machines- single needle lock stitch, overlock, blind stitching, button hole and button stitching, bartacking
 - Sewing defects and remedies
 - Care and maintenance of a sewing machine, precautions while working on a sewing machine
 - Selection of threads, needles and stitch length for various fabrics

Unit 3: Sewing Techniques and Garment Fit

(12 Hours)

- *Unit Description:* This unit imparts knowledge of seam categories and seam techniques. It also deals with the concept of garment fit and correcting fitting problems through pattern alteration.
- *Sub Topics:*
 - Garment Support Fabrics (Lining, Underlining, Interlining, Interfacing) – their use and selection
 - Basic seam categories- super imposed seam, lapped seam, bound seam, flat seam, decorative seam, ridge seam
 - Additional seam techniques: clipping, notching, grading, trimming, easing, under stitching, stay stitching, trimming a corner
 - Finishing of straight & curved edges- self finish, crossway strips, bias facing, bias binding, shaped facing, self-finishing, casings and finishing with trims
 - Elements of Fit: line, ease, grain, set and balance
 - Fit evaluation, Common fitting problems and pattern correction

Practical: 60 Hours

Unit 1: Development of Basic Blocks and design variations

(20 Hours)

- *Subtopics:*
 - Adult women's bodice block, sleeve block, skirt block

- Developing design variations in adult skirt- A-line, flared, wrap-around, pleated, skirt with yoke

Unit 2: Seams and Garment Construction

(40 Hours)

- *Subtopics:*

- Samples of Seams – Plain Seam, French seam, Run-n-fell seam, Lapped seam, Top stitching, Bound/Piped seam, Slot seam, Curved and Corner seam
- Necklines and their finishing: bias facing, bias binding, shaped facing
- Adaptation of basic blocks to construct Saree blouse, Kurti/Kameez, Skirt
- Construction of lower garments: Salwar/ Churidar, Palazzo

Essential Readings:

1. Armstrong, H.J., (2009), Pattern Making for Fashion Design, Harper Collins Publishers Inc., New York.
2. Brown, P. and Rice, J., (1998), Ready-to-wear Apparel Analysis, Prentice Hall
3. Colton V. (1995). Reader's Digest- Complete Guide to Sewing. New York: The Reader's Digest Association, Inc.
4. Knowles A. (2006). Patternmaking for Fashion Designers. New York: Fairchild Publications Inc.
5. Liechty, E.G., Potterberg, D.N., Rasband, J.A., (2010), Fitting and Pattern Alteration: A Multimethod Approach, Fairchild Publications, New York

Suggested Readings:

1. Kallal, M. J., (1985), Clothing Construction, Macmillan Publishing Company, New York
2. Kindersley D. (1996). The Complete Book of Sewing. London: Dorling Kindersley Limited.
3. MacDonald M. (2009). Principles of Flat Pattern Design (4th Edition). New York: Fairchild Publications Inc
4. Stamper, A.A., S. H. Sharp and L.B. Donnell, (1986), Evaluating Apparel Quality, Fairchild Publications, America

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category-II
B.A. (Prog.) with Food Technology (FT) as Major

**DISCIPLINE SPECIFIC CORE COURSE – DSC-3-FT:
NUTRITION AND WELL BEING FOR LIFESPAN**

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF
THE COURSE**

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre- requisite of the course (if any) |
|--|---------|-----------------------------------|----------|------------------------|-------------------------|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Nutrition and Well Being for Lifespan | 4 | 3 | 0 | 1 | Class XII Pass | DSC-1-FT |

LEARNING OBJECTIVES:

1. To make students understand the concept of wellbeing, good health, dietary guidelines and lifestyle management.
2. To familiarize students with the salient physiological changes and nutrition related health concerns during various stages of lifespan.
3. To familiarize students with the dietary guidelines and lifestyle practices which would support overall wellbeing and good health
4. Make students plan and prepare nutritious meals for self, family and the community.

LEARNING OUTCOMES:

After completion of the course, the students will be able to:

1. Appreciate the role of dietary guidelines and lifestyle management in promoting health and well being
2. Adopt a healthy and active lifestyle suitable to each physiological stage in lifespan
3. Enhance ability to make healthy food choices for self, family and the community
4. Develop educational aids to impart nutrition knowledge.

SYLLABUS OF DSC-3-FT

THEORY:

UNIT I: Maternal and Infant Nutrition

(12 Hours)

- *Unit Description:* This unit will focus on basic concepts of wellbeing,

dietary guidelines as well as maternal and infant nutrition.

- *Subtopics:*
 - Basic concepts: well-being, nutritional status, dietary guidelines and lifestyle management
 - Pregnancy - physiological changes during pregnancy, dietary guidelines, the role of nutrition in the developmental origins of disease
 - Lactation - factors affecting nutritional requirements, dietary guidelines, breast feeding practices
 - Infancy - growth and development, growth monitoring, dietary guidelines (advantages of mother's milk, complimentary feeding)

UNIT II: Child and Adolescent Nutrition

(12 Hours)

- *Unit Description:* This unit will focus on dietary guidelines and lifestyle management of children and adolescents.
- *Subtopics:*
 - Childhood Years: growth and development, dietary guidelines during early, middle and late childhood years, common nutrition concerns.
 - Adolescence: growth and development, eating behaviour, dietary guidelines, common health problems during adolescence, eating disorders, lifestyle management.

UNIT III: Nutrition during Adulthood

(12 Hours)

- *Unit Description:* This unit will focus and reference man as well as woman and nutritional needs of adults.
- *Subtopics:*
 - Reference Man and Reference Woman, dietary guidelines, role of nutrition in adulthood in the prevention and development of chronic diseases
 - Lifestyle management: healthy eating behaviour, physical activity, stress management, sleep pattern.

Unit IV: Nutrition for the Elderly

(9 Hours)

- *Unit Description:* This unit will focus on nutritional needs, lifestyle management, longevity and care for elderly.
- *Subtopics:*
 - Introduction to Geriatrics, physiological changes, nutrition and longevity, nutritional concerns, dietary guidelines, Nutrition and chronic Degenerative Diseases, Nutrient-Drug Interactions (basic concept).

PRACTICAL: 30 Hours

No. of Students per Practical Class Group: 10-15

- | | |
|---|-----------|
| 1. Develop a poster/chart on dietary guidelines or lifestyle management for adults (sedentary, moderate, heavy workers) or pregnant woman. | (4 Hours) |
| 2. Develop a digital educational aid on importance of colostrum/mother's milk/food behaviour/lifestyle management | (2 Hours) |
| 3. Develop a questionnaire on common nutrition/health concerns | (2 Hours) |
| 4. Learn to fill growth chart for under five years children (case study) | (2 Hours) |
| 5. Plan and prepare nutritious snack for Pregnant women (iron and folic acid rich) | (2 Hours) |
| 6. Plan and prepare nutritious snack Lactating mother (protein and calcium rich) | (2 Hours) |
| 7. Plan and prepare nutritious snack Pre-schooler (Vitamin A rich) | (2 Hours) |
| 8. Plan and prepare nutritious tiffin for School going child (energy and protein rich) | (2 Hours) |
| 9. Plan and prepare nutritious snack for adolescents (energy and protein rich) | (2 Hours) |
| 10. Plan and prepare nutritious snack for Elderly (easy to prepare, protein and micro-nutrient rich) | (2 Hours) |
| 11. Plan and prepare premix or complimentary food for infants | (2 Hours) |
| 12. Plan and organize a health awareness activity in college for college students (exhibition of model snacks/tiffins/one dish 2meals) OR Plan and play a skit on the concept of longevity for elderly in a nearby slum or community center or college event (Group activity) | (6 Hours) |

ESSENTIAL/ RECOMMENDED READINGS (Theory and Practical):

1. Chadha, R., & Mathur, P. (Eds.). (2015). Textbook Nutrition: A Lifecycle Approach. Orient Blackswan. ISBN978-8125059301
2. Khanna, K., Gupta, S., Passi, S. J., Seth, R., Mahna, R., & Puri, S. (2013). Textbook of Nutrition and -Dietetics (2nd ed.). Elite Publishing House Pvt. Ltd. ISBN: 978-81- 88901-53-1
3. Srilakshmi, B. (2006). Dietetics. New Age International (P) Limited Publishers. ISBN 81-224-1611-X
4. Wardlaw, G. M., & Smith, A. M. (2015). Contemporary Nutrition (9th ed.). McGraw Hill Education (India) Private Limited.

SUGGESTED READINGS:

1. Evans, S. (2009). Nutrition: A Lifespan Approach, Wiley-Blackwell. ISBN:978-1-405- 17878-5.
2. Shubhangini A Joshi, S. (2021). Nutrition and Dietetics (5th ed.). McGraw Hill Education (India) Private Limited. ISBN:978-93-90727-82-7.
3. Bernstein, M. & McMahon, K. (2018). Nutrition Across Life Stages, Jones & Bartlett Publishers. ISBN: 9781284102161
4. Katz, D., Yeh, M. and Levitt, J. (2022). Wolters Kluwer Publishers. ISBN: 9781975161491

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – DSC-4-FT: FOOD SCIENCE PART-II

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Food Science Part-II | 4 | 3 | 0 | 1 | Class XII Pass | DSC-2-FT |

LEARNING OBJECTIVES:

1. To familiarize the students with the composition and processing of milk, egg, sugars, fats and miscellaneous food.
2. To impart concept of properties of fats and oil, sugar, egg foam stages and emulsions.

LEARNING OUTCOMES:

After completion of the course, the students will be able to:

1. Describe the composition and nutritive value of milk, egg, sugar and fats and their role in food processing.
2. Develop understanding about basic processing of milk and eggs.
3. Illustrate the behaviour of sugar at various temperatures.
4. Describe spoilage of fat scientifically, determine the smoke point of different fats and illustrate the ways to prevent rancidity of fats.

THEORY:

UNIT I: MILK

(9 Hours)

- *Unit Description:* This unit is about milk, its nutritive value, processing, types and effect of processing on milk quality.
- *Subtopics:*
 - Nutritive value
 - Introduction to liquid milk technology (clarification, pasteurization, homogenization, fortification, sterilization)
 - Types of milk
 - Effect of processing on milk

UNIT II: EGGS

(12 Hours)

- *Unit Description:* This unit is about eggs its composition and nutritive value, structure, quality, foam formation and effect of heat on egg proteins.
- *Subtopics:*
 - Composition and nutritive value
 - Structure of an egg
 - Egg quality and deterioration
 - Effect of heat on egg proteins: Green ring formation in boiled egg
 - Storage and preservation of eggs
 - Egg foams – stages of preparation and factors affecting them

UNIT III: FATS AND OILS Hours)

(12

- *Unit Description:* This unit is about types of fats and oils, their functions, spoilage, precautions to be taken while using, emulsions and RUCO.
- *Subtopics:*
 - Definitions, types of fats and oils and their functions
 - Rancidity in fat and its prevention
 - Care of fat used for frying (smoke, flash and fire points)
 - Emulsions
 - Repurpose used cooking oil (RUCO).

UNIT IV: MISCELLANEOUS FOOD PRODUCTS Hours)

(12

- *Unit Description:* This unit is about miscellaneous food items like sugar and its properties and behaviour during cooking, tea and coffee processing and flavouring compounds in spices
- *Subtopics:*
 - Sugar: Properties, sugar behaviour during cooking.
 - Tea and Coffee: Types of tea and coffee, basic processing of tea and coffee.
 - Spices and Herbs: Types and flavouring components

PRACTICAL:30 Hours

No. of Students per Practical Class Group: 10-15

1. Determination of pH of different foods. (2 Hours)
2. Selection and purchase criteria of raw materials (cereal, pulses, vegetables, fruits and eggs) (2 Hours)
3. Effect of heat on milk processing. (2 Hours)
4. Effect of acid and alkali on milk processing. (2 Hours)

| | |
|--|-----------|
| 5. Egg white foam formation | (2 Hours) |
| 6. Factors affecting egg white foam stability | (4 Hours) |
| 7. Green ring formation in boiled eggs and its prevention | (2 Hours) |
| 8. Determination of the quality of an egg | (2 Hours) |
| 9. Behaviour of sugar at various temperatures | (4 Hours) |
| 10. Preparation of crystalline candies | (2 Hours) |
| 11. Preparation of non-crystalline candies | (2 Hours) |
| 12. Determination of smoke point of different fats and oil | (2 Hours) |
| 13. Preparation of emulsions – mayonnaise | (2 Hours) |

ESSENTIAL/ RECOMMENDED READINGS (Theory and Practical):

1. Suri, S. & Malhotra, A. (2014). *Food Science Nutrition and Safety*. Delhi: Pearson India Ltd.
 i. Online Question Bank and student E
 Resources: https://wps.pearsoned.co.in/suri_fsns_1/
 ii. Online Instructor Resources: www.pearsoned.co.in/sukhneetsuri
2. Sethi, P. & Lakra, P. (2015). *Aahar Vigyan, Poshan Evam Suraksha*. Delhi: Elite Publishing House Pvt.Ltd.
3. Srilakshmi, B. (2018). *Food Science*. Delhi: New Age International Pvt.Ltd.
4. Potter, N. & Hotchkiss, J.H. (2007). *Food Science*. 5th Edition. Delhi: CBS Publishers.
5. Rekhi, T. & Yadav, H. (2014). *Fundamentals of Food and Nutrition*. Delhi: Elite Publishing House Pvt.Ltd.
6. Sharma, A. (2010). *Textbook of Food Science and Technology*. 2nd Edition. Delhi: IBDC Publishers

SUGGESTED READINGS:

1. Manay, N. S. & Shadakshraswamy. (2020). *Foods: Facts and Principles*. 3rd Edition. New Age International Pvt Ltd.
2. McWilliams, M. (2016). *Foods: Experimental Perspectives*. USA: Pearson.
3. Roday, S. (2018). *Food Science and Nutrition*. 3rd Edition. Delhi: Oxford University Press.
4. Vaclavik, V.A. & Elizabeth, C. (2014). *Essentials of Food Science*. 4th Edition. New York: Springer

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

**B.A. (Prog.) with Food Technology (FT) as Non-Major
Category-III**

DISCIPLINE SPECIFIC CORE COURSE – DSC-2A-FT: FOOD SCIENCE PART-II

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Food Science Part-II | 4 | 3 | 0 | 1 | Class XII Pass | DSC-1A-FT |

LEARNING OBJECTIVES:

1. To familiarize the students with the composition and processing of milk, egg, sugars, fats and miscellaneous food.
2. To impart concept of properties of fats and oil, sugar, egg foam stages and emulsions.

LEARNING OUTCOMES:

After completion of the course, the students will be able to:

1. Describe the composition and nutritive value of milk, egg, sugar and fats and their role in food processing.
2. Develop understanding about basic processing of milk and eggs.
3. Illustrate the behaviour of sugar at various temperatures.
4. Describe spoilage of fat scientifically, determine the smoke point of different fats and illustrate the ways to prevent rancidity of fats.

THEORY:

UNIT I: MILK

(9 Hours)

- *Unit Description:* This unit is about milk, its nutritive value, processing, types and effect of processing on milk quality.
- *Subtopics:*
 - Nutritive value
 - Introduction to liquid milk technology (clarification, pasteurization, homogenization, fortification, sterilization)
 - Types of milk
 - Effect of processing on milk

UNIT II: EGGS

(12 Hours)

- *Unit Description:* This unit is about eggs its composition and nutritive value, structure, quality, foam formation and effect of heat on egg proteins.
- *Subtopics:*
 - Composition and nutritive value
 - Structure of an egg
 - Egg quality and deterioration
 - Effect of heat on egg proteins: Green ring formation in boiled egg
 - Storage and preservation of eggs
 - Egg foams – stages of preparation and factors affecting them

UNIT III: FATS AND OILS

(12 Hours)

- *Unit Description:* This unit is about types of fats and oils, their functions, spoilage, precautions to be taken while using, emulsions and RUCO.
- *Subtopics:*
 - Definitions, types of fats and oils and their functions
 - Rancidity in fat and its prevention
 - Care of fat used for frying (smoke, flash and fire points)
 - Emulsions
 - Repurpose used cooking oil (RUCO).

UNIT IV: MISCELLANEOUS FOOD PRODUCTS

(12 Hours)

- *Unit Description:* This unit is about miscellaneous food items like sugar and its properties and behaviour during cooking, tea and coffee processing and flavouring compounds in spices
- *Subtopics:*
 - Sugar: Properties, sugar behaviour during cooking.
 - Tea and Coffee: Types of tea and coffee, basic processing of tea and coffee.
 - Spices and Herbs: Types and flavouring components

PRACTICAL: 30 Hours

No. of Students per Practical Class Group: 10-15

1. Determination of pH of different foods. (2 Hours)
2. Selection and purchase criteria of raw materials (cereal, pulses, vegetables, fruits and eggs) (2 Hours)
3. Effect of heat on milk processing. (2 Hours)

- | | |
|--|-----------|
| 4. Effect of acid and alkali on milk processing. | (2 Hours) |
| 5. Egg white foam formation | (2 Hours) |
| 6. Factors affecting egg white foam stability | (4 Hours) |
| 7. Green ring formation in boiled eggs and its prevention | (2 Hours) |
| 8. Determination of the quality of an egg | (2 Hours) |
| 9. Behaviour of sugar at various temperatures | (4 Hours) |
| 10. Preparation of crystalline candies | (2 Hours) |
| 11. Preparation of non-crystalline candies | (2 Hours) |
| 12. Determination of smoke point of different fats and oil | (2 Hours) |
| 13. Preparation of emulsions – mayonnaise | (2 Hours) |

ESSENTIAL/ RECOMMENDED READINGS (Theory and Practical):

- Suri, S. & Malhotra, A. (2014). *Food Science Nutrition and Safety*. Delhi: Pearson India Ltd.
 - Online Question Bank and student E Resources: https://wps.pearsoned.co.in/suri_fsns_1/
 - Online Instructor Resources: www.pearsoned.co.in/sukhneetsuri
- Sethi, P. & Lakra, P. (2015). *Aahar Vigyan, Poshan Evam Suraksha*. Delhi: Elite Publishing House Pvt.Ltd.
- Srilakshmi, B. (2018). *Food Science*. Delhi: New Age International Pvt.Ltd.
- Potter, N. & Hotchkiss, J.H. (2007). *Food Science*. 5th Edition. Delhi: CBS Publishers.
- Rekhi, T. & Yadav, H. (2014). *Fundamentals of Food and Nutrition*. Delhi: Elite Publishing House Pvt.Ltd.
- Sharma, A. (2010). *Textbook of Food Science and Technology*. 2nd Edition. Delhi: IBDC Publishers

SUGGESTED READINGS:

- Manay, N. S. & Shadakshraswamy. (2020). *Foods: Facts and Principles*. 3rd Edition. New Age International Pvt Ltd.
- McWilliams, M. (2016). *Foods: Experimental Perspectives*. USA: Pearson.
- Roday, S. (2018). *Food Science and Nutrition*. 3rd Edition. Delhi: Oxford University Press.
- Vaclavik, V.A. & Elizabeth, C. (2014). *Essentials of Food Science*. 4th Edition. New York: Springer

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category-IV

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES OFFERED BY DEPARTMENT OF HOME SCIENCE

GENERIC ELECTIVES (GE HS 002): SELF DEVELOPMENT AND WELLBEING

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--------------------------------|---------|-----------------------------------|----------|------------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Self Development and Wellbeing | 4 | 3 | 0 | 1 | 12 th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand the concepts of self-development and wellbeing
- To study theoretical perspectives and stages of self-development
- To understand framework and dimensions of wellbeing
- To understand the context and significance of managing emotions and wellbeing
- To study and understand activities for enhancing self-development and wellbeing

Learning outcomes

The Learning Outcomes of this course are as follows:

- The student will be able to understand the concept of self-development and parameters of wellbeing
- The student will be able to understand the theoretical perspectives on self-development and wellbeing
- The students will be able to demonstrate skills in developing and using contextually appropriate methods to promote well-being
- The student will be able to enhance their self-development and wellbeing through reflection and introspection

SYLLABUS OF GE HS 002

Unit I: Understanding the self (12 Hours)

To introduce various approaches and theories of self.

Subtopics:

- Definitions and concepts of self
- Perspectives on self
- Phases of self-development
- Theories of self-development

Unit II: Components of self-development (09 Hours)

To understand various aspects of self-development.

Subtopics:

- Components of Self- An integrated approach
- Self-concept and self esteem
- Social self and development
- Factors influencing self

Unit III: Concept, approaches and importance of wellbeing (12 Hours)

To understand basic definitions and concepts of wellbeing and interlink these with self-development.

Subtopics:

- Definitions and concept of Wellbeing
- Frameworks and dimensions of wellbeing
- Health and Wellbeing
- Happiness and Wellbeing

Unit IV: Promoting self-development and wellbeing (12 Hours)

To understand significance of activities related to wellbeing.

Subtopics:

- Managing relationships and emotions
- Happiness and emotional wellbeing
- Mindfulness and decision making
- Academics and Work-life balance
-

Practical component (if any)

PRACTICAL: 30 Hours

- An activity on self-reflection from early childhood to adolescence.
- Focused group discussion on self and wellbeing.
- Narrative analysis/: biographies and autobiographies/ Diagrammatic representation of the self)

- Selected exercises to promote wellbeing: Music, dance, literature, poetry, art, yoga, meditation, play, and theatre
- Psychometric tests- on self and wellbeing
- Session on basics of counselling
- Profile an organisation work in sector of counselling

Essential Readings

1. Burkitt, I. (2008). *Social selves: Theories of self and society*. Sage
2. Emmons, R. A., & Shelton, C. M. (2002). Gratitude and the science of positive psychology. *Handbook of positive psychology*, 18, 459-471.
3. Kakar, S. (1978). *The inner world*. Delhi: Oxford University Press.
4. Kakar, S. and Kakar, K. (2007). *The Indian: The portraits of a people*. London: Penguin/Viking.
5. Mathews, G., & Izquierdo, C. (Eds.). (2008). *Pursuits of happiness: Well-being in anthropological perspective*. Berghahn books.
6. Rice, F. P. (2007). *Adolescent: Development, Relationship and Culture*.
7. Sabharwal, N., Ranganathan, N., Singh, I. V., & Basu, S. (2017). *Unit-1 Dimensions of Self: An Integrated Approach*.
8. Santrock, J. (2010). *LifeSpan Development: A Topical Approach*, New Delhi: Tata McGraw Hill.
9. Snyder, C. R., Lopez, S. J., Edwards, L. M., & Marques, S. C. (Eds.). (2020). *The Oxford handbook of positive psychology*. Oxford university press.
10. Snyder, C.R., & Lopez, S.J. (2007). *Positive psychology: The scientific and practical explorations of human strengths*. Thousand Oaks, CA: Sage.
11. Winnicott, D. W. (2012). *The family and individual development*. Routledge.
12. Gough, I., & McGregor, J. A. (Eds.). (2007). *Wellbeing in developing countries: from theory to research*. Cambridge University Press.

Suggested Readings

1. Synder, C.R., Lopez, S.J., Pedrotti, J.T. (2011). *Positive psychology: The scientific and*
2. *Practical explorations of human strengths*. New Delhi: Sage.
3. Seligman, M. (2011). *Flourish: A Visionary New Understanding of Happiness and Well-being*, Atria Books. Peterson, C. A. (2006). *A Primer in Positive Psychology*, Oxford University Press.
4. Nettle, D.S. (2006). *Happiness: The Science Behind Your Smile*, Oxford University Press.
5. Lyubomirsky, S. (2013). *The Myths of Happiness: What Should Make You Happy, but Doesn't, What Shouldn't Make You Happy, but Does*, Penguin.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE HS 006): NUTRITION FOR THE FAMILY

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Nutrition for the Family | 4 | 3 | 0 | 1 | 12 th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To enable students in understanding the principles of planning nutritionally adequate diets.
- To acquire knowledge about the nutritional needs and concerns of an individual throughout the life cycle.
- To make them exercise food choices consonant with good health based on sound knowledge of principles of nutrition.

Learning outcomes

The Learning Outcomes of this course are as follows:

The students will be able:

- The student will be able to comprehend the principles of planning nutritionally adequate diets.
- The student will be able to acquire knowledge about the nutritional needs and concerns of an individual throughout the life cycle.
- The student will be able to exercise food choices consonant with good health based on sound knowledge of principles of nutrition.

SYLLABUS OF GE HS 006

Unit I: Basics of nutrients requirements (06 Hours)

Concepts of estimated average requirements, recommended allowances and methods of assessing nutrient requirements in general for Indians

Subtopics:

- Concept of EAR, RDA and TUL
- Methods of assessment of nutrient requirements

Unit II: Principles of Meal Planning (06 Hours)

Concepts of food groups and food exchange lists for meal planning, factors affecting meal planning will be dealt with. Students will also be introduced to dietary guidelines for Indians.

Subtopics:

- Food groups
- Food exchange list
- Factors affecting meal planning and food related behaviour
- Dietary guidelines for Indians

Unit III: Nutrition during adulthood (18 Hours)

Physiological influence on nutrient requirements during adulthood (EAR/RDA), energy balance in adulthood, nutritional concerns and changes in requirements during pregnancy, lactation, and old age will be dealt with.

Subtopics:

- Adult men and women
- Pregnant women
- Lactating mothers
- Elderly

Unit IV: Nutrition during childhood (15 Hours)

Physiological changes during infancy, childhood and adolescence – growth and development; and their influence on nutrient requirements (EAR/RDA), concepts of nutrient requirements during these ages and nutrition concerns keeping in mind the changing food habits and importance of physical activity will be dealt with.

Subtopics:

- Infants
- Preschool children
- School children
- Adolescents

Practical component (if any)

PRACTICAL: 30 Hours

Introduction to meal planning:

- Rich sources of nutrients
- Use of food exchange lists

Planning nutritious diets for:

- Adult (Male and Female)
- Pregnant and Lactating woman
- Pre-schooler
- Adolescent
- Elderly

Planning and cooking of nutrient rich snacks/dishes for:

- Infants (Freshly prepared complementary foods)
- Packed tiffin
- Pregnancy/Lactation

Essential Readings

1. Chadha R and Mathur P eds. (2015). Nutrition: A Lifecycle Approach. New Delhi: Orient Blackswan
2. ICMR-NIN (2020). Expert Group on Nutrient Requirements for Indians, Recommended Dietary Allowances (RDA) and Estimated Average Requirements (EAR)-2020
3. Khanna K, Gupta S, Seth R, Passi SJ, Mahna R, Puri S (2013). Textbook of Nutrition and Dietetics. Delhi: Elite Publishing House Pvt. Ltd.
4. Longvah T, Ananthan R, Bhaskarachary K and Venkaiah K (2017). Indian Food Composition Tables. National Institute of Nutrition, Indian Council of Medical Research, Department of Health Research, Ministry of Health and Family Welfare, Government of India, Hyderabad.
5. NIN (2011). Dietary Guidelines for Indians-A manual. Second Edition. National Institute of Nutrition, Indian Council of Medical Research, Hyderabad.
6. Puri S, Bhagat A, Aeri, BT, Sharma A (2019). Food Exchange List: A Tool for Meal Planning. New Delhi: Elite Publishing House.
7. Seth V, Singh K, Mathur P (2018). Diet Planning Through the Lifecycle Part I: Normal Nutrition- A Practical Manual. 6th Edition. New Delhi: Elite Publishing House.
8. Siddhu, A, Bhatia, N, Singh, K, Gupta, S (2017). Compilation of Food Exchange List, Technical Series 6, Lady Irwin College, University of Delhi Publ. Global Books Organisation, Delhi.

Suggested Readings

1. Byrd-Bredbenner C, Moe G, Beshgetoor D, Berning J (2013). Wardlaw's Perspectives in Nutrition, McGraw- Hill International Edition, 9th edition
2. B Srilakshmi Eighth Edition (2019). Nutrition Science. New Age International Publishers.
3. Punita Sethi, Poonam Lakra (2015). Aahar Vigyan Suraksha evam Poshan. Delhi: Elite Publishing House Pvt.Ltd

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE HS 009): GENDER AND MEDIA STUDIES

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department offering the course |
|--------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|--------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| Gender and Media Studies | 4 | 3 | 0 | 1 | 12 th Pass | NIL | Home Science |

Learning Objectives

The Learning Objectives of this course are as follows:

- To introduce the concepts relating to gender and to sensitize the students to the construction of gender.
- To highlight the various aspects in gender and development, and its dimensions, theories and approaches.
- To understand the gender-based issues of equality and equity through a study of development indices and feminist theories and perspectives.
- To learn about the inter-relationships between portrayal of women in media and the status of women as well as the role media can play in empowerment of women.

Learning outcomes

The Learning Outcomes of this course are as follows:

After studying, students will be able to:

- The student will be able to understand the concept of gender and socio-cultural practices impacting the construction of gender.
- The student will be able to understand the theories and approaches of feminism.
- The student will be able to comprehend the various aspects in gender and development, and its dimensions, theories
 - and approaches.
- The student will be able to critique the role of the media in promoting gender equity and empowerment.

SYLLABUS OF GE HS 009

Unit I: Social Construction of Gender (12 Hours)

The Unit aims to critically understand the concept of gender and socio-cultural practices impacting the social construction of gender.

Subtopics:

- Concept of gender and sex
- Socialization and construction of gender
- Patriarchal social order and status of women
- Shifts in Status of women – historical and contemporary perspectives on status of women

Unit II: Gender and Development (12 Hours)

The Unit highlights the various aspects in gender and development and focuses on its dimensions, theories and approaches.

Subtopics:

- Concept of Gender, Development and Indicators
- Approaches to women's participation in development
- Invisibility of women's work and economic participation
- Gender differentials in various sectors of development
- Life Cycle Approach to gender studies (violence against women)

Unit III: Feminism, Gender and Media (12 Hours)

This Unit focuses on historical evolution of feminism and perspectives on gender and media.

Subtopics:

- Feminist theories; A short introduction
- Gender and Media; Theoretical perspectives - portrayal and representation
- Theory of Visual Pleasure - Male Gaze (Laura Mulvey);
- Queer Theory (Judith Butler)
- Masculine Hegemony (R.W. Connell)
- Framework for gender responsive media and gender mainstreaming

Unit IV: Gender and Empowerment (09 Hours)

This Unit provides an insight on the concept of empowerment and gender equality.

Subtopics:

- Advocacy of women's rights through media
- Women's Empowerment; Historical and Contemporary Perspectives
- Women's Legal Rights and Redressal System
- Media laws related to women

Practical component (if any)**PRACTICAL: 30 Hours**

- Exercises on sex and gender
- Data interpretation on gender-related indicators
- Review and content analysis of various Media: print, films/documentaries on gender issues and their critical analysis.
- Case studies on representation of gender in mainstream media from a gender perspective (print, broadcast and new media)
- Critical analysis of Laura Mulvey's notion of Male Gaze

Essential Readings

- Bhasin, Kamla (2000). Understanding Gender. New Delhi. Kaali for Women.
- Butler, J. (1999). Gender trouble: Feminism and the subversion of identity. New York: Routledge.
- Connell, R. W., & Messerschmidt, J. W. (2005). Hegemonic Masculinity: Rethinking the Concept. Gender & Society, 19(6), 829–859.
- Human Development Reports. (n.d.). Hdr.undp.org. <https://hdr.undp.org/en/towards-hdr-2022>
- Mulvey, L. (1989). Visual Pleasure and Narrative Cinema. In Visual and other pleasures (pp. 14-26). Palgrave Macmillan, London.

Suggested Readings

- Beauvoir, S. (2015). The Second Sex. London: Vintage Books.
- Chattopadhyay, S (2018). Gender Socialization and the Making of Gender in the Indian Context. New Delhi: Sage Publications.
- Dube, L. (2001). Anthropological Explorations in Gender-Intersecting Fields. New Delhi: Sage Publications.
- Ghadially, R (2007). Urban Women in Contemporary India. New Delhi: sage Publications.
- Goel, A. (2004). Education & Socio-Economic Perspectives of Women Development and Empowerment. New Delhi: Deep & Deep.
- Goel, A. (2004). Organisation & Structure of Women Development and Empowerment. New Delhi: Deep & Deep.
- Goel, A, Kaur, A and Sultana, A (2006). Violence against women: Issues and Perspectives. New Delhi, Deep & Deep Publishers.
- Khanna, S. (2009). Violence against Women and Human Rights. Delhi: Swastik
- Krishna, S. (Ed) (2003) Livelihood and Gender Equality in Community Resource Management. New Delhi: Sage Publications.
- Madhi, V. J et al (2014) Women's Studies in India. New Delhi: Rawat.
- Sohoni, K Neeraja, (1994), Status of Girls in Development Strategies, New Delhi, Har-Anand Publications.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE HS 014): FABRIC STUDY

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department offering the course |
|---------------------|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|--------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| Fabric Study | 4 | 3 | 0 | 1 | 12 th Pass | NIL | Home Science |

Learning Objectives

The Learning Objectives of this course are as follows:

- To briefly study the fabric components.
- To enhance awareness of various commercially available fabrics.
- To understand the properties and end uses of the various types of fabrics.

Learning outcomes

The Learning Outcomes of this course are as follows:

After studying, students will be able to:

- The student will be able to understand the components of a textile fabric.
- The student will be able to identify the various commercially available fabrics.
- The student will be able to appropriately select fabrics based on their properties, cost and recommended end-use.

SYLLABUS OF GE HS 014

UNIT I: Fabric components

(09 Hours)

In this unit, students will be able to understand the basics of fibres, yarns and fabric.

Subtopics:

- Fibres and yarns
- Methods of fabric construction

Fabric finishing- dyeing, printing, aesthetic and functional finishes

Unit II: Commercially important woven fabrics: Identification, properties and end use (21 Hours)

In this unit, students will gain an understanding of various types of woven fabrics

Subtopics:

- **Cotton and other Cellulosic Fabrics**
 - Lightweight fabrics- Mulmul, Voile, Organdy, etc.
 - Medium weight fabrics- Cambric, Poplin, Cotton, Rubia, Denim, Chambray, Seersucker, Eyelash dobby, Schiffli, Jute, Linen, etc.
 - Heavy weight fabrics- Canvas, Casement, Gabardine, Damask, Corduroy, Velvet, Terry, etc.
- **Silk and Wool fabrics**
 - Lightweight fabrics- Silk Crepe, De Chine, Georgette, Chiffon, Organza, etc.
 - Medium/Heavy weight fabrics- Flat silk, Satin, Taffeta, Dupion, Shantung, Raw silk, Tussar silk, Habutai silk, Tweed
- **Man-made fibre and blended fabrics**

Art silk, Lizzy-Bizzy, Terivoile, Semi-crepe, Moss crepe, Artificial chiffon, Artificial georgette, Terrycot, Poly-satin, Lycra, Modal, Viscose

Unit III: Commercially Important Knitted and Non-woven fabrics: Identification, properties and end use (09 Hours)

In this unit, students will learn about various types of knitted and non-woven and other types of fabrics

Subtopics:

- Knitted Fabrics- Knitted Terry, Jersey, Rib Knit, Interlock knit, Pique, Velour, Scuba, Fleece, etc.
- Non-wovens- Different types and weights
- Others- Leatherette, Suede, Nets and Laces

Unit IV: Traditional Indian Fabrics: Identification, properties and end use (06 Hours)

In this unit, students will be learn to identify various types of traditional Indian fabrics

Subtopics:

Selected woven, embroidered, painted, printed and dyed traditional Indian textiles.

Practical component (if any)

PRACTICAL: 30 Hours

Unit I: Identification of various types of fibres, yarns, fabrics and weaves

- Learn to identify the different components of a fabric, its construction and other essential properties

Subtopics:

- Identification of common textile fibres
- Identification of textile yarns
- Identification of fabric types: Woven, Knitted, Non-Wovens and others
- Identification of fabric weave
- Identification of various types of woven fabrics in terms of Weight
- Thread Count

Unit II: Collection of swatches for portfolio preparation of woven, knitted, non-woven and traditional Indian fabrics

Learn to recognise various types of commercially available fabrics

Subtopics:

- Preparation of portfolio of commonly available fabrics
- Commercially important Woven Fabrics

Commercially important Knitted, Non-Woven and other fabrics o Traditional Indian Fabrics

Essential Readings

- Corbman P. B., (1989), Textiles- Fibre to Fabric, 6th edition, McGraw Hill, New York.
- Hollen N., Saddler J., Langford A.L., Kadolph S.J., (1988), Textiles, 6th Edition, Macmillan Publishing Company New York, USA
- Joseph, M.L., (1988) Essentials of Textiles (6th Edition), Holt, Rinehart and Winston Inc., Florida.
- Rastogi, D. (Ed.) and Chopra, S. (Ed.), (2017), Textile Science, Orient Black Swan.
- Sekhri S., (2011) Textbook of Fabric Science: Fundamentals to Finishing, PHI Learning, Delhi.
- Chattopadhyay, K.D., 1995, Handicrafts of India, Wiley Eastern Limited, N Delhi.

Suggested Readings: (Practical)

- Corbman P. B., (1989), Textiles- Fibre to Fabric, 6th edition, McGraw Hill, New York.
- Chelna Desai, 1988, Ikats Textiles of India, Chronicle Books, India.
- Pizzuto's J.J. "Fabric Science", Fairchild Publication, New York.
- Hollen N., Saddler J., Langford A.L., Kadolph S.J., (1988), Textiles, 6th Edition, Macmillan Publishing Company New York, USA
- Das, Shukla, 1992, Fabric Art- Heritage of India, Abhinav Publications, N Delhi.
- Chelna Desai, 1988, Ikats Textiles of India, Chronicle Books, India
- Tholia A., (2013) Understanding Fabrics- A practical Approach, 2nd edition, Sarv

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Credit distribution, Eligibility and Pre-requisites of the Course

| GENERIC ELECTIVES (GE HS 018): INNOVATIVE DESIGN PRACTICES | | | | | | | |
|--|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|--------------------------------|
| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department offering the course |
| | | Lecture | Tutorial | Practical/ Practice | | | |
| Innovative Design Practices | 4 | 3 | 0 | 1 | 12 th Pass | NIL | Home Science |

Learning Objectives

The Learning Objectives of this course are as follows:

- To sensitize students towards innovation in design to improve the quality of life of users as well as comply with environment protection.
- To stimulate the students to engage in creativity and integrate sustainability in their design endeavours.

Learning outcomes

The Learning Outcomes of this course are as follows:

After studying, students will be able to:

- The student will be able to get sensitized towards innovation and creativity through innovative and sustainable design practices and techniques.
- The student will be able to carry out development of product and prototyping from a sustainability perspective.
- The student will be able to brainstorm new product ideas in a systematic manner.

Unit I: Introduction to Innovation in Design

(09 Hours)

The focus of this unit would be on understanding the theoretical concepts related to innovation, design and creativity.

Subtopics:

- Concept of Design, Innovation, and Creativity
- Theories and principles of design and innovation
- Challenges to innovation

Unit II: Methods and techniques for Innovation in Design

(12 Hours)

This unit focuses on studying the various methods and techniques used for design innovation

Subtopics:

- Understanding disruptions in innovation approaches, case analysis
- Process of creativity and design
- Methods of ideating, creating and implementing innovative design ideas

Unit III: Approaches for Sustainability in Design

(12 Hours)

This unit attempts to acquaint the students with contemporary techniques and approaches for integrating concepts of sustainability in design.

Subtopics:

- Role of sustainability in design practice
- Emerging trends and sustainable methods and techniques of design
- Sustainable Materials: reclaimed and eco-friendly composite materials
- Contemporizing traditional designs
- Circular Economy as a pathway to sustainability in design

Unit IV: Design Development and Presentation

(12 Hours)

This unit will develop competence amongst students towards creating and executing their innovative design ideas.

Subtopics:

- Critical evaluation of existing designs:
 - Products
 - Interiors and Space
- Case study of Innovative design practices related to:
 - Interiors and Space

Product

SYLLABUS OF GE HS 018

Practical component (if any)

PRACTICAL: 30 Hours

Unit I: Brainstorming Methods

Activities:

- Sessions on Tinkering Lab
- Engaging students in a practical setup for brainstorming
- Narration / Documentation of brainstorming sessions
- Workshop/ Field Visits- Contemporary discussion with the artists and designers

Unit II: Project on Innovative Design Idea

Activities:

- Case study on Reuse/ Recycle/ Reclaim products
- Minor project on sustainable materials
- Portfolio on Innovative Design Idea
- Description
- Relevance of the idea in present contextDigital Presentation / Prototype of Innovative Design Idea

Essential Readings

- Brown, T. (2019). *Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation*. ISBN-13: 9780062856623
- Soni, P. (2020) *Design Your Thinking: The Mindsets, Toolsets and Skill Sets for Creative Problem-solving*.
- Jones, J. C. *Design Methods*. ISBN-13: 978-0471284963
- Ashby, M.F, Johnson, K. *Materials and Design: The Art and Science of Material Selection in Product Design*.
- Allwood, J, Cullen, J. (2011). *Sustainable Materials*.
- Desai, A, Mital, A. *Sustainable Product Design and Development*. ISBN: 9780367343217
- William McDonough and Michael Braungart (2002). “Cradle-to-Cradle: Remaking the Way We Make Things”, North Point Press, New York.
- Lance Hosey, (2012). “The Shape of Green: Aesthetics, Ecology, and Design”, Island Press, Washington, D.C.

Suggested Readings

- Norman, A.D. *The Design of Everyday Things: Revised and Expanded Edition*.
- Kaptelinin, V. *Affordances and Design*.
- Pivot. *From Concept to Product Launch: A guide to Product Development*.
- Monto Mani and Prabhu Kandachar (Eds) (2015), “Design for sustainable well-being and empowerment: Selected Papers”, IISc, Bangalore and TU Delft, The Netherlands.
- Papanek, V. (1984), “Design for the Real World”, 2nd Edition, London: Thames & Hudson.
- White Lemon, “365 Days of DIY”, Create Space Independent Publishing Platform, 2016.
- Jaffe, S.B et.al. (2020). *Sustainable Design Basics*.

42. Amendment to Appendix -II-A to the Ordinance V (2-A) of the Ordinances of the University vide EC Resolution 38-1-1 dated 08.12.2022 regarding Syllabi of 2nd Semester of Departments under Faculty of Arts

Add the following:

Syllabi of Semester-II of the following departments under Faculty of Arts based on Under Graduate Curriculum Framework -2022 to be implemented from the Academic Year 2022-23.

FACULTY OF ARTS

Department of Arabic

Category-I
BA (Hons.) Arabic

DISCIPLINE SPECIFIC CORE COURSE – 4
ELEMENTARY ARABIC: READING & WRITING

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Elementary Arabic: Reading & Writing | 4 | 3 | 1 | 0 | Class XII Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

1. To enable the learners to read the text accurately.
2. To develop the writing skills.

Learning outcomes

The Learning Outcomes of this course are as follows:

After completing this course the learner will be able to:

1. Read and comprehend the Arabic text.
2. Make and answer the questions in Arabic language.

SYLLABUS OF DSC-4

Unit 1 (15 Hours)

- **Reading and Comprehension**

Lessons 1-4

Prescribed Book: "Madina Arabic Reader-2 by Dr. V. Abdur Rahim"

Unit 2 (15 Hours)

- **Reading and Comprehension**

Lessons 5-8

Prescribed Book: "Madina Arabic Reader-2 by Dr. V. Abdur Rahim"

Unit 3 (15 Hours)

- **Reading and Comprehension**

Lessons 9-13

Prescribed Book: "Madina Arabic Reader-2 by Dr. V. Abdur Rahim"

Practical component (if any) - NIL

Essential/recommended readings

1. Dr. V. Abdur Rahim: Madinah Arabic Reader: Book 2, New Delhi

Suggestive readings

1. Dr. Wali Akhtar Nadwi, My Arabic Reader (Elementary Level), New Delhi

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 5 ELEMENTARY ARABIC GRAMMAR

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------------|---------|-----------------------------------|----------|------------------------|-------------------------|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Elementary Arabic Grammar | 4 | 3 | 1 | 0 | Class XII Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

1. To make learners well versed in Syntax and Morphology.
2. To enable them to translate the text.
3. To develop speaking, reading and writing skills among them.

Learning outcomes

The Learning Outcomes of this course are as follows:

After completing this course the learner will be able to:

1. Easily derive perfect, imperfect, imperative, prohibitive verbs and active/passive participles from any infinitive of the following irregular patterns.
2. Use them in their writings and speaking as per the need.
3. Learn intermediate grammar of the Arabic syntax.
4. Make simple nominative and verbal sentences.

SYLLABUS OF DSC-5

Unit 1 (15 Hours)

- Description of همزة الوصل وهمزة القطع.
- المفرد (Singular) in the nominative, accusative and genitive cases.
- المثنى (Dual) in the nominative, accusative and genitive cases and deletion of (ن).
- Complete conjugation of all the four kinds of the Perfect Verb (positive, negative & active and passive mood):
فعل – قد فعل – كان فعل – كان يفعل
- Conjugation of المضارع with prefix لن (active & passive).

Unit 2 (15 Hours)

- جمع المذكر السالم (Sound Masculine Plural) in nominative, accusative and genitive cases and deletion of (ن) .
- جمع المؤنث السالم (Sound Feminine Plural) in nominative, accusative and genitive cases.
- الجمع المكسر (Broken Plural) in nominative, accusative and genitive cases.
- Conjugation of المضارع with prefix لم (active & passive).

Unit 3 (15 Hours)

- الاسم المنقوص definition and case.
- لا لنفي الجنس use and case.
- أصبح – صار – ليس – كان Use and case of the
- إن وأخواتها Use and case of

- Complete conjugation of أبواب الفعل الثلاثي المزيد فيه

| | | | | | | | |
|-------|--------|-------|-------|-------|--------|--------|---------|
| تفعيل | مفاعلة | إفعال | تفعّل | تفاعل | انفعال | افتعال | استفعال |
|-------|--------|-------|-------|-------|--------|--------|---------|

Practical component (if any) - NIL

Essential/recommended readings

1. Dr. W. A. Nadwi: A Practical Approach to the Arabic Language Vol.1 & 2, New Delhi.
2. J. A. Haywood & H. M. : A New Arabic Grammar, New Delhi.
3. S.A. Rahman: Teach Yourself Arabic, New Delhi.

4. عبدالستار خان : عربي كا معلم ، دهلي

5. علي جارم ومصطفى أمين: النحو الواضح، القاهرة

6. أنطوان الدحداح: معجم تصريف الأفعال العربية، دهلي

Suggestive readings

1. R.I. Faynan: Essential Arabic, New Delhi
2. Amir Jamal: Arabic Learn the Easy Way, New Delhi
3. عبد الماجد ندوي: معلم الإنشاء (الجزء الأول)، لکناؤ

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 6 ELEMENTARY ARABIC TRANSLATION

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Elementary Arabic Translation | 4 | 3 | 1 | 0 | Class XII Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

1. To make learners familiar with Indo-Arab Relations in general.
2. To make them know Indo-Arab Relations in Modern Period.

Learning outcomes

The Learning Outcomes of this course are as follows:

After completing this course the learner will be able to:

1. Know about Indo-Arab Relations.
2. Have the knowledge of India and the Arab world and the relations they have.

SYLLABUS OF DSC-6

Unit 1 (15 Hours)

- Translation based on simple and compound usage of the following as

خير & مبتدأ

- المركب الإشاري
- المركب الإضافي
- المركب الوصفي

Unit 2 (15 Hours)

- Translation based on different formations of singular, dual and plural.

Unit 3 (15 Hours)

- Translation of sentences based on إن وأخواتها
- Translation of sentences based on أصبح & صار – ليس – كان

Practical component (if any) - NIL

Essential/recommended readings

1. Dr. W. A. Nadwi: A Practical Approach to the Arabic Language Vol.1 & 2, New Delhi.
2. J. A. Haywood & H. M. : A New Arabic Grammar, New Delhi.
3. S.A. Rahman: Teach Yourself Arabic, New Delhi.

4. عبدالستار خان : عربي كا معلم ، دهلى

5. الدكتور منظور خان: نحو الإنشاء والترجمة، جامو وكشمير

Suggestive readings

1. R.I. Faynan: Essential Arabic, New Delhi
2. Amir Jamal: Arabic Learn the Easy Way, New Delhi.
3. Md. Quamruddin: Translation Made Easy, U.P.

4. عبد الماجد ندوي : معلم الإنشاء (الجزء الأول), لکناؤ

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category II

B.A. Programmes with Arabic as Major discipline

DISCIPLINE SPECIFIC CORE COURSE – 3 INTRODUCTORY ARABIC-2

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introductory Arabic-2 | 4 | 3 | 1 | 0 | Class XII Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

1. To make them familiar with further basics of Arabic.
2. To enable them to read and write with further fundamental rules of Arabic.

Learning outcomes

The Learning Outcomes of this course are as follows:

After completing this course the learner will be able to:

1. Develop skills of reading and writing.
2. Read, understand and comprehend simple structures of Arabic sentences.

SYLLABUS OF DSC-3 (CATOGORY-II)

Unit 1 (15 Hours)

Arabic Text-1

Lessons: 17,18,19,20,21,22,23,24,25,26,27

Prescribed Book:

القراءة الواضحة (الجزء الأول)

مولانا وحيد الزمان قاسمي كير انوي

Unit 2 (15 Hours)

Arabic Text-2

Lessons: 28,29,30,31,35,36,37,38,41,42,43

Prescribed Book:

القراءة الواضحة (الجزء الأول)

مولانا وحيد الزمان قاسمي كير انوي

Unit 3 (15 Hours)

Comprehension & Applied Grammar

Lessons: 17,18,19,20,21,22,23,24,25,26,27, 28,29,30,31,35,36,37,38,41,42,43

Prescribed Book:

القراءة الواضحة (الجزء الأول)

مولانا وحيد الزمان قاسمي كير انوي

Practical component (if any) - NIL

Essential/recommended readings

1. Dr. W. A.Nadwi: A Practical Approach to the Arabic Language Vol.1, New Delhi.
2. Dr. Amir Jamal: Arabic Learn the Easy Way, New Delhi.

3. علي جارم ومصطفى أمين: النحو الواضح، القاهرة

4. مولانا عبد الرحمن امرتسرى: كتاب النحو، پانی پت

Suggestive readings

1. J. A. Haywood & H. M.: A New Arabic Grammar, New Delhi.
2. Prof. R.I. Faynan: Essential Arabic, New Delhi.

3. مولانا عبد الماجد الندوي: معلم الإنشاء، لکنؤ

4. عبد الستار خان: عربی کا معلم، دہلی

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 4
ARABIC: TEXT, GRAMMAR & TRANSLATION -II

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Arabic: Text, Grammar & Translation-II | 4 | 3 | 1 | 0 | Class XII Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

1. To make the learners familiar with the Arabic language skills.
2. To make them familiar with grammar rules required at the second stage of learning Arabic.
3. To enhance their vocabulary through the given text and understand the different structures of sentences.

Learning outcomes

The Learning Outcomes of this course are as follows:

After completing this course the learner will be able to:

1. Read the Arabic text.
2. Understand and solve grammar based exercises.
3. Translate sentences based on learnt grammar.

SYLLABUS OF DSC-4 (CATEGORY-II)

Unit 1 (15 Hours)

Arabic Text

Lessons: 13,14,15,16,17,18,19,20,23,24,26,27
(Semester-Two)

Prescribed Book:

My Arabic Reader
Elementary Level
Dr. Wali Akhtar Nadwi

Unit 2 (15 Hours)

Grammar:

- Singular, Dual & Plural
- Sound Masculine Plural
- Sound Feminine Plural
- Broken Plural
- Doer & Object
- Conjugation of the Past Tense
- Conjugation of the Future Tense
- Groups of Triliteral Verbs
- Imperative
- Prohibitive
- Cardinal Number (1 to 10)

Unit 3 (15 Hours)

Translation:

Translation English-Arabic-English based upon the Grammar Topics learnt.

Practical component (if any) – NIL

Essential/recommended readings

1. Prof. W. A. Nadwi: A Practical Approach to the Arabic Language Vol.-1, New Delhi.
2. Reading material prepared by the Department of Arabic, ZHDC, D.U.

Suggestive readings

1. Prof. S.A. Rahman: Teach Yourself Arabic, New Delhi.
2. Prof. R.I. Faynan: Essential Arabic, New Delhi.
3. Dr. Amir Jamal: Arabic Learn the Easy Way, New Delhi.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category III

B.A. Programmes with Arabic as non-Major

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Arabic: Text, Grammar & Translation-II | 4 | 3 | 1 | 0 | Class XII Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

1. To make the learners familiar with the Arabic language skills.
2. To make them familiar with grammar rules required at the second stage of learning Arabic.
3. To enhance their vocabulary through the given text and understand the different structures of sentences.

Learning outcomes

The Learning Outcomes of this course are as follows:

After completing this course the learner will be able to:

1. Read the Arabic text.
2. Understand and solve grammar based exercises.
3. Translate sentences based on learnt grammar.

SYLLABUS OF DSC-4 (CATEGORY-II)

Unit 1 (15 Hours)

Arabic Text

Lessons: 13,14,15,16,17,18,19,20,23,24,26,27
(Semester-Two)

Prescribed Book:

My Arabic Reader
Elementary Level

Dr. Wali Akhtar Nadwi

Unit 2 (15 Hours)

Grammar:

- Singular, Dual & Plural
- Sound Masculine Plural
- Sound Feminine Plural
- Broken Plural
- Doer & Object
- Conjugation of the Past Tense
- Conjugation of the Future Tense
- Groups of Triliteral Verbs
- Imperative
- Prohibitive
- Cardinal Number (1 to 10)

Unit 3 (15 Hours)

Translation:

Translation English-Arabic-English based upon the Grammar Topics learnt.

Practical component (if any) – NIL

Essential/recommended readings

1. Prof. W. A. Nadwi: A Practical Approach to the Arabic Language Vol.-1, New Delhi.
2. Reading material prepared by the Department of Arabic, ZHDC, D.U.

Suggestive readings

1. Prof. S.A. Rahman: Teach Yourself Arabic, New Delhi.
2. Prof. R.I. Faynan: Essential Arabic, New Delhi.
3. Dr. Amir Jamal: Arabic Learn the Easy Way, New Delhi.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES

GENERIC ELECTIVES (GE-4): LET US SPEAK ARABIC-1

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) | Department offering the course |
|------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|--------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| Let Us Spoken Arabic-I | 4 | 3 | 1 | 0 | Class XII Pass | NIL | Arabic |

Learning Objectives

The Learning Objectives of this course are as follows:

1. To teach learners how to speak, read and write the language.
2. To make them comfortable in using the language.
3. To help them improve fluency in Arabic speaking.

Learning outcomes

The Learning Outcomes of this course are as follows:

By studying this course the student will be able to:

1. Learn the basic vocabulary and phrases useful in speaking and conversation.
2. Learn the formal and informal greetings.
3. Learn conversational dialogues of different occasions.

SYLLABUS OF G.E.-4

Unit 1 (15 Hours)

Lessons on Alphabet

- Lessons on Arabic alphabet along with some frequently used words which include such letters.
- Common Expressions
- Formal and Informal Greetings
- Greeting of Special Days and Times
- Expressing Thanks, Excuse and Apology etc.
- Acquaintance
- Introducing oneself and acquainting with others
- Asking for guidance or directions

Unit 2 (15 Hours)

• Questions

- Introducing common question-words and mode of questioning Conversation on special occasions

• Travel:

- Booking and reservation
- Modes, vehicles and methods of transport
- Sections and formalities in an airport, documents etc.

• Hospital:

- Sign boards
- Staff and services, common diseases
- Methods of treatment and medication

Unit 3 (15 Hours)

Vocabulary related to Shopping:

- Types and sections
- Rates and bargaining
- Currencies
- Selling and buying
- Billing and Payments
- Numeral up to 10
- Date & Timing
- Week days
- Use of calendar: Year, months, and dates, Hijri date system

Practical component (if any) - NIL

Essential/recommended readings

1. Reading material prepared by the Department of Arabic, ZHDC, D.U.
2. Makhdoom Sabri: English Urdu And Arabic Guide, Delhi
3. Rapidex (Arabic Version), New Delhi
4. Prof. S.A. Rahman: Let Us Speak Arabic, New Delhi.
5. Mohd. Haroon Rashid & Khalid Parwez: Arabic Conversation Book, New Delhi.
6. Badruz Zaman Qasmi Kairanwi: Learn to Speak Arabic & English, Delhi
7. البروفيسور الدكتور سيد محمد اجتباء الندوي: التعبير والمحادثة العربية، دلهي

Suggestive readings

1. Prof. R.I. Faynan: Essential Arabic, New Delhi.
2. Dr. Amir Jamal: Arabic Learn the Easy Way, New Delhi.
3. V. Abdur Rahim: Madinah Arabic, Vol. 1, New Delhi.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Elementary Arabic Grammar & Translation | 4 | 3 | 1 | 0 | Class XII Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

1. To teach elementary Arabic grammar.
2. To let the Learners practice sentences based on the grammatical points.
3. To make them familiar with Arabic structures based upon elementary grammar.
4. To teach learners basic rules of Arabic translation
5. To enable them to translate simple sentences.

Learning outcomes

The Learning Outcomes of this course are as follows:

By studying this course the student will be able to:

1. Read simple sentences correctly.
2. Form simple sentences based on the elementary-level grammar.
3. Free from committing errors in making Arabic sentences.
4. Learn basic rules of Arabic translation through practice.
5. Learn to translate simple sentences based on the prescribed grammatical rules.

SYLLABUS OF G.E.-5

Unit 1 (15 Hours)

Grammar & Translation topics:

- Attached pronouns
- Subject & Predicate
- Annexation
- Kinds of Definite Nouns

Unit 2 (15 Hours)

Grammar & Translation topics:

- Perfect verb
- Imperfect verb
- Imperative verb
- Prohibitive verb

Unit 3 (15 Hours)**Grammar & Translation topics:**

- Verbal sentences
- The Object & the Doer
- Preposition
- Adverb of time & place

Practical component (if any) – NIL**Essential/recommended readings**

1. Prof. W. A. Nadwi: A Practical Approach to the Arabic Language Vol.1, New Delhi.
2. Dr. Amir Jamal: Arabic Learn the Easy Way, New Delhi.
3. Abdus Sattar Khan: Arabi Ka Muallim. New Delhi.
4. Prof. Moinuddin Azami: Method of Translation, Calicut.
5. Ali Jarim Wa Mustafa Amin: Al-Nahw Al-Wadih fi Qawaid Al-lugha Al-Arabiyya, Al-Qahira.
6. Prof. S.A. Rahman: Teach Yourself Arabic, New Delhi.
7. Prof. R.I. Faynan: Essential Arabic, New Delhi.

Suggestive readings

1. Muhammad Sajid Qasmi: Taysirul Insha', Deoband
2. Dr. Md. Quamruddin: Translation Made Easy, U.P.
3. Syed Ali: Arabic For Beginners, Delhi
4. Maulana Abdur Rahman Amritsari: Kitabun Nahw, Delhi

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Functional Arabic For Daily Use | 4 | 3 | 1 | 0 | Class XII Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

1. To teach the learners basic functional Arabic.
2. To make them familiar with vocabulary of daily use.

Learning outcomes

The Learning Outcomes of this course are as follows:

By studying this course the student will be able to:

1. Learn basic vocabulary of functional Arabic.
2. Write, speak and communicate using vocabulary of daily use.

SYLLABUS OF G.E.-5

Unit 1 (15 Hours)

Simple sentences based on the following topics:

- Self-introduction
- In the college
- In bus/train/airplane)

Unit 2 (15 Hours)

Simple sentences based on the following topics:

- In hospital
- In a mall/market
- In the office

Unit 3 (15 Hours)

Simple sentences based on the following topics:

- At home
- At grocery shop
- In the bank

Practical component (if any) – NIL

Essential/recommended readings

1. Reading material prepared by the Department of Arabic, ZHDC, D.U.
2. Makhdoom Sabri: English Urdu And Arabic Guide, Delhi
3. Rapidex (Arabic Version), New Delhi
4. Prof. S.A. Rahman: Let Us Speak Arabic, New Delhi.
5. Mohd. Haroon Rashid & Khalid Parwez: Arabic Conversation Book, New Delhi.
6. Badruz Zaman Qasmi Kairanwi: Learn to Speak Arabic & English, Delhi

7. البروفيسور الدكتور سيد محمد اجتباء الندوي: التعبير والمحادثة العربية، دلهي

Suggestive readings

1. Prof. R.I. Faynan: Essential Arabic, New Delhi.
2. Dr. Amir Jamal: Arabic Learn the Easy Way, New Delhi.
3. V. Abdur Rahim: Madinah Arabic, Vol. 1, New Delhi.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DEPARTMENT OF BUDDHIST STUDIES

Category-II

DISCIPLINE SPECIFIC CORE COURSE -2 (DSC-2)

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITE OF THE COURSE

| Course Title& Code | Total Credits | Credit distribution of the course | | | Eligibility Criteria/ Prerequisite | Pre-requisite of the course, if any |
|---|----------------------|--|-----------------|------------------|---|---|
| | | Lecture | Tutorial | Practical | | |
| Theravada Buddhist Philosophy DSC-2-A2 | 4 | 3 | 1 | 0 | 12 th | Basic knowledge of Ancient Indian History/Pali/Buddhism |

COURSE NAME : THERAVADA BUDDHIST PHILOSOPHY (DSC –2-A2)

Objective

The primary objective of this course is to make students aware of the basic teachings of Buddhism.

Outcome

Upon the completion of this course, students would be able to have a clear understanding of the basic teachings of Buddhism along with their relevance and application.

Course content

| Units | Chapter | Hours |
|--------------|---|--------------|
| I | 1. Introduction 2. Four Noble Truths - Dukkha, Dukkha-samudaya, Dukkha-nirodha, Dukkha-nirodha-gāmini Paṭipadā | 12 |
| II | 3. Three Characteristics - Anicca, Dukkha & Anatta | 9 |
| III | 4. Dependent Origination - Cause & Effect 5. Karma and Rebirth - Types of kamma, their retribution, Modes of rebirth | 15 |
| IV | 6. Nibbāna & Parinibbāna - Sopadhisesa & Nīrupadhisesa 7. Pāramitā : Requisites to be the Buddha | 9 |

Essential Readings

- Bapat, P.V. (ed.) *Bauddha Dharma Ke 2500 Varṣa*, New Delhi, Government of India, Publication Division, 1956.

- Bapat, P.V. (ed.), *2500 Years of Buddhism*, Publications Division, Ministry of Information and Broadcasting, Government of India, New Delhi: 1964.
- Conze, Edward. *The Life of Buddha: as Legend and History*, Delhi: Motilal Banarsidass, 1993.
- Dutt, N., & K. D. Bajpai, *Development of Buddhism in Uttara Pradesh*, Publication Bureau, Lucknow, 1956.
- Dutt, N., *Buddhist Sects*, Reprint, Firma KLM (Pvt.) Ltd., Calcutta, 1997.
- Dutta, N., *Early Monastic Buddhism*, 2 Vols., Calcutta, 1943
- Walpola Rahula, *What the Buddha Taught* (First Published in 1978), The Corporate Body of the Buddha Educational Foundation, Taipei, 2009.

Suggested Readings

- Law, B.C, *History of Pāli Literature*, 2 volumes; Calcutta: 1970.
- McGovern, M.W. *An Introduction to Mahāyāna Buddhism*, London: Kegan Paul, Trench, Trübner & Co, 1922.
- Pande, G.C., *Studies in the Origins of Buddhism*, Allahabad University, Allahabad, 1957
- Rhys Davids, T.W. (trans.). *Buddhist Birth-Stories (Jātaka Tales): The Commentarial Introduction Entitled Nidāna-Kathā, the Story of the Lineage*, new and revised edn by C.A.F. Rhys Davids, London: George Routledge & Sons Ltd, 1925..
- Sarao, K.T.S. *Prācīna Bhāratiya Bauddha Dharma: Udbhava, Swarupva Patana*, Delhi University: Hindi Directorate, 2009.
- Sarao, KTS and AK Singh (ed), *A Text Book of the History of Theravāda Buddhism*, Delhi, 2010.
- Sarao, KTS. *Origin and Nature of Ancient Indian Buddhism*, 4th rev edn, 2012.
- Srivastava, Srinarayan, 1981, *Bhārata Mein Baudha Nikāyon kī Itihāsa*, Kishor Vidya Niketan, Varanasi, 1981.
- Strong, J.S. *The Buddha: A Short Biography*, Oxford: Oneworld, 2001.
- Thomas, E.J. *The Life of Buddha as Legend and History*, reprint, New Delhi: Asian Educational Services, 1927.
- Winternitz, M., *A History of Indian Literature*, 2 volumes, New Delhi; 1968.

DISCIPLINE SPECIFIC CORE COURSE -2 (DSC-B2)

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITE OF THE COURSE

| Course Title & Code | Total Credits | Credit distribution of the course | | | Eligibility Criteria/ Prerequisite | Pre-requisite of the course, if any |
|---|---------------|-----------------------------------|----------|-----------|------------------------------------|---|
| | | Lecture | Tutorial | Practical | | |
| Mahāyāna Buddhist Philosophy DSC –2-B2 | 4 | 3 | 1 | 0 | 12 th | Basic knowledge of Ancient Indian History/Pali/Buddhism |

COURSE NAME : MAHAYANA BUDDHIST PHILOSOPHY

Objective

The primary objective of this course is to make students aware of the comprehensive knowledge of the origin and development of Mahayana Buddhism, its features, its school, and the fundamental principles.

Outcome

At the end of leaning this course, students would have a clear and comprehensive understanding of the Mahāyāna Buddhism, its feature and fundamental principles.

Course content

| Units | Chapter | Teaching Hours |
|-------|---|----------------|
| I | 1. Introduction 2. Background of the Emergence of Mahāyāna Buddhism | 9 |
| II | 3. Features of Mahāyāna Buddhism 4. Difference between Hīnayāna and Mahāyāna Buddhism | 9 |
| III | 5. Mahāyāna Buddhist Schools : Madhyamika and Yogācāra | 12 |
| IV | 6. Mahāyāna Buddhist Principles – Bodhicitta, Bodhisattva-Ideal, Pāramitā, Daśabhūmi, Trikāya | 15 |

Essential Readings

- Bapat, P.V. (ed.) *Bauddha Dharma Ke 2500 Varṣa*, New Delhi, Government of India, Publication Division, 1956.
- Bapat, P.V. (ed.), *2500 Years of Buddhism*, Publications Division, Ministry of Information and Broadcasting, Government of India, New Delhi: 1964.
- Dutt, N., *Buddhist Sects*, Reprint, Firma KLM (Pvt.) Ltd., Calcutta, 1997.
- Dutt, N., *Mahayana Buddhism*, MLBD, 1985
- McGovern, M.W. *An Introduction to Mahāyāna Buddhism*, London: Kegan Paul, Trench, Trübner & Co, 1922.

Suggested Readings

- Conze, Edward. *The Life of Buddha: as Legend and History*, Delhi: Motilal Banarsidass, 1993.
- Dutta, N., *Early Monastic Buddhism*, 2 Vols., Calcutta, 1943
- Dutt, N., & K. D. Bajpai, *Development of Buddhism in Uttara Pradesh*, Publication Bureau, Lucknow, 1956.
- Pande, G.C., *Studies in the Origins of Buddhism*, Allahabad University, Allahabad, 1957
- Rhys Davids, T.W. (trans.). *Buddhist Birth-Stories (Jātaka Tales): The Commentarial Introduction Entitled Nidāna-Kathā, the Story of the Lineage*, new and revised edn by C.A.F. Rhys Davids, London: George Routledge & Sons Ltd, 1925..
- Sarao, K.T.S. *Prācīna Bhāratīya Bauddha Dharma: Udbhava, Swarupva Patana*, Delhi University: Hindi Directorate, 2009.
- Sarao, KTS and AK Singh (ed), *A Text Book of the History of Theravāda Buddhism*, Delhi, 2010.
- Sarao, KTS. *Origin and Nature of Ancient Indian Buddhism*, 4th rev edn, 2012.

- Srivastava, Srinarayan, 1981, *Bhārata Mein BaudhaNikāyonkĀItihāsa*, KishorVidyaNiketan, Varanasi, 1981.
- Strong, J.S. *The Buddha: A Short Biography*, Oxford: Oneworld, 2001.
- Thomas, E.J. *The Life of Buddha as Legend and History*, reprint, New Delhi: Asian Educational Services, 1927.
- WalpolaRahula, *What the Buddha Taught* (First Published in 1978), The Corporate Body of the Buddha Educational Foundation, Taipei, 2009.
- Winternitz, M., *A History of Indian Literature*, 2 volumes, New Delhi; 1968.

**BA Prog) with Buddhist Studies as
NON-MAJOR/MINOR COURSE-II**

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITE OF THE COURSE

| Course Title& Code | Total Credits | Credit distribution of the course | | | Eligibility Criteria/ Prerequisite | Pre-requisite of the course, if any |
|---|---------------|-----------------------------------|----------|-----------|---------------------------------------|---|
| | | Lecture | Tutorial | Practical | | |
| Theravada Buddhist Philosophy DSC–2-A2 | 4 | 3 | 1 | 0 | 12 th | Basic knowledge of Ancient Indian History/Pali/Buddhism |

COURSE NAME : THERAVADA BUDDHIST PHILOSOPHY (DSC –2-A2)

Objective

The primary objective of this course is to make students aware of the basic teachings of Buddhism.

Outcome

Upon the completion of this course, students would be able to have a clear understanding of the basic teachings of Buddhism along with their relevance and application.

Course content

| Units | Chapter | Hours |
|-------|---|-------|
| I | 8. Introduction 9. Four Noble Truths - Dukkha, Dukkha-samudaya, Dukkha-nirodha, Dukkha-nirodha-gāmini Paṭipadā | 12 |
| II | 10. Three Characteristics - Anicca, Dukkha & Anatta | 9 |
| III | 11. Dependent Origination - Cause & Effect 12. Karma and Rebirth - Types of kamma, their retribution, Modes of rebirth | 15 |
| IV | 13. Nibbāna & Parinibbāna - Sopadhisesa & Nīrupadhisesa | 9 |

| | | |
|--|--|--|
| | 14. Pāramitā : Requisites to be the Buddha | |
|--|--|--|

Essential Readings

- Bapat, P.V. (ed.) *Bauddha Dharma Ke 2500 Varṣa*, New Delhi, Government of India, Publication Division, 1956.
- Bapat, P.V. (ed.), *2500 Years of Buddhism*, Publications Division, Ministry of Information and Broadcasting, Government of India, New Delhi: 1964.
- Conze, Edward. *The Life of Buddha: as Legend and History*, Delhi: Motilal Banarsidass, 1993.
- Dutt, N., & K. D. Bajpai, *Development of Buddhism in Uttara Pradesh*, Publication Bureau, Lucknow, 1956.
- Dutt, N., *Buddhist Sects*, Reprint, Firma KLM (Pvt.) Ltd., Calcutta, 1997.
- Dutta, N., *Early Monastic Buddhism*, 2 Vols., Calcutta, 1943
- Walpola Rahula, *What the Buddha Taught* (First Published in 1978), The Corporate Body of the Buddha Educational Foundation, Taipei, 2009.

Suggested Readings

- Law, B.C, *History of Pāli Literature*, 2 volumes; Calcutta: 1970.
- McGovern, M.W. *An Introduction to Mahāyāna Buddhism*, London: Kegan Paul, Trench, Trübner & Co, 1922.
- Pande, G.C., *Studies in the Origins of Buddhism*, Allahabad University, Allahabad, 1957
- Rhys Davids, T.W. (trans.). *Buddhist Birth-Stories (Jātaka Tales): The Commentarial Introduction Entitled Nidāna-Kathā, the Story of the Lineage*, new and revised edn by C.A.F. Rhys Davids, London: George Routledge & Sons Ltd, 1925..
- Sarao, K.T.S. *Prācīna Bhāratīya Bauddha Dharma: Udbhava, Swarupva Patana*, Delhi University: Hindi Directorate, 2009.
- Sarao, KTS and AK Singh (ed), *A Text Book of the History of Theravāda Buddhism*, Delhi, 2010.
- Sarao, KTS. *Origin and Nature of Ancient Indian Buddhism*, 4th rev edn, 2012.
- Srivastava, Srinarayan, 1981, *Bhārata Mein Baudha Nikāyon kā Itihāsa*, Kishor Vidya Niketan, Varanasi, 1981.
- Strong, J.S. *The Buddha: A Short Biography*, Oxford: Oneworld, 2001.
- Thomas, E.J. *The Life of Buddha as Legend and History*, reprint, New Delhi: Asian Educational Services, 1927.
- Winternitz, M., *A History of Indian Literature*, 2 volumes, New Delhi; 1968.

DEPARTMENT OF ENGLISH
BA (Hons.) English
Category-I

DISCIPLINE SPECIFIC CORE COURSE -4 (DSC-4) – : 14th to 17th Century English Poetry

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|---|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DSC 4: 14 th to 17 th Century English Poetry | 4 | 3 | 1 | 0 | Passed Class XII with English from List A in CUET | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To introduce the discipline of literary studies in English in a chronological manner, with specific reference to the social and cultural determinants of the period under review.
- To illustrate the ability of poetry to articulate the need for social and cultural reform.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to develop a basic sense of the tools and methods employed by the poetry of the period to analyse and change social and political hierarchies.
- Students will inculcate a foundational understanding of the distinctive ways in which poetry works.

SYLLABUS OF DSC-4

UNIT – I (15 Hours)

1. Geoffrey Chaucer: 'General Prologue' and 'Pardoner's Tale' from *Canterbury Tales*

UNIT – II (15 Hours)

2. Philip Sidney: 'Sonnet I'
3. Walter Raleigh: 'The Passionate Man's Pilgrimage'
4. John Donne, 'Sunne Rising,' 'The Canonization,' 'The Good Morrow'

UNIT – III (15 Hours)

5. John Milton: 'Book I', *Paradise Lost*

Practical component (if any) - NIL

Essential/recommended readings- as listed in the units

Suggestive readings:

1. Philip Sidney, *An Apology for Poetry*. ed. Forrest G. Robinson, Indianapolis: Bobbs Merrill, 1970. pp 13–18
2. *The Holy Bible*, Genesis, Chap. 1–4, *The Gospel* according to St. Luke, Chap. 1–7 & 22–4.
3. Wimsatt, W. K. *The Verbal Icon*, 1954.
4. Hill, Christopher. *Milton and the English Revolution*. London: Faber and Faber, 1977.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 5 (DSC-5): 16th & 17th Century English Drama

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|---|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DSC 5- 16 th & 17 th Century English Drama | 4 | 3 | 1 | 0 | Passed Class XII with English from List A in CUET | NIL |

Learning Objectives:

The Learning Objectives of this course are as follows:

- To take forward the development of literary studies in English with specific reference to the theatre in England during the period under survey.
- To open up a sense of theatre as a space of continual experimentation and change.

Learning outcomes:

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to develop a basic sense of the way in which drama works as genre on its own terms.
- Students' imagination will be stimulated by showing how theatre can analyse and critique political and cultural hierarchies successfully.

SYLLABUS OF DSC- 5

UNIT – I (15 Hours)

1. Christopher Marlowe: *Doctor Faustus*

UNIT – II (15 Hours)

2. William Shakespeare: *Macbeth*

UNIT – III (15 Hours)

3. Aphra Behn: *The Rover*

Practical component (if any) - NIL

Essential/recommended readings- as listed in the units

Suggestive readings (if any):

1. Greenblatt, Stephen. *Shakespearean Negotiations: The Circulation of Social Energy in Renaissance England*. Oxford: Clarendon P, 1988.
2. Adelman, Janet. *Suffocating Mothers: Fantasies of Maternal Origin in Shakespeare's Plays, Hamlet to The Tempest*. New York and London: Routledge, 1992.

3. Dollimore, Jonathan and Alan Sinfield eds. *Political Shakespeare*. Ithaca and London: Cornell UP, 1985.
4. Black, Jeremy Black. *England in the Age of Shakespeare*. Bloomington: Indiana UP, 2019.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE– 6 (DSC-6): 18th Century Literature

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-------------------------------------|---------|-----------------------------------|----------|---------------------|---|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| 18 th Century Literature | 4 | 3 | 1 | 0 | Passed Class XII with English from List A in CUET | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To offer a continuing sense of the evolution of literary studies in English, so that the quiet revolutions of the eighteenth century in England resonate with significance in contemporary times.
- To study the period under survey through a combination of genres to focus on movements of empire, capital and emancipation.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to understand the way in which the 'Age of Reason' shapes contemporary life.
- Students will be alerted to understanding the ways in which major lines of thought and action may have understated beginnings.

SYLLABUS OF DSC-6

UNIT – I (15 Hours)

1. Alexander Pope: *Rape of the Lock*

UNIT – II (15 Hours)

2. Jonathan Swift: *Gulliver's Travels*

UNIT – III (15 Hours)

3. Oliver Goldsmith: *The Vicar of Wakefield*

Practical component (if any) - NIL

Essential/recommended readings- as listed in the units

Suggestive readings:

1. Butler, Marilyn. *Romantics, Rebels and Reactionaries: English Literature and Its Background, 1760-1830*. Oxford: Oxford University Press, 1981.
2. Habermas, Jurgen. *The Structural Transformation of the Public Sphere: An Inquiry into the Category of Bourgeois Society*. 1962. Cambridge, Mass: MIT, 1989.
3. Nussbaum, Martha. *The Cosmopolitan Tradition: A Noble but Flawed Ideal*. Cambridge, Mass: Harvard University Press, 2019.
4. Hobsbawm, Eric. *The Age of Revolution: Europe 1789-1848*. London: Wiedenfeld and Nicholson, 1962.
5. 'Pope's Intellectual Character: Pope and Dryden Compared', from 'The Life of Pope', *The Norton Anthology of English Literature, vol. 1*, ed. Stephen Greenblatt, 8th edn. New York: Norton, 2006. pp 2693–2694, 2774–2777
6. Defoe, Daniel. 'The Complete English Tradesman' (Letter XXII), 'The Great Law of Subordination Considered' (Letter IV), & 'The Complete English Gentleman', *Literature and Social Order in Eighteenth-Century England*. ed. Stephen Copley, London: Croom Helm, 1984.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BA (Prog) with English as Major

DISCIPLINE SPECIFIC CORE COURSE – 5 (DSC-5): 16th & 17th Century English Drama

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|----------------|--|-----------------|----------------------------|---|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DSC 5- 16 th & 17 th Century English Drama | 4 | 3 | 1 | 0 | Passed Class XII with English from List A in CUET | NIL |

Learning Objectives:

The Learning Objectives of this course are as follows:

- To take forward the development of literary studies in English with specific reference to the theatre in England during the period under survey.
- To open up a sense of theatre as a space of continual experimentation and change.

Learning outcomes:

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to develop a basic sense of the way in which drama works as genre on its own terms.
- Students' imagination will be stimulated by showing how theatre can analyse and critique political and cultural hierarchies successfully.

SYLLABUS OF DSC- 5

UNIT – I (15 Hours)

1. Christopher Marlowe: *Doctor Faustus*

UNIT – II (15 Hours)

2. William Shakespeare: *Macbeth*

UNIT – III (15 Hours)

3. Aphra Behn: *The Rover*

Practical component (if any) - NIL

Essential/recommended readings- as listed in the units

Suggestive readings (if any):

1. Greenblatt, Stephen. *Shakespearean Negotiations: The Circulation of Social Energy in Renaissance England*. Oxford: Clarendon P, 1988.

2. Adelman, Janet. *Suffocating Mothers: Fantasies of Maternal Origin in Shakespeare's Plays, Hamlet to The Tempest*. New York and London: Routledge, 1992.

3. Dollimore, Jonathan and Alan Sinfield eds. *Political Shakespeare*. Ithaca and London: Cornell UP, 1985.

4. Black, Jeremy Black. *England in the Age of Shakespeare*. Bloomington: Indiana UP, 2019.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE– 6 (DSC-6): 18th Century Literature

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|---|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DSC-6 18 th Century Literature | 4 | 3 | 1 | 0 | Passed Class XII with English from List A in CUET | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To offer a continuing sense of the evolution of literary studies in English, so that the quiet revolutions of the eighteenth century in England resonate with significance in contemporary times.

- To study the period under survey through a combination of genres to focus on movements of empire, capital and emancipation.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to understand the way in which the 'Age of Reason' shapes contemporary life.
- Students will be alerted to understanding the ways in which major lines of thought and action may have understated beginnings.

SYLLABUS OF DSC-6

UNIT – I (15 Hours)

1. Alexander Pope: *Rape of the Lock*

UNIT – II (15 Hours)

2. Jonathan Swift: *Gulliver's Travels*

UNIT – III (15 Hours)

3. Oliver Goldsmith: *The Vicar of Wakefield*

Practical component (if any) - NIL

Essential/recommended readings- as listed in the units

Suggestive readings:

1. Butler, Marilyn. *Romantics, Rebels and Reactionaries: English Literature and Its Background, 1760-1830*. Oxford: Oxford University Press, 1981.
2. Habermas, Jurgen. *The Structural Transformation of the Public Sphere: An Inquiry into the Category of Bourgeois Society*. 1962. Cambridge, Mass: MIT, 1989.
3. Nussbaum, Martha. *The Cosmopolitan Tradition: A Noble but Flawed Ideal*. Cambridge, Mass: Harvard University Press, 2019.
4. Hobsbawm, Eric. *The Age of Revolution: Europe 1789-1848*. London: Wendenfeld and Nicholson, 1962.

5. 'Pope's Intellectual Character: Pope and Dryden Compared', from 'The Life of Pope', *The Norton Anthology of English Literature, vol. 1*, ed. Stephen Greenblatt, 8th edn. New York: Norton, 2006. pp 2693–2694, 2774–2777

6. Defoe, Daniel. 'The Complete English Tradesman' (Letter XXII), 'The Great Law of Subordination Considered' (Letter IV), & 'The Complete English Gentleman', *Literature and Social Order in Eighteenth-Century England*. ed. Stephen Copley, London: Croom Helm, 1984.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BA (Prog.) with English as Minor

Category III

DISCIPLINE SPECIFIC CORE COURSE – 5 (DSC-5): 16th & 17th Century English Drama

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|---|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DSC 5- 16 th & 17 th Century English Drama | 4 | 3 | 1 | 0 | Passed Class XII with English from List A in CUET | NIL |

Learning Objectives:

The Learning Objectives of this course are as follows:

- To take forward the development of literary studies in English with specific reference to the theatre in England during the period under survey.
- To open up a sense of theatre as a space of continual experimentation and change.

Learning outcomes:

The Learning Outcomes of this course are as follows:

- The course will facilitate a basic sense of the way in which drama works as genre on its own terms.
- Students' imagination will be stimulated by showing how theatre can analyse and critique political and cultural hierarchies successfully.

SYLLABUS OF DSC- 5

UNIT – I (15 Hours)

1. Christopher Marlowe: *Doctor Faustus*

UNIT – II (15 Hours)

2. William Shakespeare: *Macbeth*

UNIT – III (15 Hours)

3. Aphra Behn: *The Rover*

Practical component (if any) - NIL

Essential/recommended readings- as listed in the units

Suggestive readings (if any):

1. Greenblatt, Stephen. *Shakespearean Negotiations: The Circulation of Social Energy in Renaissance England*. Oxford: Clarendon P, 1988.

2. Adelman, Janet. *Suffocating Mothers: Fantasies of Maternal Origin in Shakespeare's Plays, Hamlet to The Tempest*. New York and London: Routledge, 1992.

3. Dollimore, Jonathan and Alan Sinfield eds. *Political Shakespeare*. Ithaca and London: Cornell UP, 1985.

4. Black, Jeremy Black. *England in the Age of Shakespeare*. Bloomington: Indiana UP, 2019.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Pool of General Electives (GE) Courses
Offered by Department of English
Category-Iv

GENERIC ELECTIVES (GE-7) Research Methodology

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|----------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Research Methodology | 4 | 3 | 0 | 1 | Passed Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To offer practical training in academic writing.
- To introduce the basics of research and its methods.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to acquire in-depth and practical knowledge regarding academic reading and writing.
- This course will enable students to write a research paper as part of project work.

SYLLABUS OF GE-7

UNIT – I (15 Hours)

1. Introduction to Practical Criticism
2. Conceptualizing and Drafting of a Research Proposal

UNIT – II (15 Hours)

1. Style Manuals: Notes, References and Bibliography/Annotated Bibliography

UNIT – III (15 Hours)

1. Workshop on Topic Development
2. Workshop on Research Proposal

Practical component (if any) – 30 Hours

- Writing a Research Paper (2000 to 2,500 words)

Essential/recommended readings

1. Flick, Uwe. *Introducing Research Methodology: A Beginner's Guide to Doing a Research Project*. New Delhi: Sage, 2017.
2. Leki, Ilona. *Academic Writing: Exploring Processes and Strategies*. 2nd edn. New York: CUP, 1998.
3. Dev, Anjana N (ed.). *Academic Writing and Composition*. New Delhi: Pinnacle, 2015.
4. Richards, I. A. *Practical Criticism: A Study of Literary Judgement*. New York: Harcourt Brace, 1929.
5. Bailey, Stephen. *The Essentials of Academic Writing for International Students*. London: Routledge, 2015.
6. Orwell, George. *Politics and the English Language*. United Kingdom: Sahara Publisher Books, 1946.

Suggestive readings-

1. Hamp-Lyons, Liz and Ben Heasley. *Study Writing: A Course in Writing Skills for Academic Purposes*. Cambridge: CUP, 2006.
2. Kumar, Ranjit, *Research Methodology: A Step by Step Guide for Beginners*. New Delhi: Sage, 2014.
3. Phanse, Sameer. *Research Methodology: Logic, Methods and Cases*. New Delhi: OUP, 2016.
4. Griffin, Gabrielle, ed. *Research Methods for English Studies*. 2nd edn. New Delhi: Rawat Publications. 2016 (Indian Reprint)

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-8) MARGINALITIES IN INDIAN WRITING
Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GE-8 Marginalities in Indian Writing | 4 | 3 | 1 | 0 | Passed Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To train the students in a multi-genre approach to writings from the marginalities.
- To move toward an understanding of alternative aesthetics.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to understand the need for a renewed social and cultural consciousness.
- This course will aid students in the understanding of a movement toward a new kind of literary and social history based on emancipation.

SYLLABUS OF GE-8

UNIT – I (15 Hours)

Caste

1. Ambedkar, B. R. Chap. 4 (pp 233-236); Chap. 6 (pp 241-244) & Chap. 14 (pp 259-263), *Annihilation of Caste: The Annotated Critical Edition*. (New Delhi: Navayana Publications, 2015).

2. Bama, 'Chapter 1', *Sangati*. trans. Lakshmi Holmstrom, New Delhi: Oxford University Press, 2005. pp 3-14

3. Navaria, Ajay. 'Yes Sir', *Unclaimed Terrain*. trans. Laura Brueck, New Delhi: Navayana, 2013. pp 45-64

4. Gogulamanda, Aruna. 'A Dalit Woman in the Land of Goddesses', *First Post*, Posted 13 August 2017.

<https://www.firstpost.com/long-reads/a-dalit-woman-in-the-land-of-goddesses-3919861.html>

UNIT – II (15 Hours)

Disability

5. Chib, Malini. *One Little Finger*. New Delhi: Sage, 2011. pp 103-190
6. Sahay, Raghuvir. 'The Handicapped Caught in a Camera', *Chicago Review*. trans. Harish Trivedi, 38: 1/2,1992. pp 146-147

UNIT – III (15 Hours)

Tribe

9. Sonawane, Waharu. 'Literature and Adivasi Culture', *Lokayana Bulletin*. Special Issue on Tribal Identity, 10: 5/6, March-June 1994. pp 11-20
10. Brahma, Janil Kumar. 'Orge', *Modern Bodo Short Stories*. trans. Joykanta Sarma, Delhi: Sahitya Akademi, 2003. pp 1-9
11. Sangma, D. K. 'Song on Inauguration of a House', *Garo Literature*, trans. Caroline Marak, Delhi: Sahitya Akademi, 2002. pp 72-73
12. Khare, Randhir. 'Raja Pantha', *The Singing Bow: Poems of the Bhil*. Delhi: Harper Collins, 2001. pp 1-2

Practical component (if any) - NIL

Essential/recommended readings- as listed in the units

Suggestive readings:

1. Basu, Sudeep and Asmita Bhattacharyya (ed.). *Marginalities in India: Themes and Perspectives*. Singapore: Springer, 2017.
2. Kumar, Parmod (ed.). *Literature and Marginality: Emerging Perspectives in Dalit Literature*. Germany: Lap Lambert Academic Publishing GmbH KG, 2013.
3. Addlakha, Renu (ed.). *Disability Studies in India: Global Discourses, Local Realities*. India: Taylor & Francis, 2020.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-9) INDIAN CLASSICAL LITERATURE

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-------------------------------------|---------|-----------------------------------|----------|---------------------|---|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GE-9 Indian Classical Literature | 4 | 3 | 1 | 0 | Passed Class XII with English from List A in CUET | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To offer students a foundational understanding of Indian classical literary tradition.
- To introduce students to a rich and diverse literature from two classical languages of India, Sanskrit and Tamil.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to gain knowledge of the aesthetic and cultural values that serve as the groundwork for later developments in Indian philosophical and social change.

SYLLABUS OF GE-9

UNIT – I (15 Hours)

1. Vyasa. Selections from *The Mahabharata*, from *The Mahabharata of Krishna-Dwaipayana Vyasa*, trans. K. M. Ganguli (Delhi: Munshiram Manoharlal Publishers, 2012).

- a) 'The Dicing' and 'Sequel to Dicing', Book 2, Sabha Parva Section XLVI-LXXII
- b) 'The Temptation of Karna', Book 5, Udyog Parva, Section CXL-CXLVI.
- c) 'Krishna's Peace Proposal', Book 5, Udyog Parva, Section LXXXIX-CXXXI

UNIT – II (15 Hours)

1. Kalidasa. *Abhijnanasakuntalam*, trans. Chandra Rajan, in *Kalidasa: The Loom of Time*. Penguin Classics, 1989, reprint 2000.

UNIT – III (15 Hours)

1. Ilango Atikal. 'The Book of Vanci', *Cilappatikaram*. trans. R. Parthasarathy (Columbia University Press, 1993; Penguin Books India, 2004).

Practical component (if any) - NIL

Essential/recommended readings- as listed in the units

Suggestive readings:

1. Bharata Muni. Selections from *Natyasastra*. (i) Chapter 6, 'The Sentiments'; (ii) Chapter 20, 'Ten Kinds of Play'; (iii) Chapter 35, 'Characteristics of the Jester', trans. Manomohan Ghosh, Calcutta: Asiatic Society of Bengal, 1951. pp105-17; 355-74; 548-50
2. Osho. Selections from *Krishna: The Man and His Philosophy*. (i) Krishna is Complete and Whole (ii) Draupadi: A Rare Woman (iii) Action, Inaction and Non-Action (iv) Rituals, Fire and Knowledge, Delhi: Jaico Publishing House, 1991.
3. Kapoor, Kapil. *Indian Knowledge System Vol. 1*. New Delhi: D.K. Printworld Pvt. Ltd., 2005. pp 1-31
4. Gerow, Edwin, et al. 'Indian Poetics', *The Literatures of India: An Introduction*. ed. Edward. C. Dimock et al, Chicago: University of Chicago Press, 1974. pp 115-143
5. Venkatachalapathy, R. 'Introduction', *Love Stands Alone: Selections from Tamil Sangam Poetry*. Delhi: Penguin Classics, 2013. pp XIII-XLI; 25; 45; 70; 186

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-10) TWENTIETH CENTURY DRAMA

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GE-10 TWENTIETH CENTURY DRAMA | 4 | 3 | 1 | 0 | Passed Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To familiarize students with drama of the 20th century with a focus on region and milieu.
- To enable an understanding of the various evolving sub genres of drama in the 20th Century.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to identify the generic differences contextualized by the socio-political interventions of the 20th Century.
- Students will learn of contemporary critical approaches to drama such as feminist, new historicist, etc.

SYLLABUS OF GE- 10

UNIT – I (15 Hours)

1. Bernard Shaw: *Saint Joan*

UNIT – II (15 Hours)

2. Arthur Miller: *Death of a Salesman*

UNIT – III (15 Hours)

3. Karnad, Girish. 'Broken Images', *Collected Plays: Volume II*. New Delhi: Oxford University Press, 2005. pp 261-284

Practical component (if any) - NIL

Essential/recommended readings- as listed in the units

Suggestive readings:

1. Stanislavsky, Constantin. 'Faith and the Sense of Truth', *An Actor Prepares*. United Kingdom: Bloomsbury Academic, 2013. pp 111-139
2. Steiner, George. 'On Modern Tragedy', *The Death of Tragedy*. London: Faber, 1995. pp 303–324
3. Worthen, W. B. *Print and the Poetics of Modern Drama*. United Kingdom: Cambridge University Press, 2005.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-11) CINEMATIC ADAPTATIONS OF LITERARY TEXTS

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GE-11 Cinematic Adaptations of Literary Texts | 4 | 3 | 1 | 0 | Passed Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To introduce aspects of cinema studies and adaptation studies
- To consider the relationship between literature and cinema

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to Students will acquire knowledge of visual grammar across genres of film.
- This course will help understand how cinema deals with issues of literariness, translation and adaptation.

SYLLABUS OF GE- 11

UNIT – I (15 Hours)

1. Shakespeare: *Othello*
2. *Othello*. dir. Oliver Parker, 1995.

UNIT – II (15 Hours)

3. E M Forster: *A Passage to India*
4. *A Passage to India*. dir. David Lean, 1984.

UNIT – III (15 Hours)

5. Mario Puzo: *The Godfather*

6. *The Godfather*. dir. by Francis Ford Coppola, 1972.

Practical component (if any) - NIL

Essential/recommended readings- as listed in the units

Suggestive readings:

1. Stam, Robert, et al. (ed.) *Literature and Film: A Guide to the Theory and Practice of Film Adaptation*. Taiwan: Wiley, 2005.

2. Cartmell, Deborah. (ed.) *A Companion to Literature, Film, and Adaptation*. United Kingdom: Wiley, 2014.

3. Monaco, James. 'The language of film: signs and syntax', *How to Read a Film: The World of Movies, Media & Multimedia*. New York: OUP, 2009. pp 170– 249

4. Hutcheon, Linda. 'On the Art of Adaptation', *Daedalus*. vol. 133, 2004.

5. Leitch, Thomas. 'Adaptation Studies at Crossroads', *Adaptation*. vol. 1, no. 1, 2008. pp 63–77

6. Trivedi, Poonam. 'Filmi Shakespeare', *Litfilm Quarterly*, vol. 35, issue 2, 2007.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-12) TRAVEL WRITINGS

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-----------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GE-12 Travel Writings | 4 | 3 | 1 | 0 | Passed Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To introduce students to the field of genre fiction
- To indicate the diversity of the field

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to analyse the differences and similarities between detective and science fiction.
- Students will be able to appreciate generic specifics of travel writings.

SYLLABUS OF GE- 12

UNIT – I (15 Hours)

1. Vikram Seth: *From Heaven Lake: Travels through Sinkiang and Tibet*

UNIT – II (15 Hours)

2. Amitav Ghosh: *Dancing in Cambodia; At Large in Burma*

UNIT – III (15 Hours)

3. Ved Mehta: *Walking the Indian Streets*

Practical component (if any) - NIL

Essential/recommended readings- as listed in the units

Suggestive readings:

1. Bassnett, Susan. 'Travel Writing and Gender', *Cambridge Companion to Travel Writing*. ed. Peter Hulme and Tim Young, Cambridge: CUP, 2002. pp 225-241
2. Khair, Tabish. 'An Interview with William Dalrymple and Pankaj Mishra', *Postcolonial Travel Writings: Critical Explorations*. ed. Justin D Edwards and Rune Graulund, New York: Palgrave Macmillan, 2011. pp 173-184
3. Balton, Casey. 'Narrating Self and Other: A Historical View', *Travel Writing: The Self and The Other*. Routledge, 2012. pp 1-29
4. Mohanty, Sachidananda. 'Introduction: Beyond the Imperial Eyes', *Travel Writing and Empire*. New Delhi: Katha, 2004. pp ix –xx.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-13) CONTEMPORARY INDIA: WOMEN AND EMPOWERMENT

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GE-13 Contemporary India: Women and Empowerment | 4 | 3 | 1 | 0 | Passed Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To familiarize students with the basic theories about gender, be it feminism, queer studies or masculinity studies.
- To introduce students to literary texts that prioritise issues of gender in India.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to identify and contextualize gender politics at work within a text and read social change through the lens of gender.
- Students will be able to use the knowledge of gender theory and its evolution in their everyday life.

SYLLABUS OF GE- 13

UNIT – I (15 Hours)

Concepts

- Sex and Gender -- social construction of gender; socialisation into gender
- Femininities and masculinities -- normative gender privilege; heteronormativity

- Patriarchy -- history of the efforts to undo feminism

ESSENTIAL READINGS:

1. Kamble, Baby. 'Our Wretched Lives', *Women Writing in India: 600 BC to the Early Twentieth Century*. Eds. Susie Tharu and K Lalitha, Delhi: OUP, 1997. pp 307-311
2. Rassundari Devi, Excerpts from *Amar Jiban*, *Women Writing in India: 600 BC to the Early Twentieth Century*. Eds. Susie Tharu and K Lalitha, Delhi: OUP, 1997. pp 190-202
3. Begum Rokeya Shekhawat Hossain, 'Sultana's Dream', *Women Writing in India: 600 BC to the Early Twentieth Century*. Eds. Susie Tharu and K Lalitha, Delhi: OUP, 1997. pp 340-351
4. Geetha, V. *Patriarchy*. Kolkata: Stree, 2007. pp 3-61

UNIT – II (15 Hours)

Intersections

- Women and caste, religion, class, sexualities, race, disability
- Women and environment, technology, development
- Women and access to resources: employment, health, nutrition, education
- Women and reproductive work: singleness, marriage, motherhood, symbolical biological surrogacy and parenting, abortion, and other rights over own body

ESSENTIAL READINGS:

5. Devi, Mahasweta. 'Bayen', *Five Plays*. trans. Samik Bandyopadhyay, Calcutta: Seagull, 2009.
6. John, Mary. 'Feminism Poverty and the Emergent Social Order', *Handbook of Gender*. ed. Raka Ray, Delhi: Oxford University Press, 2012.
7. Kasturi, Leela. 'Report of the Sub-Committee Women's Role in Planned Economy National Planning Committee (1947)', *Feminism in India*. ed. Maitrayee Chaudhuri, Delhi: Zed, 2005. pp 136-155
8. Shiva, Vandana. Chapters 2 & 4, *Staying Alive: Women Ecology and Development*. Delhi: Kali for Women, 1989.

9. Vinodini, M.M. 'The Parable of the Lost Daughter', *The Exercise of Freedom*. eds. K. Satyanarayana and Susie Tharu, Delhi: Navayana, 2013. pp 164-77

UNIT – III (15 Hours)

Histories

- The women's question pre-Independence -- sati-reform, widow remarriage, debates around age of consent
- Women in the Independence movement, Partition
- Post-Independence campaigns -- against sexual harassment and rape, dowry, violence, debates around the Uniform Civil Code
- Public sphere participation of women -- in politics, in the workplace, in the economy, creating educational inclusion

ESSENTIAL READINGS:

10. Kumar, Radha. Chapters 2; 3; 7; 8; 11, *A History of Doing: An Illustrated Account of Movements for Women's Rights and Feminism in India 1800—1990*. Delhi: Zubaan, 1993.

11. Sangari, Kumkum. 'Politics of Diversity: Religious Communities and Multiple Patriarchies', *Economic and Political Weekly*. Vol. 3052, 1995.

12. Sarkar, Tanika. 'Rhetoric against Age of Consent: Resisting Colonial Reason and Death of a Child-Wife', *Economic and Political Weekly*. Vol. 2836, April, 1993.

13. Moon, Meenakshi and Urmila Pawar. Chapters 1; 5; 6, *We also made history: Women in the Ambedkarite Movement*. Delhi: Zubaan, 2008.

Practical component (if any) –

Students to examine the bare text of 4 laws (as set out in the Gazette of India) followed by discussion and analysis -- laws against dowry (The Dowry Prohibition Act 1961), against sex determination (Pre-Conception & Pre-Natal Diagnostics Act 1994), against domestic violence (Protection of Women from Domestic Violence Act 2005), against sexual harassment at the workplace (The Sexual Harassment of Women at Workplace Prevention Prohibition and Redressal Act 2013).

Essential/recommended readings- as listed in the units

Suggestive readings:

1. Nair, Janaki. 'The Foundations of Modern Legal Structures in India', *Handbook of Gender*. ed. Raka Ray, Delhi: OUP, 2012.
2. Agnes, Flavia. 'Conjuality, Property, Morality and Maintenance', *Handbook of Gender*. ed. Raka Ray, Delhi: OUP, 2012.
3. *Indian Literature: An Introduction*. Delhi: University of Delhi, 2005.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-14) CULTURE & THEORY

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GE-14 Culture & Theory | 4 | 3 | 1 | 0 | Passed Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To familiarize students with the basic theories which they might fruitfully deploy when engaging with problems related to culture.
- To introduce students to critical texts that deal with the central problems in the analysis of modern culture.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to deal with the methodological breakthroughs that enable them to decipher culture.
- Students will be introduced to the possibilities of semiotic analyses of culture as it moves across differing often non-linguistic media.

SYLLABUS OF GE- 14

UNIT – I (15 Hours)

1. Hall, Stuart. 'Cultural Identity and Diaspora,' *Identity: Community, Culture, Difference*. Ed. J. Rutherford, London: Lawrence and Wishart, 1990.
2. Chekhov, Anton. 'The Bride', *Selected Works*. Moscow: Progress P, 1973.

UNIT – II (15 Hours)

3. Beauvoir, Simone de. 'Introduction', *The Second Sex*. London: Vintage 1997. pp 13-29
4. Sartre, Jean Paul. 'Intimacy', *The Wall*. trans. Alexander Lloyd Wisconsin, Hal Leonard Corp, 1995.

UNIT – III (15 Hours)

5. Foucault, Michel. 'What is an Author?', *Modern Criticism and Theory: A Reader*. ed. David Lodge with Nigel Wood, New Delhi: Pearson, 2007. pp 192-205
6. Mansfield, Katherine. 'The Voyage', *The Penguin Book of Short Stories*. ed. Christopher Dolley, Harmondsworth: Penguin, 1970.

Practical component (if any) - NIL

Essential/recommended readings- as listed in the units

Suggestive readings:

1. Smith, Philip, and Riley, Alexander. *Cultural Theory: An Introduction*. Germany: Wiley, 2011.
2. Archer, Margaret Scotford, and Archer, Margaret S. *Culture and Agency: The Place of Culture in Social Theory*. United Kingdom: Cambridge University Press, 1996.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-15) LIFE AND LITERATURE

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|----------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GE-15 Life & Literature | 4 | 3 | 1 | 0 | Passed Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To study the ways in which art and literature is understood by engaging with aspects of form, taste and feeling.
- To analyze and understand the social and practical dimensions of aesthetics.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to appreciate of the ways in which different cultural modes of aesthetic function.
- Students will be able to critically study of life, art and literature in students.

SYLLABUS OF GE-15

UNIT – I (15 Hours)

1. Albom, Mich. *Tuesdays with Morrie*. Doubleday, 1997.

UNIT – II (15 Hours)

2. Bandyopadhyay, Bibhutibhushan. *Pather Panchali* (1929) trans. *The Song of the Road*. Penguin Modern Classics, 2019.

UNIT – III (15 Hours)

3. Murthy, Sudha. *Wise and Otherwise*. Penguin Random House, 2002.

Practical component (if any) - NIL

Essential/recommended readings- as listed in the units

Suggestive readings:

1. Berne, Eric. *Games People Play: The Psychology of Human Relationships*. United States: Grove Press, 1964.
2. Kalam, A.P.J. Abdul. *My Journey: Transforming Dreams into Actions*. India: Rupa Publications India, 2013.
3. Richard Bach: *Jonathan Livingston Seagull*. 1970

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-16) INDIVIDUAL AND SOCIETY

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GE-16 Individual and Society | 4 | 3 | 1 | 0 | Passed Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To study the ways in which individual and society engage with each other across socio political and geopolitical contexts
- To analyze the texts and contexts that enable such an engagement and continue to shape the world

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to inculcate an ability to evaluate the continuing significance of identity-construction and aesthetic representation.
- Students will be able to appreciate the way in which different modes of narratives reconfigure the relationships between individual and society.

SYLLABUS OF GE- 16

UNIT – I (15 Hours)

UNIT I: Caste and Class

1. Sood, Vinay, ed. Chapters 1-6, *The Individual and Society: Essays, Stories and Poems*. Delhi: Pearson, 2005.

UNIT – II (15 Hours)

UNIT II: Violence and War

2. Sood, Vinay, ed. Chapters 21-26, *The Individual and Society: Essays, Stories and Poems*. Delhi: Pearson, 2005.

UNIT – III (15 Hours)

UNIT III: Living in a Globalized World

3. Sood, Vinay, ed. Chapters 29-34. *The Individual and Society: Essays, Stories and Poems*. Delhi: Pearson, 2005.

Practical component (if any) - NIL

Essential/recommended readings- as listed in the units

Suggestive readings:

1. Béteille, André. *Caste, Class, and Power*. University of California Press, 1969.
2. Sharma, Kanhaiya Lal (ed.). *Caste and Class in India*. India, Rawat Publications, 1994.
3. Malešević, Siniša. *The Sociology of War and Violence*. United Kingdom: Cambridge University Press, 2010.
4. Karatzogianni, Athina (ed.). *Violence and War in Culture and the Media: Five Disciplinary Lenses*. United Kingdom: Taylor & Francis, 2013.
5. Held, David (ed.). *A Globalizing World? Culture, Economics, Politics*. United Kingdom: Routledge, 2000.
6. Yoshida, David, et al. *Living in a Globalized World*. Canada: Oxford University Press, 2007.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE) LANGUAGE COURSES

GENERIC ELECTIVES LANGUAGE COURSES (GE Language 1) English Language through Literature-II

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| English Language Through Literature-II | 4 | 3 | 1 | 0 | Passed Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To develop in students the ability and confidence to process, understand and examine different kinds of texts-verbal and written-that they encounter in everyday life.
- To enable students to identify and understand social contexts and ethical frameworks in the texts they encounter.
- To encourage suitable research—to recognize sources; to distinguish fact from opinion/editorialization; produce objective versus subjective pieces
- To learn skilled comprehension; listening/reading; skimming; summarizing; précis writing; paraphrasing; note making
- To identify key topics/arguments/ideas
- To accomplish writing goals: creating an essay; writing a thesis statement; producing topic sentences; developing organised paragraphs; evolving the skill of producing suitable transitions between paragraphs
- To enable students to write in expository argumentative and descriptive modes

- To help students identify and use the characteristic features of various writing forms: letters; programmes reports/press-releases; newspaper; feature articles; fiction and nonfiction
- To enable students to choose between expository, argumentative, descriptive and narrative writing styles to assemble their own writing

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to inculcate confident expression.
- Students will be able to articulate their own views confidently as their language skills sufficiently empower them to converse, research and collate information from various textual sources—verbal or written.

SYLLABUS OF GE LANGUAGE-1-

UNIT – I (15 Hours)

UNIT 1-Understanding Fiction

1. Christie, Agatha. *The Tuesday Night Club: A Miss Marple Short Story*. United Kingdom, HarperCollins Publishers, 2012.
2. Mistry, Rohinton. 'The Ghost of Firozsha Baag' *Tales from Firozsha Bagh* McClelland & Stewart 1992
3. Joshi, Umashankar. 'The Last Dung Cake' *The Quilt from the Flea-market and Other Stories* Delhi: National Book Trust 2017

UNIT – II (15 Hours)

UNIT 2-Creating Your Own Voice

4. Sandford, Rachel and Thomas Quarmby, "Space, place, and identity: New pressures in the lives of young people". *Young People, Social Media and Health*. United Kingdom, Taylor & Francis, 2018.
5. Scott, C. P. "A Hundred Years", *The Manchester Guardian published on May 5, 1921*.

UNIT – III (15 Hours)

UNIT 3-Writing your own academic paper

6. Patel, Raj and Moore Jason. 'How the chicken nugget became the true symbol of our era' *The Guardian*, 8 May 2018

<https://www.theguardian.com/news/2018/may/08/how-the-chicken-nugget-became-the-true-symbol-of-our-era> Accessed 1 June 2022

7. Berger, John. *Ways of Seeing*. Penguin Books, 1972.

8. Latest editions of the MLA and APA style sheets

Practical component (if any) - NIL

Essential/recommended readings- as listed in the units

Suggestive readings- NIL

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES LANGUAGE COURSES (GE Language 2) Digital Communication-II

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Digital Communication-II | 4 | 3 | 1 | 0 | Passed Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To hone skills for online communication and provide interpersonal skills required in the digital world.
- To effectively present themselves in personal and professional capacities using online mediums.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to understand and learn globally emerging forms of digital communication in English and effectively communicate in their everyday contexts be it in social or professional situations.

SYLLABUS OF GE LANGUAGE-2

UNIT – I (15 Hours)

UNIT I-Curating Persona

1. Maintaining profiles (continuity: coherence, cohesion)
2. Innovating content (introducing new ideas, opinions, and facts: style and correctness)
3. Content writing (briefs, press releases, podcast scripts: concise, cohesion, coherence, clarity)

UNIT – II (15 Hours)

UNIT II-Making Institutional Profiles and networks

1. Writing about the institution (describing and assessing)
2. Building networks (compare, contrast, synthesize)
3. Updating Blogs and Vlogs (discourse markers)

UNIT – III (15 Hours)

UNIT III-Online Interactions and Diversity

1. Etiquettes for online interactions (chats, meetings, video conferences).
2. Ethics towards inclusive and integrated participation (addressing gender, ethnicity, special abilities)
3. Drawing boundaries in communication (obscenities, hostility, addressing disrespectful comments and feedback: changing register and tone of communication)

Practical component (if any) - NIL

Essential/recommended readings- as listed in the units

Suggestive readings- NIL

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES LANGUAGE COURSES (GE Language 3) English Fluency-II

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| English Fluency-II | 4 | 3 | 1 | 0 | Passed Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To describe or express their opinions on topics of personal interest such as their experiences of events, their hopes and ambitions.
- To read and understand information on topical matters and explain the advantages and disadvantages of a situation.
- To write formal letters, personal notes, blogs, reports and texts on familiar matters.
- To comprehend and analyse texts in English.
- To organise and write paragraphs and short essays in a variety of rhetorical styles.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to effectively communicate in their everyday contexts.
- Students will be equipped with skills that will help them interact with people around their personal, institutional and social spaces.

SYLLABUS OF GE LANGUAGE-3-

UNIT – I (15 Hours)

Unit 1-In the State

1. Research -- Filing an FIR, making an RTI request, submitting a consumer complaint
2. Active & Passive voice; idioms
 - Find out what the procedure is for making a complaint about trees being cut in your neighbourhood
 - Draft a formal letter requesting information about the disbursement of funds collected by a residents' welfare association

Suggested Readings:

1. *Where the Wild Things Are* by Maurice Sendak. Random House UK, 2000.
2. rtionline.gov.in/index.phpconsumerhelpline.gov.in/consumer-rights.php
3. www.jaagore.com/know-your-police/procedure-of-filing-fir
4. www.consumercomplaints.in/municipal-corporation-of-delhi-b100274

UNIT – II (15 Hours)

Unit 2-Interface with Technology

Book/film reviews

Punctuation

- Write a review of a text you have read in class
- Record a collaborative spoken-word review of the latest film your group have all seen

Suggested Readings:

5. Kennedy, Elizabeth. "Breakdown and Review of 'Where the Wild Things Are'." ThoughtCo, Jul. 3, 2019, thoughtco.com/where-the-wild-things-are-maurice-sendak-626391.
6. Brown, Dan. *Angels & Demons*. Pocket Books: UK. 2000.
7. *Angels & Demons*. dir. Ron Howard. 2009

UNIT – III (15 Hours)

Unit 3- Self-Representation

Introducing oneself, giving and seeking information.

Introduce characters from the texts you are reading.

Creating a profile for social media.

Creating a professional profile of oneself.

Dialogue writing, Paragraph writing – Brainstorming, planning/outline rough drafts, editing.

Intercultural Communication

Suggested Readings:

8. Ambedkar, B. R., and Ambedkar, Dr. *Waiting For A Visa*. India, Lector House, 2021.
9. Sharma, Natasha. *Squiggle Takes a Walk: All About Punctuation*. Penguin/Young Zubaan and Puffin: 2014.
10. Lorde, Audre. 'The Transformation of Silence into Language and Action', *Sister Outsider*. Random House: New York, 1984. pp. 40-44
11. Extract from *Haroun and the Sea of Stories: Salman Rushdie*. Penguin Books, New Delhi, 1991. pp. 15-23.

Practical component (if any) - NIL

Essential/recommended readings- as listed in the units

Suggestive readings: NIL

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES LANGUAGE COURSES (GE Language 4) Developing English Language Skills-II

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Developing English Language Skills-II | 4 | 3 | 1 | 0 | Passed Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To enhance comprehension skills and enrich vocabulary through the reading of short and simple passages with suitable tasks built around these.
- To introduce simple syntactical structures and basic grammar to students through contextualized settings and ample practice exercises so that they can engage in short independent compositions.
- To introduce the sounds of the language and the essentials of English pronunciation to students in order to remove the inhibitions experienced by them while speaking English.
- To acquaint students with social formulae used to perform various everyday functions so that they can converse in English in simple situations.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to read and write in English with confidence.
- The course will help in increasing their proficiency in English, increase their vocabulary and improve their comprehension of syntactical structures

SYLLABUS OF GE LANGUAGE-4-

UNIT – I (15 Hours)

UNIT 1: READING & VOCABULARY – II

Ways of expanding vocabulary; learning how to use a dictionary; understanding more text types such as argumentative and descriptive passages, poetry, character sketches, etc. through suitable activities based on selected texts

Prescribed readings:

1. *A Foundation English Course for Undergraduates*: Book III. (Delhi: University of Delhi, 1993) pp 5 – 10, 27 – 29, 40 – 44, 81 – 83.
2. *Developing Language Skills 2* (Delhi: Doaba House, 1995) pp 43 – 51.
3. *Everyday English* (Delhi: Pearson, 2005) pp 36 – 43.
4. *English at the Workplace II* (Delhi: Oxford University Press, 2007) pp 32 – 37, 46 – 48.

UNIT – II (15 Hours)

UNIT 2: WRITING & GRAMMAR – II

Understanding what constitutes a piece of good writing; learning to describe objects and processes, narrate incidents and stories, and argue a point of view. Further topics in grammar: framing of questions and negative sentences; modals and their uses.

Prescribed readings:

5. *A Foundation English Course for Undergraduates*: Book II. (Delhi: University of Delhi, 1992) pp 115 – 130.
6. *A Foundation English Course for Undergraduates*: Book III. (Delhi: University of Delhi, 1993) pp 126 – 136.
7. *Developing Language Skills I* (Delhi: Manohar, 1997) pp 183 – 186, 206 – 209.
8. *Developing Language Skills 2* (Delhi: Doaba House, 1995) pp 112 – 116.
9. *English at the Workplace II* (Delhi: Oxford University Press, 2007) pp 49 – 52.

UNIT – III (15 Hours)

UNIT 3: SPEAKING & LISTENING – II

Understanding the essentials of English pronunciation: word stress and rhythm in connected speech; speaking on the telephone; becoming a better listener; expressions used for getting and giving permission, agreeing and disagreeing, warning and persuading, inviting, suggesting, accepting and refusing, expressing likes and dislikes, regulating speech and ending a conversation.

Prescribed readings:

10. *Developing Language Skills I* (Delhi: Manohar, 1997) pp 26 – 45.

11. *English at the Workplace* (Delhi: Macmillan, 2006) pp 52 – 57.

12. *English at the Workplace II* (Delhi: Oxford University Press, 2007) pp 10 – 13, 20 – 24, 38 – 45.

Practical component (if any) - NIL

Essential/recommended readings- as listed in the units

Suggestive readings- NIL

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BA (Hons.) Journalism
Category I

DISCIPLINE SPECIFIC CORE COURSE -4 (DSC-4) REPORTING AND EDITING FOR PRINT

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------------------|---------|-----------------------------------|----------|---------------------|---|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DSC 4 Reporting and Editing for Print | 4 | 3 | 0 | 1 | Passed Class XII with English from List A in CUET | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To learn the basic terminologies of print media with special emphasis on reporting.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to understand about reporting and editing for the print media.
- Students will be able to join any media organisation as a reporter or a sub-editor as they have grasped the basics of reporting and editing.

SYLLABUS OF DSC-4

UNIT – I (15 Hours)

UNIT I: Covering news and Interviewing

- Reporter- role and qualities
- Covering of beats- crime, courts, city reporting, health, education, sports
- Covering speeches, meetings and press conferences
- News agency reporting.
- Interviewing: doing the research, setting up the interview, conducting the interview

- News leads/intros, Structure of the news story– Leads: importance, types of lead
- Articles, features, types of features and human interest stories

UNIT – II (15 Hours)

UNIT II: Newsroom and Anatomy of a Newspaper

- Newsroom, Organizational setup of a newspaper, Editorial department
- Introduction to editing: Principles of editing, headlines; importance/functions/types of headlines, typography and style, language, style sheet, importance and selection of news pictures
- Role of sub/copy-editor, News editor and editor, chief of bureau, correspondents
- Editorial page: structure, purpose, edits, middles, letters to the editor, special articles, light leader, Opinion pieces, op ed page, columns /columnists
- Supplements, Backgrounders

UNIT – III (15 Hours)

UNIT III: Issues and trends in news reporting

- Tabloids, Issues of sensationalism and voyeurism
- Neighbourhood/Community newspapers
- Sociology of news: factors affecting news treatment, paid news, agenda setting, pressure in the newsroom, trial by media, gatekeepers.
- Objectivity and politics of news
- Fake news
- Neutrality and bias in news

Practical component (if any)- (30 Hours) - Students will undertake assignments based on covering the beats and writing reports / interviewing personalities and celebrities. Exercises and assignments on editing copies, writing headlines, writing features, structuring a dummy editorial page, writing editorials etc.

Essential/recommended readings-

1. Baskette and Scissors, *The Art of Editing*, Allyn and Bacon Publication, 1992
2. S.N. Chaturvedi, *Dynamics of Journalism and Art of Editing*, Cyber Tech Publications, 2007
3. Bruce Itule and Douglas Anderson, *News Writing and Reporting for Today's Media*. McGraw Hill Publication, 1987
4. Richard Keeble, *The Newspaper's Handbook*. Routledge Publication, 1994

5. MacDougall and Curtis Daniel, *Principles of Editorial Writing*. W.C. Brown Co. Publishers, 1973

6. F.W. Hodgson, *Modern Newspaper Practice: A Primer on the Press*. Focal Press, 1996

Suggestive readings-

1. Fred Fedler and John R. Bender, *Reporting for the Media*. Oxford University Press, 1997

2. Mencher, Melvin. *News Reporting and Writing*. MC Graw Hill, NY. 2003

3. Denis McQuail, *Mass Communication Theory*. Sage Publications, 1983

4. Fedler, Fred. *Reporting for the Print Media*, (2nd ed). Harcourt, Bruce Jovanovich Inc., NY, 1979

5. Vartika Nanda, *Media Laws and Ethics*. Kanishka Publishers, 2018

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE-5 (DSC-5): ADVERTISING AND PUBLIC RELATIONS

CREDIT DISTRIBUTION, ELIGIBILITY AND PREREQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|---|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DSC-5 Advertising and Public Relations | 4 | 3 | 1 | 0 | Passed Class XII with English from List A in CUET | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To facilitate a deep understanding of the role and influence of the media in an individual's life. It will help the student to critically perceive the effects of the media use.

- To learn the concepts and skills required for advertising and public relations and the importance of effective brand positioning using integrated marketing communications.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to critically evaluate advertisements and understand the importance of ethical practices in advertising and PR.
- Students will be able to work in any advertising agency as a copy writer/ content writer/ client servicing/ marketing professional and any Public Relations firm and work as a member of their team.

SYLLABUS OF DSC- 5

UNIT – I (15 Hours)

UNIT I: Introduction to Advertising: Concept, Trends and Regulatory Aspects

- Concept of Advertising – Importance and Functions
- Advertising Theories and Models – AIDA, DAGMAR Model, Maslow’s Hierarchy Model, Cognitive Dissonance Theory, Stern’s Model of Advertising Communication Process
- Types of Advertising and Classification of Advertising
- Economic, cultural, psychological and social aspects of advertising
- Ethical & Regulatory aspects of Advertising - Role of ASCI and Contemporary Case Studies
- Marketing Mix, Role of Advertising in Marketing Mix
- Market Segmentation, Positioning, Targeting and Branding
- Media Planning, Creativity and Copy Writing, Scheduling and Budgeting
- Advertising Department vs. Agency - Structure and Functions
- Campaign Planning, Creation and Production
- Emerging Trends in Advertising – Content Marketing, Native Advertising, AI and automation in Marketing, Augmented and Virtual Reality, User-generated Content, Affiliate Marketing

UNIT – II (15 Hours)

UNIT II: Digital Advertising and Marketing

- Digital, Social & Interactive Media for Advertising and Marketing
- Social Media Tools, Strategies, Tactics and Developing Social Networks
- Social Media Interactivity in Advertising
- Digital Influencers
- Digital Advertising – Ethics and Concerns
- Measurement Strategies and ROI

UNIT – III (15 Hours)

UNIT III: Public Relations - Concepts and Practices

- Introduction to Public Relations – Role, Importance and Functions of PR
- Publics in PR
- Principles and Tools of PR
- Organization of Public Relations: In House Department versus Consultancy
- PR in Government and Private Sectors
- Research for PR
- PR Strategies for Social Media
- PR Campaign - Planning, Execution, Evaluation
- PR in Political and Election Campaigns
- Role and Scope of PR in Crisis Management
- Corporate Social Responsibility and Image Management, Case Studies in CSR
- Ethical Issues in PR
- Apex bodies in PR - IPRA, PRSI Codes.

Practical component (if any) -

Essential/recommended readings-

1. Chunawalla, SA. *Advertising Theory and Practice*, Himalaya Publishing House. 2008
2. Jethwaney, Jaishri, *Advertising Management*, Oxford University Press, 2006
3. Jefkins, Frank. *Public Relation Techniques*, Butterworth-Heinmann Ltd, 1994
4. Cutlip S.M and Center A.H., *Effective Public Relations*, Prentice Hall, 1985

Suggestive readings (if any)-

1. David Ogilvy, *Ogilvy on Advertising*, Pan/Prion Books, 1983
2. Frank Jefkins, *Advertising Made Simple*, Rupa & Co., 1973
3. Heath Robert L, *Handbook of Public Relations*, Sage Publications, 2000
4. Dennis L. Wilcose & Glen T, *Public Relations*, Pearson, 2006
5. Kaul J.M., Noya Prakash, *Public Relation in India*, Calcutta, 1982
6. Belch George E., Belch Michael A., Purani Keyoor. *Advertising & Promotion, an Integrated Marketing Communications Perspective*. McGraw Hill, 2007

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE– 6 (DSC-6): INTRODUCTION TO BROADCAST MEDIA

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|---|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DSC-6 Introduction to Broadcast Media | 4 | 3 | 0 | 1 | Passed Class XII with English from List A in CUET | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To help students grasp the skills of handling the cameras, shoot a story and will be able to gather and edit and report a story for television.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to understand the basic sound, image and visual concepts appreciate the visual grammar and visual perspectives and comprehend various elements in broadcast news.
- They will also be capable of anchoring, producing TV news bulletins and documentaries.

SYLLABUS OF DSC-6

UNIT – I (15 Hours)

UNIT I: Basics of Sound and Visual

- Sound-scape, Sound culture
- Types of sound-Sync, Non-Sync, Natural sound, Ambience Sound
- Microphone- Different kinds of microphones (dynamic, condenser, directional microphones)
- Basics of Sound Design
- What is a visual?
- Visual Culture in media studies
- Politics of an image
- Ecology of image

UNIT – II (15 Hours)

Unit II: Visual Grammar

- Basics of a Camera- (Lens & accessories)
- Camera Movement
- Types of shots, Focusing, Depth of field, Lighting
- Visual Perspective

UNIT – III (15 Hours)

UNIT III: Elements in Broadcast news

- Electronic News Gathering (ENG) & Electronic field Production (EFP) (Concept)
- Elements of a Television News Story: Gathering, Writing/Reporting.
- Elements of a Television News Bulletins
- Basics of Editing for TV- Basic Softwares and Techniques (for editing a news capsule)

Practical component (if any) – 30 Hours – Presentations, news bulletins in English and Hindi on national and private channels (as teaching material)

Essential/recommended readings-

1. Documentary--‘The future of Television News’

Suggestive readings-

1. Zettl Herbert, Television Production Handbook. (Page nos: 20-80, 85-135), 1961
2. Robert c Allen and Annette Hill, The Television Reader, Routledge (Page no: 10- 40), 2004
3. P.C Chatterjee, Broadcasting in India, New Delhi, Sage (Page no: 25- 78), 1987
4. The Radio Handbook, by Carrol Fleming, Rout ledge (London & New York) (Page no: 47- 105), 2002

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Pool of Generic Elective (GE) Courses
Offered by Department of English for Journalism
Category-IV

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES

GENERIC ELECTIVES (GE-10): MEDIA AND POPULAR CULTURE

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GE-10 Media and Popular Culture | 4 | 3 | 0 | 1 | Passed Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To learn the process of structuring news formation for print publications as print journalists.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to understand the notion of Journalism and grasp the underlying factors that define the news.

The course will help the student to attain familiarity with the historical evolution of the media. It will enable the student to contextualize the developments of the media and its role through political and economic changes across the world. Students can work as media analysts and reviewers/ critics of media texts for various platforms.

SYLLABUS OF GE-

UNIT – I (15 Hours)

UNIT I: Understanding Culture

- Mass Culture, Popular Culture, Folk Culture
- Frankfurt School, Media as Cultural Industries
- Political Economy, Ideology and Hegemony
- Technological Determinism

UNIT – II (15 Hours)

UNIT II: Representation

- Media as Texts
- Signs and Codes in Media
- Uses and gratification approach
- Reception studies
- Representation of nation, class, caste and gender issues in media

UNIT – III (15 Hours)

UNIT III: Audiences

- Active audiences
- Women as audiences
- Sub Cultures; music and the popular,
- Fandom

Practical component (if any) (30 Hours)- Assignments can take rather creative forms like group blogging, journal entries, short films and posters. Students can be encouraged to do projects on analysis of TV shows, cultural symbols, folk performances and music shows. They can also take up challenging themes like the representation of caste, gender and nation in contemporary media.

Essential/recommended readings-

1. AS Media Studies: An Essential Introduction Edited by Philip Rayner, Peter Wall and Stephen Kruger, Routledge (Covers Unit II, III, IV and V)
2. John Fiske, 1982, Introduction to Communication Studies, Routledge (Covers Unit II, Ideology and Meanings and Unit III signs and codes)
3. Dennis McQuail, 2000, (fourth Edition) Mass Communication Theory, London, Sage (Covers Unit IV, Media Technologies)
4. Baran and Davis, Mass Communication Theory. Oxford University Press. 2020 (covers Unit II, III and IV)

5. John Storey. Cultural Theory and Popular Culture: An Introduction. London: Pearson Longman. 2009 (Covers Unit 1 and II and IV)
6. Kevin Williams, Understanding Media Theory. 1955-2011. Bloomsbury. 2003 (Covers Unit II, III and IV)

Suggestive readings-

1. Media Cultures by Nick Stevenson, 2002, Second Edition, SAGE.
2. Short Extracts from writings by Adorno and Horkheimer, Radway, Roland Barthes, McLuhan
3. Parmar S. Traditional Folk Media in India, 1975, New Delhi, Geka Books
4. Chatterji, Roma. "Folklore and the construction of national tradition. "Indian Folklife (2005).
5. Rege, Sharmila. "Conceptualising Popular Culture: 'Lavani' and 'Powada' in Maharashtra." Economic and political weekly (2002): 1038-1047.
6. Uberoi, Patricia. "Feminine identity and national ethos in Indian calendar art." Economic and Political Weekly (1990): WS41-WS48.
7. Punathambekar, Aswin. "Reality television and the making of mobile publics: The case of Indian Idol." in The Politics of Reality Television, pp. 154-174. Routledge, 2010.
8. Ranganathan, Maya. "The archetypes of Sita, Kaikeyi and Surpanakha stride the small screen." In Rodrigues, Usha M., and Maya Ranganathan. Indian news media: From observer to participant. SAGE Publications India, 2014.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-11): MEDIA LAWS & SOCIETY

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------------------------|----------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GE-11 Media Laws & Society | 4 | 3 | 1 | 0 | Passed Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand the contemporary media practices through contemporary debates.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to grasp the nuances and the legal provisions laid down in the Constitution of India.
- They will also be able to work as journalists on legal issues as well as media researchers.

SYLLABUS OF GE-11

UNIT – I (15 Hours)

UNIT I: Ethical framework and media practice

- Freedom of expression (Article 19(1) (a) and Article 19(1)2)
- Freedom of expression and defamation- Libel and slander, Issues of privacy and surveillance in society
- Right to Information Idea of Fair Trial/Trial by Media
- Issues of Copyright
- Media ethics and cultural dependence
- Live reporting and ethics Legality and Ethicality of Sting Operations, Phone Tapping etc.
- Ethical issues in Social media (IT Act 2000, Sec 66 A and the verdict of The Supreme Court)

UNIT – II (15 Hours)

UNIT II: Representation, Regulation and ethics

- Advertisement and Women
- Pornography related laws and case studies- Indecent representation of Women (Prohibition) Act, 1986 and rules 1987, Protection of Women against Sexual Harassment Bill, 2007, Sec 67 of IT Act 2000 and 292 IPC etc
- Regulatory bodies, codes and ethical guidelines
- Self-regulation, media content- Debates on morality and accountability: taste, culture and taboo, censorship and media debates

UNIT – III (15 Hours)

UNIT III: Media and Social Responsibility

- Media reportage of marginalized sections- children, dalits, tribals, gender, differently-abled, old-aged persons,
- media coverage of violence and related laws - inflammatory writing (IPC 353), Seditious- incitement to violence, hate Speech.

Practical component (if any) -

Essential/recommended readings-

1. Thakurta, Paranjay Guha, Media Ethics, Oxford University Press, 2009 Barrie mc Donald and Michel petheran Media Ethics, mansell, 1998
2. Austin Sarat Where Law Meets Popular Culture (ed.), The University of Alabama Press, 2011
3. Vikram Raghvan, Communication Law in India, Lexis Nexis Publication, 2007
4. Iyer Vekat, Mass Media Laws and Regulations in India-Published by AMIC, 2000
5. William Mazzarella, Censorium: Cinema and the Open Edge of Mass Publicity. Durham: Duke University Press, 2013. 304 pp.

Suggestive readings-

1. Raminder Kaur, William Mazzarella, Censorship in South Asia: Cultural Regulation from Sedition to Seduction. Taylor & Francis Ltd. 2012
2. Linda Williams, Hard Core: Power, Pleasure, and the "Frenzy of the Visible". University of California Press. 1999

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-12) BASICS OF SPORTS JOURNALISM

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GE 12 - Basics of Sports Journalism | 4 | 3 | 1 | 0 | Passed Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand the basics of Sports journalism in India and list down various policy making bodies functioning in India & abroad.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to demonstrate abilities to do sports reporting for print and electronic media as sports journalists.

SYLLABUS OF GE-12

UNIT – I (15 Hours)

Unit 1 Introduction to Sports:

- Sports in India: A Historical Perspective Sports Journalism: Concept & History
- Major national and international sports events Profile of outstanding sports personalities

UNIT – II (15 Hours)

Unit 2: Sports Policy making

- Sports regulatory/ governing bodies in India (Ministry of Sports, SAI, BCCI, IHA, etc)
- International Sports Organisations (FIFA, IOC, etc)
- Sports Budget by Indian Government

UNIT – III (15 Hours)

Unit 3: Sports Reporting:

- Sports Coverage by Print Media (Sports News, Sports Photography, Sports Features, Interviews)
- Sports Magazines
- Sports Coverage by Television (Sports TV Channels, Commentary & Broadcasting on TV, Special Programmes on Sports, Live Telecasts, Writing Sports News for TV) Sports Coverage by Radio (Commentary & Broadcasting on Radio, writing sports news for radio)
- Sports Newsroom
- Gender Neutral Reporting

Practical component (if any) -

Essential/recommended readings-

Suggestive readings-

1. Srinivas Rao. "Sports Journalism". Khel Sahitya Kendra; 2009.
2. Prasidh Kumar. "Sports Journalism". Pinnacle Technology. 2010.
3. Phil Andrews. "Sports Journalism: A Practical Introduction". SAGE Publications Ltd. 2013.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-13): FILM APPRECIATION & CRITICISM

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GE-13 Film Appreciation & Criticism | 4 | 3 | 0 | 1 | Passed Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To develop an understanding of the visual language of cinema.
- To understand cinema beyond its entertainment value.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be equipped them with the skills required for becoming film reviewers/ critics.

SYLLABUS OF GE-13

UNIT – I (15 Hours)

UNIT I: Language of Cinema

- Language of Cinema I – Focus on visual Language: Shot, Scene, Mis-en-scene, Deep focus, Continuity Editing, Montage
- Focus on Sound and Color: Diegetic and Non-Diegetic Sound; Off
- Screen Sound; Sync Sound; the use of Color as a stylistic Element

Recommended Screenings:

1. Rear Window (1954) Alfred Hitchcock (Language of Cinema)
2. Battleship Potempkin (1925) Sergei Eisenstein (Language of Cinema)
3. Man with a Movie Camera (1929) Dziga Vertov

UNIT – II (15 Hours)

UNIT II: History of Cinema

- German Expressionism and Film Noir
- Italian Neo-realism
- French New-Wave
- Genre and the development of Classical Hollywood Cinema (Western, Film Noir, Musicals)
- Beginning of Indian Cinema (Phalke, Silent Cinema)
- Arrival of Sound to Post Independence Era
- The Indian New-Wave
- Globalisation and Indian Cinema

Recommended Screenings:

1. Rome Open City (1945) by Roberto Rossellini (Italian Neo Realism)
2. Metropolis (1927) Fritz Lang/ German Expressionism
3. Double Indemnity (1944) Billy Wilder (Film Noir)
4. Breathless (1960) Jean Luc Godard (French New Wave)

UNIT – III (15 Hours)

UNIT III: Alternative Visions

- Third Cinema
- Non Fiction Cinema
- Introduction to Feminist Film Theory
- Auteur- Film Authorship with a special focus on Satyajit Ray or Hitchcock

Recommended Screenings:

1. Pather Panchali (1954) Satyajit Ray
2. Clips from the hour of the Furnaces (1968) by Fernando Solanas
3. Battle of Algiers (1966) Gille Pontecorvo (Third cinema)
4. Nanook of the North (1922) Robert Flaherty (Non-Fiction Cinema)
5. Nishant (1975) Shyam Benegal (Indian New wave)
6. Pyaasa (1957) Guru Dutt
7. Mother India (1957) Mehboob Khan
8. Jagte Raho (1956) Raj Kapoor

Practical component (if any) – Suggested Film screenings- 30 Hours

Students are required to watch films associated with diverse film movements and critically analyse film texts. They are expected to watch at least one film from each unit and do a semiotic analysis of two scenes from each film.

Students are also required to refer to journals/blogs on the works of noted Indian film makers (Satyajit Ray, Guru Dutt, Shyam Benegal et.al)

Students should also undertake studies to examine debates in public sphere around commercial films. They can also have discussions in groups to enhance their understanding of visual language of cinema.

Essential/recommended readings-

1. Villarejo, Amy. *Film studies: The Basics*. Routledge, 2006. (For Unit I) P 1-54
2. A Nowell –Smith.G.*The Oxford History of World Cinema*. Oxford: Oxford University Press, 1996. (Unit II, III, IV)
3. Duggal, Menon & Bhattacharya. *Film Studies: An Introduction*, Worldview Publications, New Delhi, 2019. (For Unit I, II, IV and V)

4. Mishra, Vijay. Bollywood cinema: Temples of desire. Routledge, 2013. (Chapter 3, Chapter 4, Chapter 5)

Suggestive readings-

1. Anandam P. Kavoori & Punanthambekar Eds. *Global Bollywood*, New York: New York University Press. 2008. Pages 17-41, 223-240
2. Paul Schrader —Notes on Film Noir in John Belton ed. *Movies and Mass Culture* New Brunswick, New Jersey: Rutgers University Press: 1996 pg.153-17
3. Robert Stam, "The Cult of the Auteur," in *Film Theory: An Introduction*. Massachusetts & Oxford Blackwell Publishers: 2000
4. Andre Bazin, —The Ontology of the Photographic Image from his book: *What is Cinema* Vol. I Berkeley, Los Angeles and London: University of California Press: 1967, 9-16
5. Sergei Eisenstein, —A Dialectic Approach to Film Form from his book *Film Form: Essays in Film Theory* (Edited and Translated by Jay Leyda) San Diego, New York, London: A Harvest/Harcourt Brace Jovanovich, Publishers: 1977, 45-63
6. Tom Gunning, "Non-continuity, Continuity, and Discontinuity: A theory of Genres in Early Films," in Thomas Elsaesser, ed. *Early Cinema: Space, Frame, Narrative*. London: British Film Institute, 1990, 86-94
7. David Bordwell, "Classical Hollywood Cinema: Narrational Principles and Procedures" in Philip Rosen, ed. *Narrative, Apparatus, Ideology*. New York: Columbia University Press, 1986, 17-34.
8. Richard Dyer —*Heavenly Bodies: Film Stars and Society* in *Film and Theory: An Anthology* Massachusetts, U.S.A & Oxford, U.K: Blackwell Publishers: 2000, 603-617
9. Madhava Prasad. *Ideology of Hindi Film* New Delhi: Oxford University Press. 1998

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-): 14 WAR REPORTING

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|----------------------------|----------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GE-14 War Reporting | 4 | 3 | 0 | 1 | Passed Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To train students to apply a historical perspective to the media coverage of conflict and war reporting.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to develop an in-depth awareness of the difficulties involved in conflict reporting while keeping in mind ethical standards to their analysis of conflict reporting as war and conflict journalists.

SYLLABUS OF GE-14

UNIT – I (15 Hours)

Unit 1: Introduction

- Conflict Reporting and War Reportage: Concepts
- Information warfare and dominance
- Issues & Obstacles in war reporting
- Dimensions of War Coverage: Organizations and Reporters
- Working lives of War Correspondents
- Components and themes in war reporting, construction of ‘enemy’
- Concept of ‘hybrid war’

UNIT – II (15 Hours)

Unit II: Issues

- Risks and Risk Management, Threats to personal safety
- Objectivity, Rationality and accuracy of media coverage
- Competing narratives & Viewpoints
- Cultural differences in reporting the war on terror
- Challenges of reporting from a foreign land

UNIT – III (15 Hours)

Unit III: Challenges and Ethical Concerns

- Media Opinions and Advocacy
- Contemporary changes in warfare & Media environment
- Women in war reporting: discrimination, derogatory attitudes, sexual harassment
- News Media Visuals, Images of death spectacle
- Technological developments and its uses in war
- Digital Platforms, blogs, Twitter, chats

Practical component (if any) – 30 Hours

The students are expected to do projects, critically examining the coverage of wars in each phase of development of the media. The students must submit write ups on the reporting of wars in relation to the limitations of technology in each phase of the media beginning from the

coverage from the era of print journalism to the present times. Debates and discussions will be held on the issues of conflict and the role of international bodies in the call for peace. The students must submit projects on the ethical dimensions of war reporting with reference to global audiences and the pressures of professionalism vs. patriotism. They must write a critical report comparing the reportage of war on traditional/mainstream media with posts/reports on social media platforms of the Russian-Ukraine war and its implications on international politics and economy.

Essential/recommended readings-

Suggestive readings-

1. Armoudian, Maria. 2016. *Reporting from the Danger Zone: Frontline Journalists, Their Jobs and an Increasingly Perilous Future*. Introduction, Chapter Two & Conclusion
2. Wolfsfeld, Gadi. 2015. "Telling a Good Story." In *Making Sense of Media & Politics*. Routledge.
3. Galtung, Johan, and Dietrich Fischer. 2013. "High road, low road: Charting the course for peace journalism." *Johan Galtung*. Springer Berlin Heidelberg. 95-102.
http://reference.sabinet.co.za/webx/access/electronic_journals/track2/track2_v7_n4_a4.htm
4. Jakobsen, Peter Viggo. 2000. "Focus on the CNN Effect Misses the Point: The Real Media Impact on Conflict Management is Invisible and Indirect." *Journal of Peace Research*. Vol. 37, No. 2 (p. 131-143).
5. Lance Bennett: *When the Press Fails*. University of Chicago Press. Introduction.
6. Cull, Nicholas. 2009. *Annals of the American Academy of Political and Social Science*. Vol. 616, Public Diplomacy in a Changing World (Mar., 2008), pp. 31-54.
7. Seib, Philip. 2010. "Transnational journalism, public diplomacy, and virtual states." *Journalism Studies* 5: 734-744.
8. Norris, Pippa. 2003. Montague Kern & Marion Just. "The Lessons of Framing Terrorism." In *Framing Terrorism*.
9. Bolt, Neville. 2011. "Conclusion." *From The Violent Image*. Columbia University Press.
10. Rutkin, Aviva. 2016. "Cyberwar becomes official." *New Scientist*.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-15): INVESTIGATIVE REPORTING

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|----------|-----------------------------------|----------|------------------------|-------------------------|--------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GE-15 Investigative Reporting | 4 | 3 | 0 | 1 | Passed Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand and analyse the key areas of investigative journalism.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to creatively and meaningfully engage with the investigative journalism as investigative reporters.

SYLLABUS OF GE-

UNIT – I (15 Hours)

Unit 1: Introduction to Investigative Journalism

- Investigative Reporting: History, Concept, Process & News values
- Investigative Journalist- Qualities, Career & Opportunities
- Use of Sting Operations, Internet / Social media, Right to Information for Investigative Reporting
- Case Study: Panama Papers and Watergate Scandal

UNIT – II (15 Hours)

Unit 2: Sources

- News Sources – Traditional and new media
- Confidentiality of Source (On/Off the record)
- Fact Checking Process
- Variables of Information: Sources; Social media feeds, eye witness, over hearing, propaganda, whistle blowers

UNIT – III (15 Hours)

Unit 3: Ethical Issues and Concerns

- Ethico-legal Coefficient
- Right to Privacy
- Accuracy & Conflict of Interest
- Plagiarism

Practical component (if any) - Teachers to give cases to students to investigate and file a project report. **-30 Hours**

Teachers to give cases to students to investigate and file a project report.

Students are required to thoroughly study noteworthy works in the history of investigative journalism in the global and Indian context. (For example, The Washington Post and the Guardian Report on the NSA surveillance in 2013, Open Magazine's publication of Nira Radia Tapes in 2010 etc.)

They should also undertake projects examining the ethical concerns associated with the works of the investigative journalists with a focus on sting operations in India.

Essential/recommended readings-

Suggestive readings-

1. Nazakat, Syed, A Manual for Investigative Journalism, Singapore: Drummond, 2010.
2. Pilger, John, Tell Me No Lies: Investigate Journalism and its Triumphs, New York: Vintage Digital, 2011.
3. Spark, David, Investigative Reporting: A Study in Technique, London: Focal Press, 2012.
4. Mazzetti's, Mark, The way of the Knife: The CIA, a secret Army, and a war at the Ends of the Earth, New York: Penguin Press, 2014.
5. Gaines, William C., Investigative Journalism: Proven Strategies for Reporting the Story, Washington DC: CQ Press, 2007.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-16) CONTENT AND BRAND MARKETING

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|----------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GE-16 Content and Brand Marketing | 4 | 3 | 0 | 1 | Passed Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To learn the importance of content writing and brand marketing and the various ways in which strategies can be made using available tools to advertise and market content for brands.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to to advertise and market content for brands as marketing professionals in advertising and other related fields.

SYLLABUS OF GE-16

UNIT – I (15 Hours)

Unit I Foundational Concepts

- Content and brand marketing, scope and advantages
- Content Creation Framework
- ROI-focused meaningful content strategy
- Working with Influencers
- Understanding keywords

UNIT – II (15 Hours)

Unit II Tools and Strategies

- Brand Strategy and Goals
- Organic and Paid Promotion
- Topic discovery and content creation

- Content promotion techniques
- SEO, blogs, newsletters, e-books, forums/discussion boards, videos, social media channels

UNIT – III (15 Hours)

Unit III Content Management

- Audience discovery, personas and brand content styles
- Editorial calendar and maintenance
- Metrics and measurement
- Building an authority presence

Practical component (if any) - The students will conceive and produce content and brand marketing plans outlining goals and strategies. They will also use tools and techniques to create campaigns.

30 Hours

Essential/recommended readings-

1. Pam Didner. Global Content Marketing: How to Create Great Content, Reach More Customers, and Build a Worldwide Marketing Strategy that Works. 2014. McGraw Hill Education
2. Robert Rose, Joe Pulizzi. Managing Content Marketing The Real-World Guide for Creating Passionate Subscribers to Your Brand. 2017. CMI Books
3. Jan-Benedict Steenkamp. Global Brand Strategy World-wise Marketing in the Age of Branding. 2017. Palgrave Macmillan UK
4. Timothy Garrand. Writing for Multimedia and the Web: A Practical Guide to Content Development for Interactive Media. 2020. CRC Press

Suggestive readings-

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-17) SOCIAL MEDIA AND GOVERNANCE

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GE-17 Social Media and Governance | 4 | 3 | 0 | 1 | Passed Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To understand the use of social media for governance by businesses and the government as well as the ethical issues and challenges faced in such communication on different platforms.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, students will be able to receive practical know-how on understanding, implementing, and managing main stream social media tools (e.g., blogs and micro-blogs, social network sites, and content communities) from a public sector and private sector perspective for working as public policy and communication officers in various organisations.

SYLLABUS OF GE-17

UNIT – I (15 Hours)

Unit I Understanding governance and social media

- Key elements of governance through communication
- Social media in Business and Government, benefits and impact
- Influencing public and social perception
- Democracy and engagement
- Governance Transparency
- Developing Social Media Goals and Strategies

UNIT – II (15 Hours)

Unit II Social Media Applications and Practices

- Virtual Campaigning and Outreach
- Health Communication

- Public Policy Dissemination
- Governance Feedback and Redressal
- Branding and Identity
- Crisis Management

UNIT – III (15 Hours)

Unit III Ethical and Regulatory Challenges

- Digital Media Ethics Code
- Classified and sensitive information
- Misinformation, fake news, propaganda and political polarization
- Online hate speech
- AI, Bots and automation of information dissemination
- Data mining, issues of privacy and surveillance

Practical component (if any) - The students will prepare case studies of the use of social media for governance in Business and/or Government. **30 Hours**

Essential/recommended readings-

1. Jeremy Harris Lipschultz. *Social Media Communication: Concepts, Practices, Data, Law and Ethics*, 2020, Taylor and Francis
2. Asha Kaul, Vidhi Chaudhri. *Corporate Communication Through Social Media Strategies for Managing Reputation*. 2017, Sage
3. Bu Zhong. *Social Media Communication Trends and Theories*, 2021, Wiley
4. Lucinda L. Austin, Yan Jin. *Social Media and Crisis Communication*. 2017, Taylor and Francis
5. Staci M. Zavattaro, Thomas A. Bryer. *Social Media for Government Theory and Practice*. 2016, Taylor and Francis
6. Gohar F. Khan. *Social Media for Government: A Practical Guide to Understanding, Implementing, and Managing Social Media Tools in the Public Sphere*, 2017, Springer
7. Tim Highfield. *Social Media and Everyday Politics*. 2017. Polity Press
8. Joshua A. Tucker, Nathaniel Persily. *Social Media and Democracy: The State of the Field, Prospects for Reform*. 2020. Cambridge University Press

Suggestive readings-

1. Kerrie Harvey. *Encyclopaedia of Social Media and Politics*. Volume 2. 2013. Sage.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DEPARTMENT OF PERSIAN

BA (Hons.) Persian

DISCIPLINE SPECIFIC CORE COURSE – 4: Persian Prose – Level II

Credit distribution, Eligibility and Pre-requisites of the Course:

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Persian Prose-Level - II | 4 | 3 | 1 | 0 | Class XII pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

1. To make students acquainted with some prose writers with their specimens of prose.
2. To equip the students with basic Persian prose writing.

Learning outcomes

The Learning Outcomes of this course are as follows:

- By studying this course, the students will be able to get acquainted with Persian prose writing by Iranian writers
- By studying this course, they shall get to know different prose styles by famous Iranian prose writers like Saadi Shirazi and Hakim Abu Ali Sina.

SYLLABUS OF DSC-4

UNIT – I (9 Hours)

- Benam-e-Khoda
- Murghabi-e-Laakposht
- Gurg-o-Gao
- Faryad Baraye Azadi
- Ba Haivanaat Mehrebaan Basheem
- Ferdausi
- Dehqan-e-Fidakaaar
- Rubah-o-Khuroos

UNIT – II (9 Hours)

- Sa'adi Shiraazi

- Dehqan-o-Gunjishk
- Umar Khayyam
- Sangpush-o-Gavazn
- Luqman Hakeem
- Neki-o-Badi
- Abu Ali Sina
- Madar Ra Dil Misuzad Dayi Ra Daman

UNIT – III (9 Hours)

- Life and works of Prose writers: Saadi Shirazi, Hakim Abu Ali Sina

UNIT – IV (9 Hours)

- Reading and writing of the lessons with their exercises given at the end of the chapters

UNIT – V (9 Hours)

- Translation of passages from Persian to English or Hindi or Urdu language and vice-versa of above mentioned writers

Essential/recommended readings:

1. Farsi Duvum-e-Dabistan, Vizarat-e-Amozish-e-Parvarish, Iran
2. Farsi Sivvum-e-Dabistan, Vizarat-e-Amozish-e-Parvarish, Iran
3. Farsi Chaharum-e-Dabistan, Vizarat-e-Amozish-e-Parvarish, Iran
4. Kitabe-Farsi Baraye Class hae diplom
5. Bagh-e-Mehrebaniha by Rahmat Dost, Mostafa. Madraseh Publication, Tehran, Iran, 1374 A.H./1995 A.D.

Suggestive readings

1. Farsi Dastoor by Kiya Khanlari, Dr. Zehra. Idarah-eAdabiyat, Jayyed Press, Ballimaran, Delhi 110 006
2. Shafaq, Raza Zadeh: Tareekh-e-Adabyat-e-Iran, tr. by Syed Mubarizuddin Rafat, Nadvatul Musannefin, Urdu Bazar, Jama Masjid, Delhi-110 006. 1993.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 5: Introduction to Persian Poetry

Credit distribution, Eligibility and Pre-requisites of the Course:

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction to Persian Poetry | 4 | 3 | 1 | 0 | Class XII pass | NIL |

Learning Objectives:

The Learning Objectives of this course are as follows:

1. To equip the students with some prominent poets with their specimen
2. To enable the students to know the basics of Persian poetry writing

Learning outcomes:

The Learning Outcomes of this course are as follows:

- By learning this course, students will come to know the basics of Persian poetry writing
- By learning this course, students will be able to know the different poetic styles by famous Iranian poets like Abul Qasim Ferdausi, Saadi Shirazi and Umar Khayyam.

SYLLABUS OF DSC- 5

UNIT – I (9 Hours)

- Benam-e-Khoda
- Kitab-e-Khoob
- Qudrat-e-Khoda
- Mihan-eKhish ra kuneem Abaad
- Rubah-o-Zaagh
- Subh
- Madar

UNIT – II (9 Hours)

- Darakhtkaari
- Khana-e-Maa
- Khursheed-e-Mehrebaan
- Az Khudam Ranjeedam
- Maiazaar Moori ki Daanekash Ast
- Gurg-o-Sag
- Ranj-o-Ganj

UNIT – III (9 Hours)

- Life and works of poets: Abul Qasim Ferdausi, Saadi Shirazi, Umar Khayyam

UNIT – IV (9 Hours)

- Reading and writing of the poems with their exercises given at the end of the chapters
- Write the stanzas into simple Persian

UNIT – V (9 Hours)

- Translation of stanzas from Persian to English or Hindi or Urdu language

Essential/recommended readings:

1. Farsi Duvvum-e-Dabistan, Vizarat-e-Amozish-e-Parvarish, Iran
2. Farsi Sivvum-e-Dabistan, Vizarat-e-Amozish-e-Parvarish, Iran
3. Farsi Chaharum-e-Dabistan, Vizarat-e-Amozish-e-Parvarish, Iran
4. Kitabe-Farsi Baraye Class hae diplom
5. Bagh-e-Mehrebaniha by Rahmat Dost, Mostafa. Madraseh Publication, Tehran, Iran, 1374 A.H./1995 A.D.

Suggestive readings:

1. Farsi Dastoor by Kiya Khanlari, Dr. Zehra. Idarah-eAdabiyat, Jayyed Press, Ballimaran, Delhi-110 006
2. Shafaq, Raza Zadeh : Tareekh-e-Adabyat-e-Iran, tr. by Syed Mubarizuddin Rafat, Nadvatul Musannefin, Urdu Bazar, Jama Masjid, Delhi-110 006. 1993.

DISCIPLINE SPECIFIC CORE COURSE – 6: Introduction to Persian Rhetoric

Credit distribution, Eligibility and Pre-requisites of the Course:

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction to Persian Rhetoric | 4 | 3 | 1 | 0 | Class XII pass | NIL |

Learning Objectives:

The Learning Objectives of this course are as follows:

1. To acquaint the students with Persian rhetoric.
2. To familiarize the students with Persian Asnaf-e-Sukhan.

Learning outcome:

- By learning this course, students will come to know the basics of Persian rhetoric.
- By learning this course, students will be able to know the different Asnaf-e-Sukhan prevalent in Persian poetry

SYLLABUS OF DSC-6

UNIT – I (9 Hours)

- Asnaf-e-Sukhan: Nazm, Sher, Ghazal, Matla, Maqta, Radeef

UNIT – II (9 Hours)

- Qafia, Takhallus, Qitaa, Rubai, Qasida-o-Ajzai Qasida

UNIT – III (9 Hours)

- Masnavi, Hamd, Naat, Manqabat, Marsia, Hajv

UNIT – IV (9 Hours)

- Sanaye-e-Maanvi: Tazad, Iyham, Mirat-un-Nazeer, Mushaklat, Laf-o-Nashr, Jam-o-Taqseem, Mubalgha, Tazmeen

UNIT – V (9 Hours)

- Sanaye-e-Lafzi: Tajnees, Tashbih, Esteara, Kinayah

Essential/recommended readings:

1. She'r-ul-Ajam, by Shibli Nomani, Vol. I-V, Shibli Academy, Azamgarh.
2. A History of Persian Language and Literature at the Mughal Court (Part I and II) Allahabad, 1929-30.
3. Aaina-e-Balaghat by Mohd Askari, Lucknow, 1937
4. Dars-e-Balaghat, NCPUL New Delhi 1997
5. Sirius Shamisa: Anwa'-e-Adabi, Intesharat-e-Firdos, Tehran, Iran, 1383/2004.

Suggestive readings:

1. A History of Persian Language by Ansari, Dr. Noorul Hasan. Idara-e-Adabiyat-e-Delhi, Delhi 110 006. Vol. I, 1982.

Category II

Persian Courses for Undergraduate Programme of study with Persian as one of the Core Disciplines

(B.A. Programmes with Persian as Major discipline)

DISCIPLINE SPECIFIC CORE COURSE (DSC-1): Persian Prose: Some Selections

Credit distribution, Eligibility and Pre-requisites of the Course:

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Persian Prose: Some Selections | 4 | 3 | 1 | 0 | Class XII pass | NIL |

Learning Objectives:

The Learning Objectives of this course are as follows:

1. To equip the students with Simple Persian Prose
2. To acquaint the students with Iranian culture through Modern Persian Prose

Learning outcomes:

The Learning Outcomes of this course are as follows:

- By learning this course, the students will be acquainted simple Persian prose
- By learning this course, the students will be acquainted with Iranian culture through samples of Modern Persian prose

SYLLABUS OF DSC-1

UNIT – I (9 Hours)

Persian Prose: Some Selections

The following lessons only:

- Faslha-i-Saal
- Zimistan-o-Tabistan
- Bahar
- Mazandaran
- Ruznameh
- Jashn-e-Nauruz

UNIT – II (9 Hours)

- Jashn-e-Mehregaan
- Jashn-e-Sadeh
- Firdausi

- Sa'di Shirazi
- Umar Khayyam (two parts)
- Chaupan-e-Durughgo

UNIT – III (9 Hours)

- Dahqaan-e-Fidakaar
- Shaban-o-Gusfand
- Kudak-e-Hushyaar
- Gawahi-e-Darakht
- Se Duzd-e-Harees
- Eidi

UNIT – IV (9 Hours)

- Comprehension and Translation from Persian to English, Hindi or Urdu

UNIT – V (9 Hours)

- Explanation of a chapter in English, Hindi, or Urdu

Essential/recommended readings:

1. Kitab-e-Farsi: Baraye Classha-e-Muqaddemati, Department of Persian, University of Delhi, Delhi-110 007.
2. Kitab-e-Farsi: Baraye Class-hae Diplom, Department of Persian, University of Delhi, Delhi-110 007.
3. Kitab-e-Farsi: B.A. (Prog.), Part-I/II/III, Department of Persian, University of Delhi, Delhi-110 007
4. Nisab-e-Jadeed Farsi, Jayyad Press, Ballimaran, Delhi-110 006. -
5. Baghcheban, Saminah: Farsi Barai Ghair Farsi Zaban, Idarah-e-Adabiyat-e-Delhi, Ballimaran, Delhi.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2: Introduction to Sufistic literature in India

Credit distribution, Eligibility and Pre-requisites of the Course:

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction to Sufistic literature in India | 4 | 3 | 1 | 0 | CLASS XII PASS | NIL |

Learning Objectives:

The Learning Objectives of this course are as follows:

1. To equip the students with the introduction of Sufistic literature of India
2. To acquaint the students with the life and works of famous Sufis of India

Learning outcomes:

The Learning Outcomes of this course are as follows:

1. By learning this course, the students will be introduced with Sufistic literature of India
2. By learning this course, the students will get acquainted with the life and works of famous Sufis of India

SYLLABUS OF DSC-1

UNIT – I (12 Hours)

- Kashf-ul Mahjub
- Life and works of Jalali Hujveri, Shaikh Abul-Hasan Ali bin Usman

UNIT – II (12 Hours)

- Khair-ul-Majalis
- Life and works of Nasiruddin Chiragh Delhi

UNIT – III (12 Hours)

- Fawaid-ul-Fuwad
- Life and works of Hazrat Nizamuddin Awliya

UNIT – IV (9 Hours)

- Introduction to History of Sufism in India
- Impact of Sufism on Indian society

Essential/recommended readings:

1. Shafaq, Razazadeh: Tarikh-e-Adabiyat-e-Iran, Translated in Urdu by Sayyed Mubarizuddin Raf'at, Kutubkhana, Khurshidia, Urdu Bazar, Lahore, 2014.
2. Nizami, K. A., Tarikh-e-Masha'ikh-e-Chisht, Delhi, Idara-e-Adabiyat-e-Dilll (Urdu), 1980-5

Category III

(B.A. Programmes with Persian as non-Major or Minor discipline)

Credit distribution, Eligibility and Pre-requisites of the Course:

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Persian Prose: Some Selections | 4 | 3 | 1 | 0 | Class XII pass | NIL |

Learning Objectives:

The Learning Objectives of this course are as follows:

1. To equip the students with Simple Persian Prose
2. To acquaint the students with Iranian culture through Modern Persian Prose

Learning outcomes:

The Learning Outcomes of this course are as follows:

- By learning this course, the students will be acquainted simple Persian prose
- By learning this course, the students will be acquainted with Iranian culture through samples of Modern Persian prose

SYLLABUS OF DSC-1

UNIT – I (9 Hours)

Persian Prose: Some Selections

The following lessons only:

- Faslha-i-Saal
- Zimistan-o-Tabistan
- Bahar
- Mazandaran
- Ruznameh
- Jashn-e-Nauruz

UNIT – II (9 Hours)

- Jashn-e-Mehregaan
- Jashn-e-Sadeh
- Firdausi
- Sa'di Shirazi
- Umar Khayyam (two parts)
- Chaupan-e-Durughgo

UNIT – III (9 Hours)

- Dahqaan-e-Fidakaar
- Shaban-o-Gusfand
- Kudak-e-Hushyaar
- Gawahi-e-Darakht
- Se Duzd-e-Harees
- Eidi

UNIT – IV (9 Hours)

- Comprehension and Translation from Persian to English, Hindi or Urdu

UNIT – V (9 Hours)

- Explanation of a chapter in English, Hindi, or Urdu

Essential/recommended readings:

1. Kitab-e-Farsi: Baraye Classha-e-Muqaddemati, Department of Persian, University of Delhi, Delhi-110 007.
2. Kitab-e-Farsi: Baraye Class-hae Diplom, Department of Persian, University of Delhi, Delhi-110 007.
3. Kitab-e-Farsi: B.A. (Prog.), Part-I/II/III, Department of Persian, University of Delhi, Delhi-110 007
4. Nisab-e-Jadeed Farsi, Jayyad Press, Ballimaran, Delhi-110 006. -
5. Baghcheban, Saminah: Farsi Barai Ghair Farsi Zaban, Idarah-e-Adabiyat-e-Delhi, Ballimaran, Delhi.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES OFFERED BY THE DEPARTMENTS

Credit distribution, Eligibility and Pre-requisites of the Course:

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|-----------------------|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction to Intermediary level Persian | 4 | 3 | 1 | 0 | 12 th Pass | Student should have studied GE-1 of 1 st semester |

Learning Objectives

The Learning Objectives of this course are as follows:

- To make the students equipped with intermediary level Persian
- To make the students more efficient to form Persian sentences
- To make the students more fluent in Persian language

Learning outcomes

The Learning Outcomes of this course are as follows:

- By learning this course, the students will be equipped with intermediary level Persian
- By learning this course, the students will be more efficient to form Persian sentences
- By learning this course, the students will be more fluent in Persian language

SYLLABUS OF GE-4

UNIT – I (9 Hours)

- Use of verbs in Present, Past and Future tenses
- Opposite words
- Degrees
- Personal and Possessive Pronouns
- Objectives, Compound Verb and Relative Clause
- Present Participle
- Active and Passive Voice
- Conjugation
- Technical Words
- Translation: English to Persian and vice versa
- Text Reading and comprehension from chapter no.16 to 30 of book of Kitab-e-Farsi by Samina Baghcheban

UNIT – II (9 Hours)

- Intermediary Persian Grammar:
- Use of Verbs in Present, Past and Future Tenses
- Degrees
- Personal and Possessive Pronouns
- Use of objectives
- Compound Verbs
- Relative Clause

UNIT – III (6 Hours)

Conjugation:

- In Present, Past and Future Tenses

UNIT – IV (6 Hours)

- Opposite Words
- Use of Technical Words in sentences

UNIT – V (6 Hours)

- Translation from Persian to English.
- Translation from English to Persian. Reading of Unseen Paragraphs of Persian

UNIT – VI (9 Hours)

- Chapter 16 to 30 from Kitab-e-Farsi by: Samina Baghcheban, Exercise of the chapters of the above book

Essential/recommended readings

1. Samina Baghcheban: Kitab-e-Farsi, Idarah-e-Adabyat, Jayyad Press, Ballimaran, Delhi-110 006

Suggestive readings

1. Kumar, Rajinder: Elementary Persian Grammar, Harjeet Publication, Delhi-110 034, 2009.

GENERIC ELECTIVES (GE-5): Persian Translation of Indian writings during Mughal**Credit distribution, Eligibility and Pre-requisites of the Course:**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|---------|-----------------------------------|----------|---------------------|-----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Persian Translation of Indian writings during Mughal Period | 4 | 3 | 1 | 0 | 12 th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To equip the students with the literary and historical importance of Persian Translation of Indian writings during Mughal Period
- To familiarize the students with the social and cultural history of Mughal Period
- To provide the students introductory knowledge of Persian Translation of Indian writings during Mughal Period

Learning outcomes

The Learning Outcomes of this course are as follows:

- By learning this course, the students will be able to know about the literary and historical importance of Persian Translation of Indian writings during Mughal Period
- By learning this course, the students will be able to know the social and cultural history of Mughal Period
- By learning this course the, the students will be able to get the introductory knowledge of Persian Translation of Indian writings during Mughal Period

SYLLABUS OF GE-5**UNIT – I (12 Hours)**

- Literary and historical importance of Persian translations of Indian works

UNIT – II (9 Hours)

- Social and cultural history of Mughal Period

UNIT – III (12 Hours)

Introduction to the following translation works:

- Singhasan Battisi
- Mahabharata
- Lilawati
- Tarikh-i-Kashmir
- Moajam-ul-Buldan
- Baharul Asmar
- Har Bans
- Zeech-e-Mirzai
- Injeel
- Ramayana
- Kalila wa Dimneh
- Tuzuk-i-Baburi
- Jama-e-Rashidi
- Tajik
- Nuzhat ul Arwah wa Nuzhat ul Afrah
- Athardeen

UNIT – IV (12 Hours)

Introduction to the following translators:

- Mulla Abdul Qadir Badayuni
- Abul Fazal Allami
- Mulla Husain Waiz
- Mir Fatehullah Shirazi
- Shaikh Mubarak
- Abul Faiz Faizi
- Abdul Rahim Khan i Khanan

Essential/recommended readings

1. Shafaq, Razazadeh: Tarikh-e-Adabiyat-e-Iran, Translated in Urdu by Sayyed Mubarizuddin Rafat, Kutubkhana, Khurshidia, Urdu Bezar, Lahore, 2014.
2. Shibli Nomani: Shair-ul Ajam, Shibli Academy, Azamgarh (U.P.).
3. Sabahuddin, Abdur Rahman: Bazm-e-Taimuriah, Shibli Academy, Azamgarh, (U.P.).
4. Ansari, Nurul Hasan: Farsi Adab-be-Ahd-e-Aurangzeb, Department of Persian, University of Delhi, Delhi, 2006.
5. Ghani, M.A.: A History of Persian Language & Literature at the Mughal Court (Part I & II), Allahabad (U.P.), 1929-30.
6. Qasemi, S.H.: A Descriptive Catalogue of Persian Translations of Indian Works, National Mission for Manuscripts, Asila Offset Printers, Kucha Chelan, Darya Ganj, New Delhi, 2014

DEPARTMENT OF PHILOSOPHY

Category I

Philosophy Courses for Undergraduate Programme of study with Philosophy as a Single Core Discipline (B.A. Honours in Philosophy in three years)

DISCIPLINE SPECIFIC CORE COURSE -4 (DSC-4) – Fundamentals of Philosophy

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Fundamentals of Philosophy DSC 4 | 4 | 3 | 1 | 0 | Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- The course is designed for the grasp of the fundamental problems of the subject from the writings of original philosophers.
- The course will analyse problems like the problem of existence, like what is there, and why is anything there, what is justice; the origin of ideas, how we think about the world, what is the self, etc.
- A broad and deep approach to the subject is envisaged, learning from sources spread across centuries and continents.

Learning outcomes

The Learning Outcomes of this course are as follows:

- The student will learn how original philosophers express themselves about the great problems of philosophy
- The student will acquire the skill of argumentation and the ability to find flaws in the arguments of the philosophers
- The student will improve the grasp in the subject matter
- The student's curiosity will be aroused to explore the subject further in a meaningful way

SYLLABUS OF DSC-4

UNIT 1: Being

(12 Hours)

1. What is Being?
2. Why does anything exist?

Essential/ Recommended Readings

Derek Parfit (1998) Why Anything? Why this? <https://www.lrb.co.uk/the-paper/v20/n02/derek-parfit/why-anything-why-this>

Selection from Aristotle's Metaphysics "The Process of Change" in Moore, Brooke Noel and Bruder, Kenneth (2011). *Philosophy: The Power of Ideas*. (Indian Edition) McGraw-Hill, pg. 71-72

UNIT 2: Ideas, Thought and World

(12 Hours)

1. The Origin of Ideas
2. What is thought?
3. Social Construction

Essential/Recommended Readings

Moore, Brooke Noel and Bruder, Kenneth (2011). *Philosophy: The Power of Ideas*. (Indian Edition) McGraw-Hill, pg. 143 – 145 (Section on Hume and Kant)

Donald Davidson's "The Problem of Objectivity" in Moore, Brooke Noel and Bruder, Kenneth (2011). *Philosophy: The Power of Ideas*. (Indian Edition) McGraw-Hill, pg. 243-245

Paul Boghossian's "What is Social Construction" in Moore, Brooke Noel and Bruder, Kenneth (2011). *Philosophy: The Power of Ideas*. (Indian Edition) McGraw-Hill, pg. 245-248

UNIT 3: Consciousness, Knowledge and Self

(12 Hours)

1. Perspectives on Consciousness and Knowledge
2. Perspectives on the Perception of Self

Essential/Recommended Readings

Mohanty, J. N. (1979). Consciousness and knowledge in Indian philosophy. *Philosophy East and West* 29 (1):3-10.

Matilal, Bimal Krishna (2002) The perception of Self in the Indian tradition. In J. Ganeri (ed.) *Mind, Language and World: The Collected Essays of Bimal Krishna Matilal*, OUP, pp. 299-314

UNIT 4: Justice

(9 Hours)

1. What is Justice?
2. Might is Right or Right is Might?

Essential/ Recommended Readings

Plato's *Republic*, Book 1, 327a – 345a. In Christopher Rowe's translation, Penguin Books, 2012

Suggestive Readings

Blackburn, Simon (1999). *Think: A Compelling Introduction to Philosophy*. Oxford University Press.

Moore, Brooke Noel and Bruder, Kenneth (2011). *Philosophy: The Power of Ideas*. McGraw-Hill
Indian edition

Perry, John, Bratman, Michael & Fischer, John Martin (2009). *Introduction to Philosophy: Classical and Contemporary Readings, Fourth Edition, International Edition*. OUP, USA

DISCIPLINE SPECIFIC CORE COURSE – 5 (DSC-5): Greek Philosophy

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-------------------------------|----------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Greek Philosophy DSC 5 | 4 | 3 | 1 | 0 | Class XII | NIL |

Learning Objectives

- This course traces the origins of philosophy in the Western tradition in the thinkers of Ancient Greece.
- It begins with the Pre-Socratic natural philosophers like Thales and Anaximander. Then it moves on to Heraclitus and Parmenides of Elea.
- Then, it discusses the counter position of Sophists and Socrates. Finally, there is discussion on Plato's theory of virtue and Forms.

Learning Outcomes:

- The student will comprehend the foundations and origins of philosophy through the lens of early Greek philosophy
- The student will broaden the grasp of the subject and understand how philosophy arose from a close tie with cosmological and logical thinking
- The student will appreciate the role of reason in philosophy and the role of law and order in the structure of the world

Unit-1: Naturalism (Cosmos and Arche)

(12 Hours)

1. Thales and Anaximander

Essential/Recommended Reading:

J. Barnes. *Early Greek Philosophy*. Harmondsworth: Penguin Books, 1981. p.xi-xxv.

Curd, Patricia. *A Presocratic Reader: Selected Fragments and Testimonia* Second Edition Edited, with Introduction. Translations by Richard D McKirahan and Patricia Curd (Hackett Publishing Company, Inc, 2011) ,p.13-19

Warren, James & Frisbee Sheffield (eds.). *The Routledge Companion to Ancient Philosophy*. Routledge: London and New York, 2014. Part-1., 94-124

Kirk, G.S and Raven, J.E, The Presocratic Philosophers: A Critical History with Selection of Texts (Cambridge; At The University Press, 1957) pp74-99

Unit 2: Change, Being and Becoming

(12 Hours)

1. Heraclitus: Doctrine of Flux.
2. Parmenides of Elea: Doctrine of Being and not-being.

Essential/Recommended Reading:

Curd, Patricia. A Presocratic Reader: Selected Fragments and Testimonia Second Edition Edited, with Introduction. Translations by Richard B. McKirahan and Patricia Curd (Hackett Publishing Company, Inc, 2011), p.39-65,

G.S Kirk and J.E. Raven, The Presocratic Philosophers, Chapters vi and x

Online Source:

Adobe PDF ebook ISBN: [978-1-60384-598-4](https://doi.org/10.1017/9781603845984)/2010019297

Unit 3: Sophists and Socrates

(9 Hours)

1. Sophists (Protagoras): Relativism and Scepticism
2. Socrates: Critical Enquiry and Virtue is Knowledge

Essential/Recommended Reading:

Gill, M. L. A Companion to Ancient Philosophy edited. Pierre Pellegrin: Blackwell Companion Series, 2006. Relevant chapters.

Warren, James & Frisbee Sheffield (eds.),

The Routledge Companion to Ancient Philosophy. Routledge: London and New York, 2014. Part-1., 94-124

Unit 4: Plato

(12 Hours)

Justice as Virtue and Theory of Forms

Essential/Recommended Readings

Lee, Desmond (translated), Plato: The Republic, edited by Betty Radice, (Penguin Classics, 1974), p.196-224 and 300-333. (books 4.5 and 7.6-7.7)

Warren, James & Sheffield Frisbee. (eds). The Routledge Companion to Ancient Philosophy. Routledge: London and New York, 2014. Part-II, chapters 13-16.

Vlastos, G. "Justice and psychic harmony in the Republic" in Journal of Philosophy. 1969. Vol.66. (16): pp 505-521)

Suggestive Readings

Barnes, Jonathan. Early Greek Philosophy. Harmondsworth: Penguin Books, 1987.

Gill, M. L. & Pellegrin, Pierre. Blackwell Companion to Philosophy: A Companion to Ancient Philosophy. Blackwell Series, 2006. Warren, James & Sheffield Frisbee. (eds). The Routledge Companion to Ancient Philosophy. Routledge: London and New York, 2014.

Cohen, M.S. Curd, P. & Reeve, C.D.C.(ed). Readings in Ancient Greek Philosophy. Hackett: Indianapolis, 1995.

Lee, Desmond(translated), Plato: The Republic,edited by Betty Radice, (Penguin Classics,1974)

Curd, Patricia. A Presocratic Reader: Selected Fragments and Testimonia Second Edition Edited, with Introduction. Translations by RichardbDMckirahan and Patricia Curd (Hackett Publishing Company, Inc,2011) ,

Wareen, James & Sheffield Frisbee. (eds). The Routledge Companion to Ancient Philosophy (Routledge: London and New York,2014).

Kirk, G.S. Raven & Schofield , Pre Socratic Philosophy. CUP,1957.

Tankha, V. Ancient Greek Philosophy: Thales to Socrates. India: Pearson, 2012.

Vlastos, G. “Justice and psychic harmony in the Republic” in Journal of Philosophy.1969. Vol.66. (16)

Additional Resources:

Guthrie,WKC. A History of Greek Philosophy, Vol-. The Earlier Presocratic Tradition and the Pythagoreans. Cambridge,1962. ----A History of Greek Philosophy, Vol-2. The Presocratic Tradition from Parmenides to Democritus. Cambridge,1965. —A History of Greek Philosophy, Vol-3, The fifth Century Enlightenment. Cambridge,1969. —A History of Greek Philosophy, Vol-4, Plato, the Man and his Dialogues: Earlier Period Cambridge,1975.

Kirk,G.S and Raven, J.E, The Presocratic Philosophers: A Critical History with Selection of Texts(Cambridge; At The University Press,1957)

DISCIPLINE SPECIFIC CORE COURSE – 6 (DSC-6): Ethics

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Ethics DSC 6 | 4 | 3 | 1 | 0 | Class XII | NIL |

Learning Objectives

- The course is designed to acquaint the students with basic concepts of ethics, the nature and development of morality, cultural relativism and to familiarize them with the western and Indiantraditional ethical theories.

- Various philosophical concepts of ethical behaviour and normative principles of human conduct will be emphasized in this course.

Learning Outcomes

- The students after being introduced to basic ethical theories will acquire the ability to understand ethical perspective and ethical issues.
- The students will be equipped with the ethical sensitivity and moral understanding required to recognize and overcome ethical dilemmas
- The students will be able to differentiate normative statements from other kinds of statements.
- By reading the Indian ethical theories they will learn about the value system and culture of ancient India.

Unit 1: Introduction to Ethics

(15 Hours)

1. Nature and development of morality (from Convention to Reflection)
2. Cultural Relativism

Essential/Recommended Readings:

- Lillie, W., (1948), *An Introduction to Ethics*, Methuen & Co. Ltd. London.
- Rachel, J., (2003), *The Elements of Moral Philosophy*, Mc Graw-Hill.

Unit 2: Western theories

(15 Hours)

1. Virtue Ethics with respect to Aristotle's Eudaimonia
2. Teleological ethics with respect to J.S. Mill's Utilitarianism.
3. Deontological ethics with respect to Immanuel Kant's Categorical Imperative

Essential/Recommended Readings:

- Mill, J.S., (1863), *Utilitarianism*, London, in Mary Warnock *Utilitarianism and On Liberty*, Ed.1962, Wiley Blackwell.
- Aristotle, (1926) *Nicomachean Ethics*, Harvard University Press.
- Kant, Immanuel: *Groundwork of the Metaphysics of Morals*, in Trans. H J Paton, The Moral Law, Hutchinsons University Library.

Unit 3: Indian Ethics

(15 hours)

1. Four Purusarthas: Artha, Kama, Dharma, Moksa
2. Bhagvadgita: Nishkamakarma

3. Karuna, Maitri and Nonviolence (with respect to Indian Value System)

Essential/Recommended Readings:

- Bilimoria, Purushottama ed., (2007), Indian Ethics: Classical traditions and contemporary challenges, New Delhi: Oxford University Press.
- Sharma, I.C., (1967), Ethical Philosophies of India, New York, U.S.A Johnson Publishing Company.

Suggestive Readings

- Louis P. Pojman, and P. Tramel, Ed., (1998), Moral Philosophy: A Reader (Indianapolis, IN: Hackett Publishing Co.
- Frankena W.K, (1973), Ethics, Englewood Cliffs, N.J., Prentice-Hall.
- Lillie, W., (1948), An Introduction to Ethics, Methuen & Co. Ltd. London.
- Sinha, Jadunath, (2004), A Manual of Ethics, New Central Book Agency
- Kaveeshwar, G.W. (1971), The Ethics of Gita, Motilal Banarasi Dass Publications, Delhi.
- Mackenzie, J.S., (1977), A Manual of Ethics, Oxford University Press Bombay,
- Taylor, Paul. W., (1978), "Problems of moral philosophy: an introduction to ethics", Dickenson publishing company, Inc. Belmont, California.
- Satyanarayana, Y.V., (2010), Ethics: Theory and Practice, Pearson.
- Thiroux, Jacques, (1998), Ethics: Theory and Practice (6th Ed.), Pearson.

Additional Resources:

- Hartmann, N., (1950), *Moral Phenomena*, New Macmillan.
- Taylor, P.W., Problems of Moral Philosophy: An Introduction to Ethics, Dickenson Publishing Co. Inc. Belmont, California.
- Shelly Kagan, (1998), Normative Ethics, Westview Press.

Category II

BA (Prog.) with Philosophy as Major

(Courses for Undergraduate Programme of study with Philosophy discipline as one of the Core Disciplines)

DISCIPLINE SPECIFIC CORE COURSE (DSC-3): Introduction to Indian Philosophy

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|----------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DSC 3 Introduction to Indian Philosophy | 4 | 3 | 1 | 0 | Class XII | NIL |

Learning Objectives

- Indian philosophical tradition and thought will be explored in this course
- As Indian Philosophy projects another type of aspect of life, this course will help to understand the tradition and experiences that relate to Indian philosophy, adding to the intellectual richness of studying philosophy.

Learning Outcomes

- Students will learn about the different aspects of Indian Philosophy
- Students will understand and appreciate the contrasting approaches to the truth in Indian philosophy
- The student will come to appreciate that Indian philosophy is one of the major streams of thought in the world

Unit 1: Indian Philosophy: An Overview (9 Hours)

1. Common Characteristics of Indian Philosophy

Essential/Recommended Readings:

1. Chatterjee, S & Datta, D.M (1984) An Introduction to Indian Philosophy, 8th ed., University of Calcutta, Chapter 1 General Introduction pp 1-24.

2. Hiriyana,(1950), Popular Essays in Indian Philosophy, Kavyalaya Publishers, Mysore. Chapter-2,"Aim of Indian Philosophy", pp,19-24.

Unit 2: Theory of Knowledge (Nyāya–Vaiśeṣika) (12 Hours)

1. Perception (*Pratyakṣa*)
2. Inference (*Anumāna*)

Recommended Readings:

- 1.SurendranathDasgupta, A History of Indian Philosophy, Vol.1, Delhi: MotilalBanarsidass Publishers Private Limited, 2004.
2. Chatterjee, S &Datta. D.M (1984) An Introduction to Indian Philosophy, 8th ed., University of Calcutta,Chapter 5 The Nyaya Philosophy pp 161 - 201

Unit 3 Theories of Causation (12 Hours)

1. *Asatkāryavāda*
2. *Satkāryavāda*

Essential/ Recommended Readings:

1. Chatterjee and Datta (2016) An Introduction to Indian Philosophy , Motilal Banarasidass Publishers, Chapter VII The Samkhya Philosophy pp 254 - 257.
- 2 Sharma, C.D.(2000) A Critical Survey of Indian Philosophy, Motilal Banarasidass Publishers, Chapter 11 Theory of Causation pp151 – 157

Unit 4 Theories of Reality (12 Hours)

1. Buddhism - Anatmavāda
2. Jainism – Anekāntavāda.
3. Advaita Vedanta - Śaṅkara's Nature of Brahmana

Essential/Recommended Readings:

- 1.Chatterjee, S &Datta. D.M (1984) An Introduction to Indian Philosophy, 8th ed., University of Calcutta, Chapter-3, "The Jaina Philosophy", pp,73-84.
2. Chatterjee, S &Datta. D.M (1984) An Introduction to Indian Philosophy, 8th ed., University of Calcutta, Chapter-4, "The Buddha Philosophy", pp,135-137.

3. Mehta, S. (2017), The problem of meaning in Buddhist Philosophy, Delhi Krishi Sanskriti Publications, Chapter-3, pp-6-17

4. Sharma, C.D.(2000) A Critical Survey of Indian Philosophy, Motilal Banarasi Das.(MLBD)

DISCIPLINE SPECIFIC CORE COURSE – 4 (DSC-4): Introduction to Western Philosophy

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction to Western Philosophy DSC 4 | 4 | 3 | 1 | 0 | Class XII | NIL |

Learning Objective

- The course will introduce students to currents of thought in Western Philosophy
- The students will be acquainted with the writings of the foremost philosophers of the western tradition

Learning Outcomes

- The students will be equipped with knowledge of basics of western philosophy
- The students will acquire the skills of reading the texts of western philosophy
- The students will be able to analyze the various traditions of western philosophy

UNIT-1

(9 Hours)

1. INTRODUCTION

Essential/recommended Readings

Moore, Noel. M. and Bruder, Kenneth, Philosophy, The Power of Ideas, 6th ed. McGraw Hill Publication, 2005, **Ch.1- Powerful Ideas**

UNIT-2

(12 Hours)

1. METAPHYSICS AND KNOWLEDGE-

Moore, Noel. M. and Bruder, Kenneth, Philosophy, The Power of Ideas, 6th ed. McGraw Hill Publication, 2005.

Ch. 3- Socrates, Plato, pp- 34- 43.

Ch. 4- Aristotle, pp.63- 67

UNIT-3

(12 Hours)

1. DUALISM AND IDEALISM

Essential/Recommended Readings

Moore, Noel. M. and Bruder, Kenneth, Philosophy, The Power of Ideas, 6th ed. McGraw Hill Publication, 2005.

Ch.6- Descartes and Dualism, pp.103-109.

The Idealism of Locke and Berkeley, pp.117- 123.

UNIT-4

(12 Hours)

1. SCEPTICISM, TRANSCENDENTALISM AND EXISTENTIALISM

Essential/Recommended Readings

Moore, Noel. M. and Bruder, Kenneth, Philosophy, The Power of Ideas, 6th ed. McGraw Hill Publication, 2005.

Ch. 7- The Eighteenth and Nineteenth Centuries, David Hume- pp.137-139, Immanuel Kant, pp. 139-143.

Ch. 8- The Continental Tradition- Existentialism, pp. 159-166, Phenomenology 170-175.

Suggestive Readings

1 Copleston, F.J. History of Philosophy, USA, Image Books, 1993

2 Falkenberg. History of Modern Philosophy, USA, Jefferson Publications, 2015

3 Moore, Bruder, Philosophy: The Power of Ideas, New Delhi, Tata McGraw Hill, 2011

4 O'Connor, D.J. A Critical History of western Philosophy, USA, MacMillan, 1964

5 Steg Muller, W. Main Currents in Contemporary German, British and American Philosophy, Dordrecht; D. Riedel Publishing, 1969

6 Garrett, Thomson, An Introduction to Modern Philosophy, California: Wadsworth Publishing, 1993

Category III

BA (Prog.) with Philosophy as Minor

DISCIPLINE SPECIFIC CORE COURSE (DSC-2): Introduction to Indian Philosophy

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|----------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction to Indian Philosophy DSC 2 | 4 | 3 | 1 | 0 | Class XII | NIL |

Learning Objectives

- Indian philosophical tradition and thought will be explored in this course
- As Indian Philosophy projects another type of aspect of life, this course will help to understand the tradition and experiences that relate to Indian philosophy, adding to the intellectual richness of studying philosophy.

Learning Outcomes

- Students will learn about the different aspects of Indian Philosophy
- Students will understand and appreciate the contrasting approaches to the truth in Indian philosophy
- The student will come to appreciate that Indian philosophy is one of the major streams of thought in the world

Unit 1: Indian Philosophy: An Overview (9 Hours)

1. Common Characteristics of Indian Philosophy

Essential/Recommended Readings:

1. Chatterjee, S & Datta, D.M (1984) An Introduction to Indian Philosophy, 8th ed., University of Calcutta, Chapter 1 General Introduction pp 1-24.
2. Hiriyana, (1950), Popular Essays in Indian Philosophy, Kavyalaya Publishers, Mysore. Chapter-2, "Aim of Indian Philosophy", pp, 19-24.

Unit 2: Theory of Knowledge (Nyāya–Vaiśeṣika) (12 Hours)

1. Perception (*Pratyakṣa*)
2. Inference (*Anumāna*)

Recommended Readings:

1. Surendranath Dasgupta, A History of Indian Philosophy, Vol.1, Delhi: Motilal Banarsidass Publishers Private Limited, 2004.
2. Chatterjee, S & Datta. D.M (1984) An Introduction to Indian Philosophy, 8th ed., University of Calcutta, Chapter 5 The Nyaya Philosophy pp 161 - 201

Unit 3 Theories of Causation

(12 Hours)

1. *Asatkāryavāda*
2. *Satkāryavāda*

Essential/ Recommended Readings:

1. Chatterjee and Datta (2016) An Introduction to Indian Philosophy , Motilal Banarasidass Publishers, Chapter VII The Samkhya Philosophy pp 254 - 257.
2. Sharma, C.D.(2000) A Critical Survey of Indian Philosophy, Motilal Banarasidass Publishers, Chapter 11 Theory of Causation pp 151 – 157

Unit 4 Theories of Reality

(12 Hours)

1. Buddhism - Anatmavāda
2. Jainism – Anekāntavāda.
3. Advaita Vedanta - Śaṅkara's Nature of Brahmana

Essential/Recommended Readings:

1. Chatterjee, S & Datta. D.M (1984) An Introduction to Indian Philosophy, 8th ed., University of Calcutta, Chapter-3, "The Jaina Philosophy", pp,73-84.
2. Chatterjee, S & Datta. D.M (1984) An Introduction to Indian Philosophy, 8th ed., University of Calcutta, Chapter-4, "The Buddha Philosophy", pp,135-137.
3. Mehta, S. (2017), The problem of meaning in Buddhist Philosophy, Delhi Krishi Sanskriti Publications, Chapter-3, pp-6-17
4. Sharma, C.D.(2000) A Critical Survey of Indian Philosophy, Motilal Banarasidass.(MLBD)

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES

GENERIC ELECTIVES (GE-1): Art and Film Appreciation

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-----------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Art and Film Appreciation GE 1 | 4 | 3 | 1 | 0 | Class XII | NIL |

Learning Objectives

- The objective of the course is to enable a student to become an active and engaging viewer of art and cinema.

Learning Outcomes

- It would enable the student to discern the aesthetic experience as different from art experience.
- It shall enable a student to understand and appreciate films and other related art forms.

Unit 1: Meaning and Analysis of Indian and Western Aesthetics (9 hours)

Introduction

Aesthetics: Meaning and Nature:

- Meaning of Aesthetics, difference between art and craft
- Comparison and distinction between Art-criticism and Aesthetic analysis
- Comparison between Greek and Indian Views of Art and Aesthetics with specific reference to Aesthetic Delight.

The Indian view of art and Aesthetics with reference to *Rasa* Theory and the concept of *sadharanikarana*.

The Western view of Art and Aesthetics with reference to the concept of Aesthetic Attitude, Aesthetic Judgment, Philosophy of Taste and concept of disinterestedness.

Unit II: Comparison between Different Arts (12 Hours)

1. Form and Content in art forms
2. Performative arts, Plastic arts, Literary Arts, Cinema, TV, Web Series

Unit III: Film as an Art Form (12 Hours)
Documentaries, Commercial, Parallel Cinema, Web Series as new cinematic art form

The focus shall be on brief, yet a panoramic view of

- a) Introduction to cinema as a composite art form
- b) Brief History of cinema from silent era to the contemporary format .
- c. OTT platforms and short movies

Unit IV: Art, Morality and Culture (12 Hours)

1. Art-Reality interface with specific reference to Cinematic art.
2. Representation and Imagery in Cinema with brief reference to Aesthetic theory of Communication
3. Issues of Censorship

Essential/ Recommended Readings:

Barlingay, S.S. A modern Introduction to Indian Aesthetic Theories. (New Delhi: D .K . Print Pvt Ltd , 2016 edition) Chapters 7th and 8th

Gupta, Shyamala. *Art, Beauty and Creativity*, (New Delhi: DK Printworld, 1999) Chapters 1,2, 8,9,15 and 18

Hiriyanna, M. *Art Experience*, (Delhi: Indira Gandhi National Centre for the Arts, Manohar, 1997) Chapters 6 and 7

Osborne, Harold. *Aesthetics*. (London: Oxford University Press, 1972), Chapter-2, “JP Sartre”

Tolstoy, Leo. (Kindle edition,2014). What is Art? Translated from the Original, with an Introduction by Aylmer Maude Chapters 1 and 2

Feminism and the Cinema of Realism by Lakshmi, C. S. (1986) in Economic and Political Weekly. Vol XXI, No 3.

Cinema & Culture" by Andrew, Dudley(1985) in Humanities. Vol. 6, No. 4

Hindi Resource:

Manjula Saxena, *Aesthetics: Kala aur Saundrya Ka DarshnikVivechana* (Delhi:DKPrintworld, 2008)

OnlineResources(Recommended)

Kracauer, Siegfried (1960). Theory of Films: The Redemption of Physical Reality. Princeton. Retrieved here from: Kracauer, —Bazin and realism in cinema. (Web blog post). <http://www.ign.com/blogs/cusmar350/2013/03/01/erasmus19-kracauerbazin-and-realism-in-cinema>

<https://amirhashmi.com/2018/05/22/difference-between-parallel-film-and-commercial-film/>
https://www.academia.edu/37948527/The_Aesthetics_of_Digital_Art.pdf
<https://thirdcinema.wordpress.com/2015/10/27/indias-parallel-cinema/>

“Philosophy and Hindi Cinema: Not a theory of Hindi Cinema” by Deshpande, S.(n.d). Retrieved from: https://www.academia.edu/29274541/Philosophy_and_Hindi_Cinema .

“Kant's Aesthetics: Overview and Recent Literature” by Christian Helmut Wenz (2009). Philosophy Compass 4(3). Pp.385-391. DOI:10.1111/j.1747-9991.2009.00214.x . Retrieved from: https://www.researchgate.net/publication/249474233_Kant's_Aesthetics_Overview_and_Recent_Literature

GENERIC ELECTIVES (GE-2): Critical Thinking

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Critical Thinking GE 2 | 4 | 3 | 1 | 0 | Class XII | NIL |

Learning Objectives

- Critical Thinking aims at enabling a person to take decision in difficult situations. It is the ability to analyse the way one thinks and presents the evidence for one's own ideas rather than simply accepting it.
- It is creative, clear and to some extent reflective thinking. Being a cognitive trait, it trains students to construct good and sound arguments by eliminating false ones Course.

Learning Outcomes

This course

1. Helps in generating productive/creative ideas for further use in difficult situation.

2. Creates enthusiasm for taking a risk of dealing with difficult issues and finding a way out for solution
3. Provides valuable intellectual traits like courage, empathy, perseverance and faith in reason and encourage a flair for fairness and justice. As a result, a learner learns step by step how to arrive at an ideal solution keeping in mind all situational factors.
4. Provides clarity in thinking as well as proper understanding of an issue to make it precise for further analysis.
5. Helps to learn how to read, write and think critically, how to separate bad information from good information and helps in constructing cogent arguments.
6. Finally the learner becomes self-directed, self-monitored and self- corrective through this process of reflective thinking.

Unit 1: CRITICAL THINKING: BASIC COMPONENT (9 Hours)

1. Critical Thinking: An Introduction
2. Cognitive Biases
3. Arguments: Their Structure and Kinds
4. Persuasion through Logic: Logos, Ethos and Pathos

Essential/Recommended Reading:

1. Moore, Brooke N., et al. Critical thinking. Dubuque: McGraw-Hill Companies, Inc, 2015, Ch 1-2.

Unit 2: CRITICAL THINKING: A SECOND ORDER ACTIVITY (12 Hours)

1. Clear Thinking
2. Vagueness, Ambiguity, Generality and Definition of Terms
3. Credibility of Claims and Their Sources

Essential/Recommended Reading:

1. Moore, Brooke N., et al. Critical thinking. Dubuque: McGraw-Hill Companies, Inc, 2015, Ch 3-4.

Unit 3: RHETORIC AND ITS FALLACIES (12 Hours)

1. Persuasion through rhetoric.
2. Fallacies involved in rhetoric

Essential/Recommended Reading:

1. Moore, Brooke N., et al. Critical thinking. Dubuque: McGraw-Hill Companies, Inc, 2015, Ch5 &6.

Unit 4: SCIENTIFIC REASONING (12 Hours)

1. Inductive reasoning.
2. Scientific Explanations and its evaluation.

Essential/Recommended Reading:

1. Moore, Brooke N., et al. Critical thinking. Dubuque: McGraw-Hill Companies, Inc, 2015, Ch-10.
 2. Copi, I M. Cohen Carl, Introduction to Logic, 13thedn. Prentice Hall 2009, ch-13
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Suggested Readings

Galen A. Foresman, Peter S. Fosl, and Jamie Carlin Watson; Critical Thinking, WILEY Blackwell 2017

GENERIC ELECTIVES (GE-3): Engaged Buddhism

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Engaged Buddhism GE 3 | 4 | 3 | 1 | 0 | Class XII | NIL |

Learning Objectives

- This course aims to introduce the essence of philosophy of Buddhism and its engagement with issues such as caste, gender, ecology and peace of contemporary times.

Learning Outcomes

- The student will be realizing the moral potential of Buddhism by applying it to various social and political issues of everyday life.

Unit I Introduction to Engaged Buddhism

(9 hours)

- 1) Buddhism as Saddhamma
- 2) Fourteen Guidelines for Engaged Buddhism
- 3) Features of Socially Engaged Buddhism

Essential/Recommended Readings:

B.R.Ambedkar, Buddha and His Dhamma, Babasaheb Ambedkar Writings and Speeches, Vol.11, New Delhi: Dr.Ambedkar Foundation, GoI, 2014 pp.280-301

*Nhat Hanh, Thich. 1998. Interbeing: Fourteen Guidelines for Engaged Buddhism. Berkeley: Parallax Press.

* Jessica L. Main and Rongdao Lai. 2013. Introduction: Reformulating “Socially Engaged Buddhism” as an Analytical Category. The Eastern Buddhist 44, 2.

Unit 2 Buddhism as an Emancipatory Identity

(12 hours)

- 1) Ambedkar, Buddha or Karl Marx
- 2) Iyothetheassar and Tamil Buddhist movement

Essential/Recommended Readings:

B.R.Ambedkar, ‘Buddha or Karl Marx,’ Babasaheb Ambedkar Writings and Speeches, Vol.3, New Delhi: Dr.Ambedkar Foundation, GoI, 2014 pp.441-462

Alyosius, G. 1998. *IyotheeThassar and Tamil Buddhist Movement*, New Delhi: Critical Quest, 2015, Pp.177-208.

* King, S. B. 2009. *Socially Engaged Buddhism*. Honolulu: University of Hawai'i Press. pp. 159-175.

Unit 3 Women in Buddhism

(12 hours)

Essential/Recommended Readings

*Narasu, P. L. 1993. *The Essence of Buddhism*. Delhi: Asian Education Services. pp. 91-117.

Unit 4 Buddhism , Ecology and Peace Movement

(12 hours)

Essential/Recommended Readings

* King, S. B. 2009. *Socially Engaged Buddhism*. Honolulu: University of Hawai'i Press. pp. 118-136.

James J Hughes, 'World Buddhism and Peace Movement,' *Bulletin of Peace Proposal*, Vol.18, No.3, 1987

Suggestive Readings

Batchelor, M. 2002. *Women on the Buddhist Path*. London: Thorsons.

Batchelor, M., and Kerry Brown, eds. 1992. *Buddhism and Ecology*. London: Cassell

Buddhadasa, Bhikkhu. 1985. *Dharmic Socialism*. Bangkok: Thai Inter-Religious Commission for Development.

Daniel, H. Henning. 2002. *A Manual for Buddhism and Deep Ecology*. Australia: Buddha Dharma Education Association Inc.

Gross, Rita. 1993. *Buddhism after Patriarchy: A Feminist History, Analysis, and Reconstruction of Buddhism*. Albany: State University of New York Press

Jones, Ken. 2003. *The New Social Face of Buddhism: A Call to Action*. Boston: Wisdom Publications.

Joshi, Lal Mani. 1983. *Discerning the Buddha*. New Delhi: MunshiramManoharlal Publishers Pvt. Ltd.

King, S. B. 2009. *Socially Engaged Buddhism*. Honolulu: University of Hawai'i Press.

Kotler, Arnold, ed. 1996. *Engaged Buddhist Reader*. Berkeley: Parallax Press

Kesava Kumar, P. 'Religion, Caste and Modernity: Ambedkar's Reconstruction of Buddhism' Pradeep Gokhale(Ed.) *Classical Buddhism, Neo-Buddhism and the Question of Caste*, London: Routledge, 2021

Lama, Dalai. 1999. *Ethics for the New Millennium*. New York: Riverhead Books.

Narasu, P. L. 1993. *The Essence of Buddhism*. Delhi: Asian Education Services.

Payutto, Bhikkhu P. A. 1994. *Buddhist Economics: A Middle Way for the Market Place*. Bangkok: Buddhadhamma Foundation.

Queen, Christopher, and King Sallie, eds. 1996. *Engaged Buddhism: Buddhist Liberation Movements in Asia*. Albany: State University of New York Press.

Queen, Christopher, ed. 2000. *Engaged Buddhism in the West*. Boston: Wisdom Publications.

Sivaraksa, Sulak. 1988. *A Socially Engaged Buddhism*. Bangkok: Thai Inter-Religious Commission for Development.

Theresa Der-lan Yeh, *The Way to Peace: A Buddhist Perspective*, International Journal of Peace Studies, Vol.11 No.1, 2006

GENERIC ELECTIVES (GE-4): Media Ethics

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Philosophy, Politics, Economics GE 4 | 4 | 3 | 1 | 0 | Class XII | NIL |

Learning Objectives

- Basic concepts of justice, and various theories about justice. Issues regarding human nature and its relation to politics will be discussed in the course.
- Recent reflections on equality and its extent in society and how it is to be measured will also be imparted.
- The idea is to acquaint, and make salient contemporary reflections on various issues like justice, property, and equality.

Learning Objectives

- To equip students with good working knowledge of concepts in philosophy, politics, and economics and how they interact with each other.]
- This will make students appreciate the interconnections between the subjects, and also develop interdisciplinary thinking.

UNIT 1: JUSTICE (PHILOSOPHY)

(9 hours)

1. The Concept of Justice
2. Distinctions of Justice
3. Scope of Justice

Essential/Recommended Readings:

Miller, David. *Justice*, Stanford Encyclopedia of Philosophy

Unit 2: THEORIES OF JUSTICE

(9 hours)

1. Utilitarianism and Justice
2. Contractarianism and Justice
3. Egalitarianism and Justice\

Essential/Recommended Readings

Miller, David. *Justice*, Stanford Encyclopedia of Philosophy

UNIT 3: STATE OF NATURE

(15 hours)

1. Property

2. Ends of Political Society and Government
3. Causes, Generation and Definition of Commonwealth
4. Rights of Sovereigns by Institution
5. Slavery
6. The Social Pact

Essential/Recommended Readings:

Locke, John. *Treatise of Civil Government* (Chapters V & IX), ed. C.L. Sherman, New York, D. Appleton- Century, 1937 (Topics 1 & 2)

Hobbes, Thomas. *Leviathan*, (Part II, Chapters XVII & XVIII), ed. C.B. Macpherson, London, Penguin Classics, 1985 (Topics 3 & 4)

Rousseau, Jean-Jacques. *The Social Contract* (Book Chapters IV & VI), tr., revised and ed. C. Frankel, New York, Hafner Publishing Co., 1947 (Topics 5 & 6)

UNIT 4: PHILOSOPHY AND ECONOMICS

(12 hours)

Essential/Recommended Readings

Karl Marx. "From preface to a contribution to the critique of political economy" ,Daniel Hausman (ed) *Philosophy of Economics*, :Cambridge University Press, 2008, pp119-128

Amartya Sen. *Development as Freedom*, New York:Alfred A.Knopf,2000,Pp. 3-12

Piketty, Thomas. *A Brief History of Equality*, translated by Steven Rendall(Chapter 1: “The Movement Towards Equality” and Chapter 2: “The Slow Deconcentration of Power and Property”), Harvard University Press, 2022.

Suggestive Readings

Pojman, Louis P. & Westmoreland, Robert (eds.) (1997). *Equality: Selected Readings*. OUP, USA

Rawls, John (2007). *Lectures on the History of Political Philosophy*. Belknap Press of Harvard University Press.

Reiss, Julian (2013). *Philosophy of Economics: A Contemporary Introduction*. Routledge.

Rousseau, Jean-Jacques (1997). *The Social Contract and Other Later Political Writings*. Cambridge University Press.

Sandel, Michael J. (ed.) (2009). *Justice: What's the Right Thing to Do?*. Farrar, Straus and Giroux.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DEPARTMENT OF URDU

Category-I BA (Hons.) URDU

DISCIPLINE SPECIFIC CORE COURSE – 4: STUDY OF MODERN NAZM

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------|---------|-----------------------------------|----------|---------------------|------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| STUDY OF MODERN NAZM | 4 | 3 | 1 | 0 | Urdu in Class XII or X | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To give the knowledge of contemporary society of India through Urdu Poetry.
- To give a glimpse of modern literature with special reference to Urdu Poetry.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Understanding of concepts.
- Exercising concepts through writings.
- Demonstrating conceptual and textual understanding in test and exam.

SYLLABUS OF DSC-4

UNIT – I (12 Hours)

1. Jadeed Urdu Nazm ke Fikri-o-Fanni Imteyazat
2. Faiz ki Nazm Nigari
3. Josh ki Nazm Nigari

UNIT – II (12 Hours)

4. Majaz ki Nazm Nigari
5. N.M.Rashid ki Nazm Nigari
6. Akhtar-ul-Iman ki Nazm Nigari

UNIT – III (12 Hours)

7. Subah-e-Aazadi, Tanhai (Faiz Ahmad Faiz) (Matn ki Tadrees)
8. Husn aur Mazduri (Josh) (Matn ki Tadrees)
9. Awarah (Majaz) (Matn ki Tadrees) 125

UNIT – IV (9 Hours)

| | | |
|-----------------|------------------|-------------------|
| 10. Saba Weeran | (N.M. Rashid) | (Matn ki Tadrees) |
| 11. Ek Ladka | (Akhtar-ul-Iman) | (Matn ki Tadrees) |

Practical component (if any) - NIL

Essential/recommended readings**Suggestive readings**

1. Urdu Shairi ka Fanni Irteqa - Dr. Farman Fatehpuri
2. Jadeed Urdu Nazm: Nazariya-o-Amal - Aqeel Ahmad Siddiqui
3. Nayi Nazm ka Safar - Khaleel-ul-Rahman Azmi
4. Urdu Shairi mein Azad Nazm aur Nazm-e-Moarra – Haneef Kaifi
5. Nazmon ke Tajziye - Kazi Afzal Hussain

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 5 STUDY OF MODERN GHAZAL

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-------------------------------|----------|-----------------------------------|----------|---------------------|-------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| STUDY OF MODERN GHAZAL | 4 | 3 | 1 | 0 | Urdu in Class XII or X | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To give the knowledge of contemporary society of India through Urdu Poetry.
- To give a glimpse of modern literature with special reference to Urdu Ghazal.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Understanding of concepts.
- Exercising concepts through writings.
- Demonstrating conceptual and textual understanding in test and exam.

SYLLABUS OF DSC-5

UNIT – I (9 Hours)

1. Urdu Ghazal Ibtada aur Irteqa
2. Shaad Azeemabadi ki Ghazalgori
3. Hasrat Mohani ki Ghazalgori

UNIT – II (12 Hours)

4. Jigar ki Ghazalgori
5. Asghar ki Ghazalgori
6. Faani ki Ghazalgori
7. Nasir Kazmi ki Ghazalgori

UNIT – III (12 Hours)

8. (i) Tamannao mein Uljhaya gaya hoon (Matn ki Tadrees)
- (ii) Agar Marte huye lab pe na tera naam aayega (Matn ki Tadrees)
9. (i) Chupke Chupke raat din Aansoo bahana yaad hai (Matn ki Tadrees)
- (ii) Husn-e-Be parwa ko Khudbeen-o-Khudaara kar diya (Matn ki Tadrees)
10. (i) Dil Gaya Raunaq-e-Hayat Gayi (Matn ki Tadrees)
- (ii) Kabhi Shakh-o-Sabza-o-Barg Par (Matn ki Tadrees)

UNIT – IV (12 Hours)

- 13.(i) Phir main nazar aaya na Tamasha nazar aaya (Matn ki Tadrees)
(ii) Koi Mahmal Nasheen kyo Shaad ya Nashaad hota hai(Matn ki Tadrees)
14. (i) Duniya meri bala jane Mahangi hai ya Sasti hai (Matn ki Tadrees)
(ii) Shauq se Naqami ke Badaulat kucha-e-dil hi chhoot gya (Matn ki Tadrees)
15. (i) Dil mein Ik Lahar si Uthi hai abhi (Matn ki Tadrees)
(ii) Kuchh Yadgar-e-Shahar Sitam hi Le Chalein (Matn ki Tadrees)

Practical component (if any) - NIL

Essential/recommended readings**Suggestive readings**

- | | |
|-----------------------------------|------------------------|
| 1. Urdu Shairi ka Fanni Irteqa - | Dr. Farman Fatehpuri |
| 2. Jadeed Urdu Ghazal - | Rasheed Ahmad Siddiqui |
| 3. Urdu Ghazal - | Kamil Qureshi |
| 4. Ghazal ki Sarguzisht | Akhtar Ansari |
| 5. Urdu Ghazal ka Naya Manzarnama | Shameem Hanfi |

DISCIPLINE SPECIFIC CORE COURSE – 6 SPECIAL STUDY OF HALI

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------------|----------|-----------------------------------|----------|---------------------|-------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| SPECIAL STUDY OF HALI | 4 | 3 | 1 | 0 | Urdu in Class XII or X | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- Through this course students will learn the contribution of our legendary literary personality Hali who had given uncountable contributions to the modern Urdu literature.
- There are many new form of creative writings which was emerged by Hali and make an important turn into Urdu literature.
- Through this course students will learn to defend the problems of their era.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Understanding of concepts.
- Exercising concepts through writings.
- Demonstrating conceptual and textual understanding in test and exam.

SYLLABUS OF DSC-3

UNIT – I (15 Hours)

1. Haali : Shakshiyat aur Fan
2. Hali Bahaisiyat Sawaneh Nigar

UNIT – II (15 Hours)

3. Hali ki Nazm Goi
4. Hali ka Nasri Usloob

UNIT – III (15 Hours)

5. Yaadgar-e-Ghalib (Aaghaz se Qate Burhaan ki Taeed tak) (Matn ki Tadrees)
6. Musaddas-e-Hali (Ibtedai 40 band) (Matn ki Tadrees)

Essential/recommended readings

1. Yaadgar-e-Hali
2. Naqsh-e-Hali
3. Hali ka Siyasi Shaoor
4. Sir Syed aur Unke Namwar Rufqa
5. Urdu Nasra ka Fanni Irteqa

Saliha Abid Husain
Syed Ehtesham Husain
Moin Ahsan Jazbi
Syed Abdullah
Dr. Farman Fatehpuri

Suggestive readings

Nil

Category II

(Multidisciplinary Courses for Undergraduate Programme of study with Urdu discipline as one of the Core Disciplines)

(For e.g. courses for B.A. Programmes with Urdu (discipline's name) as Major discipline)

DISCIPLINE SPECIFIC CORE COURSE (DSC-1): URDU-A, STUDY OF MODERN PROSE AND POETRY-II

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Urdu-A, Study of Modern Prose and Poetry-II | 4 | 3 | 1 | 0 | Urdu in Class XII or X | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To give knowledge of contemporary society of India through Urdu Poetry and Fiction.
- To give knowledge of literature such as Afsana, Mazmoon, Nazmein and Ghazalein.
- To give a glimpse of modern literature with special reference to Urdu Prose and Poetry.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Understanding of concepts.
- Exercising concepts through writings.
- Demonstrating conceptual and textual understanding in test and exam.

SYLLABUS OF DSC-1

NASR:

UNIT – I (9 Hours)

1. Guzra Hua Zamana – Sir Syed (Matn ki Tadrees)
2. Murda Badast Zinda – Mirza Farhatullah Beg (Matn ki Tadrees)

UNIT – II (9 Hours)

3. Namak Ka Darogha – Prem Chand (Matn ki Tadrees)
4. Sawere Jo kal Ankh Meri Khuli – Patras Bukhari (Matn ki Tadrees)

NAZM:**UNIT – III (9 Hours)**

5. (i) Ik Khalish Hoti hai Mahsoos Rage Jaan Ke Qareeb – Hasrat (Matn ki Tadrees)
(ii) Wasl Ki Banti Hain In Baton Ki Tadbiren Kahin – Hasrat (Matn ki Tadrees)
6. (i) Kabhi Shakho Sabzao Barg Par – Jigar (Matn ki Tadrees)
(ii) Dil Gaya Raunaqe Hayaat Gai – Jigar (Matn ki Tadrees)

UNIT – IV (9 Hours)

7. (i) Kabhi Ae Haqiqate Muntazar – Iqbal (Matn ki Tadrees)
(ii) Sitaron Se Aage Jahan Aur Bhi Hain – Iqbal (Matn ki Tadrees)
8. Badli Ka Chand – Josh (Matn ki Tadrees)

UNIT – V (9 Hours)

9. Do Ishq – Faiz (Matn ki Tadrees)
10. Aawara – Majaz (Matn ki Tadrees)

Note: Hissa Nasr Aur Nazm Mein Shamil Tamam Takhliqkaaroon Ke Fanni Mahasin Se Bhi Rushanas Karaya Jae.

Practical component (if any) - NIL

Essential/recommended readings

1. Jadeed Urdu Nasr Wa Nazm-I

Suggestive readings

1. Urdu Shairi Ka Fanni Irteqa – Dr. Farman Fatehpuri
2. Meer Amman Se Abdul Haq Tak – Sayyed Abdullah

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 2 (DSC, B-2): STUDY OF MODERN PROSE-I

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-------------------------|---------|-----------------------------------|----------|---------------------|------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Study of Modern Prose-I | 4 | 3 | 1 | 0 | Urdu in Class XII or X | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To give knowledge of contemporary society of India through Urdu fiction and non-fiction.
- To give knowledge of literature such as Afsana, Mazmoon and Inshaiya.
- To give a glimpse of classical literature with special reference to Urdu fiction and non fiction.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Understanding of concepts.
- Exercising concepts through writings.
- Demonstrating conceptual and textual understanding in test and exam.

SYLLABUS OF DSC- 2

MAZAMEEN:

UNIT – I (12 Hours)

1. Prem Chand – Adab ki Gharaz-o-Ghayat (Matn ki Tadrees)
2. Abdul Haleem Sharar – Guzishta Lucknow (Matn ki Tadrees)

UNIT – II (12 Hours)

1. Sajjad Haider Yaldram – Mujhe Mere Doston Se Bachao (Matn ki Tadrees)
2. Maulana Abul Kalam Azad – Intikhabe Ghubare Khatir (Matn ki Tadrees)

AFSANE:

UNIT – III (12 Hours)

- | | |
|---------------------------------|-------------------|
| 5. Prem Chand – Boorhi Kaaki | (Matn ki Tadrees) |
| 6. Krishn Chander – Kalu Bhangi | (Matn ki Tadrees) |

UNIT – IV (9 Hours)

- | | |
|-----------------------------------|-------------------|
| 7. Saadat Hasan Manto – Khol Do | (Matn ki Tadrees) |
| 8. Rajinder Singh Bedi – Lajwanti | (Matn ki Tadrees) |

Practical component (if any) - NIL

Essential/recommended readings

1. Intikhab-e-Nasr Hissa Dom – Uttar Pradesh Urdu Akademi, Lucknow

Suggestive readings (if any)

1. Urdu Afsana Riwayat Aur Masayel – Gopi Chand Narang
2. Urdu Nasr Ka Fanni Irteqa – Dr. Farman Fatehpuri
3. Urdu Essays – Syed Zaheeruddin Madni
4. Arbab-e-Nasr Urdu – Syed Mohammad

Category III

Multidisciplinary Courses for Undergraduate Programme of study with discipline as one of the Core Disciplines
(For e.g. courses for B.A. Programmes with Urdu (discipline's name) as Non-Major or Minor discipline)

DISCIPLINE SPECIFIC CORE COURSE (DSC-1): URDU-A, STUDY OF MODERN PROSE AND POETRY-II

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Urdu-A, Study of Modern Prose and Poetry-II | 4 | 3 | 1 | 0 | Urdu in Class XII or X | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To give knowledge of contemporary society of India through Urdu Poetry and Fiction.
- To give knowledge of literature such as Afsana, Mazmoon, Nazmein and Ghazalein.
- To give a glimpse of modern literature with special reference to Urdu Prose and Poetry.

Learning outcomes

The Learning Outcomes of this course are as follows:

- Understanding of concepts.
- Exercising concepts through writings.
- Demonstrating conceptual and textual understanding in test and exam.

SYLLABUS OF DSC-1

NASR:

UNIT – I (9 Hours)

3. Guzra Hua Zamana – Sir Syed (Matn ki Tadrees)
4. Murda Badast Zinda – Mirza Farhatullah Beg (Matn ki Tadrees)

UNIT – II (9 Hours)

7. Namak Ka Darogha – Prem Chand (Matn ki Tadrees)
8. Sawere Jo kal Ankh Meri Khuli – Patras Bukhari (Matn ki Tadrees)

NAZM:**UNIT – III (9 Hours)**

9. (i) Ik Khalish Hoti hai Mahsoos Rage Jaan Ke Qareeb – Hasrat (Matn ki Tadrees)
(ii) Wasl Ki Banti Hain In Baton Ki Tadbiren Kahin – Hasrat (Matn ki Tadrees)
10.(i) Kabhi Shakho Sabzao Barg Par – Jigar (Matn ki Tadrees)
(ii) Dil Gaya Raunaqe Hayaat Gai – Jigar (Matn ki Tadrees)

UNIT – IV (9 Hours)

9. (i) Kabhi Ae Haqiqate Muntazar – Iqbal (Matn ki Tadrees)
(ii) Sitaron Se Aage Jahan Aur Bhi Hain – Iqbal (Matn ki Tadrees)
10.Badli Ka Chand – Josh (Matn ki Tadrees)

UNIT – V (9 Hours)

- 11.Do Ishq – Faiz (Matn ki Tadrees)
12.Aawara – Majaz (Matn ki Tadrees)

Note: Hissa Nasr Aur Nazm Mein Shamil Tamam Takhliqkaaroon Ke Fanni Mahasin Se Bhi Rushanas Karaya Jae.

Essential/recommended readings

1. Jadeed Urdu Nasr Wa Nazm-I

Suggestive readings

1. Urdu Shairi Ka Fanni Irteqa – Dr. Farman Fatehpuri
2. Meer Amman Se Abdul Haq Tak – Sayyed Abdullah

Category-IV (Common Pool of Generic Electives)

Note: The Generic Electives courses offered in Semester-I are also open for Semester-II.

DEPARTMENT OF HINDI

Category-I

BA (HONS.) HINDI

हिंदी कविता : सगुण भक्तिकाव्य एवं रीतिकालीन काव्य

| COURSE | Nature of the Course | Total Credit | Components | | | Eligibility Criteria / Prerequisite |
|---|----------------------|--------------|------------|----------|-----------|-------------------------------------|
| | | | Lecture | Tutorial | Practical | |
| हिंदी कविता : सगुण भक्तिकाव्य एवं रीतिकालीन काव्य | कोर कोर्स (DSC) 4 | 4 | 3 | 1 | 0 | DSC |

Course Objective

- सगुण भक्तिकाव्य एवं रीतिकालीन काव्य का अध्ययन समयावधि की साहित्यिक स्थिति से अवगत कराएगा
- सामाजिक – राजनीतिक – सांस्कृतिक पृष्ठभूमि में कविता के अध्ययन – विश्लेषण की जानकारी देना

Course learning outcomes

- हिंदी के मध्यकालीन साहित्य का विशिष्ट परिचय प्राप्त होगा।
- ब्रजभाषा के समृद्ध साहित्य का रसास्वादन और आलोचनात्मक ज्ञान प्राप्त होगा।

Unit 1

10 घंटे

गोस्वामी तुलसीदास : रामचरित मानस,
(सुन्दर काण्ड)
गीताप्रेस, गोरखपुर

Unit 2

10 घंटे

सूरदास : भ्रमरगीतसार : (संपादक) आचार्य रामचंद्र शुक्ल
(नागरी प्रचारिणी सभा, वाराणसी, नई दिल्ली)

पद संख्या – (4,7,21,22,23,24,25,37,52,76,85)

Unit 3

10 घंटे

केशवदास – रामचंद्रिका : वन-गमन वर्णन

बिहारी – बिहारी रत्नाकार : श्री जगन्नाथदास 'रत्नाकार'
(शिवाला, वाराणसी)

छंद संख्या – 1, 62, 103, 127, 128, 143, 180, 347

Unit 4

15 घंटे

घनानंद – घनानंद (ग्रंथावली) ; संपा, विश्वनाथ प्रसाद मिश्र;
(वाणी वितान; बनारस-1)
सुजानहित (1, 4, 7, 18, 19, 38, 41)

भूषण – शिवभूषण तथा प्रकीर्ण रचना, विश्वनाथ प्रसाद मिश्र
छंद संख्या – 50, 104, 411, 420, 443, 512

References

- सूरदास – रामचंद्र शुक्ल
- गोस्वामी तुलसीदास – रामचंद्र शुक्ल
- भक्ति आन्दोलन और सूरदास का काव्य – मैनेजर पांडेय
- बिहारी – विश्वनाथ प्रसाद मिश्र
- भूषण – विश्वनाथ प्रसाद मिश्र
- गिरिधर कविराय ग्रंथावली – संपा, डॉ. किशोरीलाल गुप्त
- घनानंद और स्वछंदतावादी काव्यधारा – मनोहरलाल गौड़
- रीतिकाव्य की भूमिका – डॉ. नगेन्द्र
- कविवर बिहारीलाल और उनका युग – रणधीर प्रसाद शास्त्री
- भूषण और उनका साहित्य – राजमल बोरा
- हिंदी नीतिकाव्य का स्वरूप विकास – रामस्वरूप शास्त्री
- हिंदी साहित्य का उत्तरमध्यकाल : रीतिकाल – महेंद्र कुमार
- हिंदी साहित्य का वृहत इतिहास, भाग – 6 – संपा. डॉ. नगेन्द्र
- घनानंद ग्रंथावली – विश्वनाथ प्रसाद मिश्र

Additional Resources:

- सनेह को मारग – इमरै बंधा
- आर्या सप्तशती और बिहारी सतसई का तुलनात्मक अध्ययन – कैलाश नारायण तिवारी
- हिंदी साहित्य का इतिहास (आदिकाल से रीतिकाल तक) – पूरनचंद टंडन

Teaching learning process

कक्षा व्याख्यान सामूहिक चर्चा

Assessment Methods

टेस्ट, असाइनमेंट

Keywords

मध्यकालीनता, सामंतवाद, इतिहास

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

हिंदी साहित्य का इतिहास (आधुनिक काल)

| COURSE | Nature of the Course | Total Credit | Componets | | | Eligibility Criteria / Prerequisite |
|--------------------------------------|----------------------|--------------|-----------|----------|-----------|-------------------------------------|
| | | | Lecture | Tutorial | Practical | |
| हिंदी साहित्य का इतिहास (आधुनिक काल) | कोर कोर्स (DSC) 5 | 4 | 3 | 1 | 0 | DSC |

Course Objective

- साहित्येतिहास की अध्ययन प्रक्रिया में आधुनिक साहित्य के विकास का परिचय
- साहित्य के स्वरूप और प्रयोजन का ज्ञान
- साहित्य और समाज के आपसी रिश्ते और कालजयी कृतियों का परिचय

Course learning outcomes

- विकास के क्रम में साहित्य के जरिए समाज और संस्कृति की पहचान के लिए साहित्येतिहास के अध्ययन का महत्व निर्विवाद है।
- साहित्येतिहास के अध्ययन का एक प्रयोजन साहित्य के विकास की गति और दिशा के साथ-साथ समाज के विकास को भी चिह्नित करना है।
- साहित्येतिहास के बिना साहित्य-विवेक का उचित विकास और निर्माण संभव नहीं। अतः साहित्य-विवेक के निर्माण के लिए साहित्येतिहास का अध्ययन जरूरी है।

Unit 1

10 घंटे

- मध्यकालीन बोध तथा आधुनिक बोध (नवजागरण की पृष्ठभूमि)
- नवजागरण की परिस्थितियाँ और भारतेन्दु युग
- महावीर प्रसाद द्विवेदी : हिंदी पत्रकारिता और खड़ी बोली आंदोलन
- स्वाधीनता आंदोलन और नवजागरणकालीन चेतना का उत्कर्ष, विभिन्न वैचारिक मत और हिंदी साहित्य से उनका संबंध

Unit 2

10 घंटे

- कथा साहित्य का विकास
- नाटक का विकास
- निबंध और अन्य गद्य विधाएँ (संस्मरण, यात्रा आख्यान, डायरी, रिपोर्टाज, रेखाचित्र, साक्षात्कार साहित्यिक पत्रकारिता और लघु पत्रिका)
- आलोचना का विकास

Unit 3

10 घंटे

- छायावाद : परिवेश और प्रवृत्तियाँ
- उत्तर छायावाद : परिवेश और प्रवृत्तियाँ
- प्रगतिवाद : परिवेश और प्रवृत्तियाँ
- प्रयोगवाद : परिवेश और प्रवृत्तियाँ
- नयी कविता : परिवेश और प्रवृत्तियाँ

15 घंटे

Unit 4

- साठोत्तरी कविता, नवगीत, समकालीन कविता
- समकालीन कथा और कथेतर साहित्य
- आलोचना और साहित्यिक पत्रकारिता
- अस्मितामूलक विमर्श : दलित, आदिवासी और स्त्री

References

1. हिंदी साहित्य का इतिहास — रामचंद्र शुक्ल
2. हिंदी साहित्य का इतिहास — संपादक — नगेन्द्र
3. हिंदी साहित्य का सरल इतिहास — विश्वनाथ त्रिपाठी
4. आधुनिक साहित्य की प्रवृत्तियाँ — नामवर सिंह
5. हिंदी का गद्य साहित्य — रामचन्द्र तिवारी
6. हिंदी साहित्य और संवेदना का विकास — रामस्वरूप चतुर्वेदी
7. हिंदी गद्य : विन्यास और विकास — रामस्वरूप चतुर्वेदी
8. आधुनिक साहित्य — नंददुलारे वाजपेयी

additional Resources:

शिवसिंह सरोज — शिवसिंह सेंगर
हिंदी नवरत्न — मिश्र बंधु
समकालीन हिंदी कविता — विश्वनाथ प्रसाद तिवारी
हिंदी नाटक : नयी परख — संपादक — रमेश गौतम
कथेतर — माधव हाड़ा
भारतेन्दु प्रसाद द्विवेदी और हिंदी नवजागरण — रामविलास शर्मा
महावीर प्रसाद द्विवेदी और हिंदी नवजागरण — रामविलास शर्मा
छायावाद — नामवर सिंह
कविता के नए प्रतिमान — नामवर सिंह
तारसप्तक और दूसरा सप्तक (पहला संस्करण और दूसरा संस्करण की भूमिकाएँ) —
संपादक — अज्ञेय
हिंदी नवगीत : उद्भव और विकास — राजेंद्र गौतम
सामाजिक न्याय और दलित साहित्य—स. श्यौराज सिंह 'बेचैन'
आधी दुनिया का सच—कुमुद शर्मा
आदि—धर्म—रामदयाल मुंडा

आदिवासी साहित्य की भूमिका—गंगा सहाय मीणा

Teaching learning process

कक्षाओं में पारंपरिक और आधुनिक तकनीकी माध्यमों की सहायता से अध्ययन—अध्यापन, समूह—परिचर्चाएँ

कक्षा में कमजोर विद्यार्थियों की पहचान और कक्षा के बाद उनकी अतिरिक्त सहायता

Assessment Methods

सतत मूल्यांकन

असाइनमेंट के द्वारा आंतरिक मूल्यांकन

सामूहिक प्रोजेक्ट के द्वारा मूल्यांकन

सेमेस्टर के अंत में परीक्षा के द्वारा मूल्यांकन

Keywords

साहित्य, आधुनिक साहित्य, साहित्येतिहास, साहित्य विवेक, साहित्येतिहास दृष्टियाँ, समाज और साहित्य की पहचान आदि।

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

हिंदी निबंध एवं अन्य गद्य विधाएँ

| COURSE | Nature of the Course | Total Credit | Componets | | | Eligibility Criteria / Prerequisite |
|----------------------------------|----------------------|--------------|-----------|----------|-----------|-------------------------------------|
| | | | Lecture | Tutorial | Practical | |
| हिंदी निबंध एवं अन्य गद्य विधाएँ | कोर कोर्स (DSC) 6 | 4 | 3 | 1 | 0 | DSC |

Course Objective

- अन्य गद्य विधाओं की जानकारी
- गद्य-विधाओं की विश्लेषण पद्धति
- प्रमुख गद्य विधाओं की चुनी हुई रचनाओं का अवलोकन

Course learning outcomes

- कथेतर साहित्य का परिचय
- विश्लेषण और रचना प्रक्रिया की समझ
- प्रमुख हस्ताक्षरों का परिचय

Unit 1

इकाई – 1 निबंध

10 घंटे

बालकृष्ण भट्ट – जातियों का अनूठापन (नेशनल चार्टर)
(भट्ट निबंधमाला, द्वितीय भाग, नागरीप्रचारिणी सभा, काशी)
सरदार पूर्ण सिंह – आचरण की सभ्यता

Unit 2

इकाई – 2 निबंध

10 घंटे

रामचंद्र शुक्ल – करुणा
हजारीप्रसाद द्विवेदी – भारतवर्ष की सांस्कृतिक समस्या

Unit 3

इकाई – 3 जीवनी एवं व्यंग्य

10 घंटे

रामविलास शर्मा – 'निराला की साहित्य साधना' भाग -1 से 'नए संघर्ष'
शीर्षक अध्याय
हरिशंकर परसाई – सदाचार का ताबीज

Unit 4

इकाई – 4 [संस्मरण एवं यात्रा-वृत्त](#)

15 घंटे

संस्मरण : अज्ञेय के साथ – आचार्य जानकीवल्लभ शास्त्री, 'हंसबलाका' से

यात्रा वृत्तांत : राहुल सांकृत्यायन – अथातो घुमक्कड़ जिज्ञासा

References

- हिंदी का गद्य साहित्य – रामचंद्र तिवारी
- हिंदी साहित्य और संवेदना का विकास – रामस्वरूप चतुर्वेदी
- रामचंद्र शुक्ल संचयन – सं. नामवर सिंह (साहित्य अकादेमी)
- हजारी प्रसाद द्विवेदी संकलित निबंध – सं. नामवर सिंह (नेशनल बुक ट्रस्ट, इंडिया)
- हिंदी आत्मकथा : सिद्धांत और स्वरूप विश्लेषण – विनीता अग्रवाल
- हिंदी गद्य : विन्यास और विकास – रामस्वरूप चतुर्वेदी
- भरतेन्दु युग – रामविलास शर्मा
- छायावादोत्तर हिंदी गद्य साहित्य – विश्वनाथ प्रसाद तिवारी
- आधुनिक हिंदी गद्य का साहित्य – हरदयाल
- गद्यकार आचार्य जानकीवल्लभ शास्त्री – पाल वसीन
- साहित्य से संवाद – गोपेश्वर सिंह
- निबंधों की दुनिया – विजयदेव नारायण साही, प्र.सं. निर्मला जैन, हरिमोहन शर्मा

Teaching learning process

Assessment Methods

सतत मूल्यांकन
असाइनमेंट के द्वारा आंतरिक मूल्यांकन
सामूहिक प्रोजेक्ट के द्वारा मूल्यांकन
सेमेस्टर के अंत में परीक्षा के द्वारा मूल्यांकन

Keywords

सभी विधाएँ, यथार्थ, कल्पना, तथ्य, घटना आदि

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category-IV

COMMON POOL OF GENERIC ELECTIVES OFFERED BY DEPARTMENT OF HINDI

पटकथा और संवाद लेखन

| COURSE | Nature of the Course | Total Credit | Components | | | Eligibility Criteria / Prerequisite |
|---------------------|----------------------|--------------|------------|----------|-----------|-------------------------------------|
| | | | Lecture | Tutorial | Practical | |
| पटकथा और संवाद लेखन | GE/ Language | 4 | 3 | 1 | 0 | DSC |

Course Objective

- विद्यार्थी को पटकथा लेखन की तकनीक को समझना।
- विद्यार्थियों में साहित्यिक विधाओं का पटकथा में रूपांतरण तथा संवाद लेखन की समझ विकसित करना।

Course learning outcomes

- पटकथा क्या है समझेंगे।
- पटकथा और संवाद में दक्षता हासिल करेंगे।
- पटकथा लेखन को आजीविका का माध्यम बना सकेंगे।

Unit 1

10 घंटे

- पटकथा अवधारणा और स्वरूप
- पटकथा लेखन के तत्व
- पटकथा लेखन की प्रक्रिया

10 घंटे

Unit 2

- फीचर फिल्म की पटकथा
- डॉक्यूमेंट्री की पटकथा
- धारावाहिक की पटकथा

10 घंटे

Unit 3

- संवाद लेखन की प्रक्रिया
- संवाद लेखन की विशेषताएँ
- संवाद संरचना

Unit 4

15 घंटे

- टी.वी. धारावाहिक का संवाद लेखन
- डॉक्यूमेंट्री का संवाद लेखन
- फीचर फिल्म का संवाद लेखन

References

पटकथा लेखन : मनोहर श्याम जोशी
 कथा पटकथा : मन्नू भंडारी
 रेडियो लेखन : मधुकर गंगाधर
 टेलीविजन लेखन : असगर वजाहत, प्रभात रंजन

Teaching learning process

व्याख्यान, सामूहिक चर्चा, फिल्म प्रस्तुति और विश्लेषण

Assessment Methods

सतत मूल्यांकन
 असाइनमेंट के द्वारा आंतरिक मूल्यांकन
 सामूहिक प्रोजेक्ट के द्वारा मूल्यांकन
 सेमेस्टर के अंत में परीक्षा के द्वारा मूल्यांकन

Keywords

सिनेमा, हिंदी सिनेमा, फिल्म समीक्षा, फिल्म तकनीक, सेंसर बोर्ड

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

भाषा और समाज

Generic Elective – (GE) /Language

Core Course - (GE) Credits : 4

| COURSE | Nature of the Course | Total Credit | Components | | | Eligibility Criteria / Prerequisite |
|--------------|----------------------|--------------|------------|----------|-----------|-------------------------------------|
| | | | Lecture | Tutorial | Practical | |
| भाषा और समाज | GE/ Language | 4 | 3 | 1 | 0 | DSC |

Course Objective

- भाषा और समाज के अंतर्संबंध की जानकारी
- समाज में भाषा के व्यवहार की जानकारी
- सफल सम्प्रेषण के लिए कौशल विकास

Course learning outcomes

- समाजभाषाविज्ञान का अध्ययन
- सम्प्रेषण की सामाजिक समझ
- भाषा के समाजशास्त्र का अध्ययन

Unit 1

10 घंटे

भाषा और समाज का अंतर्संबंध
समाज भाषाविज्ञान और उसका स्वरूप
भाषा और सामाजिक व्यवहार

Unit 2

10 घंटे

भाषाई विविधता और भाषिक समुदाय
भाषा और समुदाय
भाषा और जाति

Unit 3

10 घंटे

भाषा और वर्ग
भाषा अस्मिता और जेंडर
भाषा और संस्कृति

Unit 4

15 घंटे

भाषा सर्वेक्षण
भाषा सर्वेक्षण : स्वरूप और प्रविधि
भाषा नमूनों का सर्वेक्षण और विश्लेषण

References

भाषा और समाज – रामविलास शर्मा
हिंदी भाषा चिंतन – दिलीप सिंह
आलोचना की सामाजिकता – मैनेजर पाण्डेय
सांझी सांस्कृतिक विरासत के आईने में भारतीय साहित्य – मंजु मुकुल, हर्ष बाला

Additional Resources:

Socio Linguistics : An Introduction to Language and Society – Peter Trudgill
Socio Linguistics – R. A. Hudson
An Introduction to Socio Linguistics – Ronald Wordhaugh
The Shadow of Language – George Yule

Teaching learning process

व्याख्यान, सामूहिक चर्चा, फिल्म प्रस्तुति और विश्लेषण

Assessment Methods

सतत मूल्यांकन
असाइनमेंट के द्वारा आंतरिक मूल्यांकन
सामूहिक प्रोजेक्ट के द्वारा मूल्यांकन
सेमेस्टर के अंत में परीक्षा के द्वारा मूल्यांकन

Keywords

भाषाविज्ञान के पारिभाषित शब्द

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

हिंदी भाषा और लिपि का इतिहास

| COURSE | Nature of the Course | Total Credit | Components | | | Eligibility Criteria / Prerequisite |
|------------------------------|----------------------|--------------|------------|----------|-----------|-------------------------------------|
| | | | Lecture | Tutorial | Practical | |
| हिंदी भाषा और लिपि का इतिहास | GE/ Language | 4 | 3 | 1 | 0 | DSC |

Course Objective

इस पाठ्यक्रम का उद्देश्य हिंदी भाषा और लिपि के आरंभिक रूप से लेकर आधुनिक काल की विकास यात्रा को बताना है। भारत के संविधान में देवनागरी लिपि में लिखित हिंदी को संघ की राजभाषा घोषित किया गया है। हिंदी को पढ़ने वाले विद्यार्थियों के लिए पाठ्यक्रम के आरंभ में ही हिंदी भाषा संबंधी सामान्य जानकारी देना अत्यंत आवश्यक है। साथ ही पूरी दुनिया वैश्वीकरण युग में प्रवेश कर गई है। बाज़ार और व्यवसाय ने देशों की सीमाएँ लाँघ ली है। अतः ऐसे में भाषा का मजबूत होना आवश्यक है। यह पाठ्यक्रम बाज़ारवाद और भूमंडलीकरण की वैश्विक गति के बीच से ही हिंदी भाषा और उसकी लिपि के माध्यम से ही राष्ट्रीय प्रगति को भी सुनिश्चित करेगा क्योंकि सशक्त भाषा के बिना किसी राष्ट्र की उन्नति संभव नहीं है। यह पाठ्यक्रम वर्तमान संदर्भों के अनुकूल है। साथ ही इस पाठ्यक्रम का आधुनिक रूप रोजगारपरक भी है। कंप्यूटर को हिंदी से जोड़ना विद्यार्थियों को व्यावहारिक पहलू से अवगत करा सकेगा।

Course learning outcomes

1. इस पाठ्यक्रम के शिक्षण के निम्नलिखित परिणाम सामने आएँगे:
2. उपर्युक्त पाठ्यक्रम के माध्यम से हिंदी भाषा के सैद्धांतिक पहलू के साथ व्यावहारिक रूप का ज्ञान प्राप्त किया जा सकेगा
3. हिंदी भाषा की उच्च शैक्षिक स्तर की भूमिका के महत्वपूर्ण पक्ष को जाना जा सकेगा।
4. कंप्यूटर को हिंदी भाषा से जोड़ने पर हिंदी भाषा के व्यावहारिक ज्ञान को प्राप्त किया जा सकता है
5. वैश्विक युग में भाषा को सिद्धांतों के साथ-साथ व्यावहारिक रूप से भी जोड़ना होगा। अतः पाठ्यक्रम वर्तमान संदर्भों के भी अनुकूल है।
6. भाषा के बदलते परिदृश्य को आरंभ से अब तक की प्रक्रिया में समझना बहुत आवश्यक है। यह पाठ्यक्रम भाषा के आरंभ से लेकर वर्तमान को विविध आयामों में प्रस्तुत करता है जो विद्यार्थियों के लिए उपयोगी होगा।
7. शिक्षा को रोजगार से जोड़ना अत्यंत अनिवार्य है। यह पाठ्यक्रम भाषा की इस मांग को भी प्रस्तुत करता है।

Unit 1 हिंदी भाषा के विकास की पूर्वपीठिका

10 घंटे

- भारोपीय भाषा-परिवार एवं आर्यभाषाएँ (पालि, प्राकृत, अपभ्रंश आदि)
- हिंदी का आरंभिक रूप
- 'हिंदी' शब्द का अर्थ एवं प्रयोग
- हिंदी का विकास (आदिकाल, मध्यकाल, आधुनिककाल)

Unit 2 हिंदी भाषा का क्षेत्र एवं विस्तार

10 घंटे

- हिंदी भाषा : क्षेत्र एवं बोलियाँ

- हिंदी के विविध रूप (बोलचाल की भाषा, राष्ट्रभाषा, राजभाषा, संपर्क-भाषा)
- हिंदी का अखिल भारतीय स्वरूप

Unit 3 लिपि का इतिहास 10 घंटे

- भाषा और लिपि का अंतर्संबंध
- लिपि के आरंभिक रूप (चित्रलिपि, भावलिपि, ध्वनि-लिपि)
- भारत में लिपि का विकास

Unit 4 देवनागरी लिपि 15 घंटे

- देवनागरी लिपि का परिचय एवं विकास
- देवनागरी लिपि का मानकीकरण
- देवनागरी लिपि की विशेषताएँ
- देवनागरी लिपि और कम्प्यूटर

References

1. हिंदी भाषा का इतिहास – धीरेंद्र वर्मा
2. भारतीय पुरालिपि – डॉ. रामबली पाण्डेय (लोकभारती प्रकाशन)
3. हिंदी भाषा का उद्गम और विकास – उदयनारायण तिवारी
4. हिंदी भाषा की पहचान से प्रतिष्ठा तक – डॉ. हनुमानप्रसाद शुक्ल
5. लिपि की कहानी – गुणाकर मुले
6. भाषा और समाज – रामविलास शर्मा

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

CATEGORY-II

BA (PROG) WITH HINDI AS MAJOR

हिंदी कविता (मध्यकाल और आधुनिककाल)

| COURSE | Nature of the Course | Total Credit | Components | | | Eligibility Criteria / Prerequisite |
|---------------------------------------|----------------------|--------------|------------|----------|-----------|-------------------------------------|
| | | | Lecture | Tutorial | Practical | |
| हिंदी कविता (मध्यकाल और आधुनिककाल) | कोर कोर्स (DSC) 3 | 4 | 3 | 1 | 0 | DSC-I |

Course Objective

- विद्यार्थियों को हिंदी के मध्यकालीन और आधुनिक कवियों से परिचित कराना।
- मुख्य कविताओं के माध्यम से तत्कालीन साहित्य की जानकारी देना।

Course learning outcomes

- कविताओं का अध्ययन-विश्लेषण करने की पद्धति सीख सकेंगे।
- साहित्य के सामाजिक-राजनीतिक-सांस्कृतिक पहलुओं की जानकारी प्राप्त होगी।

इकाई-1 10 घंटे

- **कबीर** – कबीर ग्रंथावली; माताप्रसाद गुप्त; लोकभारती प्रकाशन; 1969 ई.
 - साँच कौ अंग (1), भेष कौ अंग (5, 9, 12) संमथाई कौ अंग (12)
- **सूरदास** – सूरसागर संपा. डॉ. धीरेंद्र वर्मा; साहित्य भवन 1990 ई.
- गोकुल लीला – पद संख्या 20, 26, 27, 60

– गोस्वामी तुलसीदास – तुलसी ग्रंथावली (दूसरा खण्ड); संपा. आ. रामचंद्र शुक्ल
(नागरीप्रचारिणी सभा, काशी)

दोहावली – छंद सं. 277, 355, 401, 412, 490

इकाई—2 10 घंटे

– बिहारी – रीतिकाव्य संग्रह; जगदीश गुप्त; साहित्य भवन प्रा. लि.; इलाहाबाद; प्रथम संस्करण;

1961 ई.

छंद सं. – 3, 14, 16, 18, 23, 24

इकाई—3 10 घंटे

– मैथिलीशरण गुप्त : रईसों के सपूत (भारतभारती, वर्तमान खण्ड, साहित्य सदन, झाँसी)

पद सं. 123 से 128

– जययशंकर प्रसाद : बीती विभावरी जाग री (लहर, लोकभारती प्रकाशन, 2000)

हिमालय के आँगन में (स्कन्दगुप्त; भारती भण्डार; इलाहाबाद, 1973)

इकाई—4 15 घंटे

– हरिवंश राय 'बच्चन' – जो बीत गयी (हरिवंश राय 'बच्चन' : प्रतिनिधि कविता; राजकमल पेपरबैक्स, संपा. मोहन गुप्त, 2009)

– नागार्जुन – उनको प्रणाम! (नागार्जुन : प्रतिनिधि कविताएँ, संपा. नामवर सिंह, राजकमल, पेपरबैक्स, 2009)

— भवानीप्रसाद मिश्र — गीत—फरोश (दूसरा सप्तक, भारतीय ज्ञानपीठ प्रकाशन, द्वितीय संस्करण, 1970)

References

1. कबीर : हजारीप्रसाद द्विवेदी
2. तुलसी काव्य—मीमांसा : उदयभानु सिंह
3. बिहारी की वाग्विभूति : विश्वनाथ प्रसाद मिश्र
4. सूरदास : ब्रजेश्वर शर्मा
5. सूरदास : रामचंद्र शुक्ल
6. गोस्वामी तुलसीदास : रामचंद्र शुक्ल
7. घनानंद और स्वच्छंद काव्यधारा : मनोहरलाल गौड़
8. मैथिलीशरण गुप्त : व्यक्ति और काव्य : कमलकांत पाठक
9. प्रसाद, पंत और मैथिलीशरण — रामधारी सिंह 'दिनकर'
10. प्रसाद के काव्य — प्रेमशंकर
11. जयशंकर प्रसाद — नंददुलारे वाजपेयी
12. हरिवंश राय बच्चन — संपा. पुष्पा भारती
13. आधुनिक हिंदी कविता : विश्वनाथ प्रसाद तिवारी

Assessment Methods

टेस्ट, असाइनमेंट

Keywords

मध्यकाल, आधुनिकता, आधुनिकतावाद, काव्य, विभिन्न बोलियाँ आदि।

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

हिंदी का मौखिक साहित्य और उसकी परम्परा

| COURSE | Nature of the Course | Total Credit | Components | | | Eligibility Criteria / Prerequisite |
|--|----------------------|--------------|------------|----------|-----------|-------------------------------------|
| | | | Lecture | Tutorial | Practical | |
| हिंदी का मौखिक साहित्य और उसकी परम्परा | कोर कोर्स (DSC) 4 | 4 | 3 | 1 | 0 | DSC-II |

Course Objective

- भारत के मौखिक साहित्य और लोक-परम्परा का अवलोकन
- लोक-जीवन और संस्कृति की जानकारी
- पर्यटन और संगीत-नृत्य आदि में आकर्षण विकसित होगा।

Course Learning Outcomes

- मौखिक साहित्य का परिचय
- प्रमुख रूपों का परिचय
- संस्कृति और लोक-जीवन व संस्कृति के विश्लेषण की क्षमता

इकाई-1 10 घंटे

मौखिक साहित्य की अवधारणा : सामान्य परिचय, मौखिक साहित्य और लिखित साहित्य का संबंध

साहित्य के विविध रूप – लोकगीत, लोककथा, लोकगाथाएँ, लोकनाट्य, लोकोक्तियाँ

इकाई-2 10 घंटे

लोकगीत : वाचिक और मुद्रित

संस्कार गीत : सोहर, विवाह, मंगलगीत इत्यादि

सोहर : भोजपुरी, संस्कार गीत; श्री हंस कुमार तिवारी; बिहार राष्ट्रभाषा परिषद्, पृ. 8, गीत सं. 4

सोहर : अवधी, हिंदी प्रदेश के लोकगीत; कृष्णदेव उपाध्याय; पृ. 110, 111; साहित्य भवन; इलाहाबाद

विवाह : भोजपुरी; भारतीय लोकसाहित्य : परम्परा और परिदृश्य; विद्या सिन्हा; पृ. 116

निम्नलिखित पाठ्यपुस्तकों के पृष्ठ :

हरियाणा प्रदेश का लोकसाहित्य : शंकर लाल यादव; पृ. 231

हिंदी प्रदेश के लोकगीत : कृष्णदेव उपाध्याय; पृ. 205

वाचिक कविता : भोजपुरी; पं. विद्यानिवास मिश्र, पृ. 49

श्रमसंबंधी गीत : कटनी, जंतसर; दँवनी, रोपनी इत्यादि

कटनी के गीत; अवधी 2 गीत; हिंदी प्रदेश के लोकगीत : पं. कृष्णदेव उपाध्याय; पृ. 134, 135

जंतसारी : भोजपुरी; भारतीय लोकसाहित्य परम्परा और परिदृश्य; विद्या सिन्हा; पृ. 140, 141

विविध गीत : घुघुती-कुमाउनी; कविता कौमुदी : ग्रामगीत : पं. रामनरेश त्रिपाठी

गढ़वाली : कविता कौमुदी : ग्रामगीत; पं. रामनरेश त्रिपाठी; पु. 801-802

इकाई—3

10 घंटे

लोककथाएँ एवं लोकगाथाएँ :

— विधा का सामान्य परिचय और प्रसिद्ध लोककथाएँ एवं लोकगाथाएँ आल्हा, लोरिक,

सारंग — सदावृक्ष, बिहुला

— राजस्थानी लोककथा नं. 2; हिंदी साहित्य का बृहत् इतिहास; पं. राहुल सांकृत्यायन, पृ. 461-462

— अवधी लोककथा नं. 2, हिंदी साहित्य का बृहत् इतिहास; पं. राहुल सांकृत्यायन, पृ. 187–188

इकाई—4

15 घंटे

लोकनाट्य

विधा का परिचय, विविध भाषा क्षेत्रों के विविध नाट्यरूप और शैलियाँ, रामलीला,; रासलीला, मालवा का माच; राजस्थान का ख्याल, उत्तर प्रदेश की नौटंकी, भांड, रासलीला, बिहार — बिदेसिया, हरियाणा सांग पाठ, संक्षिप्त पद्मावत सांग (लखमीचंद ग्रंथावली, संपा. पूरनचंद शर्मा, हरियाणा साहित्य अकादमी, पंडवानी; तीजन बाई)

References

1. हिंदी प्रदेश के लोकगीत : कृष्णदेव उपाध्याय
2. हरियाणा प्रदेश का लोकसाहित्य : शंकरलाल यादव
3. मीट माई पीपल : देवेन्द्र सत्यार्थी
4. मालवी लोक—साहित्य का अध्ययन : श्याम परमार
5. रसमंजरी : सुचीता रामदीन, महात्मा गांधी संस्थान, मॉरिशस
6. हिंदी साहित्य का बृहत् इतिहास : पं. राहुल सांकृत्यायन; 16वां भाग
7. वाचिक कविता : भोजपुरी: विद्यानिवास मिश्र
8. भारतीय लोकसाहित्य :परंपरा और परिदृश्य : डॉ. विद्या सिन्हा
9. कविता कौमुदी : ग्रामगीत :पं. रामनरेश त्रिपाठी
10. हिंदी साहित्य को हरियाणा प्रदेश की देन—हरियाणा साहित्य अकादमी का प्रकाशन
11. मध्यप्रदेश लोककला अकादमी की पत्रिका—चौमासा

Assessment Methods

टेस्ट, असाइनमेंट

Keywords

विभिन्न रूप, बोलियाँ सांस्कृतिक शब्द

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

CATEGORY-III

BA (PROG) WITH HINDI AS NON-MAJOR

हिंदी कविता (मध्यकाल और आधुनिककाल)

| COURSE | Nature of the Course | Total Credit | Components | | | Eligibility Criteria / Prerequisite |
|---------------------------------------|----------------------|--------------|------------|----------|-----------|-------------------------------------|
| | | | Lecture | Tutorial | Practical | |
| हिंदी कविता (मध्यकाल और आधुनिककाल) | कोर कोर्स (DSC) 3 | 4 | 3 | 1 | 0 | DSC-I |

Course Objective

- विद्यार्थियों को हिंदी के मध्यकालीन और आधुनिक कवियों से परिचित कराना।
- मुख्य कविताओं के माध्यम से तत्कालीन साहित्य की जानकारी देना।

Course learning outcomes

- कविताओं का अध्ययन-विश्लेषण करने की पद्धति सीख सकेंगे।
- साहित्य के सामाजिक-राजनीतिक-सांस्कृतिक पहलुओं की जानकारी प्राप्त होगी।

इकाई-1

10 घंटे

- **कबीर** – कबीर ग्रंथावली; माताप्रसाद गुप्त; लोकभारती प्रकाशन; 1969 ई.
 - साँच कौ अंग (1), भेष कौ अंग (5, 9, 12) संमथाई कौ अंग (12)
- **सूरदास** – सूरसागर संपा. डॉ. धीरेंद्र वर्मा; साहित्य भवन 1990 ई.
- गोकुल लीला – पद संख्या 20, 26, 27, 60

– गोस्वामी तुलसीदास – तुलसी ग्रंथावली (दूसरा खण्ड); संपा. आ. रामचंद्र शुक्ल
(नागरीप्रचारिणी सभा, काशी)

दोहावली – छंद सं. 277, 355, 401, 412, 490

इकाई-2 10 घंटे

– बिहारी – रीतिकाव्य संग्रह; जगदीश गुप्त; साहित्य भवन प्रा. लि.; इलाहाबाद; प्रथम संस्करण;
1961 ई.

छंद सं. – 3, 14, 16, 18, 23, 24

इकाई-3 10 घंटे

– मैथिलीशरण गुप्त : रईसों के सपूत (भारतभारती, वर्तमान खण्ड, साहित्य सदन, झाँसी)
पद सं. 123 से 128

– जययशंकर प्रसाद : बीती विभावरी जाग री (लहर, लोकभारती प्रकाशन, 2000)

हिमालय के आँगन में (स्कन्दगुप्त; भारती भण्डार; इलाहाबाद, 1973)

इकाई-4 15 घंटे

– हरिवंश राय 'बच्चन' – जो बीत गयी (हरिवंश राय 'बच्चन' : प्रतिनिधि कविता;
राजकमल पेपरबैक्स, संपा. मोहन गुप्त, 2009)

– नागार्जुन – उनको प्रणाम! (नागार्जुन : प्रतिनिधि कविताएँ, संपा. नामवर सिंह, राजकमल,
पेपरबैक्स, 2009)

— भवानीप्रसाद मिश्र — गीत—फरोश (दूसरा सप्तक, भारतीय ज्ञानपीठ प्रकाशन, द्वितीय संस्करण, 1970)

References

1. कबीर : हजारिप्रसाद द्विवेदी
2. तुलसी काव्य—मीमांसा : उदयभानु सिंह
3. बिहारी की वाग्विभूति : विश्वनाथ प्रसाद मिश्र
4. सूरदास : ब्रजेश्वर शर्मा
5. सूरदास : रामचंद्र शुक्ल
6. गोस्वामी तुलसीदास : रामचंद्र शुक्ल
7. घनानंद और स्वच्छंद काव्यधारा : मनोहरलाल गौड़
8. मैथिलीशरण गुप्त : व्यक्ति और काव्य : कमलकांत पाठक
9. प्रसाद, पंत और मैथिलीशरण — रामधारी सिंह 'दिनकर'
10. प्रसाद के काव्य — प्रेमशंकर
11. जयशंकर प्रसाद — नंददुलारे वाजपेयी
12. हरिवंश राय बच्चन — संपा. पुष्पा भारती
13. आधुनिक हिंदी कविता : विश्वनाथ प्रसाद तिवारी

Assessment Methods

टेस्ट, असाइनमेंट

Keywords

मध्यकाल, आधुनिकता, आधुनिकतावाद, काव्य, विभिन्न बोलियाँ आदि।

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category I

बी.ए. आनर्स हिन्दी पत्रकारिता एवं जनसंचार

(B.A. Honours in Hindi Journalism & Mass Communication in three years)

मीडिया

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| मीडिया भाषा और अनुवाद DSC | 4 | 3 | | 1 | | |

Learning Objectives

The Learning Objectives of this course are as follows:

- भाषा और मीडिया के मूलतत्त्व से अवगत कराना।
- अनुवाद तकनीक से अवगत कराना।
- भाषा और मीडिया के सम्बंधों को समझाना।
- मीडिया अनुवाद का अभ्यास व व्यावहारिक पक्ष से परिचित कराना।

Learning Outcomes

- भाषा एवं मीडिया के अंतरसंबंधों से परिचित होंगे।
- मीडिया में अनुवाद की रोजगारोन्मुख संभावनाओं से अवगत हो सकेंगे।
- भाषा और मीडिया के संदर्भ में अनुवाद की भूमिका और दायित्वों से परिचित होंगे।
- विद्यार्थियों में अनुवाद कौशल विकसित होगा।

SYLLABUS OF SEC

1. मीडिया भाषा और अनुवाद

10 घंटे (

- भाषा: परिभाषा और महत्व

- अनुवाद: परिभाषा, महत्व, प्रक्रिया
- मीडिया अनुवाद का स्वरूप और महत्व

2. प्रिंट मीडिया और अनुवाद

10 घंटे

- पत्र पत्रिकाओं में समाचार, लेख और संपादकीय की भाषा का स्वरूप
- प्रिंट मीडिया अनुवाद - पत्र : पत्रिकाओं के समाचार शीर्षक, समाचार, लेख, फीचर, संपादकीय और विज्ञापन का अनुवाद
- प्रिंट मीडिया अनुवाद की शब्दावली

3. इलेक्ट्रॉनिक मीडिया और अनुवाद

10 घंटे

- रेडियो और टेलीविजन समाचार भाषा समाचार शीर्षक, और समाचारों का अनुवाद
- रेडियो और टेलीविजन के विज्ञापनों का अनुवाद
- इलेक्ट्रॉनिक मीडिया अनुवाद की शब्दावली

4. डिजिटल मीडिया व फिल्मों की भाषा और अनुवाद

15 घंटे

- सोशल नेटवर्किंग साइट्स, वेबसाइट, न्यूज़ पोर्टल, विकिपीडिया में अनुवाद का स्वरूप
- डिजिटल अनुवाद के उपकरण : आर्टिफिशियल इंटेलिजेंस, अनुवाद ऐप्स, ऑनलाइन शब्दकोश
- फिल्म और डॉक्यूमेंट्री अनुवाद : शीर्षक अनुवाद, डबिंग

प्रायोगिक कार्य :

30 घंटे

1. अखबार में प्रकाशित समाचारों, लेख और फीचर के अनुवाद का अभ्यास कराना।
2. समाचार शीर्षक के अनुवाद का अभ्यास कराना।
3. टेलीविजन समाचारों और वृत्तचित्र का अभ्यास कराना।
4. अनुवाद ऐप्स का परिचय, ऐप्स आधारित अनुवाद का संपादन।
5. डिजिटल अनुवाद के विविध रूपों का अभ्यास कराना।
6. विज्ञापन अनुवाद का अभ्यास कराना।

संदर्भ पुस्तकें :

1. हिंदी भाषा भोलानाथ -तिवारी, किताब महल प्रकाशन
2. अनुवाद विज्ञान सिद्धान्त और अनुप्रयोग हिंदी ,डॉ नगेंद्र - माध्यम कार्यान्वयन निदेशालय , दिल्ली विश्वविद्यालय
3. अनुवाद की व्यापक संकल्पना। डॉ दिलीप सिंह ,वाणी प्रकाशन
4. पत्रकारिता में अनुवाद - जितेंद्र गुप्त, प्रियदर्शन, अरुण प्रकाश राधाकृष्ण प्रकाशक ,
5. अनुवाद : अवधारणा और आयाम डॉ सुरेश -सिंघल संजय प्रकाशन ,

Examination scheme and mode:

Total Marks:100

Internal Assessment: 25 Marks

End Semester University Exam:75 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

समाचार की अवधारणा और रिपोर्टिंग

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| समाचार की अवधारणा और रिपोर्टिंग DSC | 4 | 3 | | 1 | | |

Learning Objectives

The Learning Objectives of this course are as follows:

Course Objective

- समाचार रिपोर्टिंग के विषय में सैद्धांतिक और व्यावहारिक ज्ञान प्रदान करना ।
- समाचार बोध विकसित करना ।
- छात्रों को प्रिंट, इलेक्ट्रॉनिक और वेब मीडिया हेतु न्यूज़ लिखने के योग्य बनाना।
- रिपोर्टिंग के विभिन्न क्षेत्रों की जानकारी देना और विचार निर्माण कौशल को बढ़ावा देना।
- समसामयिक मुद्दों पर तथ्य आधारित विचार - विमर्श और विश्लेषण कौशल का विकास करना।

Course Learning Outcomes

- न्यूज़ रिपोर्टिंग के सिद्धांत और तकनीक के विषय में अच्छी समझ विकसित होगी।
- समाचार बोध का विकास होगा।
- इवेंट कवर करने और समाचार लिखने की योग्यता विकसित होगी।
- न्यू स्टोरी लेखन के लिए सामग्री योजना और विचार निर्माण का व्यवहारिक ज्ञान प्राप्त होगा।
- समसामयिक मुद्दों पर विचार-विमर्श और विश्लेषण करने में दक्ष होंगे।

SYLLABUS

1. समाचार 10 घंटे

- समाचार अवधारणा एवं महत्व :
- समाचार के तत्त्व एवं प्रकार
- समाचार स्रोत एवं समाचार संकलन

2. समाचार लेखन 10 घंटे

- समाचार : संरचना, सिद्धांत एवं तकनीक
- समाचार शैली : विलोम स्तूपी, फीचर शैली,
- इंद्रो और शीर्षक लेखन

3. समाचार रिपोर्ट 10 घंटे

- रिपोर्टर के गुण, दायित्व एवं चुनौतियां
- बीट रिपोर्टिंग : शिक्षा, स्वास्थ्य, अपराध, नागरिक मुद्दे, संसदीय, अदालत, खेल एवं व्यापार
- हार्ड न्यूज़ एवं सॉफ्ट न्यूज़ अवधारणा एवं अंतर स्टिंग ऑपरेशन , पीत पत्रकारिता ,

4. माध्यम लेखन 15 घंटे

- प्रिंट मीडिया के लिए समाचार के चयन का आधार एवं लेखन
- इलेक्ट्रॉनिक मीडिया के लिए समाचार के चयन का आधार एवं लेखन
- डिजिटल मीडिया के लिए समाचार के चयन का आधार एवं लेखन

प्रायोगिक कार्य : 30 घंटे

1. विविध विषयों पर प्रकाशित खबरों के पुनर्लेखन का अभ्यास कराना।
2. समाचार पत्र में प्रकाशित खबरों के आधार पर शीर्षक लेखन का अभ्यास कराना।
3. स्थानीय स्थलों पर जाकर नागरिक मुद्दों पर समाचार पत्र, पत्रिका, रेडियो, टेलीविजन या वेब के लिए रिपोर्ट तैयार करना।
4. किसी एक विषय पर समाचार, समाचार विश्लेषण और साक्षात्कार तैयार करना।
5. चयनित कार्टून और चित्रों के लिए कैप्शन लेखन करना।
6. किसी मानवीय अभिरुचि, विकास या सामाजिक मुद्दे पर पॉडकास्ट, टेलीविजन रिपोर्ट या ब्लॉग तैयार करना।
7. प्रेस कॉन्फ्रेंस प्रेस रिलीज के आधार ,ार पर रिपोर्ट बनाना।

Essential/recommended readings

- समाचार और संवाददाता -काशीनाथ जोगलेकर, वाराणसी विश्वविद्यालय प्रकाशन

- समाचार संकलन और लेखन - नंदकिशोर त्रिखा, हिंदी समिति उत्तर प्रदेश
- क्राइम रिपोर्टर - हर्ष देव, भारतीय जनसंचार संस्थान नई दिल्ली
- हिंदी के आधुनिक पत्रकारिता - अरुण कुमार भगत, नेशनल बुक ट्रस्ट, भारत सरकार
- समाचार, फीचर लेखन एवं संपादन कला - हरिमोहन तक्षशिला पब्लिकेशन, नई दिल्ली
- खोजी पत्रकारिता - एच. भीष्मपाल, प्रकाशन विभाग
- साइबर पत्रकारिता - विजय कुलश्रेष्ठ, राजस्थान हिंदी ग्रंथ अकादमी

Examination scheme and mode:

Total Marks:100

Internal Assessment: 25 Marks

End Semester University Exam:75 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

मीडिया लेखन DSC

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| मीडिया लेखन DSC | 4 | 3 | | 1 | | |

Learning Objectives

The Learning Objectives of this course are as follows:

Course Objective

1. विभिन्न जनमाध्यमों के लिए मीडिया लेखन की जानकारी देना।
2. मीडिया लेखन के विविध प्रारूपों एवं उनमें प्रयुक्त शब्दावली से परिचित कराना।
3. मीडिया के विविध रूपों में लेखन प्रक्रिया एवं जानकारी लेना।

Course Learning Outcomes

1. विद्यार्थी जनमाध्यमों के विविध स्वरूपों के लिए लेखन की जानकारी प्राप्त होगी।
2. मीडिया शब्दावली से परिचित होकर मीडिया संस्थानों में कार्य करने हेतु तैयार होंगे।
3. व्यावसायिक क्षेत्र में उपयोगी प्रशिक्षण मिलेगा।

1. मीडिया लेखन:

10 घंटे

- मीडिया लेखन के आधारभूत सिद्धांत
- मीडिया लेखन कौशल
- मीडिया लेखन के विविध क्षेत्र डिजिटल ,वेबसाइट ,रेडियो ,टेलिविज़न ,पत्रिका ,समाचार पत्र : मीडिया

2. प्रिंट के लिए लेखन :

10 घंटे

- संपादकीय पृष्ठ संरचना और लेखन ,संपादकीय : संपादक के नाम पत्र कॉलम एवं संपादकीय , पृष्ठ की भाषा

- फीचर लेख एवं स्तम्भ लेखन ,
- प्रिंट लेखन के अन्य विविध रूप : समाचार ,साक्षात्कार परिशिष्ट लेखन ,कैप्शन लेखन ,

3. टेलिविज़न के लिए लेखन :

10 घंटे

- इलेक्ट्रॉनिक एवं प्रिंट माध्यम के लिए लेखन में अंतर
- टेलीविजन के विविध कार्यक्रमों के लिए लेखन । धारावाहिक लेखन कॉमेडी ,डॉक्युमेंट्री लेखन , शो
- ओटीटी प्लेटफॉर्म के लिए लेखन

4. रेडियो के लिए लेखन

: 15 घंटे

- रेडियो लेखन की विशेषता
- रेडियो में भाषा उच्चारण एवं उद्घोषक का महत्व ,
- रेडियो कार्यक्रम के विविध प्रारूप के लिए लेखन । वार्ता ,जिंगल ,समाचार ,नाटक ,फीचर , पाँड्कास्ट लेखन

प्रायोगिक कार्य

30 घंटे

- किसी समाचार पत्र के लिए संपादकीय लेख या फीचर लिखना। ,
- टेलिविज़न के लिए एक पैकेज लिखना।
- रेडियो के लिए परिचर्चा की स्क्रिप्ट लिखना।

Essential/recommended readings

1. मीडिया लेखन सिद्धांत एवं व्यवहार संजय प्रकाशन ,चंद्र प्रकाश मिश्रा :
2. जनसंचार और मीडिया लेखन नेशनल पब्लिशिंग हाउस ,रेवती शरण शर्मा :
3. मीडिया लेखन सृजन कल्पाज प्रकाशन ,ओम गुप्ता :
4. मीडिया लेखन कला नई दिल्ली ,ओमेगा प्रकाशन ,निशांत सिंह :
5. कथा वाणी प्रकाशन ,मन्नु भंडारी : पटकथा-

Examination scheme and mode:

Total Marks:100

Internal Assessment: 25 Marks

End Semester University Exam:75 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

(क)

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| (क) फिल्म अध्ययन (GE) | 4 | 3 | | 1 | | |

Learning Objectives

The Learning Objectives of this course are as follows:

Course Objective

- सिनेमा का सैद्धांतिक एवं व्यावहारिक ज्ञान देना।
- सिनेमा के तत्वों एवं कथा तकनीकों से परिचित कराना एवं सिनेमा के विभिन्न आंदोलनों का परिचय देना।
- सिनेमा निर्माण प्रक्रिया की समझ विकसित करना।
- सिनेमा के माध्यम से भारतीय समाज एवं संस्कृति का बोध कराना।

Course Learning Outcomes

- सिनेमा की भाषा एवं विजुअल्स की समझ विकसित होगी।
- सिनेमा संबंधी तकनीकी कौशल का विकास होगा।
- फिल्मों में अंतर्निहित समाज एवं संस्कृति के अंतरसंबंधों के विश्लेषण में दक्ष होंगे।
- भारतीय सिनेमा की विश्लेषण क्षमता बढ़ेगी।

1. सिनेमा सामान्य परिचय : $3 + 1 \times 3 = 9 + 3$ 1 से (सप्ताह 3)

- हिन्दी सिनेमा की इतिहास यात्रा, स्वतंत्रता पूर्व - स्वातंत्र्योत्तर सिनेमा, भूमंडलीकरण के दौर का सिनेमा

- सिनेमा के प्रकार - लोकप्रिय सिनेमा, समानान्तर सिनेमाकला सिनेमा ,, क्षेत्रीय सिनेमा
- सिनेमा की भाषा (विजुअल्स और शॉट्स के आधार पर)का अध्ययन

2. सिनेमा ,समाज और संस्कृति 3 +1x3 = 9+3) 4 से (सप्ताह 6

- राष्ट्रीय चेतना और हिंदी सिनेमा
- लोक संस्कृति, सिनेमा और जन मनोविज्ञान
- क्षेत्रीय हिन्दी सिनेमा - भोजपुरी ,हरियाणवी ,राजस्थानी बोलियों का सिनेमा

3. सिनेमा तकनीक 3 +1x3 = 9+3) 7 से (सप्ताह 9

- सिनेमा में पटकथा, अभिनय, संवाद,ध्वनि,गीत, संगीत, नृत्य, निर्देशन, कैमरा, लाइट दृश्य और, स्पेशल इफेक्ट्स तकनीक
- भारतीय सिनेमा में गीत, संगीत और नृत्य की भाषा
- एनिमेशन ,क्रॉसओवर ,ऑफ बीट ,ओटीटी प्लेटफॉर्म और वेब सिनेमा

4. सिनेमा का अर्थशास्त्र और प्रबन्धन 3 +1x3 = 9+3) 10 से (सप्ताह 12

- सिनेमा की मार्केटिंग तकनीक
- सिनेमा का राष्ट्रीय अन्तर्राष्ट्रीय बाजार -
- सिनेमेटोग्राफी एक्ट 1956

प्रायोगिक कार्य 3+1x3 = 9+3) 13 से 14 सप्ताह(

- दी गई फ़िल्मों में से किसी एक फिल्म की समीक्षा कीजिए । राजा हरिश्चंद्र, मदर इंडिया ,दो बीघा जमीन ,शहीद ,दंगल, मैरीकॉम ,स्वदेश ,दादा लखमी
- भारतीय संस्कृति को अभिव्यक्त करती किसी एक फिल्म की भाषा
- विजुअल्स और शॉट्सपर रिपोर्ट तैयार करना (
- किसी एक फिल्म में अभिव्यक्त जीवन मूल्यों का विश्लेषण और प्रभाव की समीक्षा
- भारतीय संस्कृति को अभिव्यक्त करती लघु फिल्म का निर्माण कराना)8 -10 मिनट(
- ओटीटी प्लेटफॉर्म और दायित्व बोध एवं भारतीय सिनेमेटोग्राफी एक्ट की समीक्षा और 1956 संशोधन के सुझाव

Essential/recommended readings

- हिन्दी सिनेमा के सौ बरस : मृत्युंजय, शिल्पायन प्रकाशन

- सत्यजीत राय का सिनेमा : चिदानन्द दास गुप्ता, नेशनल बुक ट्रस्ट, प्रकाशन
- भारतीय सिनेमा का सफरनामा : डॉ पुनीत बिसारिया, अटलांटिक पब्लिशर्स एंड डिस्ट्रीब्यूटर , नई दिल्ली
- फिल्में कैसे बनती है : हरमल सिंह, राजस्थान पत्रिका प्रकाशन
- सिनेमा की सोच : अजय ब्रह्मात्मज, वाणी प्रकाशन

Examination scheme and mode:

Total Marks:100

Internal Assessment: 25 Marks

End Semester University Exam:75 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

(ख)

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| (ख) सोशल मीडिया (GE) | 4 | 3 | | 1 | | |

Learning Objectives

The Learning Objectives of this course are as follows:

Course Objective

- सोशल मीडिया के मूलतत्त्व से अवगत कराना।
- नेटवर्किंग तकनीक से अवगत कराना।
- सोशल मीडिया का उद्भव एवं विकास समझाना।
- सोशल मीडिया के वैचारिक, सांस्कृतिक और नैतिक परिदृश्य से परिचित कराना।

Course Learning Outcomes

- समाज एवं संस्कृति पर सोशल मीडिया के प्रभाव से परिचित होंगे।
- डिजिटल मीडिया में रोजगारोन्मुख संभावनाओं से अवगत हो सकेंगे।
- सोशल मीडिया की भूमिका और दायित्वों से परिचित होंगे।

1. सोशल मीडिया सामान्य परिचय :

10 घंटे

- सोशल मीडिया स्वरूप एवं विकास :
- सोशल मीडिया विशेषताएँ :
- लोकतंत्र और सोशल मीडिया

2. सोशल मीडिया : प्रकार और प्रयोग

10 घंटे

- सोशल नेटवर्किंग साइट्स

- सोशल मीडिया ट्रायलमीम्स ,ट्रोलिंग ,, रील्स ,
- ब्रांडिंग एवं व्यावसायिकता उद्देश्य

3. सोशल मीडिया कंटेंट लेखन

10 घंटे

- प्रिंट टीवी, रेडियो एवं डिजिटल मीडिया कंटेंट लेखन में अंतर
- सोशल मीडिया पर सूचना निर्माण, फेक न्यूज़, फेक्ट चेक
- सोशल मीडिया | रचनात्मकता के नए आयाम : लेखन शिक्षण और कला के संदर्भ में ,

4. सोशल मीडिया नियमन और प्रभाव

15 घंटे

- साइबर अपराध एवं सूचना प्रौद्योगिकी अधिनियम
- सामुदायिक निर्माण और जनसंपर्क
- अभिव्यक्ति की स्वतंत्रता एवं स्वनियमन

प्रायोगिक कार्य

: 30 घंटे (

- ई न्यूज़ लेटर, ई पत्रिका, ब्लॉग निर्माण व लेखन।
- केस स्टडी अन्ना आंदोलन -, कोरोना काल जनजागृति ,लोकसभा एवं विधानसभा चुनाव , अभियान
- जन सर्वेक्षण के आधार पर-सोशल मीडिया के प्रभावों और लोकप्रियता का विश्लेषण एवं उसकी रिपोर्ट प्रस्तुति।
- सोशल मीडिया के माध्यम से बनी खबरों पर एक रिपोर्ट तैयार करना।

Essential/recommended readings

- दूरसंचार एवं सूचना प्रौद्योगिकी - डी. डी. ओझा ज्ञान गंगा दिल्ली ,सत्यप्रकाश ,
- न्यू मीडिया इन्टरनेट की भाषाई चुनौतियां - एस आर अनुराधा ,राधाकृष्ण प्रकाशन , दिल्ली
- हिन्दी ब्लॉगिंग अभिव्यक्ति की नयी क्रान्ति - अविनाश वाचस्पति, रवीन्द्र प्रभात , हिंदी साहित्य निकेतन उत्तरप्रदेश ,
- भूमंडलीकरण और मीडिया - कुमुद शर्मा नई दिल्ली ,ग्रंथ अकादमी ,
- संस्कृति, विकास और संचार क्रान्ति - पूरनचंद्र जोशी नई दिल्ली ,ग्रंथ शिल्पी ,
- नया मीडिया अध्ययन और अभ्यास | शालिनी जोशी पेंगुइन बुक्स ,शिवप्रसाद जोशी ,
- मुक्त समाज की मृगमरीचिका - नॉम चोमस्की

Examination scheme and mode:

Total Marks:100

Internal Assessment: 25 Marks

End Semester University Exam:75 marks

The Internal Assessment for the course may include Class participation, Assignments, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

DEPARTMENT OF SANSKRIT

Category-I
BA (Hons.) Sanskrit

DSC 4: Classical Sanskrit Literature (Prose)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Classical Sanskrit Literature (Prose) | 04 | 3 | 1 | 0 | Class 12TH Pass | NIL |

Learning Objectives

- This course aims to acquaint students with Classical Sanskrit Prose Literature.
- Origin and development of prose, important prose romances and Sanskrit fables are also included here for students to get acquainted with the beginnings of Sanskrit Prose literature.
- The course also seeks to help students to creatively and critically engage with texts.

Learning outcomes

- The course will enable students enable students to familiarize themselves with some leading classical prose works and individual literary styles of their authors.
- After the completion of this course the learner will be exposed to the socio-cultural conditions of the Indian society as reflected in the prescribed texts.
- Course will also help students to develop their level of Sanskrit language comprehension.

SYLLABUS OF DSC-4

(45 hours Lectures and 15 hours Tutorials)

Unit: I

(15 Hrs)

Śukanāsopadeśa (Ed. Prahlād Kumar)

Introduction – Author and his works, text reading (Grammar, translation and explanation)

(एवं समतिक्रामत्सु केषुचिद् दिवसेषुरेणुमयीव स्वच्छमपि कलुषीकरोति)

Unit: II Viśrutacaritam upto 11th Para

(12 Hrs)

Introduction –Author and his works, Text reading (Grammar, translation and explanation)
(.....इति तमुत्थाप्य क्रीडानिर्भरमतिष्ठत्।)

Unit: III

(10 Hrs)

Shivarajvijayam

(----- न पारितं निरोद्धुं नयनवाष्पाणि) Introduction –Author and his works, text para 1 to10, Text reading (Grammar, translation and explanation)

Unit: IV

(08 Hrs)

General Survey of main Sanskrit Prose Works

Origin and Development of Prose literature and its Kind, Some Major Texts- Vāsavadattā, Kādambarī, Harṣacaritam, Daśakumaracaritam, Tilakmanjarī, Gadyacintāmaṇi, Śivarajvijayam, Pancatantra, Hitopdeśa, Vetālapancaviṃśikā, Siṃhāsanadvātriṃśikā, Puruṣaparīkṣā, Śukasaptati.

Essential/recommended readings:

1. प्रह्लाद कुमार. शुकनासोपदेश, मेहरचन्द लक्ष्मणदास, दिल्ली
2. शास्त्री, रामपाल, शुकनासोपदेश, चौखम्बा औरियन्टलिया, वाराणसी
3. सुरेन्द्रदेव शास्त्री, विश्रुतचरितम्, साहित्यभण्डार, मेरठ
4. झा, रमाकान्त, शुकनासोपदेश, चौखम्बा विद्याभवन, वाराणसी
5. देवनारायण मिश्र, शिवराजविजयम्, साहित्यभण्डार, मेरठ
6. पन्त, सुबोधचन्द्र एवं झा, विश्वनाथ, दशकुमारचरितम्, मोतीलाल बनारसीदास, दिल्ली

Suggested readings:

1. शर्मा, उमाशंकर ऋषि: संस्कृत साहित्य का इतिहास, चौखम्बा भारती अकादमी, वाराणसी
2. उपाध्याय, बलदेव: संस्कृत साहित्य का इतिहास, शारदा निकेतन, वाराणसी
3. प्रीतिप्रभा, गोयल: संस्कृत साहित्य का इतिहास, राजस्थानी ग्रन्थगार, जोधपुर
4. त्रिपाठी, राधावल्लभ: संस्कृत साहित्य का अभिनव इतिहास, विश्वविद्यालय प्रकाशन, वाराणसी
5. Keith, A.B., History of Classical Sanskrit Literature, MLBD, Delhi, हिन्दी अनुवाद सहित, मंगलदेव शास्त्री, मोतीलाल बनारसीदास, दिल्ली
6. M. Krishnamachariyar Shastri: History of Classical Sanskrit Literature, MLBD, Delhi
7. Gaurinath Shastri: A Concise History of Sanskrit Literature, MLBD, Delhi
8. Maurice, Winternitz: Ancient Indian Literature (Vol.1-III), also Hindi Translation, MLBD, Delhi

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DSC 5: Sanskrit Epics

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Sanskrit Epics | 04 | 3 | 1 | 0 | Class 12TH Pass | NIL |

Learning Objectives

- To enable students to read simple classical Sanskrit
- To enable students to have a sense of the great impact of the epics on Indian life and literature.
- To impart knowledge of some important segments in the Gita and the Ramayana.
- To introduce Advaita philosophy through Shankaracharya's commentary on the Gita.

Learning outcomes

- The students will be able to understand simple classical Sanskrit.
- The students will build a good vocabulary to write and communicate in Sanskrit.
- Students will become more aware of the impact of the epics on life and literature in India
- They will get acquainted with Advaita philosophy.

SYLLABUS OF DSC-5

(45 hours Lectures and 15 hours Tutorials)

Unit1

(10 Hrs.)

वाल्मीकि रामायण अयोध्याकाण्ड सर्ग 109 (रामेण जाबालिमतनिराकरणम्)

From Verse 1 (जाबालेस्तु वचः श्रुत्वा...) से 27 कार्याकार्यविचक्षणः तक)

Unit 2

(12 Hrs.)

Ramayana as the source of Sanskrit literature

- i. Ramayana as the source book for Indian values – ideal king, ideal family, Ideal Polity, ideal society, ideal character
- ii. Valmiki Ramayana as the source book for Sanskrit literature – Epics, Dramas, Lyric poetry, Adhyātma Ramayana, Adbhuta Ramayana.

- iii. Works in Indian languages based on the Ramayana

Unit 3. (15 Hrs)

भगवद्गीता अध्याय २ पद्य ११ से २५ तक (शाङ्करभाष्य सहित)

Unit 4: (08 Hrs)

Mahabharata as the source book

- i. Mahabharata as the source book for Indian knowledge and values
- ii. Sanskrit literary works based on the Mahabharata – Dramas, long poems (Mahakavyas)
- iii. Works in Indian languages based on the Mahabharata

Essential/recommended readings:

1. भगवद्गीता, शाङ्करभाष्य अनुवाद सहित, अनुवादक श्रीहरिकृष्णदास गोयन्दका, गीता प्रेस, गोरखपुर
2. Valmiki Ramayana – Valmiki.iitk.ac.in
3. गीताभाष्यनवाम्बरा- डॉ० शिवनारायण शास्त्री

Suggested readings:

1. Bhagawadgita with the commentary of Shankaracharya – A.K. Warrior,
2. Bhagawadgita – Dr. S. Radhakrishnan
3. Śrīmadbhagavadgītā, The Scripture of Mankind, text in Devanagari with transliteration in English and notes by Swami Tapasyananda, Sri Ramakrishna Math, 1984
4. Chattopadhyaya D.P., Lokayata- A Study in Ancient Indian Materialism, Popular Publishing House, New Delhi
5. Mishra, Pankaj Kumar, चार्वाक, शिबालिक प्रकाशन, दिल्ली

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DSC 6: Critical Survey of Śāstric Literature

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Critical Survey of Śāstric Literature | 04 | 3 | 1 | 0 | Class 12TH Pass | NIL |

Learning Objectives

- To enable students to Know the Ancient Indian Śāstric Literature.
- To impart knowledge of some important texts and authors who created knowledge on medical science, Aeronautics, music, dances, paintings etc.
- To prepare students to exhibit their understanding of ancient Knowledge System.
- To introduce the contribution of Charak, Sushrut, Bharat, Nagarjun, Paalkaapya etc.

Learning outcomes

- The students will be able to understand the long history of Indian Śāstric Tradition.
- The students will be able to exhibit their understanding of the Indian Knowledge System.
- Students will become more aware of some aspects of Ancient Scientific thoughts and achievements.
- They will get acquainted with Ancient Scientific texts/writings.

SYLLABUS OF DSC-6

(45 hours Lectures and 15 hours Tutorials)

Unit 1-

(12 Hrs)

चिकित्साशास्त्र, वनस्पतिशास्त्र, रसायनशास्त्र (Medical Sciences, Botany and Rasāyana) – Origin and development, major texts, major theories, contribution to current understanding

Unit 2-

(12 Hrs)

संगीतशास्त्र, नृत्यशास्त्र, मूर्तिकला, चित्रकला (Music, Dance, Iconography and Painting)– Origin and development, major texts, major theories, contribution to current understanding.

Unit 3-

(09 Hrs)

वैमानिकशास्त्र, अश्वशास्त्र, गजशास्त्र, आयुधविज्ञान (Vimānaśāstra, Aśva-śāstra, Gaja- śāstra, Ayudhavijñāna – Origin and development, major texts, major theories, contribution to current understanding

Unit 4-

(12 Hrs)

कोशशास्त्र, छन्दः शास्त्र, निरुक्तशास्त्र, व्याकरणशास्त्र - Origin and development, major texts, major theories, contribution to current understanding

Essential/recommended readings:

1. संस्कृत वाङ्मय का विवेचनात्मक इतिहास- डॉ० सूर्यकान्त
2. संस्कृत साहित्य का इतिहास- डॉ० उमाशंकर शर्मा ऋषि
3. अद्भुत भारत- बाशम, ए. एल. (1995,)अनु० पाण्डेय वेंकटेशचन्द्र शिवलाल अग्रवाल एण्ड कम्पनी , आगरा
4. History of Classical Sanskrit Literature, M. Krishnamachariyar Shastri MLBD, Delhi
5. History of Classical Sanskrit Literature, Keith, A.B., MLBD, Delhi, हिन्दी अनुवाद सहित, मंगलदेव शास्त्री, मोतीलाल बनारसीदास, दिल्ली

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DSC-3: Sanskrit Prose

Credit distribution, Eligibility and Pre-requisites of the Course

| Course Title & Code | Credits | Credits distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------|---------|------------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Sanskrit Prose DSC - 3 | 4 | 3 | 1 | 0 | Class 12TH | NIL |

Learning Objectives:

- This course aims to acquaint students with Classical Sanskrit Prose Literature.
- Origin and development of prose, important prose romances and Sanskrit fables are also included here for students to get acquainted with the beginnings of Sanskrit Prose literature.
- The course also seeks to help students to creatively and critically engage with texts.

Learning outcomes:

- The course will enable students enable students to familiarize themselves with some leading classical prose works and individual literary styles of their authors.
- After the completion of this course the learner will be exposed to the socio-cultural conditions of the Indian society as reflected in the prescribed texts.
- Course will also help students to develop their level of Sanskrit language comprehension.

SYLLABUS OF DSC-3

(45 hours Lectures and 15 hours Tutorials)

Unit: I

(15 Hrs)

Śukanāsopadeśa:

Introduction- Author/Text, Text up to page 116 of Prahlad Kumar upto यथा यथा चेयं चपला दीप्यते. समाप्तिपर्यन्त (up to the end of the text.)
Society and political thought depicted in Śukanāsopadeśa, logical meaning and application of sayings.

Unit: II

(15 Hrs)

Śivarājavijayam, Niḥśwāsa-I

Para 1 to 20 Introduction- Author/Text, Text reading (Grammar, Translation, and Explanation), poetic excellence, plot, Timing of Action.

Śivarājavijayam, Niḥśwāsa-II

From para 21 to the end of the text. Text reading (Grammar, Translation, and Explanation), Poetic excellence, plot, Timing of Action.

Unit: III

(15 Hrs)

History of Sanskrit Literature: Prose:

Origin and development of prose and important prose romances. Subandhu, Bāṇa, Daṇḍin, Ambikādatṭa Vyāsa.

Unit: IV

(15 Hrs)

Survey of Sanskrit Literature: Prose:

Pañcatantra, Hitopadeśa, Vetālapañcavimsattikā, Simhāsanadvātrimśikā and Puruṣaparīkṣā.

Essential/recommended readings:

1. प्रहलाद कुमार. शुकनासोपदेश, मेहरचन्द लक्ष्मणदास, दिल्ली
2. भानुचन्द्रसिंह, शुकनासोपदेश: संस्कृत टीका तथा हिन्दी व्याख्या व अनुवाद सहित ।
3. रामनाथ शर्मा सुमन (व्या.) , शुकनासोपदेश, साहित्य भण्डार, दिल्ली, 1968 ।
4. शिवराजविजय – अम्बिकादत्तव्यास, व्या. – रमाशंकर मिश्र, चौखम्बा सुरभारती प्रकाशन, वाराणसी ।
5. शास्त्री, रामपाल, शुकनासोपदेश, चौखम्बा औरियन्टलिया, वाराणसी
6. झा, रमाकान्त, शुकनासोपदेश, चौखम्बा विद्याभवन, वाराणसी
7. देवनारायण मिश्र, शिवराजविजयम्, साहित्यभण्डार, मेरठ
8. पन्त, सुबोधचन्द्र एवं झा, विश्वनाथ, दशकुमारचरितम्, मोतीलाल बनारसीदास, दिल्ली
9. शर्मा, उमाशंकर ऋषि: संस्कृत साहित्य का इतिहास, चौखम्बा भारती अकादमी, वाराणसी
10. A.B. Keith, *History of Sanskrit Literature*, also Hindi translation, MLBD, Delhi (हिन्दी अनुवाद, मंगलदेव शास्त्री, मोतीलाल बनारसीदास, दिल्ली) ।
11. Krishnamachariar, *History of Classical Sanskrit Literature*, MLBD, Delhi.

Additional Resources:

1. उपाध्याय, बलदेव: संस्कृत साहित्य का इतिहास, शारदा निकेतन, वाराणसी
2. प्रीतिप्रभा, गोयल: संस्कृत साहित्य का इतिहास, राजस्थानी ग्रन्थगार, जोधपुर

3. त्रिपाठी, राधावल्लभः संस्कृत साहित्य का अभिनव इतिहास, विश्वविद्यालय प्रकाशन, वाराणसी
4. M. Krishnamachariyar Shastri: History of Classical Sanskrit Literature, MLBD, Delhi
5. Gaurinath Shastri: A Concise History of Sanskrit Literature, MLBD, Delhi
6. Maurice, Winternitz: Ancient Indian Literature (Vol.1-III), also Hindi Translation, MLBD, Delhi
7. Winternitz, Maurice: *Indian Literature* (Vol. I-III), also Hindi Translation, MLBD, Delhi.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DSC - 4: Sanskrit Drama

Credit distribution, Eligibility and Pre-requisites of the Course

| Course Title & Code | Credits | Credits distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------|---------|------------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Sanskrit Drama DSC - 4 | 04 | 03 | 01 | 0 | Class 12TH Pass | NIL |

Learning Objectives:

This course is intended to acquaint the students with three of the most famous dramatic works of Sanskrit literature which represent the three stages of the development of Sanskrit drama.

Learning Outcomes:

- After completion of this course the students will be aware about the beauty and richness of classical Sanskrit dramatic tradition.
- This course will enhance the ability for critical thinking on issues of culture, polity, morality, religion etc as reflected in the prescribed texts.
- The course will make the students aware of the formal structures of Sanskrit drama in the tradition of Bharata's natya Shastra.

SYLLABUS OF DSC - 4

(45 hours Lectures and 15 hours Tutorials)

Unit: I**(15 Hrs)****Dutavākyaṃ: Act I – Bhāsa**

First Act (प्रथम अङ्क) Introduction, Text Reading (Grammar, Translation, and Explanation), Poetic excellence, Plot.

Unit: II**(15 Hrs)****Abhijñānaśākuntalam Act IV- Kālidāsa**

Text Reading (Grammar, Translation, Explanation), Poetic excellence, Plot, Timing of Action. Personification of nature. *kāvyeṣu nāṭakam ramyam, upamā*, Language of Kālidāsa, *dhvani* in Kālidāsa, Purpose and design behind *Abhijñānaśākuntalam* and other problems related to the text.

Unit: III**(15 Hrs)****Technical Terms from Sanskrit Dramaturgy**

नाटक, नायक, नायिका, पूर्वरङ्ग, नान्दी, सूत्रधार, नेपथ्य, प्रस्तावना, कञ्चुकी, विदूषक, अङ्क, स्वगत, प्रकाश, अपवारित, जनान्तिक, आकाशभाषित, विष्कम्भक, प्रवेशक एवं भरतवाक्य।

Unit: IV**(15 Hrs)****History of Sanskrit Drama (Origin and Development),****Some important dramatists:**

Bhāsa, Kālidāsa, Śūdraka, Viśākhadatta, Harṣa, Bhavabhūti, and their works.

Teaching Learning Process:

1. Since most learners will be new to classical Sanskrit drama, a step by step approach is recommended.
2. Teachers must read aloud the Sanskrit text and the students should repeat.
3. Teachers must help students in disjoining all sandhis and dissolving all samāśas.
4. Teachers will arrange words in verses according to the prose order (anvaya).
5. Students will identify the grammatical structure of each word.
6. Teachers will guide students in translating each word and then the complete verse.
7. Teachers will discuss the social, political, cultural issues occurring in the text and their contemporary relevance.

Suggested Reading:

1. सुबोधचन्द्र पन्त, अभिज्ञानशाकुन्तलम्, मोतीलाल बनारसीदास, दिल्ली ।
2. सुरेन्द्रदेव शास्त्री, अभिज्ञानशाकुन्तलम्, रामनारायण बेनीप्रसाद, इलाहाबाद ।
3. नारायणराम आचार्य, अभिज्ञानशाकुन्तलम्, निर्णयसागर प्रेस ।
4. C.D. Devadhar (Ed.), Abhijñānaśākuntalam, MLBD, Delhi.

5. M.R. Kale (Ed.), Abhijñanaśākuntalam, MLBD, Delhi.
6. Gajendra Gadakar (Ed.), Abhijñanaśākuntalam.
7. Ramendramohan Bose, Abhijñanaśākuntalam, Modern Book Agency, Calcutta.
8. भागवतशरण उपाध्याय, कालिदास, कवि और काव्य, भारतीय ज्ञानपीठ, काशी ।
9. हजारीप्रसाद द्विवेदी, कालिदास की लालित्य योजना, राजकमल प्रकाशन, दिल्ली ।
10. पंकज कुमार मिश्र, शाकुन्तलविषयक रम्यत्व की अवधारणा, परिमल पब्लिकेशन, दिल्ली ।
11. Minakshi Dalal, Conflict in Sanskrit Drama, Somaiya Publication Pvt. Ltd.
12. Ratnamayi Dikshit, Women in Sanskrit Dramas, Meherchand Lacchman Das, Delhi.
13. A.B. Keith, Sanskrit Drama, Oxford University Press London, 1970.
14. Minakshi Dalal, Conflict in Sanskrit Drama, Somaiya Publication Pvt. Ltd.
15. G. K. Bhat, Sanskrit Drama, Karnataka University Press, Dharwar, 1975.
16. दूतवाक्यम् - भास, (हिन्दी व्याख्या) रामलाल सावल, गयाप्रसाद एण्ड सन्स, आगरा, १९७१

Additional Resources:

1. Mirashi, V.V. : *Kālidāsa*, Popular Publication, Mumbai.
2. Keith, A.B.: *History of Sanskrit Literature*, MLBD, Delhi.
3. Krishnamachariar : *History of Classical Sanskrit Literature*, MLBD, Delhi.
4. Gaurinath Shastri: *A Concise History of Sanskrit Literature*, MLBD, Delhi.
5. Winternitz, Maurice: *Indian Literature* (Vol. I-III), also Hindi Translation, MLBD, Delhi.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BA (Prog.) with SANSKRIT as Non-Major

DSC - 2: Sanskrit Prose

| Course Title & Code | Credits | Credits distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------------|-----------|------------------------------------|-----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Sanskrit Prose DSC - 2 | 04 | 03 | 01 | 0 | Class 12TH | NIL |

Learning Objectives:

- This course aims to acquaint students with Classical Sanskrit Prose Literature.

- Origin and development of prose, important prose romances and Sanskrit fables are also included here for students to get acquainted with the beginnings of Sanskrit Prose literature.
- The course also seeks to help students to creatively and critically engage with texts.

Learning outcomes:

- The course will enable students enable students to familiarize themselves with some leading classical prose works and individual literary styles of their authors.
- After the completion of this course the learner will be exposed to the socio-cultural conditions of the Indian society as reflected in the prescribed texts.
- Course will also help students to develop their level of Sanskrit language comprehension.

SYLLABUS OF DSC-2

(45 hours Lectures and 15 hours Tutorials)

Unit: I

(16 Hrs)

Śukanāsopadeśa:

Introduction- Author/Text, Text up to page 116 of Prahlad Kumar upto यथा यथा चेयं चपला दीप्यते. समाप्तिपर्यन्त (up to the end of the text.)
Society and political thought depicted in Śukanāsopadeśa, logical meaning and application of sayings.

Unit: II

(16 Hrs)

Śivarājaviṣayam, Niḥśwāsa-I

Para 1 to 20 Introduction- Author/Text, Text reading (Grammar, Translation, and Explanation), poetic excellence, plot, Timing of Action.

Śivarājaviṣayam, Niḥśwāsa-II

From para 21 to the end of the text. Text reading (Grammar, Translation, and Explanation), Poetic excellence, plot, Timing of Action.

Unit: III

(08 Hrs)

History of Sanskrit Literature: Prose:

Origin and development of prose and important prose romances. Subandhu, Bāṇa, Daṇḍin, Ambikādhara Vyāsa.

Unit: IV

(05 Hrs)

Survey of Sanskrit Literature: Prose:

Pañcatantra, Hitopadeśa, Vetālapañcaviṃśatikā, Siṃhāsanadvātriṃśikā and Puruṣaparīkṣā.

Essential/recommended readings:

1. प्रहलाद कुमार. शुकनासोपदेश, मेहरचन्द लक्ष्मणदास, दिल्ली
2. भानुचन्द्रसिंह, शुकनासोपदेश: संस्कृत टीका तथा हिन्दी व्याख्या व अनुवाद सहित ।
3. रामनाथ शर्मा सुमन (व्या.) , शुकनासोपदेश, साहित्य भण्डार, दिल्ली, 1968 ।
4. शिवराजविजय – अम्बिकादत्तव्यास, व्या. – रमाशंकर मिश्र, चौखम्बा सुरभारती प्रकाशन, वाराणसी ।
5. शास्त्री, रामपाल, शुकनासोपदेश, चौखम्बा औरियन्टलिया, वाराणसी
6. झा, रमाकान्त, शुकनासोपदेश, चौखम्बा विद्याभवन, वाराणसी
7. देवनारायण मिश्र, शिवराजविजयम्, साहित्यभण्डार, मेरठ
8. पन्त, सुबोधचन्द्र एवं झा, विश्वनाथ, दशकुमारचरितम्, मोतीलाल बनारसीदास, दिल्ली
9. शर्मा, उमाशंकर ऋषि: संस्कृत साहित्य का इतिहास, चौखम्बा भारती अकादमी, वाराणसी
10. A.B. Keith, *History of Sanskrit Literature*, also Hindi translation, MLBD, Delhi (हिन्दी अनुवाद, मंगलदेव शास्त्री, मोतीलाल बनारसीदास, दिल्ली) ।
11. Krishnamachariar, *History of Classical Sanskrit Literature*, MLBD, Delhi.

Additional Resources:

1. उपाध्याय, बलदेव: संस्कृत साहित्य का इतिहास, शारदा निकेतन, वाराणसी
2. प्रीतिप्रभा, गोयल: संस्कृत साहित्य का इतिहास, राजस्थानी ग्रन्थगार, जोधपुर
3. त्रिपाठी, राधावल्लभ: संस्कृत साहित्य का अभिनव इतिहास, विश्वविद्यालय प्रकाशन, वाराणसी
4. M. Krishnamachariyar Shastri: *History of Classical Sanskrit Literature*, MLBD, Delhi
5. Gaurinath Shastri: *A Concise History of Sanskrit Literature*, MLBD, Delhi
6. Maurice, Winternitz: *Ancient Indian Literature (Vol. I-III)*, also Hindi Translation, MLBD, Delhi
7. Winternitz, Maurice: *Indian Literature (Vol. I-III)*, also Hindi Translation, MLBD, Delhi.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Common Pool of Generic Electives offered by Department of SANSKRIT

GE-5 : Tools and Techniques for Computing Sanskrit Language

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| GE-5 | 04 | 3 | 1 | 0 | Class 12TH Pass | NIL |

Learning Objectives:

This course will introduce the current research and development in Sanskrit computing. Primary emphasis will be on tools and techniques developed under government and private funding and to explore new technologies for Sanskrit.

Learning Outcomes:

The course-level learning outcomes that a student of this course is required to demonstrate are indicated below:

- Learn the basic concept of Sanskrit Phonology, Sanskrit Morphology, Syntax, Semantics, Lexicon and Corpora.
- Learn the origin and Development of Language Computing.
- Basic Introduction of Computing Sanskrit Language.
- Various methodologies used on Language Technology.
- Various tools developed for Sanskrit Language.
- Survey of Language Computing

SYLLABUS OF GE-5

(45 hours Lectures and 15 hours Tutorials)

Unit: I

12 Hours

Major Components of Sanskrit Linguistics:

- Phonology
- Morphology
- Syntax
- Semantics
- Lexicon and Corpora

Unit: II**12 Hours****Areas and Applications of the Sanskrit Language Computation**

- Text Digitization/Content Creation and Search for Sanskrit
- Speech Technology
- Grammar Tools
- Machine Translation
- Preservation and Delivery of Cultural Heritage of Sanskrit

Unit: III**09 Hours****Language Computing Methodology**

- Rule Base
- Statistical
- Hybrid

Unit: IV**12 Hours****Survey of Language Computing**

- Survey of the Language Computing for Sanskrit
- Survey of the Language Computing for Indo Aryan Languages

[D] References:**Compulsory Readings:**

1. Akshar Bharati, Vineet Chaitanya and Rajeeva Sanghal, Natural Language Processing: A Paninian Prospective, Prentice Hall of India, New Delhi, 1995.
2. Chandra Subhash (2021). भाषासंगणन (Language Computing), Upasana Publications, New Delhi, India, ISBN: 978-93-87677-05-0.
3. Girish Nath Jha, Madhav Gopal, Diwakar Mishra, Annotating Sanskrit Corpus: Adapting IL-POSTS, Human Language Technology. Challenges for Computer Science and Linguistics Lecture Notes in Computer Science Volume 6562, 2011, pp 371-379.
4. Tools developed by Computational Linguistics Group, Department of Sanskrit, University of Delhi, Delhi-110007 available at: <http://cl.sanskrit.du.ac.in>
5. Daniel Jurafsky and James H. Martin, Speech and Language Processing, Prentice Hall; 2008
6. Chandra, Subhash and Jha, GN. Computer Processing of Nominal Inflections in Sanskrit: Methods and Implementations, CSP, UK, 2012.
7. Jha, Girish Nath, Morphology of Sanskrit Case Affixes: A Computational Analysis, M.Phil Dissertation, Centre of English and Linguistics, School of Language, Literature and Culture Studies, JNU, 1993.
8. Sanskrit Computational Linguistics symposium 1-2: Springer Verlag LNCS 5402 G Huet, A Kulkarni and P Scharf (eds), Proceedings of the 1st and 2nd International Symposium, 2009.

9. Sanskrit Computational Linguistics symposium 3: Springer Verlag LNCS 5406 A Kulkarni, G Huet (eds), Proceedings of the 3rd International Symposium, Jan 15 - 17, 2009, Hyderabad.
10. Grishman, R., Computational Linguistics: An introduction, Cambridge University Press, 1986.
11. Chandra, Subhash .मशीनी अनुवाद (Machine Translation) Vidyanidhi Prakashana, New Delhi,

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

GE-6
Machine Translation: Tools and Techniques

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|-----------|-----------------------------------|----------|---------------------|------------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Machine Translation: Tools and Techniques | 04 | 3 | 1 | 0 | Class 12TH Pass | NIL |

Learning Objectives:

This course will introduce the theory and practice of computer based translations and expose the students to the internal processes and inter module interactions in a typical Machine Translation (MT) system

Learning Outcomes:

The course-level learning outcomes that a student of this course will be able to demonstrate are indicated below:

- Learn the origin and Development of Machine Translation.
- Basic Introduction of Machine Translation.
- Human vs Machine Translation.
- Concepts to ideal various methodologies used on Machine Translation System.
- Using guidelines of the Machine Translation system: Google and Bing.
- Evaluation and Challenges in Machine Translation

SYLLABUS OF GE-6

| | |
|---|-----------------|
| Unit: I Introduction and History of Machine Translation <ul style="list-style-type: none">History and Survey of Machine Translation Systems.List of Major MT System for Indian Languages: Google Translate and Bing by Microsoft. | 09 Hours |
| Unit: II Theoretical Concepts of Machine Translation: <ul style="list-style-type: none">Human vs Computer translation of languages.Basics of Machine TranslationTools and Techniques of Machine TranslationSource and Target Language | 12 Hours |
| Unit: III Machine Translation (MT) Approaches <ul style="list-style-type: none">Rule Base MT Transfer-basedInterlingual and Dictionary BasedStatistical MT Example Based MTHybrid MT | 12 Hours |
| Unit: IV Evaluation of MT <ul style="list-style-type: none">Evaluation of MTChallenges in Machine TranslationAmbiguity and Acceptability | 12 Hours |

References:

Compulsory Readings:

- Chandra, Subhash. मशीनी अनुवाद (Machine Translation) यूजीसी सीबीसीएस स्कीम के तहत बीए (संस्कृत) के एईईसी (AEEC)-3 के पाठ्यक्रम पर आधारित. Vidyanidhi Prakashana, New Delhi, India, ISBN: 9789385539527.
- Sergei Nirenburg, H. L. Somers, Readings in Machine Translation, MIT Press (MA)
- Philipp Koehn, Statistical Machine Translation, Cambridge University Press.
- Sergei Nirenburg, Jaime Carbonell, Masaru Tomita, Editors: Kenneth Goodman, Machine Translation: A Knowledge-Based Approach, Morgan Kaufmann Publishers Inc. San Francisco, CA, USA, 1994
- Amba Kulkarli, Machine translation activities in India: A survey, In proceedings of workshop on survey on Research and Development of Machine Translation in Asian Countries, Thailand, May 13-14, 2002.

Examination scheme and mode: Subject to directions from the Examination Branch/University of Delhi from time to time.

DEPARTMENT OF LINGUISTICS

Category-II

BA (Prog.) with Linguistics as Major

DSC (3): Elementary Phonetics and Phonology

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Elementary Phonetics and Phonology | 4 | 3 | 1 | 0 | Class XII | NIL |

Learning Objectives: Building on the DSC-1, this course provides hands-on training in analysing the phonetics and phonology of languages(s). It deals with the production of speech sounds and their descriptive and physical properties. Students learn how to transcribe and describe sounds using International Phonetic Alphabets (IPA symbols) and diacritics. Students work with a variety of languages.

Learning outcomes: Basic skills in Phonetic and phonological analysis; Gain practical Knowledge of how to identify the sound inventory of a language; analyse phonetic and acoustic properties of speech sounds; identify phonological processes and carry out phonological analysis of a given language.

(45 hours Lectures)

Unit 1: Identification and description of different classes of speech sounds

10 Hours

- Perception
- Description
- Transcription

Unit 2: Physical properties of speech sounds

10 Hours

- Learning to record speech sounds
- Spectrograms and speech sounds

- Waveforms and speech sounds (periodic-aperiodic, simple-complex)

Unit 3: **Phonological Analysis**

15 Hours

- Natural classes
- Contrast and Minimal pairs
- Environment and distribution
- Phonological processes in specific languages

Unit 4: **Non-segmental Phonological properties**

10 Hours

- Tonal languages
- Syllable and Stress
- Phonological analysis

Readings

1. Ladefoged, Peter. 2001 (4th edn.). *A course in phonetics*. New York: Harcourt Brace.
2. Ladefoged, Peter and Johnson, Keith. 2011 (6th edition). *A course in phonetics*. Wadsworth.
3. Ohio language files. Or any other best Intro book
4. Fromkin, Victoria, Rodman, Robert and Hyams, Nina. *Introduction to language*. 2012 ed. Thomson-Wadsworth.

KEYWORDS: Speech Sounds, Transcription, Spectrogram, Tone, Syllable, Stress.

Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DSC (4): Phonetics and Phonology of Indian Languages

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Phonetics and Phonology of Indian Languages | 4 | 3 | 1 | 0 | Class XII | NIL |

Objectives. This course provides the physical properties of speech sounds and the speech sound patterns of Indian languages.

Learning outcomes. The learning outcomes include the Phonetic and Phonological analysis of Indian languages.

(45 hours Lectures)

Unit 1: Phonetics and Phonology of Indian languages- An Introduction

10 Hours

- Speech sounds and Mother tongue.
- Articulation of the speech sounds and their relation to the native languages.
- IPA charts: Consonants and Vowels

Unit 2: Phonetics and Phonology of Indo-Aryan Languages

10 Hours

- Articulation of Vowels and Consonants of Indo-Aryan Languages.
- Classification of Vowels and Consonants; Clusters; Diphthongs of Indo-Aryan Languages. Suprasegmental features of Indo-Aryan Languages: Stress, length, Pitch, Intonation.
- Organization of speech sounds of Indo-Aryan Languages
- Possible sequences of speech sounds in Indo-Aryan Languages.
- Indo-Aryan Languages and Phonological processes.

Unit 3: Phonetics and Phonology of Dravidian languages and Tibeto-Burman languages

15 Hours

- Articulation of Vowels and Consonants of Dravidian languages and Tibeto-Burman languages.
- Classification of Vowels and Consonants; Clusters; Diphthongs of Dravidian languages and Tibeto-Burman languages. Suprasegmental features of Dravidian languages and Tibeto-Burman languages: Stress, length, Pitch, Intonation.
- Organization of speech sounds of Dravidian language family and Tibeto-Burman languages.
- Possible sequences of speech sounds in Dravidian languages and Tibeto-Burman languages.
- Dravidian languages and Tibeto-Burman languages: Phonological processes.

Unit 4: Phonetics and Phonology of Austro-Asiatic languages and Languages of Andaman and Nicobar

10 Hours

- Articulation of Vowels and Consonants of Austro-Asiatic languages and Languages of Andaman and Nicobar.
- Classification of Vowels and Consonants; Clusters; Diphthongs Austro-Asiatic languages and Languages of Andaman and Nicobar. Suprasegmental features of Austro-Asiatic languages and Languages of Andaman and Nicobar: Stress, length, Pitch, Intonation.
- Organization of speech sounds of Austro-Asiatic languages and Languages of Andaman and Nicobar.
- Possible sequences of speech sounds in Austro-Asiatic languages and Languages of Andaman and Nicobar.
- Austro-Asiatic languages and Languages of Andaman and Nicobar: Phonological processes.

Readings

1. Abercrombie, D. 1967. *Elements of General Phonetics*. Edinburgh: E. University Press.
2. Hyman, L.M. 1975. *Phonology: Theory and Analysis*. New York: Holt, Rinehart & Winston.
3. Ladefoged, P. 1962. *Elements of Acoustic Phonetics*. Chicago: University Of Chicago.

4. Ladefoged, P. 1971. *Preliminaries to Linguistic Phonetics*. Chicago: Chicago University Press.
5. Ladefoged, P. 1975. *A Course in Phonetics*. New York: Harcourt Brace Jovanovich 2nd. ed. 1982.
6. Pike, K.L. 1947. *Phonemics*. Ann Arbor: The University of Michigan Press.
7. Radford, A., M. Atkinson, D. Britain, H. Clahsen & A. Spencer. 1999. *Linguistics: An Introduction*. UK: Cambridge University Press.

KEYWORDS: Indo-Aryan, Dravidian, Austro-Asiatic, Tibeto-Burman, Andamans, Nicobar, IPA, Clusters, Diphthongs.

Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category-III
BA (Prog.) with Linguistics as Non-Major

DSC (3): Elementary Phonetics and Phonology

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Elementary Phonetics and Phonology | 4 | 3 | 1 | 0 | Class XII | NIL |

Objectives: Building on the DSC-1, this course provides hands-on training in analysing the phonetics and phonology of languages(s). It deals with the production of speech sounds and their descriptive and physical properties. Students learn how to transcribe and describe sounds using International Phonetic Alphabets (IPA symbols) and diacritics. Students work with a variety of languages.

Course learning outcomes: Basic skills in Phonetic and phonological analysis; Gain practical Knowledge of how to identify the sound inventory of a language; analyse phonetic and acoustic properties of speech sounds; identify phonological processes and carry out phonological analysis of a given language.

(45 hours Lectures)

Unit 1: Identification and description of different classes of speech sounds

10 Hours

- Perception
- Description
- Transcription

Unit 2: Physical properties of speech sounds

10 Hours

- Learning to record speech sounds

- Spectrograms and speech sounds
- Waveforms and speech sounds (periodic-aperiodic, simple-complex)

Unit 3: **Phonological Analysis**

15 Hours

- Natural classes
- Contrast and Minimal pairs
- Environment and distribution
- Phonological processes in specific languages

Unit 4: **Non-segmental Phonological properties**

10 Hours

- Tonal languages
- Syllable and Stress
- Phonological analysis

Readings

5. Ladefoged, Peter. 2001 (4th edn.). *A course in phonetics*. New York: Harcourt Brace.
6. Ladefoged, Peter and Johnson, Keith. 2011 (6th edition). *A course in phonetics*. Wadsworth.
7. Ohio language files. Or any other best Intro book
8. Fromkin, Victoria, Rodman, Robert and Hyams, Nina. *Introduction to language*. 2012 ed. Thomson-Wadsworth.

KEYWORDS: Speech Sounds, Transcription, Spectrogram, Tone, Syllable, Stress.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

CATEGORY-IV

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES OFFERED BY DEPARTMENT OF LINGUISTICS

GENERIC ELECTIVES (GE-2): LINGUISTICS AND MEDIA

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|------------------------------|----------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Linguistics and Media | 4 | 3 | 1 | 0 | Class XII | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- To develop students' understanding of the role language plays in the construction, interpretation and communication of media texts
- To develop students' understanding of the influence that media has on languages and their use
- To teach the fundamentals of media discourse analysis using linguistic tools
- To make students appreciate how media language is produced and shaped by social structures

Learning outcomes

By participating in this course, the student will develop:

- an appreciation of linguistic structures underlying media discourse;
- skills to analyse spoken and written language using linguistic tools in the contexts of print, digital and new media
- experience of handling of difficult and sensitive materials and an understanding of ethical issues involved in crime-related data;
- skills of auditory analysis and digital processing of forensic recordings.

SYLLABUS OF GE-2 (SEMESTER-II)

(45 hours Lectures)

UNIT – I (10 Hours)

Media and discourse processes

- Critical Discourse Analysis
- Textual analysis
- Analysing social practices

UNIT – II (15 Hours)

Micro-linguistic features of media texts

- Phonetic & Phonological features
- Morphological features
- Syntactic features

UNIT – III (10 Hours)

Meaning and media

- Semantics of media texts
- Pragmatics of media texts
- Semiotics of media texts

UNIT – IV (10 Hours)

Media and language change

- language maintenance and shift
- advertising language
- new media and language change

Practical component (if any) – NIL

Essential/recommended readings

Bell, A. (1991). *The language of news media*. Oxford: Basil Blackwell

Fairclough, N. (1993). Critical discourse analysis and the marketization of public discourse: The universities. *Discourse and Society*. 4.133-168.

Jones, R. H., Jaworska, S., Aslan, E. (2021). *Language and Media: A Resource Book for Students* (2nd Edition). London & New York: Routledge.

Suggestive readings

Bhatia, T. K. (1992). Discourse functions and pragmatics of mixing: Advertising across cultures. *World Englishes*. 11.195-215.

Cook, G. (1992). *The discourse of advertising*. London: Routledge

Fatihi, Ali R. (2022). *Media Linguistics in South Asia*. London & New York: Routledge

- Fowler, R. (1991). *Language in the news: Discourse and ideology in the press*. London: Routledge.
- Grice, H.P. (1975). Logic and conversation. In P. Cole & J.L. Morgan (eds.) *Syntax and Semantics, Vol. 3, Speech Acts*. New York: Academic Press.
- Hartford, B. A. S. (1993). Tense and aspect in the news discourse of Nepali English. *World Englishes*. 12.1-13

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DEPARTMENT OF PUNJABI

DISCIPLINE SPECIFIC CORE COURSE -4 (DSC-4)

ADHUNIK PUNJABI SAHIT DA ITIHAS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------------|---------|-----------------------------------|----------|---------------------|--|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| ADHUNIK PUNJABI SAHIT DA ITIHAS | 4 | 3 | 1 | 0 | Class 12 th pass in any subject | Studied Punjabi up to 10th Standard or <i>Working knowledge of Punjabi language</i> |

Credits: 4

L/T/P= 3/1/0

Learning Objectives:

- The course will offer extensive insight into the history of Modern Punjabi literature, while laying special emphasis on various literary movements, genres and writers.
- It will help the students to evaluate the way socio-cultural and historical phenomena influence the literary production of a particular period.
- The course will help them to develop a nuanced appreciation of the literary production of modern times.
- The students will be offered an in-depth understanding on the growth of Punjabi language under the influence of various other languages.
- The course will guide the students to understand the history of different genres of Modern Punjabi literature.

Learning Outcomes:

- The students will be able to understand the concept of Colonial Modernity.
- They can analyze the influence of modernity on Punjab and Punjabi literature.
- The course will educate them to understand various social and political movements of Punjab which provide shape to Modern Punjabi Literature.

- The students will understand the history of Modern Punjabi poetry, fiction, drama and prose.
- They will be able to evaluate various trends emerged in Modern Punjabi Literature.

Unit 1 ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਸਾਹਿਤ: ਸਿਧਾਂਤ ਅਤੇ ਇਤਿਹਾਸ (Adhunik Punjabi Sahit: Sidhant ate Itihas) (12 hours)

- ਆਧੁਨਿਕਤਾ: ਸੰਕਲਪ ਅਤੇ ਸਰੂਪ
Adhunikta: Sankalp ate Saroop
- ਮੱਧਕਾਲ ਅਤੇ ਆਧੁਨਿਕ ਕਾਲ ਦਾ ਨਿਖੇੜਾ
Madhkal ate Adhunik kaal da Nikherha
- ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਸਾਹਿਤ ਦਾ ਇਤਿਹਾਸਕ ਪਿਛੋਕੜ
Adhunik Punjabi Sahit da Itihasak Pichhokarh
- ਪੰਜਾਬ ਦੀਆਂ ਸਮਾਜਕ-ਧਾਰਮਕ ਲਹਿਰਾਂ
Punjab dian Samajak-Dharmak Lehran

Unit 2 ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਕਵਿਤਾ (Adhunik Punjabi Kavita) (9 hours)

- ਰਹੱਸਵਾਦੀ ਅਤੇ ਰੁਮਾਂਸਵਾਦੀ ਕਾਵਿ ਧਾਰਾ
Rahasvadi ate Romancevadi Kaav Dhara
- ਪ੍ਰਗਤੀਵਾਦੀ ਕਾਵਿ ਧਾਰਾ
Pragativadi Kaav Dhara
- ਸੁਹਜਵਾਦੀ ਕਾਵਿ ਧਾਰਾ
Sohajvadi Kaav Dhara
- ਜੁਝਾਰਵਾਦੀ ਕਾਵਿ ਧਾਰਾ
Jujharvadi Kaav Dhara

Unit 3 ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਗਲਪ (Adhunik Punjabi Galap) (12 hours)

- 1960 ਤੋਂ ਪਹਿਲਾਂ ਦਾ ਪੰਜਾਬੀ ਨਾਵਲ
1960 ton Pehlan da Punjabi Novel
- 1960 ਤੋਂ ਬਾਅਦ ਦਾ ਪੰਜਾਬੀ ਨਾਵਲ
1960 ton Baad da Punjabi Novel
- 1960 ਤੋਂ ਪਹਿਲਾਂ ਦੀ ਪੰਜਾਬੀ ਕਹਾਣੀ
1960 ton Pehlan di Punjabi Kahani
- 1960 ਤੋਂ ਬਾਅਦ ਦੀ ਪੰਜਾਬੀ ਕਹਾਣੀ
1960 ton Baad di Punjabi Kahani

Unit 4 ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਨਾਟਕ ਅਤੇ ਵਾਰਤਕ (Adhunik Punjabi Natak ate Vartak) (12 hours)

- 1960 ਤੋਂ ਪਹਿਲਾਂ ਦਾ ਪੰਜਾਬੀ ਨਾਟਕ
1960 ton Pehlan da Punjabi Natak
- 1960 ਤੋਂ ਬਾਅਦ ਦਾ ਪੰਜਾਬੀ ਨਾਟਕ
1960 ton Baad da Punjabi Natak

- 1960 ਤੋਂ ਪਹਿਲਾਂ ਦੀ ਪੰਜਾਬੀ ਵਾਰਤਕ
1960 ton Pehlan di Punjabi Vartak
- 1960 ਤੋਂ ਬਾਅਦ ਦੀ ਪੰਜਾਬੀ ਵਾਰਤਕ
1960 ton Baad di Punjabi Vartak

Essential Reading:

- Jaswinder Singh (Dr.), Dhindsa, Man Singh (2006), **Punjabi Sahit da Itihas (Adhunik Kal 1901-1995)**, Punjabi University, Patiala.
- Kasel, Kirpal Singh, Parmindar Singh (eds.) (2002), **Punjabi Sahit di Utpatti te Vikas**, Lahore Book Shop, Ludhiana.

Suggested Readings:

- Brar, Rajinder Pal Singh (Dr.) (2006), **Adhunik Punjabi Kavita da Itihas**, Punjabi Academy, Delhi.
- Dhaliwal, Baldev Singh (2006), **Adhunik Punjabi Kahani da Itihas**, Punjabi Academy, Delhi.
- Piara Singh (Prof.) (2004), **Punjabi Vartak: Sidhant, Itihas te Parvirtian**, New Book Company, Jalandhar.
- Piara Singh (Prof.) (2004), **Punjabi Galap: Sidhant, Itihas te Parvirtian**, New Book Company, Jalandhar.
- Piara Singh (Prof.) (2004), **Adhunik Punjabi Kavita: Sidhant, Itihas te Parvirtian**, New Book Company, Jalandhar.
- Satinder Singh (Dr.) (2006), **Adhunik Punjabi Vartak da Itihas**, Punjabi Academy, Delhi.
- Verma, Satish Kumar (Dr.) (2005), **Punjabi Natak da Itihas**, Punjabi Academy, Delhi.

INTERNET RESOURCES:

- <https://www.britannica.com/art/Punjabi-literature>
- <http://certindia.gov.in/downloads/Fellowship/Published%20Project/2013-2014/34.%20History%20of%20Punjabi%20Lecture.pdf>
- https://pa.bharatpedia.org/wiki/%E0%A8%AA%E0%A9%B0%E0%A8%9C%E0%A8%BE%E0%A8%AC%E0%A9%80_%E0%A8%B8%E0%A8%BE%E0%A8%B9%E0%A8%BF%E0%A8%A4_%E0%A8%A6%E0%A8%BE_%E0%A8%87%E0%A8%A4%E0%A8%BF%E0%A8%B9%E0%A8%BE%E0%A8%B8

*(Note: Teachers are free to recommend additional related standard source books, if required so.)

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time

DISCIPLINE SPECIFIC CORE COURSE -5 (DSC-5)**ADHUNIK PUNJABI KAVITA****CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------|---------|-----------------------------------|----------|---------------------|--|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| ADHUNIK PUNJABI KAVITA | 4 | 3 | 1 | 0 | Class 12 th pass in any subject | Studied Punjabi up to 10th Standard or Working knowledge of Punjabi language |

Credits: 4**L/T/P= 3/1/0****LEARNING OBJECTIVES:**

- The course will demonstrate knowledge of Modern Punjabi Poetry.
- The course will help the students to recognize and identify different formal rhythmic properties of poems and of language as a whole.
- It will demonstrate an understanding of poetic vocabulary essential to the practice of literary criticism.
- The course will develop an understanding of individual poets in their historical, social, economic, cultural and political contexts.
- The course is aimed to evaluate the creative and analytical sensibility of the students.

LEARNING OUTCOMES:

- The students will be able to analyse various elements of poetry such as diction, tone, form, genre, imagery, figures of speech, symbolism, theme, etc.
- They will be able to identify various forms and genres of poetry such as Nazam, Ghazal, Rubai and Free Verse etc.
- The course will facilitate them to understand the socio-cultural, economic and political concerns of Punjabi society reflected in Punjabi poetry.
- They will understand the basic terminology and practical elements of poetry.
- They will develop a feeling of sensitivity depicted in poetry.

Unit 1 ਮੁਢਲੇ ਦੌਰ ਦੀ ਪੰਜਾਬੀ ਕਵਿਤਾ (Mudhle Dour di Punjabi Kavita) (12 hours)

- ਭਾਈ ਵੀਰ ਸਿੰਘ: ਸਮਾਂ, ਕੰਬਦੀ ਕਲਾਈ, ਗੁਲਾਬ ਦਾ ਫੁੱਲ ਤੋੜਨ ਵਾਲੇ ਨੂੰ
Bhai Vir Singh: Sama, Kambadi Kalai, Gulab da Full Torhan Vale Nu
- ਪੂਰਨ ਸਿੰਘ: ਹਲ ਵਾਹੁਣ ਵਾਲੇ, ਜਵਾਨ ਪੰਜਾਬ ਦੇ, ਪਸ਼ੂ ਚਰਦੇ
Puran Singh: Hal Vahun Vale, Javan Punjab de, Pashu Charde
- ਧਨੀ ਰਾਮ ਚਾਤ੍ਰਿਕ: ਪੰਜਾਬ, ਮੇਲੇ ਵਿਚ ਜੱਟ, ਬੋਲੀ ਹੈ ਪੰਜਾਬੀ ਸਾਡੀ
Dhani Ram Chatrik: Punjab, Mele Vich Jatt, Boli hai Punjabi Sadi
- ਨੰਦ ਲਾਲ ਨੂਰਪੁਰੀ: ਭੋਲਾ ਪੰਛੀ, ਚੁੰਮ-ਚੁੰਮ ਰੱਖੋ, ਸ਼ੌਕਣ ਮੇਲੇ ਦੀ
Nand Laal Noorpuri: Bhola Panchhi, Chum-Chum Rakho, Shoukan Mele di

Unit 2 ਦੂਜੇ ਦੌਰ ਦੀ ਪੰਜਾਬੀ ਕਵਿਤਾ (Duje Dour di Punjabi Kavita) (12 hours)

- ਮੋਹਨ ਸਿੰਘ: ਤਾਜ ਮਹਿਲ, ਰੱਬ, ਮੁੱਕਣ ਤੇ ਆਇਆ ਸਾਥੀਓ (ਗ਼ਜ਼ਲ)
Mohan Singh: Taj Mehal, Rabb, Mukan te Aaya Sathiyo (Ghazal)
- ਅਮ੍ਰਿਤਾ ਪ੍ਰੀਤਮ: ਅੱਜ ਆਖਾਂ ਵਾਰਸ ਸ਼ਾਹ ਨੂੰ, ਅੰਨਦਾਤਾ, ਸੁਨੇਹਰੇ
Amrita Pritam: Ajj Aakhan Waris Shah nu, Anndaata, Sunehrhe
- ਬਾਵਾ ਬਲਵੰਤ: ਦੁਨੀਆ, ਓਸ ਦਾ ਹਾਰ, ਨਵੀਨ ਆਸ
Bawa Balwant: Dunia, Os da Haar, Navin Aas
- ਹਰਿਭਜਨ ਸਿੰਘ: ਮਾਏ ਨੀ, ਵੇ ਮੈਂ ਭਰੀ ਸੁੰਗਧੀਆਂ ਪੌਣ, ਧਰਤੀ ਦੇ ਹੇਠਾਂ
Harbhajan Singh: Maye Ni, Ve Mein Bhari Sugandhian Poun, Dharti de Hethan

Unit 3 ਤੀਜੇ ਦੌਰ ਦੀ ਪੰਜਾਬੀ ਕਵਿਤਾ (Teeje Dour di Punjabi Kavita) (12 hours)

- ਸ. ਸ. ਮੀਸ਼ਾ: ਚੀਕ ਬੁਲਬੁਲੀ, ਅੱਧੀ ਰਾਤ ਪਹਿਰ ਦੇ ਤੜਕੇ, ਸ਼ਾਮ ਦੀ ਨਾ ਸਵੇਰ ਦੀ ਗੱਲ ਹੈ
S.S. Meesha: Cheek Bulbuli, Adhi Raat Pehar de tadhke, Sham di na Sver di Gall hai
- ਜਗਤਾਰ: ਹਰ ਮੋੜ 'ਤੇ ਸਲੀਬਾਂ, ਕੋਈ ਮਜ਼ਬੂਰੀ ਨਹੀਂ, ਰੁੱਖਾਂ ਹੇਠ ਛੁਪ ਕੇ
Jagtar: Har Morh te Saliban, Koi Mazboori Nahi, Rukhan Heth Chhup Ke
- ਸ਼ਿਵ ਕੁਮਾਰ: ਰੁੱਖ, ਆਰਤੀ, ਕੀ ਪੁੱਛਦੇ ਓਂ ਹਾਲ ਫਕੀਰਾਂ ਦਾ
Shiv Kumar: Rukh, Aarti, Ki Puchhde ho Haal Fakiran da
- ਪਾਸ਼: ਦਹਿਕਦੇ ਅੰਗਿਆਰਾਂ 'ਤੇ, ਚਿੜੀਆਂ ਦਾ ਚੰਬਾ, ਸਭ ਤੋਂ ਖ਼ਤਰਨਾਕ
Pash: Dehkde Angiyaran te, Chirhiyan da Chamba, Sabh ton Khatarnak

Unit 4 ਚੌਥੇ ਦੌਰ ਦੀ ਪੰਜਾਬੀ ਕਵਿਤਾ (Chouth Dour di Punjabi Kavita) (9 hours)

- ਸੁਰਜੀਤ ਪਾਤਰ: ਕੁਝ ਕਿਹਾ ਤਾਂ, ਚੱਲ ਪਾਤਰ ਹੁਣ ਢੂੰਡਣ ਚੱਲੀਏ, ਆਇਆ ਨੰਦ ਕਿਸ਼ੋਰ
Surjit Patar: Kujh Kiha tan, Chal Patar hun Dhundhan Chaliye, Aaya Nand Kishor
- ਸੁਖਵਿੰਦਰ ਅਮ੍ਰਿਤ: ਬੜੀ ਹੀ ਨਰਮ ਪੱਤੀ ਹਾਂ, ਥਲਾਂ ਦਾ ਸੇਕ ਨਾ ਹੋਵੇ, ਨੀ ਫੁੱਲਾਂ ਵਰਗੀਓ ਕੁੜੀਓ
Sukhwinder Amrit: Barhi hi Naram Patti han, Thalan da Sek na Hove, Ni Fullan Vargiyo Kurhiyo
- ਬਲਬੀਰ ਮਾਧੋਪੁਰੀ: ਕਵਿਤਾ ਮੁਖਾਤਬ ਹੋ, ਕੱਖੋਂ ਹੋਲਾ ਆਦਮੀ, ਮਾਂ ਦੱਸਦੀ ਹੈ
Balbir Madhopuri: Kavita Mukhatab ho, Khakhon Hola Aadmi, Maa Dasdi hai

- ਜਸਵੰਤ ਜਫ਼ਰ: ਅਸੀਂ ਨਾਨਕ ਦੇ ਕੀ ਲੱਗਦੇ ਹਾਂ, ਭਾਈ ਘੱਨਈਆ, ਭਗਤ ਸਿੰਘ
Jaswant Zafar: Asin Nanak de Ki Lagde han, Bhai Ghanyia, Bhagat Singh

Essential Readings/Sources:

- Jagjit Singh (Dr), Virk, Anup Singh (Prof) (eds.) (2014), **Samkali Punjabi Kavita**, Punjabi University, Patiala.
- <https://www.punjabi-kavita.com/>

Suggested Readings:

- Brar, Rajinder Pal Singh (Dr.) (2006), **Adhunik Punjabi Kavita da Itihas**, Punjabi Academy, Delhi.
- Kasel, Kirpal Singh, Parmindar Singh (eds.) (2002), **Punjabi Sahit di Utpatti te Vikas**, Lahore Book Shop, Ludhiana.
- Jaswinder Singh (Dr.) & Man Singh Dhindsa (2006), **Punjabi Sahit da Itihas (Adhunik Kal 1901-1995)**, Publication Bureau, Punjabi University, Patiala.
- Piara Singh (Prof.) (2004), **Adhunik Punjabi Kavita: Sidhant, Itihas te Parvirtian**, New Book Company, Mai Hiran Gate, Jalandhar.
- Satinder Singh (Dr.) (1980), **Adhunik Punjabi Kaav Roop Adhiyan**, Guru Nanak Dev University, Amritsar.

***(Note: Teachers are free to recommend additionall related standard source books, if required so.)**

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE -6 (DSC-6)**ADHUNIK PUNJABI KAHANI****CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------|---------|-----------------------------------|----------|---------------------|--|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| ADHUNIK PUNJABI KAHANI | 4 | 3 | 1 | 0 | Class 12 th pass in any subject | Studied Punjabi up to 10th Standard or Working knowledge of Punjabi language |

Credits: 4**L/T/P= 3/1/0****Learning Objectives:**

- The course will develop skills in short story analysis, including comprehension of the narrative fundamentals of character, point of view, theme and plot in Punjabi short stories.
- It will help the students to gain an appreciation of different literary styles, voices and approaches in Punjabi short stories.
- The course is aimed to develop ethical values, social concerns and awareness about the current issues of society among the students.
- The course will give an outline of various development phases of Punjabi short story.
- It will help the students to develop a creative aspect and sensitize them towards society.

Course Outcomes:

- Students will develop an ability to identify, analyse, interpret and describe the critical ideas, values, and themes appeared in the prescribed short stories.
- They will be able to understand the ways how various ideas, values and themes are depicted in Punjabi short stories.

- The students will develop skills in literary analysis, including comprehension of the narrative, fundamentals of character, point of view, theme and action (plot).
- They will gain an appreciation of different literary styles, voices and approaches in Punjabi short story.
- The course will develop ethical values, social concerns and awareness about the current issues of society among the students.

Unit 1 ਮੁਢਲੇ ਦੌਰ ਦੀ ਪੰਜਾਬੀ ਕਹਾਣੀ (Mudhle Dour di Punjabi Kahani) (12 hours)

- ਨਾਨਕ ਸਿੰਘ: ਤਾਸ਼ ਦੀ ਆਦਤ, ਸੁਨਹਿਰੀ ਜਿਲਦ
Nanak Singh: Tash di Aadat, Sunehri Jilad
- ਗੁਰਬਖਸ਼ ਸਿੰਘ: ਭਾਬੀ ਮੈਨਾ, ਪਹੁਤਾ ਪਾਂਧੀ
Gurbax Singh: Bhabhi Maina, Pahuta Pandhi
- ਸੁਜਾਨ ਸਿੰਘ: ਬਾਗਾਂ ਦਾ ਰਾਖਾ, ਰਾਸ ਲੀਲਾ
Sujan Singh: Bagan da Rakha, Raas Leela
- ਸੰਤ ਸਿੰਘ ਸੇਖੋਂ: ਪੇਮੀ ਦੇ ਨਿਆਣੇ, ਹਲ ਵਾਹ
Sant Singh Sekhon: Pemi de Niane, Hal Vah

Unit 2 ਦੂਜੇ ਦੌਰ ਦੀ ਪੰਜਾਬੀ ਕਹਾਣੀ (Duje Dour di Punjabi Kahani) (12 hours)

- ਕਰਤਾਰ ਸਿੰਘ ਦੁੱਗਲ: ਕਰਾਮਾਤ, ਨੀਲੀ
Kartar Singh Duggal: Karamat, NILi
- ਕੁਲਵੰਤ ਸਿੰਘ ਵਿਰਕ: ਖੱਬਲ, ਧਰਤੀ ਹੇਠਲਾ ਬੋਲਦ
Kulwant Singh Virk: Khabbal, Dharti Hethla Boulad
- ਸੰਤੋਖ ਸਿੰਘ ਧੀਰ: ਕੋਈ ਇਕ ਸਵਾਰ, ਸਵੇਰ ਹੋਣ ਤੱਕ
Santokh Singh Dheer: Koi Ik Savar, Sver Hon Takk
- ਦਲੀਪ ਕੌਰ ਟਿਵਾਣਾ: ਰੱਬ ਤੇ ਚੁੱਤਾਂ, ਸਤੀਆਂ ਸੇਈ
Dalip Kaur Tiwana: Rabb te Ruttan, Satian Sein

Unit 3 ਤੀਜੇ ਦੌਰ ਦੀ ਪੰਜਾਬੀ ਕਹਾਣੀ (Teeje Dour di Punjabi Kahani) (12 hours)

- ਅਜੀਤ ਕੌਰ: ਗੁਲਬਾਨੇ, ਮੌਤ ਅਲੀ ਬਾਬੇ ਦੀ
Ajit Caur: Gulbano, Mout Ali Babe di
- ਗੁਰਬਚਨ ਭੁੱਲਰ: ਖੂਨ, ਨਿੱਕੀ ਬੂਟੀ ਦਾ ਸੂਟ
Gurbachan Bhullar: Khoon, Niki Booti da Suit
- ਨਵਤੇਜ: ਦੇਸ਼ ਵਾਪਸੀ, ਸੁਨੇਹਾ
Navtej: Desh Vapsi, Suneha
- ਮੋਹਨ ਭੰਡਾਰੀ: ਘੋਟਣਾ, ਮੈਨੂੰ ਟੈਗੋਰ ਬਣਾ ਦੇ ਮਾਂ
Mohan Bhandari: Ghotna, Mainu Tagore Bana de Ma

Unit 4 ਚੌਥੇ ਦੌਰ ਦੀ ਪੰਜਾਬੀ ਕਹਾਣੀ (Chouthi Dour di Punjabi Kahani) (9 hours)

- ਵਰਿਆਮ ਸੰਧੂ: ਆਪਣਾ-ਆਪਣਾ ਹਿੱਸਾ, ਚੌਥੀ ਕੂਟ
Wariyam Sandhu: Apna Apna Hissa, Chouthi Koot
- ਪ੍ਰੇਮ ਪ੍ਰਕਾਸ਼: ਬੰਗਲਾ, ਗੋਈ
Prem Prakash: Bangla, Goi

- ਗੁਰਮੀਤ ਕੜਿਆਲਵੀ: ਆਤੂ ਖੋਜੀ, ਹਾਰੀ ਨਾ ਬਚਨਿਆ
Gurmeet Karhialvi: Aatu Khoji, Harin Na Bachnia
- ਸਾਂਵਲ ਧਾਮੀ: ਮੱਲ੍ਹਮ, ਤੂੰ ਨਿਹਾਲਾ ਨਾ ਬਣੀ
Sanwal Dhami: Malham, Tu Nihala na Bani

Essential Readings/Sources:

- Harbhajan Singh (ed.) (2009), (6th Edition) **Katha Punjab**, National Book Trust, Delhi.
- <https://www.punjabi-kavita.com/punjabikahani/PunjabiStories.php>

Suggested Readings:

- Bhogal, Piara Singh (undated) **Punjabi Kahani da Vikas**, National Book Trust, Delhi.
- Jaswinder Singh (Dr.), Man Singh Dhindsa (2006), **Punjabi Sahit da Itihas (Adhunik Kal 1901-1995)**, Punjabi University, Patiala.
- Kasel, Kirpal Singh, Parmindar Singh (eds.) (2002), **Punjabi Sahit di Utpatti te Vikas**, Lahore Book Shop, Ludhiana.
- Lehri, Rajinder (Dr.) (Main ed.), (2013), **Punjabi Kahani: Praptian te Sambhavnan** (Duji Vishav Punjabi Sahit Conference), Punjabi University, Patiala.
- Piara Singh (Prof.), (2004), **Punjabi Galap: Sidhant, Itihas te Parvirtian**, New Book Company, Jalandhar.
- Sandhu, Waryam Singh (2007), **Azadi ton Baad di Punjabi Kahani**, National Book Trust, Delhi.

*(Note: Teachers are free to recommend additionall related standard source books, if required so.)

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category II

(B.A. Programmes with Punjabi as Major discipline)

**DISCIPLINE SPECIFIC CORE COURSE -3 (DSC-3)
PUNJABI LOKDHARA ATE SABHIYACHAR**

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF
THE COURSE**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre- requisite of the course (if any) |
|--|---------|--------------------------------------|----------|------------------------|---|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| PUNJABI LOKDHARA ATE SABHIYACHAR | 4 | 3 | 1 | 0 | Class 12 th pass in any subject | Studied Punjabi up to 8th Standard or Working knowledge of Punjabi language |

Credits: 4

L/T/P= 3/1/0

Learning Objectives:

- Students will understand the concepts of folklore and culture.
- They will learn the various folk traditions of Punjab and their importance in life.
- Students will demonstrate the knowledge of folk-literature, folk-traditions and customs and rituals of Punjab.
- They will examine Punjab's folklore and culture and explore themselves by studying traces of Punjabi culture.
- They will be able to understand the current problems occurring in Punjabi society and country to find the appropriate way to handle them.

Learning Outcomes:

- The students will be able to understand the basic concepts of Punjabi folklore and culture.
- They will demonstrate the knowledge of folk literature, customs and rituals of Punjab.

- The students will develop the knowledge of Punjabi folk songs, fairs and festivals.
- They will be able to understand literature in better way after studying folkore and culture.

UNIT 1: ਲੋਕਧਾਰਾ ਤੇ ਸਭਿਆਚਾਰ: ਮੁਢਲੀ ਜਾਣ-ਪਛਾਣ (Lokdhara ate Sabhiyachar: Mudhli)

Jaan Pachhaan)

(12 hours)

- ਲੋਕਧਾਰਾ : ਪਰਿਭਾਸ਼ਾ ਤੇ ਤੱਤ
Lokdhara: Paribhasha te Tatt
- ਲੋਕਧਾਰਾ ਦੀਆਂ ਮੁੱਖ ਵੰਨਗੀਆਂ
Lokdhara diyan Mukh Vangiaan
- ਸਭਿਆਚਾਰ: ਪਰਿਭਾਸ਼ਾ ਤੇ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ
Sabhiachar : Paribhasha te Vishestav
- ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ ਦੇ ਮੁੱਖ ਪਛਾਣ-ਚਿੰਨ੍ਹ
Punjabi Sabhiachar de Mukh Pachhan-Chin

UNIT 2: ਪੰਜਾਬੀ ਲੋਕ ਸਾਹਿਤ (Punjabi Lok Sahit)

(12 hours)

- ਲੋਕ ਸਾਹਿਤ: ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਵੰਨਗੀਆਂ
Lok Sahit: Paribhasha ate Vangiaan
- ਲੋਕਗੀਤ: ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਵੰਨਗੀਆਂ
Lok Geet: Paribhasha ate Vangiaan
- ਲੋਕ ਕਥਾ: ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਵੰਨਗੀਆਂ
Lok Katha: Paribhasha ate Vangiaan
- ਅਖਾਣ ਅਤੇ ਮੁਹਾਵਰੇ
Akhan ate Muhavare

UNIT 3: ਪੰਜਾਬੀ ਰਸਮ ਰਿਵਾਜ, ਮੇਲੇ ਅਤੇ ਤਿਉਹਾਰ (Punjabi Rasam Rivaj ate Mele Tyohaar)

(12 hours)

- ਜਨਮ ਨਾਲ ਸੰਬੰਧਤ ਰਸਮ ਰਿਵਾਜ
Janam Naal Sambhadhat Rasam Rivaj
- ਵਿਆਹ ਨਾਲ ਸੰਬੰਧਤ ਰਸਮ ਰਿਵਾਜ
Viaah Naal Sambhadhat Rasam Rivaj
- ਮੌਤ ਨਾਲ ਸੰਬੰਧਤ ਰਸਮ ਰਿਵਾਜ
Maut Naal Sambhadhat Rasam Rivaj
- ਮੇਲੇ ਅਤੇ ਤਿਉਹਾਰ
Mele ate Tyohaar

UNIT 4: ਪੰਜਾਬੀ ਲੋਕ ਕਲਾਵਾਂ ਅਤੇ ਲੋਕ ਵਿਸ਼ਵਾਸ (Lok Kalawan ate Lok Vishvas)

(9 hours)

- ਲੋਕ ਕਲਾਵਾਂ : ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਵੰਨਗੀਆਂ
Lok Kalawan: Paribhasha ate Vangiaan
- ਪੰਜਾਬੀ ਲੋਕ ਨਾਚ

- Punjabi Lok Naach
- ਪੰਜਾਬੀ ਲੋਕ ਨਾਟ
- Punjabi Lok Naat
- ਪੰਜਾਬੀ ਲੋਕ ਵਿਸ਼ਵਾਸ
- Punjabi Lok Vishvas

ESSENTIAL READINGS:

- Jaswinder Singh (2014), **Punjabi Sabhiyachar: Pachhan Chinn**, Gracious Books, Patiala.
- Jeet Singh Joshi (2009), **Lokdhara : Sidhant te Vishleshan**, Waris Shah Foundation, Amritsar.
- Bedi, S. S. Wanjara (Undated), **Punjab Di Lokdhara**, National Book Trust of India, Delhi.

SUGGESTED READINGS:

- Bedi, S. S. Wanjara (2002), **Punjabi Lokdhara Vishavkosh**, National Book Shop, Delhi.
- Gurdial Singh (Undated), **Punjab De Mele ate Teyohar**, Prakashan Vibhag, BharatSarkar, Delhi.
- Kairon, Joginder Singh (Undated), **Punjabi Lokdhara Adhiyan**, Guru Nanak Dev University, Amritsar.
- Nahar Singh (2011), **Kaleyan Harna Rohiye Firna**, Punjabi University, Patiala.
- Rajinderpal Singh, Jasvinder Singh, Baldev Singh Cheema (2011), **Lokdhara ate Adhunikta**, Punjabi University, Patiala.
- Sukhdev Madpuri (2013), **Punjabi Lok Gathavan**, Chetana Prakashan, Ludhiana.
- Thind, Karnail Singh (2016), **Punjab da Lok Virsa**, Punjabi University, Patiala.
- Thuhi, Hardial (2018), **Punjabi Lok Gayaki da Safar**, Lokgeet Prakashan, Mohali.

*(Note: Teachers are free to recommend additional related standard source books, if required so.)

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE -4 (DSC-4)
COMPUTER ATE PUNJABI BHASHA

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF
THE COURSE**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------------|---------|--------------------------------------|----------|-------------------------|---|---|
| | | Lecture | Tutorial | Practical / Practice | | |
| Computer ate Punjabi Bhasha | 4 | 3 | 1 | 0 | Class 12 th pass in any subject | Studied Punjabi up to 8th Standard or <i>Working knowledge of Punjabi language</i> |

Credits: 4L/T/P= 3/1/0

Learning Objectives:

- This course has been designed for those students who need to have some basic grounding in computer applications.
- The course will provide knowledge about computer fundamentals, Punjabi Language and tools, applications, software and different models of computational Linguistics.
- It will help them to analyse the development of computer fonts and typing skills available in Punjabi language.
- It will help them to search various websites related to Punjabi language, literature and culture.

Learning Outcomes:

- They will understand how computer can help in advancement of Punjabi language.
- They will be able to understand the Typing system, Unicode System and Punjabi Fonts.
- They will understand the concept of Computational Linguistics.
- They will learn about the various you tube channels working in the field of Punjabi language, literature and culture.

Unit 1: ਕੰਪਿਊਟਰ ਅਤੇ ਪੰਜਾਬੀ ਭਾਸ਼ਾ: ਮੁਢਲੀ ਜਾਣ-ਪਛਾਣ (Computer ate Punjabi Bhasha:

Mudhli

Jaan-Pachhan)

(12 hours)

- ਕੰਪਿਊਟਰ: ਮੁਢਲੀ ਜਾਣ-ਪਛਾਣ

Computer: Mudhli Jaan-Pachhan

- ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦਾ ਕੰਪਿਊਟਰੀਕਰਨ: ਸਰਵੇਖਣ

Punjabi Bhasha da Computerikaran: Sarvekhan

- ਇੰਟਰਨੈੱਟ ਦੇ ਦੌਰ ਵਿਚ ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਨੂੰ ਦਰਪੇਸ਼ ਚੁਣੌਤੀਆਂ

Internet de daur Vich Punjabi Bhasha nu Darpesh Chanautiaan

- ਪੰਜਾਬੀ ਭਾਸ਼ਾ, ਸਾਹਿਤ ਅਤੇ ਸਭਿਆਚਾਰ ਨਾਲ ਸਬੰਧਤ ਇੰਟਰਨੈੱਟ ਸਮੱਗਰੀ (ਵੇਬਸਾਇਟ ਤੇ ਯੂਟਿਊਬ ਚੈਨਲ)

Punjabi Bhasha, Sahit Ate Sabhiachar naal Sambandhat Internet Samagari: Website and YouTube Channel

Unit 2: ਐੱਮਐੱਸ. ਵਰਡ ਅਤੇ ਫੋਂਟ (MS Word and Font)

(12 hours)

- ਐੱਮਐੱਸ. ਵਰਡ (ਵਰਡ ਸਕਰੀਨ ਦੇ ਵੱਖ-ਵੱਖ ਭਾਗ, ਕੀ-ਬੋਰਡ ਸ਼ਾਟਕੱਟ, ਫੋਂਟ ਤੇ ਪੈਰਾਗ੍ਰਾਫ ਸੈਟਿੰਗ, ਇਨਸਰਟ ਟੈਬ ਦੀ ਵਰਤੋਂ, ਫਾਰਮੈਟ ਕਰਨਾ)

MSWord, Word screen de Vakha Vakh Bhag, Key Board Shortcuts, Font te Paragraph Setting, Insert tab di Varton, Format Karna

- ਪਾਵਰ ਪ੍ਰੇਜੇਂਟੇਸ਼ਨ ਦੀ ਸਿਖਲਾਈ

Power Point Presentatin di Sikhlaai

- ਐਕਸਲ ਸ਼ੀਟ ਦੀ ਸਿਖਲਾਈ

Excel Sheet di Sikhlaai

- ਫੋਂਟ: ਯੂਨੀਕੋਡ, ਫੋਨੈਟਿਕ, ਰਮਿੰਗਟਨ

Font : Unicode, Phonatic, Ramington

Unit 3: ਪੰਜਾਬੀ ਟਾਈਪਿੰਗ ਦੀਆਂ ਵਿਧੀਆਂ (Punjabi Typing dian Vidhiaan)

(12 hours)

- ਪੰਜਾਬੀ ਵਿਚ ਟਾਈਪ ਕਰਨ ਦੀਆਂ ਵਿਧੀਆਂ: ਫੋਨੈਟਿਕ, ਰਮਿੰਗਟਨ, ਇਨਸਕਰਿਪਟ)

Punjabi Vich Type Karan dian Vidhiaan: Phonetic, Ramington, Inscript

- ਯੂਨੀਕੋਡ ਪ੍ਰਣਾਲੀ ਵਿਚ ਟਾਈਪਿੰਗ

Unicode Parnali Vich Typing

- ਯੂਨੀਕੋਡ ਟਾਈਪਿੰਗ ਟੂਲਜ਼: ਜੀ ਲਿਪੀਕਾ, ਯੂਨੀਟਾਈਪ

Unicode Typing Tools: G-Lipica, Unitype

- ਗੂਗਲ ਇਨਪੁੱਟ ਟੂਲਜ਼ ਦੀ ਵਰਤੋਂ

Google Input Tools di Varton

Unit 4: ਅੱਖਰ ਸਾਫਟਵੇਅਰ (Akhar Software)

(9 hours)

- ਅੱਖਰ ਸਾਫਟਵੇਅਰ ਨਾਲ ਜਾਣ-ਪਛਾਣ
Akhar Software naal Jaan Pachhan
- ਅੱਖਰ ਵਿਚ ਟਾਈਪਿੰਗ
Akhar Vich Typing
- ਅੱਖਰ ਵਿਚ ਫੋਂਟ ਕਨਵਰਟਰ
Akhar Vich Font Converter
- ਅੱਖਰ ਵਿਚ ਲਿਪੀਅੰਤਰ ਤੇ ਸਪੈੱਲ ਚੈੱਕਰ
Akhar Vich Lippiantar te Spell Checker

Essential Readings:

- Jalwanna, Amandeep Kaur, Raj, Harminder Singh. (2013), **Daftari Varton lai Computer Kiven Sikhiye**, Tarakbharti Parkashan, Barnala.
- Kamboj, C.P. (2010), **Computer ate Punjabi Bhasha**, Lokgeet Parkashan, Chandigarh.

Suggested Readings:

- Gautam, Roop Chand (2003), **Electronic Media ke Sidhant**, Sh. Navraj Parkashan. Jalwanna, Delhi.
- Juneja, Jagmohan Singh (2008), **Computer: Muddhli Jankari ate Upyog**, Punjabi University, Patiala.
- Kamboj, C.P. (2010), **Cyber Sansar ate Punjabi Bhasha**, Lokgeet Parkashan, Chandigarh.
- Kamboj, C.P. (2012), **Computer Vigyan**, Punjabi University, Patiala.
- Kamboj, C.P. (2016), **Ajoka Phone Sansar**, Tarakbharti Parkashan, Barnala.
- Pawan Kumar (2007), **Computer Jaan-Pachhaan**, Lokgeet Parakashan, Chandigarh.

*(Note: Teachers are free to recommend additional related standard source books, if required so.)

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category III

(B.A. Programmes with Punjabi as non-Major or Minor discipline)

**DISCIPLINE SPECIFIC CORE COURSE -2 (DSC-2)
PUNJABI LOKDHARA ATE SABHIYACHAR**

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF
THE COURSE**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|--------------------------------------|----------|------------------------|---|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| PUNJABI LOKDHARA ATE SABHIYACHAR | 4 | 3 | 1 | 0 | Class 12 th pass in any subject | Studied Punjabi up to 8th Standard or Working knowledge of Punjabi language |

Credits: 4

L/T/P= 3/1/0

Learning Objectives:

- Students will understand the concepts of folklore and culture.
- They will learn the various folk traditions of Punjab and their importance in life.
- Students will demonstrate the knowledge of folk-literature, folk-traditions and customs and rituals of Punjab.
- They will examine Punjab's folklore and culture and explore themselves by studying traces of Punjabi culture.
- They will be able to understand the current problems occurring in Punjabi society and country to find the appropriate way to handle them.

Learning Outcomes:

- The students will be able to understand the basic concepts of Punjabi folklore and culture.
- They will demonstrate the knowledge of folk literature, customs and rituals of Punjab.
- The students will develop the knowledge of Punjabi folk songs, fairs and festivals.
- They will be able to understand literature in better way after studying folklore and culture.

UNIT 1: ਲੋਕਧਾਰਾ ਤੇ ਸਭਿਆਚਾਰ: ਮੁਢਲੀ ਜਾਣ-ਪਛਾਣ (Lokdhara ate Sabhiyachar: Mudhli

Jaan

Pachhaan)

(12 hours)

- ਲੋਕਧਾਰਾ : ਪਰਿਭਾਸ਼ਾ ਤੇ ਤੱਤ
Lokdhara: Paribhasha te Tatt
- ਲੋਕਧਾਰਾ ਦੀਆਂ ਮੁੱਖ ਵੰਨਗੀਆਂ
Lokdhara diyan Mukh Vangiaan
- ਸਭਿਆਚਾਰ: ਪਰਿਭਾਸ਼ਾ ਤੇ ਵਿਸ਼ੇਸ਼ਤਾਵਾਂ
Sabhiachar : Paribhasha te Vishestav
- ਪੰਜਾਬੀ ਸਭਿਆਚਾਰ ਦੇ ਮੁੱਖ ਪਛਾਣ-ਚਿੰਨ੍ਹ
Punjabi Sabhiachar de Mukh Pachhan-Chin

UNIT 2: ਪੰਜਾਬੀ ਲੋਕ ਸਾਹਿਤ (Punjabi Lok Sahit)

(12 hours)

- ਲੋਕ ਸਾਹਿਤ: ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਵੰਨਗੀਆਂ
Lok Sahit: Paribhasha ate Vangiaan
- ਲੋਕਗੀਤ: ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਵੰਨਗੀਆਂ
Lok Geet: Paribhasha ate Vangiaan
- ਲੋਕ ਕਥਾ: ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਵੰਨਗੀਆਂ
Lok Katha: Paribhasha ate Vangiaan
- ਅਖਾਣ ਅਤੇ ਮੁਹਾਵਰੇ
Akhan ate Muhavare

UNIT 3: ਪੰਜਾਬੀ ਰਸਮ ਰਿਵਾਜ, ਮੇਲੇ ਅਤੇ ਤਿਉਹਾਰ (Punjabi Rasam Rivaj ate Mele Tyohaar)

(12 hours)

- ਜਨਮ ਨਾਲ ਸੰਬੰਧਤ ਰਸਮ ਰਿਵਾਜ
Janam Naal Sambhadhat Rasam Rivaj
- ਵਿਆਹ ਨਾਲ ਸੰਬੰਧਤ ਰਸਮ ਰਿਵਾਜ
Viaah Naal Sambhadhat Rasam Rivaj
- ਮੌਤ ਨਾਲ ਸੰਬੰਧਤ ਰਸਮ ਰਿਵਾਜ
Maut Naal Sambhadhat Rasam Rivaj
- ਮੇਲੇ ਅਤੇ ਤਿਉਹਾਰ
Mele ate Tyohaar

UNIT 4: ਪੰਜਾਬੀ ਲੋਕ ਕਲਾਵਾਂ ਅਤੇ ਲੋਕ ਵਿਸ਼ਵਾਸ (Lok Kalawan ate Lok Vishvas)

(9 hours)

- ਲੋਕ ਕਲਾਵਾਂ : ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਵੰਨਗੀਆਂ
Lok Kalawan: Paribhasha ate Vangiaan
- ਪੰਜਾਬੀ ਲੋਕ ਨਾਚ
Punjabi Lok Naach
- ਪੰਜਾਬੀ ਲੋਕ ਨਾਟ
Punjabi Lok Naat
- ਪੰਜਾਬੀ ਲੋਕ ਵਿਸ਼ਵਾਸ

ESSENTIAL READINGS:

- Jaswinder Singh (2014), **Punjabi Sabhiyachar: Pachhan Chinn**, Gracious Books, Patiala.
- Jeet Singh Joshi (2009), **Lokdhara : Sidhant te Vishleshan**, Waris Shah Foundation, Amritsar.
- Bedi, S. S. Wanjara (Undated), **Punjab Di Lokdhara**, National Book Trust of India, Delhi.

SUGGESTED READINGS:

- Bedi, S. S. Wanjara (2002), **Punjabi Lokdhara Vishavkosh**, National Book Shop, Delhi.
- Gurdial Singh (Undated), **Punjab De Mele ate Teyohar**, Prakashan Vibhag, BharatSarkar, Delhi.
- Kairon, Joginder Singh (Undated), **Punjabi Lokdhara Adhiyan**, Guru Nanak Dev University, Amritsar.
- Nahar Singh (2011), **Kaleyan Harna Rohiye Firna**, Punjabi University, Patiala.
- Rajinderpal Singh, Jasvinder Singh, Baldev Singh Cheema (2011), **Lokdhara ate Adhunikta**, Punjabi University, Patiala.
- Sukhdev Madpuri (2013), **Punjabi Lok Gathavan**, Chetana Prakashan, Ludhiana.
- Thind, Karnail Singh (2016), **Punjab da Lok Virsa**, Punjabi University, Patiala.
- Thuhi, Hardial (2018), **Punjabi Lok Gayaki da Safar**, Lokgeet Prakashan, Mohali.

***(Note: Teachers are free to recommend additional related standard source books, if required so.)**

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category IV

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES OFFERED BY THE DEPARTMENT OF PUNJABI

GENERIC ELECTIVES (GE-5) : VIHARAK PUNJABI

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|--|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| VIHARAK PUNJABI | 4 | 3 | 1 | 0 | Class 12 th pass in any subject | Studied Punjabi up to 8th Standard or Working knowledge of Punjabi |

Credits: 4

L/T/P= 3/1/0

LEARNING OBJECTIVES:

- To understand the functional concept of Punjabi Language.
- To demonstrate speaking, listening, reading and writing skills in Punjabi language with advance levels.
- To enable the Students to think in Punjabi language so that they can be fluent in Punjabi language and literature.
- To demonstrate some knowledge of cultural differences related to the practical and written traditions of different societies.
- Understand the inter-relationship with other languages.

LEARNING OUTCOMES:

- Students will be able to speak and write accurate Punjabi Language.
- Students can easily move and easily employed in Punjab state as Punjabi is a widely spoken language there and in other States and countries also.
- As they have learned Punjabi language, they can take up translation jobs from Punjabi to English and English to Punjabi, they can become Translators in Central Govt. Offices in Punjab and in the other states of India and abroad.

- The Students will learn functional aspects of Punjabi Language.

Unit I ਪੰਜਾਬੀ ਭਾਸ਼ਾ ਦਾ ਗਿਆਨ (Punjabi Bhasha da Gyan) (12 hours)

- ਸ਼ਬਦ ਜੋੜਾਂ ਦੇ ਨਿਯਮ ਅਤੇ ਸ਼ਬਦ ਜੋੜ ਸ਼ੁੱਧੀ
Shabad Jorhan de Niyam ate Shabad Jorh Shudhi
- ਵਾਕਾਂ ਦੇ ਨਿਯਮ ਅਤੇ ਵਾਕ ਸ਼ੁੱਧੀ
Vaakan de Niyam ate Vaak Shudhi
- ਨਾਂਵ, ਪੜਨਾਂਵ, ਵਿਸ਼ੇਸ਼ਣ, ਕਿਰਿਆ ਅਤੇ ਕਿਰਿਆ ਵਿਸ਼ੇਸ਼ਣ ਦੀ ਵਰਤੋਂ
Naav, Parhnaav, Visheshan, Kirya ate Kirya Visheshan di Varton
- ਸੰਬੰਧਕ ਅਤੇ ਯੋਜਕ ਦੀ ਵਰਤੋਂ
Sambandhak ate Yojak di Varton

Unit II ਸ਼ਬਦ ਰਚਨਾ (Shabad Rachna) (9 hours)

- ਅਗੇਤਰ ਅਤੇ ਪਿਛੇਤਰ
Agetar ate Pichhetar
- ਸਮਾਸ
Samaas
- ਲਿੰਗ ਅਤੇ ਵਚਨ
Ling ate Vachan
- ਤਦਭਵ ਤਤਸਮ
Tadbhav Tatsam

Unit III ਵਾਕ ਰਚਨਾ (Vaak Rachna) (12 hours)

- ਕਾਰਕ ਦੀ ਸਮਝ
Karak di Samajh
- ਕਰਤਰੀਵਾਚ ਅਤੇ ਕਰਮਣੀਵਾਚ ਵਾਕ ਰਚਨਾ
Kartarivaach ate Karmanivaach Vaak Rachna
- ਅਖਾਣਾਂ ਦੀ ਵਾਕਾਂ ਵਿਚ ਵਰਤੋਂ
Akhanan di Vakan vich Varton
- ਮੁਹਾਵਰਿਆਂ ਦੀ ਵਾਕਾਂ ਵਿਚ ਵਰਤੋਂ
Muhavrian di Vakan vich Varton

Unit IV ਭਾਸ਼ਾ ਦਾ ਵਿਹਾਰਕ ਪੱਖ (Bhasha da Viharak Pakh) (12 hours)

- ਅਣਡਿੱਠਾ ਪੈਰਾ
Anditha Paira
- ਚਿੱਠੀ ਪੱਤਰ
Chithhi Patar
- ਚਲੰਤ ਵਿਸ਼ੇ ਉੱਤੇ ਪੈਰਾ ਰਚਨਾ
Chalant Vishe utte Paira Rachna
- ਛੋਟੇ ਆਕਾਰ ਦੀ ਕਵਿਤਾ ਅਤੇ ਨਿੱਕੀ ਕਹਾਣੀ ਦੀ ਸਿਰਜਣਾ
Chote Aakar di Kavita ate Nikki Kahani di Sirjana

ESSENTIAL READINGS

- Dhiman, Harbans Singh (Dr.) (2009), **Viharak Punjabi Bhasha ate Viyakaran (Part-1)**, Manpreet Publications, Delhi.
- Dhiman, Harbans Singh (Dr.) (2010), **Viharak Punjabi Bhasha ate Viyakaran (Part-2)**, Manpreet Publications, Delhi.
- Duggal, Narinder Singh (2016), **Punjabi Viyakaran ate Rachnavali**, New Book Company, Delhi.

SUGGESTED READINGS:

- **Lazmi Punjabi-11** (11vi Shreni Layi), Punjab School Sikkhia Board, Sahibzada Ajeet Singh Nagar.
- Duggal, Narinder Singh (2017), CBSE, **Punjabi Viyakaran ate Likhat Rachna (IX-X)**, New Book Company, Delhi.
- Duni Chandar (1987), **Punjabi Bhasha te Viyakaran**, Panjab University, Chandigarh.
- Harkirat Singh (2004), **Saadi Bhasha**, Punjabi University Patiala.
- Harkirat Singh, Giani Lal Singh (1999), **Punjabi Viakaran**, Punjab State University Text Book Borad, Chandigarh.

*(Note: Teachers are free to recommend additionall related standard source books, if required so.)

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to tim

GENERIC ELECTIVES (GE-6) ADHUNIK PUNJABI KAHANI

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------|---------|-----------------------------------|----------|---------------------|--|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| ADHUNIK PUNJABI KAHANI | 4 | 3 | 1 | 0 | Class 12 th pass in any subject | Studied Punjabi up to 8th Standard or Working knowledge of Punjabi |

Credits: 4

L/T/P=3/1/0

LEARNING OBJECTIVES:

- To develop a better understanding about the correlation between life and literature.
- To develop skills in literary analysis, including comprehension of the narrative fundamentals like theme as a literary art form.
- To gain an appreciation of different literary styles, voices and approaches in Punjabi short story.
- To develop ethical values, social concerns and awareness about the current issues of society through multiple texts.

LEARNING OUTCOMES:

- Students will be able to understand about the development of different phases of Punjabi short story throughout the course.
- Students will have the ability to apply critical and theoretical approaches to the reading and analysis of concerned literary texts of short-story.
- They will be able to identify, analyse, interpret and describe the critical ideas, values, and themes that appear in the prescribed texts and to understand the ways these ideas, values, and themes inform and impact cultures and societies.

Unit I ਆਧੁਨਿਕ ਪੰਜਾਬੀ ਕਹਾਣੀ: ਸਿਧਾਂਤਕ ਪੱਖ (Adhunik Punjabi Kahani: Sidhantak Pakh)

(12 hours)

- ਪਰਿਭਾਸ਼ਾ ਅਤੇ ਤੱਤ
Paribhasha ate Tatt
- ਨਿਕਾਸ ਅਤੇ ਵਿਕਾਸ
Nikas ate Vikas
- ਪ੍ਰਮੁੱਖ ਪ੍ਰਵਿਰਤੀਆਂ
Pramukh Pravirtian
- ਨਵੇਂ ਝੁਕਾਅ
Nave Jhukaa

Unit II ਪਹਿਲੇ ਦੌਰ ਦੀ ਚੋਣਵੀਂ ਪੰਜਾਬੀ ਕਹਾਣੀ: ਵਿਸ਼ਾ ਅਤੇ ਕਲਾ ਪੱਖ (Pehale Dour di Chonvi Punjabi

Kahani: Visha ate Kala Pakh)

(12 hours)

- ਨਾਨਕ ਸਿੰਘ: ਭੂਆ
Nanak Singh: Bhua
- ਸੁਜਾਨ ਸਿੰਘ: ਸਾਂਝ
Sujaan Singh: Saanjh
- ਸੰਤੋਖ ਸਿੰਘ ਧੀਰ: ਮੰਗੋ
Santokh Singh Dheer: Manngo
- ਸੰਤ ਸਿੰਘ ਸੇਖੋਂ: ਪੇਮੀ ਦੇ ਨਿਆਣੇ
Sant Singh Saikhon: Pemi de Niyane

Unit III ਵਿਚਕਾਰਲੇ ਦੌਰ ਦੀ ਚੋਣਵੀਂ ਪੰਜਾਬੀ ਕਹਾਣੀ: ਵਿਸ਼ਾ ਅਤੇ ਕਲਾ ਪੱਖ (Vichkaarle Dour di

Chonvi Punjabi Kahani: Visha ate Kala Pakh)

(12 hours)

- ਕੁਲਵੰਤ ਸਿੰਘ ਵਿਰਕ: ਸ਼ੇਰਨੀਆਂ
Kulwant Singh Virk: Sherniyan
- ਸੁਖਵੰਤ ਕੌਰ ਮਾਨ: ਮਰਿਆ ਨਹੀਂ ਜਾਂਦਾ
Sukhwant Kaur Maan: Mareya nahi Janda
- ਕਰਤਾਰ ਸਿੰਘ ਦੁੱਗਲ: ਕਰਾਮਾਤ
Kartar Singh Duggal: Karaamaat
- ਪ੍ਰੇਮ ਪ੍ਰਕਾਸ਼: ਗੋਈ
Prem Prakash: Goyi

Unit IV ਨਵੇਂ ਦੌਰ ਦੀ ਚੋਣਵੀਂ ਪੰਜਾਬੀ ਕਹਾਣੀ: ਵਿਸ਼ਾ ਅਤੇ ਕਲਾ ਪੱਖ (Nave Dour di Chonvi Punjabi

Kahani: Visha ate Kala Pakh)

(9 hours)

- ਰਸ਼ਪਿੰਦਰ ਰਸ਼ਿਮ: ਉੱਧੜੀ ਹੋਈ ਗੁੱਡੀ
Rashpinder Rashim: Udharhi Hoyi Guddi
- ਸੁਖਜੀਤ: ਸਤਾਈ ਮੀਲ
Sukhjeet: Sataayi Meel
- ਬਲਬੀਰ ਪਰਵਾਨਾ: ਪਿਤਾ
Balbir Parwana: Pita
- ਬਲਵਿੰਦਰ ਸਿੰਘ ਬਰਾਰ: ਨਵਾਂ ਸਾਲ ਪੁਰਾਣਾ ਸਾਲ
Balwinder Singh Brar: Nava Saal Purana Saal

ESSENTIAL READINGS

- Haribhajan Singh, Kaushal Jagdish, Anjan, Tara Singh (Eds.) (1987), **Katha-Kahani**, Punjabi Academy Delhi.
- Harbhajan Singh (Dr.) (Ed.) (1970), **Katha Punjab**, National Book Trust, Delhi.
- Jaswinder Singh (Dr.), Gurmukh Singh (Dr.) (Eds.), **Katha Sansaar**, Punjabi University, Patiala.

SUGGESTED READINGS:

- Ankhi, Ram Saroop (Ed.) (1988), **Punjabi Kahani**, Punjabi Sahit Academy, Chandigarh.
- Brar, Balwinder Singh (2019), **Jhooth de Aar-Par**, Navyug Publishers, Delhi.
- Dhaliwal, Baldev Singh (2017), **Punjabi Kahani da Itihaas**, Punjabi Academy, Delhi.
- Dhanwant Kaur (2003), **Punjabi Kahani Shastar**, Chetna Parkashan, Ludhiana.
- Frank, G.S (1988), **Nikki Kahani ate Punjabi Nikki Kahani**. Punjabi Writers Cooperative Society Ltd., Ludhiana.
- Ghuman, Bikram Singh (1989), **Punjabi Nikki Kahani: Sidhant te Vikas**, Punjabi Writers Cooperative Society, Ludhiana.
- Harbhajan Singh (2002), **Adhiyan te Adhyapan**, Guru Nanak Dev University, Amritsar.
- Krantipal (2002), **Punjabi Kahani: Ik Samvaad**, National Book Shop, Delhi.
- Singal, Dharampal, Gurlal Singh (1988), **Punjabi Kahani, Naveen Parvirtian**, Guru Nanak Dev University, Amritsar.

* (Note: Teachers are free to recommend additional related standard source books, if required so.)

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-7)
DESH VAND DI PUNJABI KAVITA

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------|---------|-----------------------------------|----------|---------------------|--|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DESH VAND DI PUNJABI KAVITA | 4 | 3 | 1 | 0 | Class 12 th pass in any subject | Studied Punjabi up to 8th Standard or Working knowledge of Punjabi language |

Credits: 4

L/T/P=3/1/0

LEARNING OBJECTIVES:

- To understand the historic relationship between India and Pakistan.
- To summarize and contextualize the events and opinions surrounding the partition of India
- This paper will help the students to understand the Indian history where literature plays a very important role. They will be able to grasp the ideas of partition and human resistance in a much meaningful manner.
- The paper ensures that the students learn the changes in political, social, economic and cultural scenario happening during this chronological span. It will also teach them how to study sources to the changing historical processes.

LEARNING OUTCOMES:

- Students will learn about the history of the Partition of India. They will be introduced to various perspectives of this moment and will contextualize and summarize each.

- Students will be able to develop an understanding of the poet's deep feelings about the partition over a period of time.
- Students will be able to develop an understanding of the writer's deep feelings about the partition over different time periods.
- This course will inspire students to be sensitive towards humanity

Unit I ਦੇਸ਼ ਵੰਡ: ਇਤਿਹਾਸਕ ਪਰਿਪੇਖ (Desh Vand: Itihasak Paripekh) (9 hours)

- ਦੇਸ਼ ਵੰਡ ਦੇ ਬੁਨਿਆਦੀ ਕਾਰਨ
Desh Vand de Buniyadi Kaaran
- ਦੇਸ਼ ਵੰਡ ਦੇ ਸਮਾਜਕ ਅਤੇ ਆਰਥਿਕ ਪ੍ਰਭਾਵ
Desh Vand de Samajak ate Aarthak Prabhav
- ਦੇਸ਼ ਵੰਡ ਦੇ ਰਾਜਨੀਤਕ ਪ੍ਰਭਾਵ
Desh Vand de Rajnitak Prabhaav
- ਦੇਸ਼ ਵੰਡ ਦੇ ਮਾਨਸਿਕ ਅਤੇ ਭਾਈਚਾਰਕ ਪ੍ਰਭਾਵ
Desh Vand de Mansik ate Bhayicharak Prabhaav

**Unit II 1947 ਤੋਂ 1965 ਤੱਕ ਵੰਡ ਦੀ ਕਵਿਤਾ: ਪ੍ਰਸੰਗ ਸਹਿਤ ਵਿਆਖਿਆ, ਵਿਸ਼ਾ ਅਤੇ ਕੇਂਦਰੀ ਭਾਵ
(1947 ton 1965 tak Vand di Kavita: Prasang sahit Viakhiya, Visha ate Kendri Bhaav)**

(12 hours)

- ਗੁਰਮੁਖ ਸਿੰਘ ਮੁਸਾਫਿਰ: ਰਾਵਲਪਿੰਡੀ
Gurmukh Singh Musafir: Rawalpindi
- ਚਰਾਗ਼ਦੀਨ ਦਾਮਨ: 5 ਬੰਦ
Chiragh Din Daaman: 5 Band
- ਅੰਮ੍ਰਿਤਾ ਪ੍ਰੀਤਮ: ਆਖ਼ਾਂ ਵਾਰਿਸ ਸ਼ਾਹ ਨੂੰ, ਪੰਜਾਬ ਦੀ ਕਹਾਣੀ, ਵਿਆਹੁਤਾ ਨਾਰ
Amrita Pritam: Aakhan Waris Shah nu, Punjab di Kahani, Viahuta Naar
- ਜਸਵੰਤ ਸਿੰਘ ਨੇਕੀ: ਕਿਆਮਤ ਦੇਸ਼ ਵੰਡ ਦੀ
Jaswant Singh Neki: Kiamat Desh Vand di

Unit III 1966 ਤੋਂ 2000 ਤੱਕ ਵੰਡ ਦੀ ਕਵਿਤਾ: ਪ੍ਰਸੰਗ ਸਹਿਤ ਵਿਆਖਿਆ, ਵਿਸ਼ਾ ਅਤੇ ਕੇਂਦਰੀ ਭਾਵ (1966 ton 2000 tak Vand di Kavita: Prasang sahit Viakhiya, Visha ate Kendri Bhaav)

(12 hours)

- ਰਤਨ ਸਿੰਘ: ਗੱਠੜੀ ਦਰਦ ਫ਼ਿਰਾਕ ਦੀ
Ratan Singh: Gathhari Dard Firak di
- ਸ. ਸ. ਮੀਸ਼ਾ: ਦੁਸ਼ਮਣੀ ਦੀ ਦਾਸਤਾਨ
S. S. Meesha: Dushmani di Dastaan
- ਅਮਿਤੋਜ: ਲਹੌਰ ਦੇ ਨਾਂ ਖਤ
Amitoz: Lahore de nan Khat
- ਜੋਗਾ ਸਿੰਘ: ਮੁਨਸ਼ੀ ਖ਼ਾਂ
Joga singh: Munshi Khan

Unit IV 2000 ਤੋਂ ਬਾਅਦ ਵੰਡ ਦੀ ਕਵਿਤਾ: ਪ੍ਰਸੰਗ ਸਹਿਤ ਵਿਆਖਿਆ, ਵਿਸ਼ਾ ਅਤੇ ਕੇਂਦਰੀ ਭਾਵ (2000 ton Baad Vand di Kavita: Prsang sahit Viakhiya, Visha ate Kendri Bhaav) (12 hours)

- ਸੁਰਜੀਤ ਪਾਤਰ: ਧਰਤੀ, ਪੱਛੇ ਅਤੇ ਪੁਰਵਈਆਂ, ਉਨ੍ਹਾਂ ਦਾ ਵਿਰਲਾਪ, ਓਸ ਬੰਨੇ
Surjit Patar: Dharti, Pachhon ate Purvayian, Unhaan da Virlap, Os Banne
- ਭੂਸ਼ਣ: ਜਾਂਦੀ ਵਾਰ ਦਾ ਸੱਚ
Bhushan: Jandi Vaar da Sach
- ਅਫ਼ਜ਼ਲ ਸਾਹਿਰ: ਪਾਕਿਸਤਾਨ ਦੀ ਵਾਰ
Afzal Sahir: Pakistan di Vaar
- ਹਰਵਿੰਦਰ ਸਿੰਘ ਭੱਟੀ: ਵੰਡਨਾਮਾ
Harwinder Singh Bhatti: Vandnama

ESSENTIAL READINGS:

- Amarjeet Chandan (Ed.) (2018), **Sann Santaali (Punjab de Ujaarhe di Shayari)**, Navyug Publishers, New Delhi.
- Jolly, Jagjit Kaur (2008), **Pakistani Punjabi Kavita: Samaj-Sabhiyacharak Adhiyan**, Lokgeet Parkashan, Chandigarh.
- Deepak Manmohan Singh (1988), **Desh Vand de Punjabi Sahit ute Paye Prabhaav**, Lahore Book Shop, Ludhiana.

SUGGESTED READINGS:

- Anita, Inder Singh (1987), **The Origin of the Partition of India 1936-1947**, Oxford University Press, Delhi.
- Bakshi, S.R (1990), **Congress, Muslim League and Partition of India**, Deep and Deep Publication, New Delhi.
- Chandra, Bipan ate Hor, (1972), **Sutantrata Sangraam**, National Book Trust, Delhi.
- Chandra, Bipan (2009), **History of Modern India**, Orient Blackswan, Delhi.
- Fauja Singh (1972), **A Brief Account of Freedom Movement in the Punjab**, Punjabi University, Patiala.
- Gurudatt (1960), **Desh Ki Hatya**, Bhartiya Sahitya Sadan, Navi Delhi.
- Kaloti, Keval (1993), **Honi ik Desh Di**, Ravi Sahit Prakashan, Amritsar.
- Kirpal Singh (1972), **Punjab Da Batwara**, Punjabi University, Patiala.
- Seekri, S.L. (2003), **Bharat da Rashtari Andolan ate Sanvidhanak Vikas (1858-1947)**, Punjabi University, Patiala.
- Seetal, Sohan Singh (2012), **Punjab da Ujaarha**, Lahore Book Shop, Ludhiana.

*(Note: Teachers are free to recommend additionall related standard source books, if required so.)

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-8)
DESH VAND DI PUNJABI KAHANI

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF
THE COURSE**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------|---------|-----------------------------------|----------|---------------------|--|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DESH VAND DI PUNJABI KAHANI | 4 | 3 | 1 | 0 | Class 12 th pass in any subject | Studied Punjabi up to 8th Standard or Working knowledge of Punjabi language |

Credits: 4

L/T/P=3/1/0

LEARNING OBJECTIVES:

- To understand the historic relationship between India and Pakistan.
- To summarize and contextualize the events and opinions surrounding the partition of India
- This paper will help the students to understand the Indian history where literature plays a very important role. They will be able to grasp the ideas of partition and human resistance in a much meaningful manner.
- The paper ensures that the students learn the changes in political, social, economic and cultural scenario happening during this chronological span. It will also teach them how to study sources to the changing historical processes.

LEARNING OUTCOMES:

- Students will learn about the history of the partition of India. They will be introduced to various perspectives of the National movement and will contextualize and summarize each.
- Students will be able to develop an understanding of the writer's deep feelings about the partition over a period of time and over the different time periods.
- This course will inspire students to be sensitive towards humanity.

Unit I ਦੇਸ਼ ਵੰਡ: ਇਤਿਹਾਸਕ ਪਰਿਪੇਖ (Desh Vand: Itihasak Paripekhh) (9 hours)

- ਦੇਸ਼ ਵੰਡ ਦੇ ਬੁਨਿਆਦੀ ਕਾਰਨ
Desh Vand de Buniyadi Kaaran
- ਦੇਸ਼ ਵੰਡ ਦੇ ਸਮਾਜਕ ਅਤੇ ਆਰਥਿਕ ਪ੍ਰਭਾਵ
Desh Vand de Samajak ate Aarthak Prabhav
- ਦੇਸ਼ ਵੰਡ ਦੇ ਰਾਜਨੀਤਕ ਪ੍ਰਭਾਵ
Desh Vand de Rajnitak Prabhaav
- ਦੇਸ਼ ਵੰਡ ਦੇ ਮਾਨਸਿਕ ਅਤੇ ਭਾਈਚਾਰਕ ਪ੍ਰਭਾਵ
Desh Vand de Mansik ate Bhayicharak Prabhaav

Unit II 1947 ਤੋਂ 1965 ਤੱਕ ਵੰਡ ਦੀ ਕਹਾਣੀ: ਵਿਸ਼ਾ ਅਤੇ ਕਲਾ ਪੱਖ (1947 ton 1965 tak Vand di Kahani: Visha ate Kalaa Pakh) (12 hours)

- ਨਾਨਕ ਸਿੰਘ: ਸੁਨਹਿਰੀ ਜਿਲਦ
Nanak Singh: Sunehari Jild
- ਸੰਤੋਖ ਸਿੰਘ ਧੀਰ: ਮੇਰਾ ਉੱਜੜਿਆ ਗਵਾਂਢੀ
Santokh Singh Dheer: Mera Ujarheya Guwandi
- ਗੁਰਬਖਸ਼ ਸਿੰਘ ਪ੍ਰੀਤਲੜੀ: ਮੁਬੀਨਾ ਕਿ ਸੁਕੀਨਾ
Gurbakhash Singh Preetlari: Mubeena ke Sukeena
- ਮਹਿੰਦਰ ਸਿੰਘ ਸਰਨਾ: ਛਵੀਆਂ ਦੀ ਰੁੱਤ
Mohinder Singh Sarna: Chhahviyan di Rutt

Unit III 1966 ਤੋਂ 2000 ਤੱਕ ਵੰਡ ਦੀ ਕਹਾਣੀ: ਵਿਸ਼ਾ ਅਤੇ ਕਲਾ ਪੱਖ (1966 ton 2000 tak Vand di Kahani: Visha ate Kalaa Pakh) (12 hours)

- ਗੁਰਦਿਆਲ ਸਿੰਘ: ਮੁੜ ਗੁਆਚੀ ਸ਼ੈ
Gurdial Singh: Murh Gwachi Shae
- ਕੁਲਵੰਤ ਸਿੰਘ ਵਿਰਕ: ਖੱਬਲ
Kulwant Singh Virk: Khabbal
- ਹਰਜੀਤ ਅਟਵਾਲ: ਧੁੱਪ ਦੇ ਪੈਰਾਂ ਹੇਠ
Harjit Atwal: Dhupp de Pairaan Heth
- ਵਰਿਆਮ ਸਿੰਘ ਸੰਧੂ: ਪਰਛਾਵੇਂ
Waryam Singh Sandhu: Parchhavein

Unit IV 2000 ਤੋਂ ਬਾਅਦ ਦੀ ਕਹਾਣੀ: ਵਿਸ਼ਾ ਅਤੇ ਕਲਾ ਪੱਖ (2000 ton Baad di Kahani: Visha ate Kalaa Pakh) (12 hours)

- ਖਾਲਿਦ ਹੁਸੈਨ: ਲਕੀਰ
Khalid Hussain: Lakeer
- ਹਰਮਹਿੰਦਰ ਚਹਿਲ: ਪੁੰਨ
Harmohinder Chahal: Punn
- ਭਗਵੰਤ ਰਸੂਲਪੁਰੀ: ਕਿੱਥੇ ਗਈ ਹਮੀਦਾ?

Bhagwant Rasoolpuri: Kithe Gayi Hameeda?

- ਸਾਂਵਲ ਧਾਮੀ: ਮੱਲ੍ਹਮ

Sanwal Dharmi: Mallham

ESSENTIAL READINGS

- Jinder (Ed.) (2015), **1947: Alle Zakhmaan di Dastaan (Bhag Dooja)**, Sangam Publications, Samana, Patiala.
- Jolly, Jagjit Kaur (2008), **Pakistani Punjabi Kavita: Smaj-Sabhiyacharak Adhiyan**, Lokgeet Parkashan, Chandigarh.
- Deepak Manmohan Singh (1988), **Desh Vand de Punjabi Sahit ute Paye Prabhaav**, Lahore Book Shop, Ludhiana.

SUGGESTED READINGS:

- Anita, Inder Singh (1987), **The Origin of the Partition of India 1936-1947**, Oxford University Press, Delhi.
- Bakshi, S.R. (1990), **Congress, Muslim League and Partition of India**, Deep and Deep Publication, New Delhi.
- Chandra, Bipan ate Hor (1972), **Sutantrata Sangraam**, National Book Trust, Delhi.
- Chandra, Bipan (2009), **History of Modern India**, Orient Blackswan, Delhi.
- Fauja Singh (1972), **A Brief Account of Freedom Movement in the Punjab**, Punjabi University, Patiala.
- Kaloti, Keval (1993), **Honi Ik Desh Di**, Ravi Sahit Prakashan, Amritsar.
- Kirpal Singh (1972), **Punjab Da Batwara**, Punjabi University, Patialas.
- Seekri, S.L. (2003), **Bharat da Rashtari Andolan ate Sanvidhanak Vikas (1858-1947)**, Punjabi University, Patiala.
- Seetal, Sohan Singh (2012), **Punjab da Ujaarha**, Lahore Book Shop, Ludhiana.

*(Note: Teachers are free to recommend additionall related standard source books, if required so.)

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-9)
BHARTI GYAN PRABANDH: PRAMUKH CHINTAK

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------------------|---------|-----------------------------------|----------|---------------------|--|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| BHARTI GYAN PRABANDH: PRAMUKH CHINTAK | 4 | 3 | 1 | 0 | Class 12 th pass in any subject | Studied Punjabi up to 8th Standard or Working knowledge of Punjabi language |

Credits: 4

L/T/P= 3/1/0

LEARNING OBJECTIVES:

- To learn about Indian Knowledge System as a beginner.
- To learn basic theories and its various aspects originated in Indian sub-continent.
- To comprehend the meaning of words and to know about the importance of the grammar.
- To learn about the Indian poetics through its basic philosophy.
- To collect information about philosophy of human mind, soul and the world.
- To motivate the students towards good health of their body and mind through Indian yoga and natural medicine tradition from old ages.

COURSE OUTCOMES:

- Students will learn about rich heritage of classical Indian knowledge system.
- They will learn about basic Indian thinkers and use of their theories.
- They will be able to acquire knowledge about the development of different philosophies and their basic assumptions.
- They will also learn the Indian philosophy about the harmony of body, mind and soul for the purpose of peace of mind and the world.
- Students will be able to understand the value of yoga for a healthy body.
- They will come to know about the rich heritage of research in the field of medicines for betterment of the mankind.

Unit I: ਭਾਰਤੀ ਭਾਸ਼ਾ ਗਿਆਨ ਪ੍ਰਬੰਧ: ਪ੍ਰਮੁੱਖ ਚਿੰਤਕ

(Bharti Bhasha Gyan Prabandh: Pramukh Chintak)

(12 hours)

- ਯਾਸਕ: ਮੁੱਢਲੀ ਜਾਣ-ਪਛਾਣ
Yaska: Mudhali Jan-Pachhan
- ਪਾਣਿਨੀ: ਮੁੱਢਲੀ ਜਾਣ-ਪਛਾਣ
Panini: Mudhali Jan-Pachhan
- ਪਾਤੰਜਲੀ: ਮੁੱਢਲੀ ਜਾਣ-ਪਛਾਣ
Patanjali: Mudhali Jan-Pachhan
- ਭਰਥਰੀ ਹਰੀ: ਮੁੱਢਲੀ ਜਾਣ-ਪਛਾਣ
Bhartrihari: Mudhali Jan-Pachhan

Unit II: ਭਾਰਤੀ ਕਾਵਿ ਸ਼ਾਸਤਰੀ ਗਿਆਨ ਪ੍ਰਬੰਧ: ਪ੍ਰਮੁੱਖ ਚਿੰਤਕ

(Bharti Kaav Shasteri Gyan Prabandh: Pramukh Chintak)

(12 hours)

- ਭਰਤਮੁਨੀ: ਮੁੱਢਲੀ ਜਾਣ-ਪਛਾਣ
Bharatmuni : Mudhali Jan-Pachhan
- ਭਾਮਹ: ਮੁੱਢਲੀ ਜਾਣ-ਪਛਾਣ
Bhamaha: Mudhali Jan-Pachhan
- ਵਾਮਨ: ਮੁੱਢਲੀ ਜਾਣ-ਪਛਾਣ
Vaaman : Mudhali Jan-Pachhan
- ਆਨੰਦਵਰਧਨ: ਮੁੱਢਲੀ ਜਾਣ-ਪਛਾਣ
Aanandvardhan : Mudhali Jan-Pachhan

Unit III: ਭਾਰਤੀ ਦਰਸ਼ਨ ਪ੍ਰਬੰਧ: ਪ੍ਰਮੁੱਖ ਚਿੰਤਕ

(Bharti Darshan Prabandh: Pramukh Chintak)

(12 hours)

- ਬੁੱਧ: ਮੁੱਢਲੀ ਜਾਣ-ਪਛਾਣ
Budh: Mudhali Jan-Pachhan
- ਮਹਾਵੀਰ: ਮੁੱਢਲੀ ਜਾਣ-ਪਛਾਣ
Mahaveer: Mudhali Jan-Pachhan
- ਆਦਿ ਸੰਕਰਾਚਾਰੀਆ: ਮੁੱਢਲੀ ਜਾਣ-ਪਛਾਣ
Adi Sankarachariya: Mudhali Jan-Pachhan
- ਗੁਰੂ ਨਾਨਕ: ਮੁੱਢਲੀ ਜਾਣ-ਪਛਾਣ
Guru Nanak: Mudhali Jan-Pachhan

Unit IV: ਭਾਰਤੀ ਸਿਹਤ ਅਤੇ ਯੋਗ ਚਿਕਿਤਸਾ ਗਿਆਨ ਪ੍ਰਬੰਧ: ਪ੍ਰਮੁੱਖ ਚਿੰਤਕ

(Bharti Sehat Ate Yog Chikitsa Gyan Prabandh: Pramukh Chintak) (9 hours)

- ਸੁਸ਼ਰੁਤ: ਮੁੱਢਲੀ ਜਾਣ-ਪਛਾਣ
Sushruta: Mudhali Jan-Pachhan
- ਚਰਕ: ਮੁੱਢਲੀ ਜਾਣ-ਪਛਾਣ
Charak: Mudhali Jan-Pachhan
- ਪਾਤੰਜਲੀ: ਮੁੱਢਲੀ ਜਾਣ-ਪਛਾਣ
Patanjali: Mudhali Jan-Pachhan
- ਵਾਗਭਟ: ਮੁੱਢਲੀ ਜਾਣ-ਪਛਾਣ

ESSENTIAL READINGS

- Boota Singh Brar (Dr.) (2014), **Bhasha Vigyan: Sidhant te Vihar**, Lahore Books, Ludhiana.
- Harbans Singh (Prof.), Joshi, L.M., (2016), **Sansar De Dharam**, Publication Bureau, Punjabi University, Patiala.
- Prem Prakash Singh (Prof.) (1988), **Bharti Kaav Shaster**, Punjabi Sahit Academy, Ludhiana.
- <https://www.shivajicollege.ac.in/sPanel/uploads/econtent/5119d543d5d6ee290be56249598d0782.pdf>

SUGGESTED READINGS:

- Chaudhary, Satyadev (Dr.) (1973), **Kavya Shaster ke Paridrishya**, Parimal Publications, Delhi.
- Chopra, Iqbal Narain (Dr.) (1989), **Bharti Darshan**, Publication Bureau, Punjabi University, Patiala.
- Jaggi, Gursharan Kaur (Dr.) (2014) **Bharti Kaav Shaster: Sarup Ate Sidhant**, Arsee Publishers, New Delhi.
- Khoj Patrika **Punjabi Viakaran Vishesh Ank**, Publication Bureau, Punjabi University, Patiala.
- Nirakari, R.D, (Dr.) (1994), **Bharti Darshan**, Publication Bureau, Punjabi University, Patiala.
- Sidhu, Paramjit Singh (2012), **Shabad: Sankalap Ate Saroop (Punjabi Viakaran De Paripekha Vich)**, Ravi Sahit Parkashan, Amritsar.
- Yogender Pratap Singh (Dr.) (1985), **Bharti Kavya Shaster**, Lokbharti Prakashan, Ilahabad.

INTERNET RESOURCES:

- <https://archive.org/details/in.ernet.dli.2015.401868/mode/2up>
- <http://www.panjabdigilib.org/webuser/searches/displayPage.jsp?ID=8949&page=1&CategoryID=1&Searched=>
- https://en.wikipedia.org/wiki/Category:Ancient_Sanskrit_grammarians

*(Note: Teachers are free to recommend additional related standard source books, if required so.)

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DEPARTMENT OF GRS (FRENCH)

BA (Hons.) French

Category I

DISCIPLINE SPECIFIC CORE COURSE – 4:

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Language in Context: Developing Reading and Writing Skills (2) | 4 | 3 | 1 | 0 | Class 12TH Passed | NIL |

Learning Objectives

In semester 2, students will learn

- Describe their daily schedule
- Write about a TV program or series.
- Write and reply to an invitation
- Describe an object
- Describe his food habits and preferences
- Read a menu
- Prepare a menu
- Read a recipe.
- Write a recipe
- Describe a past event
- Describe their projects

Course Learning Outcomes

At the end of Semester 2, students will be able to

- read simple texts and answer questions on them.
- write on subjects pertaining to themselves and their immediate environment.
- complete Level A1 of reading and writing skills as prescribed in the Common European Framework

SYLLABUS OF DSC-2¹

¹A text book contains 6-8 modules/units called *unité*. Each unite with the exception of *unité 0* which is the introductory unit comprises 4 lessons. Therefore the syllabus is given in terms of the text book unit being covered along with the content of the 4 lessons with a total duration of the number of weeks needed to cover a *unité* of 4 lessons.

Unité 5: (Lessons 1-4 + Project): 9 hours

Reading Comprehension: Reading and understanding simple texts on daily activities of different people information in the form of statistics or tables, daily TV program schedules posters and emails announcing events (cultural and sportive) and answering questions on them.

Writing : Write a short text, an email describing one's daily schedule, a cultural or sportive event, preparing a time table, sending, accepting or refusing an invitation.

Grammar: Reflexive verbs, structure *Aller + infinitive* used to describe events in the immediate future (Futur proche) prepositions of time. Modal verbs (*pouvoir, vouloir, devoir savoir* in the present), structure *il faut + infinitive*

Vocabulary: Daily activities, sports and hobbies, time tables, places for outings (restaurant, festivals, etc clothing and sports accessories, structures to invite accept or refuse an invitation. describing one's feelings.

Intercultural: Sports, sport competitions, festivals.

Practical component (if any) – NIL

Unité 6: (Lessons 1-4 + Project): 12 hours

Reading Comprehension: To read short texts or dialogues on collections (coins, post cards etc), on fashion, on products in the supermarket and answer simple questions on them. Rearrange a short text in order.

Writing: Prepare a sales poster for a shop, describe clothes, answer an advertisement for a clothes sale.

Grammar: Conjunctions of coordination (et and ou), expression de but (objective) with the structure "*pour + infinitif*", Interrogative adjectives (*quel, quelle, quels, quelles*), demonstrative adjectives (*ce, cet, cette, ces*).

Vocabulary: Everyday objects, purchases, market, stores, different types of payment methods, colors, clothes and clothing accessories, sales,

Intercultural: shops/stores in France and francophone countries, currency in France and francophone countries, fashion.

Unité 7: (Lessons 1-4 + Project): 12 hours

Reading Comprehension: Read short texts on alimentary habits in France and francophone countries, a recipe, a menu, restaurant review and answer questions on them. Put recipe instructions in order, put a dialogue in order, describing a past event.

Writing: Write a recipe, a restaurant review, prepare a menu.

Grammar: Partitive articles, expressions of quantity, le passé composé (past perfect).

Vocabulary : Names of ingredients, meals, measurements and quantities, restaurant.

Intercultural : Meals in France and francophone countries,, traditional recipes, Table manners.

Unité 8: (Lessons 1-4 + Project): 12 hours

Reading Comprehension: Read an interview with an explorer, a short description about a trip, description of a futuristic airport, a hotel brochure, understand a train ticket and train time table, a short dialogue at the lost baggage counter of an airport and answer questions on them.

Writing: Write about a trip you have undertaken, about your last vacation fill in a lost baggage form.

Grammar: Markers of time (*dans, depuis, il y a*), Comparative, expression of cause (*pourquoi, parce que*) and consequence (*donc, alors*)

Vocabulaire : Nature, weather, travel, journey by air or by train.

Intercultural: travel accounts of French and francophone travellers.

Practical component (if any) – NIL

Essential/recommended readings:

Any of the textbooks given below may be prescribed.

1. Abi Mansour D, Anthony S, Soucé A, Fenoglio P, Papin K. Vergues M :“*Odysée A1, Méthode de français*”, CLÉ International, France, 2021, Unités 5-8.
2. Jegou D, Vial C : « *La Classe A 1, Méthode de français* »,CLÉ International, 2019, Unités 4-6.
3. Cocton Marie-Noëlle, Pommier Emilie, Ripaud Delphine, Rabin Marie : « *L’Atelier A1, Méthode de français* », Les Éditions DIDIER, France, 2019, Unités 5-8.
4. Chahi Fatiha, Denyer Monique, Gloaneac Audrey, Briet Geneviève, Collige-Neunschwander Valérie (capsules de phonétique), Fouillet Raphaëlle (précis de grammaire) : « *Défi – 1 Méthode de français* », Éditions Maison des Langues, 2018, Unités 5-8
5. Alcaraz Marion, Braud Céline, Calvez Aurélien, Cornuau Guillaume, Jacob Anne, Vidal Sandrine : « *Edito- A 1 Méthode de français (2^e édition)* », Editions DIDIER FLE, 2022, Unités 6-10.
6. Rio Lénia : “*Odysée A1, Cahier d’activités*”, CLÉ International, France, 2021, Unités 5-8.
7. Chanéac-Knight Laetitia : « *La Classe A 1, Cahier d’activités* », CLÉ International, 2019, Unités 4-6.

8. Cocton Marie-Noëlle (coordination pédagogique), Pommier Émilie, Ripaud Delphine, Rabin Marie : « *L'Atelier A1, Cahier d'activités* », Les Éditions DIDIER, France, 2019, Unités 5-8.
 9. Chahi Fatiha, Denyer Monique, Gloaneac Audrey, Briet Geneviève, de Rongé Camille (phonétique), Verhulst Nancy (phonétique), Horquin Alexandrin (DELFL) : « *Défi – 1 Cahier d'activités* », Éditions Maison des Langues, 2018, Unités 5-8
- Additional material may be provided by the Department.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 5

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Language in Context: Developing Listening and Speaking Skills (2) | 4 | 3 | 1 | 0 | Class 12TH passed | NIL |

Learning Objectives

In Semester 1, students will learn to

- Ask for and give information about daily activities.
- Speak about his personal preferences, likes and dislikes
- Ask about and give information on a planned outing (cultural, sportive etc.)
- Accept or refuse an invitation.
- Describe an object, present its characteristics.
- Express his opinion, agreement or disagreement on a subject.
- Carry out simple purchases for goods and services.
- Talk about his alimentary preferences.
- Express measurements and quantities..
- Reserve a table in a restaurant.
- Order in a restaurant.
- Talk about past events
- Present his projects
- Ask for and give information.
- Ask for and propose to help

Learning outcomes

At the end of Semester 1, students will be able to

- listen to and understand simple texts and answer questions on them.
- talk on subjects pertaining to his/her immediate environment.
- interact in simple everyday situations.
- attain Level A1 of listening and speaking skills as described in the Common European Framework.

SYLLABUS OF DSC- 5²

Unité 5: (Lessons 1-4 + Project): 9 hours

Listening Comprehension: Watch a video or listen to a short text where one speaks about one's daily activities, makes plans for an outing and answer simple questions on them.

Speaking: Talk about your daily activities, about your likes and dislikes, , ask questions to a friend, to identify his/her likes and dislikes, discuss your schedule for the day to fix an appointment/meeting, invite a friend to an event, explain a problem to a friend,, propose a solution to a problem, present a tradition in your country and compare it to a tradition in a francophone country.

Phonetics: Intonation used to ask a question. Opposition of non nasal and nasal sounds.

Vocabulary: Daily activities, sports and hobbies, time tables, places for outings (restaurant, festivals, etc clothing and sports accessories, structures to invite accept or refuse an invitation. describing one's feelings.

Intercultural: Sports, sport competitions, festivals.

Unité 6: (Lessons 1-4 + Project): 12 hours

Listening comprehension: listen to a short announcement promoting a product in the supermarket, a short description of a store, an interview by a journalist of customers in a story, a short advertisement on the radio, watch a video and answer questions on them.

Speaking: Ask for advice in a store on a gift for a friend, make and present a weekly budget, describe clothes and clothing accessories, speak about fashion in your country, short dialogues.

Phonetics: Introduction to semi vowels, nasal vowels

Vocabulary: Everyday objects, purchases, market, stores, different types of payment methods, colors, clothes and clothing accessories, sales,

Intercultural: shops/stores in France and francophone countries, currency in France and francophone countries, fashion.

² A text book contains 6-8 modules/units called *unité*. Each unite with the exception of unite 0 which is the introductory unit comprises 4 lessons. Therefore the syllabus is given in terms of the text book unit being covered along with the content of the 4 lessons with a total duration of the number of weeks needed to cover a *unité* of 4 lessons.

Unité 7: (Lessons 1-4 + Project): 12 hours

Listening Comprehension: listen to short texts and associate different objects used in the kitchen and to set a table, listen to a dialogue between a client and a waiter, watch a video on table manners and answer questions on them. Watch a video and complete a text.

Speaking: Talk about one's alimentary preferences, one's daily meals, ask for and give information about the ingredients in a recipe or in a dish, reserving a table in a restaurant dialogue between a client and a waiter in different situations (ordering a meal, expressing one's discontent at the service in a restaurant etc), talking about/narrating past events.

Phonetics: Revision of nasal vowels, accent in a sentence, sentence rhythms.

Vocabulary : Names of ingredients, meals, measurements and quantities, restaurant.

Intercultural : Meals in France and francophone countries,, traditional recipes, Table manners.

Unité 8: (Lessons 1-4 + Project): 12 hours

Listening Comprehension: listen to a reportage, an eyewitness account on a visit to another country, announcements in a plane at the airport and answer questions on them

Speaking: Give one's impressions about a country which one has lived in or visited, compare two countries or towns in terms of visiting them as a tourist, talk about your travelling preferences, a dialogue between you and a hotel receptionist on arrival at the hotel, a dialogue between you and the agent at the lost baggage counter, a telephone conversation between your friend and you after having lost your luggage, description of the luggage you have lost)

Phonetics: Semi vowels and minimal pair "ge" and "je"

Vocabulaire : Nature, weather, travel, journey by air or by train.

Intercultural: travel accounts of French and francophone travellers.

Practical component (if any) – NIL

Essential/recommended readings:

Any of the textbooks given below may be prescribed.

1. Abi Mansour D, Anthony S, Soucé A, Fenoglio P, Papin K. Vergues M :*"Odysée A1, Méthode de français"*, CLÉ International, France, 2021, Unités 5-8.
2. Jegou D, Vial C : *« La Classe A 1, Méthode de français »*, CLÉ International, 2019, Unités 4-6.
3. Cocton Marie-Noëlle, Pommier Emilie, Ripaud Delphine, Rabin Marie : *« L'Atelier A1, Méthode de français »*, Les Éditions DIDIER, France, 2019, Unités 5-8.

4. Chahi Fatiha, Denyer Monique, Gloaneac Audrey, Briet Geneviève, Collige-Neunschwander Valérie (capsules de phonétique), Fouillet Raphaëlle (précis de grammaire) : « *Défi – 1 Méthode de français* », Éditions Maison des Langues, 2018, Unités 5-8
 5. Alcaraz Marion, Braud Céline, Calvez Aurélien, Cornuau Guillaume, Jacob Anne, Vidal Sandrine : « *Edito- A 1 Méthode de français (2^e édition)* », Editions DIDIER FLE, 2022, Unités 6-10.
 6. Rio Lénia : “*Odysée A1, Cahier d’activités*”, CLÉ International, France, 2021, Unités 5-8.
 7. Chanéac-Knight Laetitia : « *La Classe A 1, Cahier d’activités* », CLÉ International, 2019, Unités 4-6.
 8. Cocton Marie-Noëlle (coordination pédagogique), Pommier Émilie, Ripaud Delphine, Rabin Marie : « *L’Atelier A1, Cahier d’activités* », Les Éditions DIDIER, France, 2019, Unités 5-8.
 9. Chahi Fatiha, Denyer Monique, Gloaneac Audrey, Briet Geneviève, de Rongé Camille (phonétique), Verhulst Nancy (phonétique), Horquin Alexandrin (DELF) : « *Défi – 1 Cahier d’activités*», Éditions Maison des Langues, 2018, Unités 5-8
- Additional material may be provided by the Department.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Language through texts (2) | 4 | 3 | 1 | 0 | Class 12TH Passed | NIL |

Learning Objectives

- Introduction to extracts from contemporary literary texts of both French and francophone writers.
- Introduction to varied cultural themes of France and francophone countries to develop vocabulary and written expression.
- Creating awareness of present day France through short journalistic texts.
- Development of language competence (reading skills, comprehension and vocabulary)

Learning Outcomes

At the end of semester 2, a student will be able to

- read and understand a short literary text adapted for students of level A1 and to answer questions on the same.
- Read and understand a short culture based text adapted for students of level A1 and to answer questions on the same.
- read and understand a short journalistic text adapted for students of level A1 and to answer questions on the same.

SYLLABUS OF DSC-6

Unit 1: Literary texts³ 15 hours

1. Céline, Louis Ferdinand: « *Voyage au bout de la Nuit* »
2. Anouilh, Jean : « *Antigone* »
3. Sagan Françoise : « *Bonjour Tristesse* »
4. Le Clézio, J-M Gustave : « Lullaby » in *Mondo et autres histoires*
5. Condé Maryse : « *Moi, Tituba sorcière* »
6. Reza Yasmina : « *Trois versions de la vie* »

Unit 2: Texts on culture and civilisation⁴ 15 hours

1. Les Loisirs
2. Le Travail
3. Le Système de santé
4. La France urbaine
5. La France rurale

³ The titles cited above are examples of texts. The teacher can bring in other literary texts adapted to the level of students.

⁴ The teacher can introduce themes and material adapted to the level of the students.

6. Les Vacances

Unit 3: Short texts from newspapers. 15 hours

Material will be made available by the Department as journalistic texts have to refer to events in real time.

Practical component (if any) - NIL

Essential/recommended readings

To be compiled and provided by the Department.

1. Blondeau Nicole, Allouache Ferroudja, Né Marie-Françoise « *Littérature progressive du français, A1-A2 niveau débutant* » (2^e édition avec 600 activités), CLÉ, International, 2019.
2. Carlo Catherine, Causa Marielle : « *Civilisation Progressive du français, A1, niveau débutant* » (3^e édition avec 450 activités), CLÉ International, 2019.
3. “ *Le plaisir de lire en français* ” Level A1 romans illustrés, Les Éditions DIDIER
4. *Le Journal des Enfants*: A weekly newspaper for young learners.

Additional material may be provided by the Department.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category III

BA (Prog.) with French as Minor (Non-Major)

DISCIPLINE SPECIFIC CORE COURSE (DSC-2): French in Context: Basic Level – 2

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|-------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| French in Context: Basic Level-2 | 4 | 3 | 1 | NIL | Passed Class XII | None |

Learning Objectives: (Reading, Writing, Listening and Speaking):

In Semester 2, the student will learn to

- Read and understand simple documents, texts, emails describing one's routine, sports, shops, menus, recipes, weather report, travelogues etc.
- Listen to and understand basic phrases/ dialogues concerning one's daily routine, hobbies, purchases, recipes, etc.
- Present orally one's routine, one's likes and dislikes, express one's opinion, give advices...
- Engage in a simple conversation in everyday situations such as making purchases, talking about the weather, ordering a meal, etc.
- Describe past events and talk about recent events and plans.
- Describe a person physically and morally.
- Accomplish guided writing activities. A few sentences, short text, email describing one's daily routine, hobbies, preparing menus, writing recipes, weather report, travelogues...

Learning outcomes: (Reading, Writing, Listening and Speaking):

At the end of Semester 2, a student will

- be able to read, listen to and understand simple texts so as to answer questions on them;
- be able to write and talk on subjects pertaining to his/her immediate environment;
- interact in simple everyday situations.
- attain Level A1 of the Common European Framework (CEF).

SYLLABUS OF DSC-2⁵

Dossier 5 Lessons 1-6 + Project 12 hours

⁵ A text book contains 6-8 modules/units called *dossier*. Each dossier with the exception of unit 0 which is the introductory unit comprises 6 lessons. Therefore, the syllabus is given in terms of the text book unit being covered along with the content of the 6 lessons with a total duration of the number of weeks needed to cover a dossier of 6 lessons. In Semester 2, the remaining units of the text book will be covered i.e from Unit 5-8.

Reading Comprehension: Read content of an article (online newspaper, magazine etc.) , learning diary, biography of Francophone writers, extract of a literary text and answer questions based on them.

Writing: Make a list of things you did to improve your French language skills and compare with others in your class, make a list of 5 top young talented people of your country, write biography of a writer from your country who has won a prize in literature, present your favourite book and describe its protagonist, describe a famous chef in your country.

Grammar: *passé composé*, *passé récent*, *futur proche* , verb *Dire* (present tense), time markers, the structure *être* + adjective, the structure *avoir* + noun + adjective, the adjective *même*, usage of *passé composé* to talk about past events, usage of present tense to talk about current events, imperative.

Listening comprehension: Listen to interviews, radio programs and answer questions based on them.

Speaking: Describe past events and recent events and plans, present biography and describe a person physically and give advices.

Phonetics: The pronunciation of *viens* /vient[vj] and *viennent* [vjɛn], identify the silent e.

Vocabulary: Indicators of time, words used to describe one's education, success and plans, certain important stages of a person's life, physical description of a person and resemblances, words related to the job of a restaurant owner, newspapers and reports.

Cultural: Read articles in the press in order to discover and understand the world better.

Dossier 6 Lessons 1-6 + Project

12 hours

Reading Comprehension: Read the contents of a webpage of a travel agency(travel itinerary), travel pamphlet, webpage of a guest house or hotel, travel diary, travel testimonials and answer questions based on them.

Writing: Make a travel plan for visiting a Francophone destination (type of travel, describe this Francophone destination , its location on map), choose any three cities of your choice and describe them, associate a colour with these cities,etc., write an article on a unique type of stay available in your country to attract Francophone tourists, write a column for a travel web page on top destinations in your country to visit according to the climate or season of the place, write a travel diary and describe your experiences.

Grammar: *Future Simple*, the structure *Il faut*, pronoun *y* , place of qualifying adjectives, present tense of IR verbs, structures to talk about climate and weather forecast, express emotions and feelings.

Listening comprehension: Listen to a telephonic conversation, radio program, audio post card, interviews, weather forecast, audio travel diary and answer questions based on them.

Speaking: Understanding the itinerary of a stay, choose a destination and travel package, describe a city or a place, describe types of accommodation, talk about seasons and climate, express one's emotions and feelings.

Phonetics: Nasal vowel [ã], consonant root system.

Vocabulary: Words related to travel, expressions of place, colours, adjectives for describing a place, different parts of the house and adjectives to describe them, weather , climate, months and seasons, emotions and feelings

Cultural: Francophone countries and overview of Francophony in 2015.

Dossier 7 Lessons 1-6 + Project

12 hours

Reading Comprehension: Read and understand the contents of a menu, webpage, article(magazine or newspaper), observe photofit of a reader of a paperbook and answer questions based on them.

Writing: Compose an ideal menu choosing the French dishes and specialities available in French restaurants in your city or country, prepare the menu of a French meal precising the quantity , create and compare photofit of an average reader of your class group and country (average age, qualification, city, number of books read, type of books read etc.) . Write an article on evolution or transformations in French gastronomy(previously and currently) and answer questions based on them.

Grammar: Indefinite article, partitive article, express definite quantities, pronoun *en*, structures for comparison, *imparfait*, expressions of time (past), verb *Payer* in present tense, structures for understanding and receiving a client, French reciprocal pronomial verbs.

Listening comprehension: Listen to interviews, conversations , audio article, report, radio programs and answer questions based on them.

Speaking: Give an opinion, make a purchase, compare one's habits, talk about changes from yesterday to today, buy clothes, give positive or negative judgements about your favourite places or monument in your city or country.

Phonetics: Various French sounds, expressive intonation.

Vocabulary: Food items , ingredients , components of a menu, make a purchase, words related to gastronomy, reading , clothes and accessories, structures used to give negative or positive judgement.

Cultural: French export products or presence of French products in other countries, slogans.

Dossier 8 Lessons 1-6 + Project

9 hours

Reading Comprehension: Read and understand student testimonials about their educational experiences or journey, restaurant reviews and answer questions based on them.

Writing: Write an article on student's testimonials about their educational journey, plan a costume party, create a profile on a website to meet locals while travelling and share a meal at their house, write your suggestions and advices for organising a party.

Grammar: *Imparfait*, *passé composé* and present tense, structures to place an order in a restaurant, personal pronouns : direct object (*le, la, les*), and indirect object (*lui, leur*) , relative pronouns (*qui, que*), prepositions *chez/avec/sans* + emphatic pronouns, structures for giving an opinion or an advice.

Listening comprehension: Listen to audio testimonials, conversations, interviews, and answer questions based on them.

Speaking: Talk about one's educational journey of learning French, describe a restaurant, place an order, choose an outfit , describe a person or a thing, recommend a film or a show, organise a party.

Phonetics: Various French sounds.

Vocabulary: Words to talk about one's educational journey, adjectives and expressions to describe a restaurant, place an order in a restaurant, buy and rent clothes, words related to a meal, films and shows, festive events (festival, birthday party etc.).

Cultural: Program or schedule of a cultural event.

Practical component (if any) - NIL

Essential/recommended readings: Any of the text books given below may be prescribed:

1. Hirschsprung Nathalie, Tricot Tony avec la collaboration de d'Abreu Sophie et Veillon Anne (sons du français), Pardo Emilie (s'exercer), Mous Nelly (DELF) : « *Cosmopolite A1 Méthode de français* », Hachette Français langue étrangère, 2017 Dossiers 5-8.
2. Cocton Marie-Noëlle, Pommier Emilie, Ripaud Delphine, Rabin Marie : « *L'Atelier A1, Méthode de français* », Les Éditions DIDIER, France, 2019, Unités 5-8.
3. Chahi Fatiha, Denyer Monique, Gloaneac Audrey, Briet Geneviève, Collige-Neunschwander Valerie (capsules de phonétique), Fouillet Raphaëlle (précis de grammaire) : « *Défi – 1 Méthode de français* », Éditions Maison des Langues, 2018, Unités 5-8.
4. Abi Mansour D, Anthony S, Soucé A, Fenoglio P, Papin K. Vergues M: « *Odysée A1, Méthode de français* », CLÉ International, France, 2021, Unités 5-8.
5. Alcaraz Marion, Braud Céline, Calvez Aurélien, Cornuau Guillaume, Jacob Anne, Vidal Sandrine : « *Edito- A 1 Méthode de français (2^e édition)* », Editions DIDIER FLE, 2022, Unités 6-10.
6. Hirschsprung Nathalie, Mater Anais, Mathieu-Benoit Emilie, Mous Nelly, Tricot Tony : « *Cosmopolite A1 Cahier d'activités* » , Hachette Français langue étrangère, 2017 Dossiers 5-8.
7. Cocton Marie-Noëlle (coordination pédagogique), Pommier Émilie, Ripaud Delphine, Rabin Marie : « *L'Atelier A1, Cahier d'activités* », Les Éditions DIDIER, France, 2019, Unités 5-8.
8. Chahi Fatiha, Denyer Monique, Gloaneac Audrey, Briet Geneviève, de Rongé Camille (phonétique), Verhulst Nancy (phonétique), Horquin Alexandrin (DELF) : « *Défi – 1 Cahier d'activités* », Éditions Maison des Langues, 2018, Unités 5-8.
9. Rio Lénia : « *Odysée A1, Cahier d'activités* », CLÉ International, France, 2021, Unités 5-8.
10. Baylocq Marie-Pierre, Brémaud Stéphanie, Campopiano Stefano, Cheilan Clara : « *Edito A1 Cahier d'activités* », Les Éditions DIDIER FLE, 2022, Unités 6-10.

Additional material may be used.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category-IV

GENERIC ELECTIVE (GE-2)
Basic Communicative French (2)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Communicative French (2) | 4 | 3 | 1 | 0 | 12TH Pass | NIL |

Learning Objectives: Reading and Writing:

In Semester 2, the student will learn

- To describe about past event
- To describe recent events and projects
- To read and understand short simple biographies
- To describe a person
- To read and understand a website
- To describe a trip
- To read and understand an itinerary.
- To describe a specific city or place
- To describe different types of habitations
- To describe the seasons
- To read and understand a menu
- To describe alimentary habits
- To describe clothing and accessories
- To describe one's progress in learning the French language
- To read and understand a menu
- To describe an object
- To describe and compare various types of outings (cinema, theatre etc)

Course Learning Outcomes (Reading and Writing)

At the end of Semester 2, students will be able to

- Read simple texts and answer questions on them.
- Write about subjects pertaining to his/her immediate environment.

- Complete Level A1 of reading and writing skills as described in the Common European Framework.

Learning Objectives (Listening and Speaking)

In Semester 2, students will learn

- To talk about past events
- To talk about recent events and projects
- To describe a person
- To give advice
- To talk about a town or a specific place
- To talk about the weather, seasons and climate
- To express one's emotions
- To give one's opinion about a meal, a restaurant
- To compare food habits in different countries
- To buy clothes
- To do a positive or negative appraisal
- To order a meal in a restaurant
- To describe a person or object
- To organise an event.

Course Learning Outcomes (Listening and Speaking)

At the end of Semester 2, students will be able to

- listen to and understand simple texts and answer questions on them.
- talk on subjects pertaining to their immediate environment.
- interact in simple everyday situations.
- attain Level A1 of listening and speaking skills as described in the Common European framework.

SYLLABUS OF GE 2 (FRENCH)⁶

Dossier 5: Lessons 1-6 + Project

9 hours

Reading Comprehension: to read and understand short texts, web sites on past events, describing people or giving advice and answering questions on them. To read and understand simple biographies.

Writing: To create one's learning diary , to write about past events, projects and experiences, to write a short biography of a well known person, describe a person, to make a list of advice in a specific situation (ex. improve one's French)

Grammar: le Passé composé (past perfect) the structure « *Venir+ de + infinitif* » to refer to recent past events, the structure “ Aller + Infinitif” to refer to events in the immediate future, Verb “dire” (present tense), markers of time. l'impératif.

Listening Comprehension: to listen to and understand interviews, radio programs on an individual's learning experiences, projects, past events and answer questions on them

⁶ A text book contains 6-8 modules/units called *dossier* Each dossier with the exception of unite 0 which is the introductory unit comprises 6 lessons. Therefore the syllabus is given in terms of the text book unit being covered along with the content of the 6 lessons with a total duration of the number of weeks needed to cover a dossier of 6 lessons.

Speaking: to talk about one's learning experiences, projects, past events, present an author, describe a person, give advice in specific situations.

Phonetics: distinction between nasal and oral vowels, e muet, difference between the present and the past perfect tense.

Vocabulary: Words related to project description, numbers, stages in a person's life, a restaurant owner's profession, press and news reports.

Intercultural: Media

Dossier 6: Lessons 1-6 + Project

12 hours

Reading Comprehension: Read and understand an itinerary, a flyer, read and understand a website proposing different types of trips, different types of stays, read and understand a short text describing a city, seasons, climate, a short travelogue and answer questions on them.

Writing: Prepare an itinerary, a flyer, write a short text proposing different types of trips and stays, describing a city, a blog to describe the weather, a short travelogue.

Grammar: Simple future tense, the structure "*il faut*", Pronoun *y*, place of qualifying adjectives, structures to describe weather and the climate, emotions and sentiments.

Listening Comprehension: to listen to and understand telephone conversations, radio programs, interviews referring to travel and weather, listen to and understand a weather report to be able to answer questions on them.

Speaking: Present an itinerary, a francophone country, a city of your choice, different types of stays and lodging, the weather report, your opinion about a trip you went for.

Phonetics: nasal vowels, groups of consonants.

Vocabulary: Terms related to travel and tourism, expressions to situate a town or a country, adjectives of color, rooms in a lodging, weather, months and seasons, emotions and sensations.

Intercultural: Francophone countries

Dossier 7: Lessons 1-6 + Project

12 hours

Reading comprehension: read and understand a menu, read and understand a short text on a specialized grocery store, reading habits of the French, evolution in vocational training, clothes and fashion and answer questions on them.

Writing: Prepare a menu, a list of ingredients with corresponding quantities, describe reading habits in your country, describe clothing and accessories, a restaurant

Grammar: use of indefinite and partitive articles, expressions of quantity, pronoun *en*, the comparative, l'imparfait (past continuous tense) verbe *payer* (present tense)

Listening comprehension: Listen to and understand conversations, interviews, new reports and radio programs on food, restaurants, fashion, clothing and answer questions on them.

Speaking: talk about a restaurant, its menu, the ingredients in a specific dish, reading habits in your country, vocational training today and in the past, describe a person, your favorite city/ tourist destination dialogue between a vendor and a client.

Phonetics: paire minimale p et b, je et sh, intonation nasal vowels.

Intercultural: Gastronomy, clothing.

Dossier 8: Lessons 1-6 + Project

12 hours

Reading Comprehension: to read and understand short texts, first hand reports, websites and Internet forums on learning experiences, restaurants, dressing styles, persons or objects, films and shows and answer questions on them

Writing: describe a restaurant, write a review about a restaurant, describe dressing styles, an object or a person, write about a film, and create your internet profile.

Grammar: use of Present tense, past perfect tense and past continuous tense. Pronouns for the direct object (*le la l' les*), relative pronouns *qui, que/qu'*, Pronoms toniques after *chez, avec and pour*, Structures to express one's opinion and to advise, pronouns for the indirect object (*lui, leur*)

Listening Comprehension: Listen to and understand first hand reports, conversations and interviews dialogues on various cultural events (a film, a show, a masked ball,) a menu, and answer questions on them.

Speaking: talk about one's progress in French, present a restaurant, order a meal, describe a person or an object, give one's opinion on a cultural event, organise an evening..

Phonetics: semi vowels and oral vowels.

Intercultural: Cultural activities

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DEPARTMENT OF GRS (GERMAN)

BA (Hons.) German

Category I

DISCIPLINE SPECIFIC CORE COURSE – 4:

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Language in Context: Developing Reading and Writing Skills (2) | 4 | 3 | 1 | 0 | 12TH Pass | NIL |

Learning Objectives

Enable student to

- read simple texts and answer questions on them;
- be able to write short texts, about subjects pertaining to his/her immediate environment;
- attain Level A 1 of the Common European Framework (CEF).

Learning Outcomes

- Enable students to fully attain A1 Level of reading and writing skills in the concerned language.
- Reading simple texts and answering questions on them.
- Equip students to write about subjects pertaining to his/her immediate environment.

Content:

Reading: Read and understand simple documents, texts, emails containing personal information, cultural aspect of the language, gastronomia, food items and their preparation, describe an ideal locality, express preferences and its frequency, read and understand how to express in an impersonal manner, free time activities, read texts in present continuous and present perfect tense etc.

Writing: Guided writing activities. A few sentences, short text or email describing gastronomia, writing recipes, preferences, free time activities, messages of facebook, articles on different, my ideal locality, climate and its influence on the culture. writing on vacations, blogs on travel, activities related to the recent past etc.

Morphosyntax and Vocabulary: Simple grammatical structures and vocabulary used to write recipes of different dishes, travelling vocabulary, impersonal verbs, vocabulary related to the activities in the free time, blogs, vocabulary related to emails, climate, moods, colors etc.

Intercultural and cocultural: Introduction to German gastronomy, places to visit in the German-speaking world, means of transports, leisure activities, comic strips, German fashion, cinema, comic strips etc.

SYLLABUS OF DSC-4

Unit I

9 hours

Read an official mail.

Write a reply to the same.

Read a formal invitation and respond to it.

Read a text on social networking websites and write about one's preferences.

Write a letter seeking appointment.

- Dative prepositions: aus, nach, mit, etc.
- Dative articles
- Possessive articles in accusative

Unit II

9 hours

Read advertisements to find a suitable accommodation.

Read pamphlets related to furniture and electronic gadgets.

Write a text describing one's accommodation.

Read a text on different ways of living.

Write an invitation for a housewarming party.

Write a response to the invitation.

- Adjective with 'sein', 'sehr' and 'zu'
- Two-way prepositions with dative and accusative

Unit III

9 hours

Read texts about people's daily routine.

Write about one's own routine.

Read job advertisements and cull relevant information.

Write a text about the merits and demerits of a particular job.

- Participle perfect form of verb
- Connectors: and, or etc.

Unit IV

9 hours

Read an article on fashion trends.

Write a text describing your preferences about dressing for different occasions.

Read a text to gather information about the location of specific stores in a shopping mall.

- Verbs with dative
- Personal pronouns in dative
- Demonstrative articles 'dieser, diese...'
- Interrogative articles 'welcher, welche...'
- Participle perfect form of separable verbs

Unit V

9 hours

Read a text on health and fitness.

Write about one's own fitness regimen.

Read a weather report.

Read a travelogue.

Write about one's last vacation.

Write a short note on the places of tourist interest in one's place of residence.

- Imperative forms in 'du' and 'Sie'
- Modal verbs 'dürfen' and 'sollen'

Practical component (if any) - NIL

Suggestive readings

Learning/Teaching Material: Any of the textbooks given below may be prescribed.

1. Dengler, S., Rusch, P., Schmitz, H. (2013). *Netzwerk A1.2: Deutsch als Fremdsprache. Kurs- und Arbeitsbuch mit DVD und 2 Audio--CDs*. Klett Verlag.
2. Dengler, Stefanie; Tanja Mayr-Sieber, Paul Rusch, Helen Schmitz. *Netzwerk neu A1.2: Deutsch als Fremdsprache. Kurs- und Übungsbuch mit Audios und Videos*. Klett Verlag
3. Evans, S., Pude, A., Specht, F. (2021). *Momente A1: Kurs- und Arbeitsbuch*. Hueber Verlag.
4. Evans, S., Pude, A., Specht, F. (2020). *Menschen A1: Kurs- und Arbeitsbuch*. Max Hueber Verlag
5. Höldrich, B. (2010). – *Lesen & Schreiben A1: Buch (Deutsch üben) Taschenbuch*. München: Hueber Verlag.
6. Rusch, P., Schmitz, H. *Einfach Grammatik Deutsch A1 Bis B1*. Berlin: Langenscheidt.
7. Sander, I., Braun, B., Fügert, N., Kotas, O. (2016). *DaF kompakt neu A1: Deutsch als Fremdsprache für Erwachsene. Kurs- und Übungsbuch*. Klett Verlag.
8. Von, Rosa-Maria Dallapiazza, et al. (2011). *Tangram aktuell A1: Kurs- und Arbeitsbuch*. Hueber Verlag.

Additional material may be provided by the Department. Additional material may be provided by the Department.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 5

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Language in Context: Developing Listening and Speaking Skills (2) | 4 | 3 | 1 | 0 | 12TH Pass | NIL |

Learning Objectives **Learning Objectives**

Enable student to

- read simple texts and answer questions on them;
- be able to express on different topics, about subjects pertaining to his/her immediate environment;
- attain complete Level A 1 of the Common European Framework (CEF).

Learning Outcomes

- Enable students to fully attain A1 Level of listening and speaking skills in the concerned language.
- Express ideas on audios listened and answering questions on them.
- Equip students to speak about subjects pertaining to his/her immediate environment.

SYLLABUS OF DSC- 5

Unit I

9 hours

Listen to telephone conversations to gather information regarding the appointment.
Have a conversation wherein an appointment is scheduled for a particular activity.

Conduct an interview on preferred social network websites and present a statistic of the same.

Unit II

9 hours

Plan with a partner, how to arrange things in the room/apartment.

Express one's likes and dislikes about the accommodation.

Listen to a text to find out which accommodation is selected and why.

Listen and note down which furniture is placed in which room.

Describe a room with the help of pictures.

Unit III

9 hours

Talk about any past incident.

Express one's opinion about jobs.

Prepare a telephone conversation about jobs.

Listen to a jumbled telephonic conversation and put it in correct order.

Make a call to get information related to different courses.

Listen to a conversation and note down the professions of the concerned persons.

Unit IV

9 hours

Listen to a conversation to understand the given information about likes and dislikes related to apparels.

Listen to a conversation between a salesperson and a customer in a clothing store.

Simulate a conversation in a clothing store.

Unit V

9 hours

Listen to an interview with fitness experts.

Listen to a conversation with a doctor.

Simulate a conversation with a doctor.

Listen to a text on problems faced by a guest in a hotel.

Simulate a conversation with the guest.

Practical component (if any) - NIL

Essential/recommended readings/Suggestive readings

Learning / Teaching Material: Any of the textbooks given below may be prescribed.

1. Dengler, S., Rusch, P., Schmitz, H. (2013). *Netzwerk A1.2: Deutsch als Fremdsprache. Kurs- und Arbeitsbuch mit DVD und 2 Audio--CDs*. Klett Verlag.
2. Dengler, Stefanie; Tanja Mayr-Sieber, Paul Rusch, Helen Schmitz. *Netzwerk neu A1.2: Deutsch als Fremdsprache. Kurs- und Übungsbuch mit Audios und Videos*. Klett Verlag
3. Evans, S., Pude, A., Specht, F. (2021). *Momente A1: Kurs- und Arbeitsbuch*. Hueber Verlag.
4. Evans, S., Pude, A., Specht, F. (2020). *Menschen A 1: Kurs- und Arbeitsbuch*. Max Hueber Verlag
5. Höldrich, B. (2010). – *Lesen & Schreiben A1: Buch (Deutsch üben) Taschenbuch*. München: Hueber Verlag.
6. Rusch, P., Schmitz, H. *Einfach Grammatik Deutsch A1 Bis B1*. Berlin: Langenscheidt.

7. Sander, I., Braun, B., Fügert, N., Kotas, O. (2016). *DaF kompakt neu A1: Deutsch als Fremdsprache für Erwachsene. Kurs- und Übungsbuch*. Klett Verlag.
8. Von, Rosa-Maria Dallapiazza, et al. (2011). *Tangram aktuell A1: Kurs- und Arbeitsbuch*. Hueber Verlag.

Additional material may be provided by the Department. Additional material may be provided by the Department.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 6:

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Language through texts (2) | 4 | 3 | 1 | 0 | 12 th Pass | NIL |

Learning Objectives

Objective: Enable students to read and understand a short literary/journalistic/ad/song text adapted for students of level A1 and to answer questions on the same.

SYLLABUS OF DSC-6

UNIT I Literary Texts

(9 hours)

The student will learn to read, comprehend and answer simple questions on short stories. The student will also construct simple stories in German.

(A selection will be made from the list below. Any extra material will be provided by the Department)

Stories like *Lotta ist krank*, *Kommt der Zug?*, *Annas Geburtstag* from

<https://www.lernlaterne.de/deutsch/geschichten-a1>

Stories by Nikola Asif like *Endlich Urlaub*, *der Osterhase war da etc.*

[<https://www.dazaf.de/index.php/kurzgeschichten/kurzgeschichten-a1-a2>]

Abschied von Basel from <https://www.engerman.de/>

UNIT II Journalistic Texts

(9 hours)

The student will get familiar with various newspapers in German and be able to read a selection of easy articles and from the list given below. From the difficult newspapers, the student will learn to read selectively, for example some descriptions and news titles.

<https://www.zdf.de/kinder/logo>

<https://www.nachrichtenleicht.de/>

<https://www.dw.com/de/deutsch-lernen/s-2055>

UNIT III Simple Poems

(9 hours)

The student will learn to read, comprehend and answer simple questions on poems.

The student will also learn to compose simple poems.

(A selection will be made from the list below)

Konkrete Poesie by Ernst Jandl, Reinhard Döhl, Timm Ulrichs etc.

Inventur by Günter Eich

Die Ameisen von Joachim Ringelnatz

Bumerang von Joachim Ringelnatz

Some poems from <https://germankitabsolution.com/german-short-poems-for-beginners-deutsch-gedichte-a1-level/>

UNIT IV Simple Audio / Visual Texts/Songs

(9 hours)

(A selection will be made from the list below)

<https://learngerman.dw.com/de/nicos-weg/c-36519687>

<https://learngerman.dw.com/de/deine-band/s-60637027>

<https://learngerman.dw.com/de/das-deutschlandlabor/c-53074503>

<https://www.kika.de/die-sendung-mit-dem-elefanten/index.html>

https://www.goethe.de/de/kul/ges/ser/pod.html?wt_sc=podcasts

<https://www.goethe.de/ins/fr/de/spr/unt/kum/jug/utm.html>

UNIT V Advertisement

(9 hours)

(A selection will be made from the books below)

Farmache, A; Grosser, R. et al. DaF im Unternehmen A1. Kurs- und Übungsbuch mit Audios und Filmen, Klett.

Farmache, A; Grosser, R. et al. DaF im Unternehmen A1/A2. Kurs- und Übungsbuch mit Audios und Filmen, Klett.

Grosser, R.; Hanke, C. et al. DaF im Unternehmen A2. Kurs- und Übungsbuch mit Audios und Filmen. Klett.

Ros, L. Perspektive Deutsch, Kommunikation am Arbeitsplatz A2/B, Kursbuch mit Audio-CD, Klett.

Grosser, R.; Kaufmann, S; Miglio S. Linie 1 Beruf A2. Klett

Harst E., Kaufmann, S et al. Berliner Platz NEU. TREFFPUNKT BERUF A2. Deutsch für den Beruf, Langenscheidt Verlag (2012)

Suggestive readings

Learning / Teaching Material: To be compiled and provided by the Department.

5. Burger, E., Fleer, S. (2017). *Schreiben: Intensivtrainer Neu A1/A2*. Stuttgart: Ernst Klett Sprachen GmbH.
6. Klein, A. (2013, 13 September). *Learn German with Stories: Cafe in Berlin – 10 Short Stories for Beginners (German)*. Retrieved from <https://www.youtube.com/watch?v=vUXcYTjINtI>.
7. Klein, Andre (2015). *Learn German with Stories: Dino lernt Deutsch Collector's Edition - German Short Stories for Beginners: Explore German Cities and Boost Your Vocabulary (German Edition)*. ASIN: B00W9L9F9A.
8. Gomerger, Eugen (1972). *Anthologie. Konkrete Poesie. Deutschsprachige Autoren*. Stuttgart: Reclam.
9. Farmache, A; Grosser, R. et al. *DaF im Unternehmen A1*. Kurs- und Übungsbuch mit Audios und Filmen, Klett.
10. Farmache, A; Grosser, R. et al. *DaF im Unternehmen A1/A2*. Kurs- und Übungsbuch mit Audios und Filmen, Klett.
11. Grosser, R.; Hanke, C. et al. *DaF im Unternehmen A2*. Kurs- und Übungsbuch mit Audios und Filmen. Klett.
12. Ros, L. *Perspektive Deutsch, Kommunikation am Arbeitsplatz A2/B*, Kursbuch mit Audio-CD, Klett.
13. Grosser, R.; Kaufmann, S; Miglio S. *Linie 1 Beruf A2*. Klett
14. Harst E., Kaufmann, S et al. *Berliner Platz NEU. TREFFPUNKT BERUF A2. Deutsch für den Beruf*, Langenscheidt Verlag (2012)
15. *Kurzgeschichten für Deutschlerner! A 1 with Hindi translation* by Puneet Kaur
16. *Spaß mit Eli und Esi* by Richa Jain Jindal
17. *Endlich Urlaub, Der Osterhase war da* by Nikola Asif
18. <https://germankitabsolution.com/german-short-poems-for-beginners-deutsch-gedichte-a1-level/>
19. „Easy German“ Youtube channel
20. <https://www.zdf.de/kinder/logo>
21. <https://www.nachrichtenleicht.de/>
22. <https://www.dw.com/de/deutsch-lernen/s-2055>
23. <https://www.lernlaterne.de/deutsch/geschichten-a1>
24. <https://www.dazaf.de/index.php/kurzgeschichten/kurzgeschichten-a1-a2>
25. <https://www.engerman.de/>
26. <https://learngerman.dw.com/de/nicos-weg/c-36519687>
27. <https://learngerman.dw.com/de/deine-band/s-60637027>
28. <https://learngerman.dw.com/de/das-deutschlandlabor/c-53074503>
29. <https://www.kika.de/die-sendung-mit-dem-elefanten/index.html>
30. https://www.goethe.de/de/kul/ges/ser/pod.html?wt_sc=podcasts
31. <https://www.goethe.de/ins/fr/de/spr/unt/kum/jug/utm.html>

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category III

B.A. Programme with German as Minor

DISCIPLINE SPECIFIC CORE COURSE (DSC-1): German in Context: Basic Level – 2

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| German in Context: Basic Level – 2 | 4 | 3 | 1 | 0 | 12 th Pass | German Basic Level- 1 |

Learning Objectives

The Learning Objectives of this course are as follows:

At the end of semester 2, a student will

- be able to read simple texts and answer questions on them.
- be able to write short texts about subjects pertaining to his/her immediate environment.
- attain Level A 1.2 of the Common European Framework (CEF).

Learning outcomes

The Learning Outcomes of this course are as follows:

- Enable students to partially attain A2 Level of listening, speaking, reading and writing skills in the concerned language.
- Reading simple texts and answering questions on them.
- Equip students to write about subjects pertaining to his/her immediate environment.

SYLLABUS OF DSC-2

Content

Listening: Understanding familiar words and phrases about persons, professions and immediate concrete surroundings, short, simple. formal/informal conversation, questions and instructions, description of places.

Speaking:

Monologue: Describing and presenting oneself and other people, one's immediate environment using simple phrases and sentences.

Dialogue: Taking part in a conversation and interaction in a simple way. Asking simple questions on familiar topics or matters related to oneself. Making simple purchases in shops or obtaining services that one requires. Seeking information through telephonic conversation.

Reading: Reading simple texts related to one's immediate and far away environment such as notices, brochures, advertisements, posters, fliers, responding to emails.

Writing: Guided writing will include activities such as, writing phrases (postcards, messages, invitations etc.) on everyday topics, describing surroundings and tourist destinations, travelling experiences.

Morphosyntax and Vocabulary: Simple grammatical structures and vocabulary used to describe oneself and others, describe one's local surroundings, cities, greetings, professions and journeys etc.

UNIT I

9 hours

To find information in texts, to fix appointments, read and write letters, to recognise a situation and react to it. To describe one's house, written response to an invitation, to express likes and dislikes

UNIT II

9 hours

Describe one's daily routine, talk about past events, read job advertisements and note down the relevant information, conversation on phone. Talk about clothing, simulate the situation of shopping in a mall. Understanding texts related to a city.

Introduction of perfect tense, separable verbs, interrogative and demonstrative article and verbs with dative objects.

UNIT III

9 hours

Talk about Sport, talk to a doctor about health issues, to understand and give directions

Read maps and use the given information to guide someone.

Introduction of "Imperative" and modal verbs.

Vocabulary related to health. Express likes and dislikes.

UNIT IV

9 hours

Ask questions related to basic directions and explain as to how to reach specific places using different means of transport. Making a complaint in a hotel/restaurant. Understand a text about tourist destination, writing to friends from holiday destination, to briefly describe one's journey, describing weather

Vocabulary related to holidaying. Temporal prepositions and adverbs, interrogative pronouns

UNIT V

9 hours

To introduce oneself and others, talk about food. To understand and create story from pictures.

To give reasons, talk about feelings and emotions, express assumptions, to comprehend a text.

Introduction of dative possessive pronouns, reflexive verbs, conjunctions.

Practical component (if any) - NIL

Essential/recommended readings

Any of the following textbooks may be prescribed and will be partially completed.

1. Dengler, S., Rusch, P., Schmitz, H. (2013). *Netzwerk A1.1 and A1.2: Deutsch als Fremdsprache. Kurs- und Arbeitsbuch mit DVD und 2 Audio--CDs*. Klett Verlag.
2. Dengler, Stefanie; Tanja Mayr-Sieber, Paul Rusch, Helen Schmitz. *Netzwerk neu A1.1 and A1.2: Deutsch als Fremdsprache. Kurs- und Übungsbuch mit Audios und Videos*. Klett Verlag

3. Evans, S., Pude, A., Specht, F. (2021). *Momente A1.1. Kurs- und Arbeitsbuch*. Hueber Verlag.
4. Evans, S., Pude, A., Specht, F. (2020). *Menschen A 1. Kurs- und Arbeitsbuch*. Max Hueber Verlag
5. Höldrich, B. (2010). – *Lesen & Schreiben A1: Buch (Deutsch üben) Taschenbuch*. München: Hueber Verlag.
6. Rusch, P., Schmitz, H. *Einfach Grammatik Deutsch A1 Bis B1*. Berlin: Langenscheidt.
7. Sander, I., Braun, B., Fügert, N., Kotas, O. (2016). *DaF kompakt neu A1: Deutsch als Fremdsprache für Erwachsene. Kurs- und Übungsbuch*. Klett Verlag.
8. Von, Rosa-Maria Dallapiazza, et al. (2011). *Tangram aktuell A2. Kurs- und Arbeitsbuch*. Hueber Verlag.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category-IV

GENERIC ELECTIVES (GE-2)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Communicative German (2) | 4 | 3 | 1 | 0 | Passed Class XII | NIL |

Learning Objectives

Enable student to

- read simple texts and answer questions on them;
- be able to write short texts, about subjects pertaining to his/her immediate environment;
- attain Level A 1 of the Common European Framework (CEF).

Learning Outcomes

- Enable students to fully attain A1 Level of reading and writing skills in the concerned language.
- Reading simple texts and answering questions on them.
- Equip students to write about subjects pertaining to his/her immediate environment.

Content:

Reading: Read and understand simple documents, texts, emails containing personal information, cultural aspect of the language, gastronomia, food items and their preparation, describe an ideal locality, express preferences and its frequency, read and understand how to express in an impersonal manner, free time activities, read texts in present continuous and present perfect tense etc.

Writing: Guided writing activities. A few sentences, short text or email describing gastronomia, writing recipes, preferences, free time activities, messages o facebook, articles on different, my ideal locality, climate and its influence on the culture. writing on vacations, blogs on travel, activities related to the recent past etc.

Morphosyntax and Vocabulary: Simple grammatical structures and vocabulary used to write recipes of different dishes, travelling vocabulary, impersonal verbs, vocabulary related to the activities in the free time, blogs, vocabulary related to emails, climate, moods, colors etc.

Intercultural and cocultural: Introduction to Hispanic gastronomy, places to visit in German-speaking world, means of transports, leisure activities, comic strips, German fashion, cinema, comic strips etc.

SYLLABUS OF GE-2

Unit I

9 hours

Read and respond to official mails, invitations and writing letters seeking appointment.

Read a text on social networking websites and write about one's preferences.

Dative prepositions: aus, nach, mit, etc., dative articles, possessive articles in accusative

Listen to and having telephone conversations regarding scheduling appointments.

Conduct an interview on preferred social network websites and present a statistic of the same.

Unit II

9 hours

Read and write advertisements, pamphlets etc. regarding accommodation, furniture and electronic gadgets. Write a text describing one's accommodation. Read a text on different ways of living.

Write an invitation and response to it for a housewarming party.

Adjective with 'sein', 'sehr' and 'zu', two-way prepositions with dative and accusative.

Plan with a partner, how to arrange things in the room/apartment. Express one's likes and dislikes about the accommodation.

Describe a room with the help of pictures.

Unit III

9 hours

Read and write texts about daily routine.

Read job advertisements for relevant information.

Write and speak about the merits and demerits of a particular job.

Talk about any past incident.

Participle perfect form of verb, connectors: and, or etc.

Preparing telephonic conversations on the topics discussed.

Unit IV

9 hours

Read, write and speak texts on fashion trends and simulate a conversation in a clothing store.

Read a text to gather information about the location of specific stores in a shopping mall.

Verbs with dative, personal pronouns in dative, demonstrative articles 'dieser, diese...',

interrogative articles 'welcher, welche...', participle perfect form of separable verbs

Unit V

9 hours

Read a text and listen to an interview on health and fitness. Write about one's own fitness regimen.

Read a weather report, a travelogue and write about one's last vacation.

Write a short note on the places of tourist interest in one's place of residence.

Imperative forms in 'du' and 'Sie', Modal verbs 'dürfen' and 'sollen'

Listen to a conversation with a doctor, and simulate a similar conversation.

Listen to a text on problems faced by a guest in a hotel.

Simulate a conversation with the guest.

Essential/recommended readings

Essential/recommended readings/Suggestive readings

Learning/Teaching Material: Any of the textbooks given below may be prescribed.

1. Dengler, S., Rusch, P., Schmitz, H. (2013). *Netzwerk A1.2: Deutsch als Fremdsprache. Kurs- und Arbeitsbuch mit DVD und 2 Audio--CDs*. Klett Verlag.
2. Dengler, Stefanie; Tanja Mayr-Sieber, Paul Rusch, Helen Schmitz. *Netzwerk neu A1.2: Deutsch als Fremdsprache. Kurs- und Übungsbuch mit Audios und Videos*. Klett Verlag
3. Evans, S., Pude, A., Specht, F. (2021). *Momente A1: Kurs- und Arbeitsbuch*. Hueber Verlag.
4. Evans, S., Pude, A., Specht, F. (2020). *Menschen A1: Kurs- und Arbeitsbuch*. Max Hueber Verlag
5. Höldrich, B. (2010). – *Lesen & Schreiben A1: Buch (Deutsch üben) Taschenbuch*. München: Hueber Verlag.
6. Rusch, P., Schmitz, H. *Einfach Grammatik Deutsch A1 Bis B1*. Berlin: Langenscheidt.
7. Sander, I., Braun, B., Fügert, N., Kotas, O. (2016). *DaF kompakt neu A1: Deutsch als Fremdsprache für Erwachsene. Kurs- und Übungsbuch*. Klett Verlag.
8. Von, Rosa-Maria Dallapiazza, et al. (2011). *Tangram aktuell A1: Kurs- und Arbeitsbuch*. Hueber Verlag.

Additional material may be provided by the Department. Additional material may be provided by the Department.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BA (H) ITALIAN
Category I

DISCIPLINE SPECIFIC CORE COURSE -4 (DSC-4)
Language in Context: Developing Reading and Writing Skills (2)

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Language in Context: Developing Reading and Writing Skills (1) | 4 | 3 | 1 | 0 | Passed 12TH Class | NIL |

| DSC-4 Language in Context: Developing Reading and Writing Skills (2) | |
|--|--|
| | |
| Learning Objectives: Enable student to <ul style="list-style-type: none"> • read simple texts and answer questions on them; • be able to write short texts, about subjects pertaining to his/her immediate environment; • attain Level A 1 of the Common European Framework (CEF). | |
| Learning Outcomes: <ul style="list-style-type: none"> • Enable students to fully attain A1 Level of reading and writing skills in the concerned language. • Reading simple texts and answering questions on them. • Equip students to write about subjects pertaining to his/her immediate environment. | |
| Syllabus: | |
| CONTENT Reading: Read and understand simple documents, texts, emails containing personal information, cultural aspect of the language, gastronomia, food items and their preparation, describe an ideal locality, express preferences and its frequency, read and understand how to express in an impersonal manner, free time activities, read texts in present continuous and present perfect tense etc. Writing: Guided writing activities. A few sentences, short text or email describing gastronomia, writing recipes, preferences, free time activities, messages of facebook, articles on different, my ideal locality, climate and its influence on the culture. writing on vacations, blogs on travel, activities related to the recent past etc. Morphosyntax and Vocabulary: Simple grammatical structures and vocabulary used to write recipes of different dishes, travelling vocabulary, impersonal verbs, vocabulary related to the activities in the free time, blogs, vocabulary related to emails, climate, moods, colors etc. | |

| | |
|---|----------------|
| Intercultural and cocultural: Introduction to Italian gastronomy, places to visit Italian - speaking world, means of transports, leisure activities, comic strips, Italian fashion, cinema, comic strips etc. Practical component (if any) - NIL | |
| UNIT I | 9 hours |
| Read an official mail. Write a reply to the same. Read a formal invitation and respond to it. Read a text on social networking websites and write about one's preferences. Write a letter seeking appointment. Prepositions: di, a, da, in, con, su, tra, fra Definite and indefinite articles Possessive pronouns | |
| UNIT II | 9 hours |
| Read advertisements to find a suitable accommodation. Read pamphlets related to furniture and electronic gadgets. Write a text describing one's accommodation. Read a text on different ways of living. Write an invitation for a housewarming party. Write a response to the invitation. Adjectives Preposizioni articolate | |
| UNIT III | 9 hours |
| Read texts about people's daily routine. Write about one's own routine. Read job advertisements and relevant information. Write a text about the merits and demerits of a particular job. Participle perfect form of verbs Connectors: e, o ecc. | |
| UNIT IV | 9 hours |
| Read an article on fashion trends. Write a text describing your preferences about dressing for different occasions. Read a text to gather information about the location of specific stores in a shopping mall. Verbs with direct and indirect objects. Personal pronouns Demonstrative pronouns Interrogative pronouns Participle perfect form of irregular verbs | |
| UNIT V | 9 hours |
| Read a text on health and fitness. Write about one's own fitness regimen. Read a weather report. Read a travelogue. Write about one's last vacation. Write a short note on the places of tourist interest in one's place of residence. | |

| | |
|---|--|
| Imperative forms of verbs | |
| Modal verbs | |
| <p>Learning / Teaching Material: Any of the textbooks given below may be prescribed:</p> <ul style="list-style-type: none"> • Balboni, Paolo E.. (2009). <i>Nuovo Rete! A1</i>. Perugia: Guerra Edizioni. • Balboni, Paolo E., (2009). <i>Nuovo Rete! A2</i>. Perugia: Guerra Edizioni. • Balì, Maria. Rizzo, Giovanna. (2012). <i>Espresso 2</i>. Firenze: Alma Edizioni, and Delhi: Goyal Saab Publishers and Distributors Pvt. Ltd. • Frattegiani, M. Teresa. Baldelli, Rosella. (2009). <i>Arrivo in Italia: Corso di lingua italiana per studenti stranieri di livello A1-A2</i>. Perugia: Guerra Edizioni. • Guastalla, Carlo. (2004). <i>Giocare con la scrittura</i>. Firenze: Alma Edizioni. • Guastalla, Carlo. Naddeo, Ciro Massimo. (2011). <i>Domani 2</i>. Firenze: Alma Edizioni. • Mezzadri, Marco, (2008). <i>Grammatica essenziale della lingua italiana con esercizi</i> : Guerra edizione, Perugia. | |
| <p>Additional material may be provided by the Department.</p> <p>Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.</p> | |

DISCIPLINE SPECIFIC CORE COURSE – 5 (DSC-5)
Language in Context: Developing Listening and Speaking Skills (2)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Language in Context: Developing Listening and Speaking Skills (1) | 4 | 3 | 1 | 0 | Passed 12TH Class | NIL |

| DSC-5 Language in Context: Developing Listening and Speaking Skills (2) | |
|--|----------------|
| Learning Objectives: Enable student to <ul style="list-style-type: none"> • read simple texts and answer questions on them; • be able to express on different topics, about subjects pertaining to his/her immediate environment; • attain Level A 1 of the Common European Framework (CEF). | |
| Learning Outcomes: <ul style="list-style-type: none"> • Enable students to fully attain A1 Level of listening and speaking skills in the concerned language. • Express ideas on audios listened and answering questions on them. • Equip students to speak about subjects pertaining to his/her immediate environment. | |
| Syllabus: | |
| CONTENT Listening: Listen and understand basic phrases/ dialogues concerning himself, of his family, and immediate surroundings, brief announcements in public spaces and instructions when speakers are speaking at a slower pace. Speaking: which includes Monologue: Introduce oneself and others, describe oneself, a person, one's family or an object, describe one's immediate environment (class or professional), residential area, city... Dialogue: participate in a basic conversation by exchanging simple greetings, asking and replying to simple questions, give instructions etc. Morphosyntax, Vocabulary, Pronunciation: Simple grammatical structures and vocabulary used to introduce oneself, introduce others, describe oneself and others, describe one's residential area, city, greetings, professions etc. Basic rules of pronunciation. Intercultural and Co-cultural: Knowledge and practice of structures relevant to formal and informal situations. Practical component (if any) - NIL | |
| UNIT I | 9 hours |

| | |
|--|----------------|
| Listen to telephone conversations to gather information regarding the appointment. Have a conversation wherein an appointment is scheduled for a particular activity. Conduct an interview on preferred social network websites and present a statistic of the same. | |
| UNIT II | 9 hours |
| Plan with a partner, how to arrange things in the room/apartment. Express one's likes and dislikes about the accommodation. Listen to a text to find out which accommodation is selected and why. Listen and note down which furniture is placed in which room. Describe a room with the help of pictures. | |
| UNIT III | 9 hours |
| Talk about any past incident. Express one's opinion about jobs. Prepare a telephone conversation about jobs. Listen to a jumbled telephonic conversation and put it in correct order. Make a call to get information related to different courses. Listen to a conversation and note down the professions of the concerned persons. | |
| UNIT IV | 9 hours |
| Listen to a conversation to understand the given information about likes and dislikes related to apparels. Listen to a conversation between a salesperson and a customer in a clothing store. Simulate a conversation in a clothing store. | |
| UNIT V | 9 hours |
| Listen to an interview with fitness experts. Listen to a conversation with a doctor. Simulate a conversation with a doctor. Listen to a text on problems faced by a guest in a hotel. Simulate a conversation with the guest. | |
| Learning / Teaching Material: Any of the textbooks given below may be prescribed: <ul style="list-style-type: none"> • Balboni, Paolo E.. (2009). <i>Nuovo Rete! A1</i>. Perugia: Guerra Edizioni. • Balboni, Paolo E., (2009). <i>Nuovo Rete! A2</i>. Perugia: Guerra Edizioni. • Balì, Maria. Rizzo, Giovanna. (2012). <i>Espresso 2</i>. Firenze: Alma Edizioni, and Delhi: Goyal Saab Publishers and Distributors Pvt. Ltd. • Frattegiani, M. Teresa. Baldelli, Rosella. (2009). <i>Arrivo in Italia: Corso di lingua italiana per studenti stranieri di livello A1-A2</i>. Perugia: Guerra Edizioni. • Guastalla, Carlo. (2004). <i>Giocare con la scrittura</i>. Firenze: Alma Edizioni. • Guastalla, Carlo. Naddeo, Ciro Massimo. (2011). <i>Domani 2</i>. Firenze: Alma Edizioni. • Mezzadri, Marco, (2008). <i>Grammatica essenziale della lingua italiana con esercizi</i> : Guerra edizione, Perugia. | |
| Additional material may be provided by the Department. Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time. | |

DISCIPLINE SPECIFIC CORE COURSE– 6 (DSC-6)
Language Through Texts (2)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Language Through Texts (2) | 4 | 3 | 1 | 0 | Passed 12 Class | NIL |

| DSC-6 Language Through Texts (2) | |
|---|----------------|
| Learning Objectives: At the end of Semester 1, a student will <ul style="list-style-type: none"> • be able to read and understand simple texts (literary/semi-literary/audio-visual/advertisements etc.) adapted for the students of level A1, and answer questions on them; • be able to analyse, express their underlying meaning and answer questions based on them; • attain Level A 1 of the Common European Framework (CEF). | |
| Learning Outcomes: The Learning Outcomes of this course are as follows: <ul style="list-style-type: none"> • Enable students to attain A1 Level of reading, understanding, analysing and writing skills in the concerned language. • Reading and understanding simple texts and answering questions on them. • Equip students to analyse, express their underlying meaning and answer questions based on them; | |
| Syllabus: | |
| UNIT I | 9 hours |
| Literary Texts (Prose) | |
| A selection will be made from the following list: | |
| La gallina lavandaia, Fiabe italiane di Italo Calvino Il paese con l'esse davanti, Favole al telefono di Gianni Rodari Gli uomini di burro, Favole al telefono di Gianni Rodari La strada di cioccolato, Favole al telefono di Gianni Rodari A inventare i numeri, Favole al telefono di Gianni Rodari | |
| UNIT II | 9 hours |
| Literary Texts (Poetry) | |
| A selection will be made from the following list: | |
| Cielo e mare – Giuseppe Ungaretti Soldato – Giuseppe Ungaretti Ed è subito sera – Salvatore Quasimodo L'infinito – Giacomo Leopardi | |
| UNIT III | 6 hours |
| Semi-literary / Journalistic Texts | |
| A selection will be made from the following list: | |
| Che fare dei nostri animali quando Andiamo in vacanza I bambini che lavorano in Italia I giovani e la lettura dei giornali In Italia molte persone lavorano in nero Le donne al volante | |

| | |
|--|----------------|
| UNIT IV | 6 hours |
| Audio / Visual Texts – Songs / Music Videos | |
| A selection will be made from the following list: | |
| Com'è bella la città – Giorgio Gaber La solitudine – Laura Pausini Cosa hai messo nel caffè – Lisa Ono Le mille bolle blu – Mina La bambola – Patty Pravo | |
| UNIT V | 9 hours |
| Audio / Visual Texts – Films / Video Clips | |
| A selection will be made from the following list: | |
| Uomo d'acqua dolce È già ieri La dolce vita Non ci resta che piangere Benvenuti al Sud | |
| UNIT VI | 6 hours |
| Advertisements – Print / Electronic | |
| A selection will be made from the following list: | |
| Various ads from newspapers, social media, YouTube etc. | |
| Practical component (if any) - NIL | |
| Learning / Teaching Material: Any of the textbooks given below may be prescribed: <ul style="list-style-type: none"> • Guastalla, Carlo. (2004). <i>Giocare con la scrittura</i>. Alma Edizioni, Firenze. • Guastalla, Carlo. Naddeo, Ciro Massimo. (2010). <i>Domani 1</i>. Alma Edizioni, Firenze. • Guastalla, Carlo. Naddeo, Ciro Massimo. (2011). <i>Domani 2</i>. Alma Edizioni, Firenze. • Bailini, Sonia. Consonno, Silvia. (2002). <i>Ricette per parlare</i>. Alma Edizioni, Firenze. • Corno, Dario. (2002). <i>Scrivere e comunicare</i>. Bruno Mondadori, Milano. | |
| Additional material may be provided by the Department. | |
| Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time. | |

Category-IV

GENERIC ELECTIVES (GE-2)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Communicative Italian (2) | 4 | 3 | 1 | 0 | Passed Class XII | NIL |

| GE-3 Basic Communicative Italian (1) | |
|--|--|
| Learning Objectives: Reading and Writing Objectives: Enable student to <ul style="list-style-type: none">• read simple texts and answer questions on them;• be able to write short texts, about subjects pertaining to his/her immediate environment;• attain Level A 1 of the Common European Framework (CEF). Listening and Speaking Objectives: Enable student to <ul style="list-style-type: none">• read simple texts and answer questions on them;• be able to express on different topics, about subjects pertaining to his/her immediate environment;• attain Level A 1 of the Common European Framework (CEF). | |
| Learning Outcomes: Reading and Writing: <ul style="list-style-type: none">• Enable students to fully attain A1 Level of reading and writing skills in the concerned language.• Reading simple texts and answering questions on them.• Equip students to write about subjects pertaining to his/her immediate environment. Listening and Speaking: <ul style="list-style-type: none">• Enable students to fully attain A1 Level of listening and speaking skills in the concerned language.• Express ideas on audios listened and answering questions on them.• Equip students to speak about subjects pertaining to his/her immediate environment. | |
| Syllabus: | |
| CONTENT Reading: Read and understand simple documents, texts, emails containing personal information, cultural aspect of the language, gastronomia, food items and their preparation, describe an ideal locality, express preferences and its frequency, read and understand how to express in an impersonal manner, free time activities, read texts in present continuous and present perfect tense etc. Writing: Guided writing activities. A few sentences, short text or email describing gastronomia, writing recipes, preferences, free time activities, messages of facebook, articles on different, my ideal locality, climate and its influence on the culture. writing on vacations, blogs on travel, activities related to the recent past etc. | |

Morphosyntax and Vocabulary: Simple grammatical structures and vocabulary used to write recipes of different dishes, travelling vocabulary, impersonal verbs, vocabulary related to the activities in the free time, blogs, vocabulary related to emails, climate, moods, colors etc.

Intercultural and cocultural: Introduction to Italian gastronomy, places to visit Italian - speaking world, means of transports, leisure activities, comic strips, Italian fashion, cinema, comic strips etc.

Listening: Listen and understand basic phrases/ dialogues concerning himself, of his family, and immediate surroundings, brief announcements in public spaces and instructions when speakers are speaking at a slower pace.

Speaking: which includes

Monologue: Introduce oneself and others, describe oneself, a person, one's family or an object, describe one's immediate environment (class or professional), residential area, city...

Dialogue: participate in a basic conversation by exchanging simple greetings, asking and replying to simple questions, give instructions etc.

Morphosyntax, Vocabulary, Pronunciation: Simple grammatical structures and vocabulary used to introduce oneself, introduce others, describe oneself and others, describe one's residential area, city, greetings, professions etc.

Basic rules of pronunciation.

Intercultural and Co-cultural: Knowledge and practice of structures relevant to formal and informal situations.

Practical component (if any) - NIL

| | |
|--|----------------|
| UNIT I | 9 hours |
| Read and respond to official mails, invitations and writing letters seeking appointment. Read a text on social networking websites and write about one's preferences. Prepositions: di, a, da, in, con, su, tra, fra Definite and indefinite articles, possessive pronouns Listen to and having telephone conversations regarding scheduling appointments. Conduct an interview on preferred social network websites and present a statistic of the same. | |
| UNIT II | 9 hours |
| Read advertisements to find a suitable accommodation. Read pamphlets related to furniture and electronic gadgets. Write a text describing one's accommodation. Read a text on different ways of living. Write an invitation for a housewarming party. Write a response to the invitation. Adjectives Preposizioni articolate | |
| UNIT III | 9 hours |
| Read texts about people's daily routine. Write about one's own routine. Read job advertisements and relevant information. Write a text about the merits and demerits of a particular job. Participle perfect form of verbs Connectors: e, o ecc. | |
| UNIT IV | 9 hours |
| Read an article on fashion trends. Write a text describing your preferences about dressing for different occasions. | |

| | |
|--|----------------|
| <p>Read a text to gather information about the location of specific stores in a shopping mall.</p> <p>Verbs with direct and indirect objects.</p> <p>Personal pronouns</p> <p>Demonstrative pronouns</p> <p>Interrogative pronouns</p> <p>Participle perfect form of irregular verbs</p> | |
| UNIT V | 9 hours |
| <p>Read a text on health and fitness.</p> <p>Write about one's own fitness regimen.</p> <p>Read a weather report.</p> <p>Read a travelogue.</p> <p>Write about one's last vacation.</p> <p>Write a short note on the places of tourist interest in one's place of residence.</p> <p>Imperative forms of verbs</p> <p>Modal verbs</p> | |
| <p>Learning/Teaching Material: Any of the textbooks given below may be prescribed:</p> <ul style="list-style-type: none"> • Carlo Guastalla, Ciro Massimo Naddeo, <i>Domani 1</i>, Alma Edizioni, Firenze (2010). • Luciana Ziglio, Giovanna Rizzo, <i>Espresso 1</i>, Alma Edizioni, Firenze and Goyal Publishers and Distributors Pvt. Ltd., Delhi, 2012. • Mariateresa Serafini, <i>Nuovo l'italiano: grammatica e scrittura</i>, Fabbri, Milano, 2009. • Susanna Nocchi, <i>Grammatica pratica della lingua italiana</i>, Alma edizioni, Firenze. | |
| <p>Additional material may be provided by the Department.</p> <p>Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.</p> | |

Category I

B.A. (Hons.) SPANISH

DISCIPLINE SPECIFIC CORE COURSE – 4:

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Language in Context: Developing Reading and Writing Skills (2) | 4 | 3 | 1 | 0 | 12 th Pass | Nil |

Learning Objectives

Enable student to

- read simple texts and answer questions on them;
- be able to write short texts, about subjects pertaining to his/her immediate environment;
- attain Level A 1 of the Common European Framework (CEF).

Learning Outcomes

- Enable students to fully attain A1 Level of reading and writing skills in the concerned language.
- Reading simple texts and answering questions on them.
- Equip students to write about subjects pertaining to his/her immediate environment.

Content:

Reading: Read and understand simple documents, texts, emails containing personal information, cultural aspect of the language, gastronomia, food items and their preparation, describe an ideal locality, express preferences and its frequency, read and understand how to express in an impersonal manner, free time activities, read texts in present continuous and present perfect tense etc.

Writing: Guided writing activities. A few sentences, short text or email describing gastronomia, writing recipes, preferences, free time activities, messages o facebook, articles on

different, my ideal locality, climate and its influence on the culture. writing on vacations, blogs on travel, activities related to the recent past etc.

Morphosyntax and Vocabulary: Simple grammatical structures and vocabulary used to write recipes of different dishes, travelling vocabulary, impersonal verbs, vocabulary related to the activities in the free time, blogs, vocabulary related to emails, climate, moods, colors etc.

Intercultural and cocultural: Introduction to Hispanic gastronomy, places to visit in Hispanic world, means of transports, leisure activities, comic strips, Latin America fashion, cinema, comic strips etc.

SYLLABUS OF DSC-4

UNIT – I (9 hours)

The influence of the culture on your diet

Read a text related to the topic.

Write a recipe of your favourite dish and.

Writing dialogues between a waiter and a client in a restaurant.

Read a text on the diversity of gastronomy.

Write a menu and the contents of breakfast, lunch and dinner in the Hispanic world.

UNIT – II (9 hours)

Leisure activities

Read a text related to the topic.

Write plan and intentions, accept and reject, and learn to write opinion.

Write an email to a friend telling about what you do in your free time.

Read a text related to a topic.

Write on the pictures given.

Read a text related to a topic.

Write a summary.

UNIT – III (9 hours)

Climate

Read a text related to a topic.

Impersonal verbs: LLueve, Nieva, Hace frío/calor, está nublado, hay viento etc.

Read a text related to a topic.

Write a note on different seasons and its influences on daily life.

Compare different places.

Write pamphlets, articles, and interview a person about his preference for the season.

UNIT – IV (9 hours)

An ideal locality

Read a text related to a topic.

Write a note on your locality.

Quantifiers: algún, ningún, muchos etc.

Preposiciones and adverbs of place: a, en al, al lado de, lejos, cerca etc.

Write a brief note on your ideal locality and its direction.

UNIT – 5 (9 hours)

Travelling

Read a text related to the topic.

Contents: saber and conocer

Irregular verbs and its participle form

Préterito perfecto, por, para, porque marcadores de lugar: a la derecha, al lado de...
tec. Marcadores temporales: hoy, este año, esta mañana etc.

Write on a series of pictures.

Read a text related to the topic.

Write a blog on a place recently visited and the activities.

Practical component (if any) - NIL

Essential/recommended readings

Essential/recommended readings/Suggestive readings

Learning/Teaching Material: Any of the textbooks given below may be prescribed.

1. Alondo, Elcina. Corpas, Jaime. (2018). Diverso A1 Libro de alumno. Madrid, Madrid: SGEL.

2. Alvarez Martinez, María Angeles. Canales, Ana Blanco. et al. (2017). Sueña 1 Libro de alumno. Salamanca. Salamanca: Grupo Anaya.

3. Baulenas, Neus Sans. Peris, Ernesto Martín. et al. (2016). Bítacora 1 Libro de alumno. Barcelona, Barcelona: Editorial Difusión.

4. Campo, Cristina, Cuadrado, Charo et.al. (2017) Protagonistas A1- Libro de alumno. Madrid, Madrid: Ediciones SM.

5. Sanz, N. (2016). Aula Internacional 1. Barcelona. Barcelona: Editorial Difusión

6. Martí Peris, E., Sans, N. (2016). Gente 1 Libro del alumno. Barcelona: Editorial Difusión.

Additional material may be provided by the Department. Additional material may be provided by the Department.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 5

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Language in Context: Developing Listening and Speaking Skills (2) | 4 | 3 | 1 | 0 | 12 th Pass | NIL |

Learning Objectives Learning Objectives

Enable student to

- read simple texts and answer questions on them;
- be able to express on different topics, about subjects pertaining to his/her immediate environment;
- attain complete Level A 1 of the Common European Framework (CEF).

Learning Outcomes

- Enable students to fully attain A1 Level of listening and speaking skills in the concerned language.
- Express ideas on audios listened and answering questions on them.
- Equip students to speak about subjects pertaining to his/her immediate environment.

SYLLABUS OF DSC- 5

UNIT – I (9 hours)

The influence of the culture on your diet

Listen to an audio activity related to the topic.

Talk to your classmates about a recipe of your favourite dish.

Listen to a text related to the topic.

Organize a restaurant activity, role play of a waiter and clients.

UNIT – II (9 hours)

Leisure activities

Listen to a text related to the topic.

Exchange your plans and intentions, accept and reject, and learn to express your opinion.

Listen to a text related to a topic.

Talk about your leisure activities in the class.

Listen to a text related to a topic.

Express your opinion on a video clip or audio activity.

UNIT – III (9 hours)

Climate

Listen to a text related to a topic.

Express different climatic conditions: LLueve, Nieva, Hace frío/calor, está nublado, hay viento etc.

Listen to a text related to a topic.

Talk about different seasons and its influences on daily life.

Interview a person in the class about his/her preference for the season and record the audio.

UNIT – IV (9 hours)

An ideal locality

Listen to a text related to a topic.

Express and use Quantifiers: algún, ningún, muchos etc. Preposiciones and adverbs of place: a, en al, al lado de, lejos, cerca etc., while making a video presentation on a place.

Listen to a text on an ideal locality and its direction.

Talk to your classmates about your vision for an ideal place.

UNIT – 5 (9 hours)

Travelling

Listen to a text related to the topic.

Express and learn to differentiate between saber and conocer

Listen to a text related to the topic.

Talk to your classmates: ¿Qué has hecho hoy/ este año, esta mañana etc.?

Express what you have and what you have not done and still have to do.

Listen to a text related to the topic.

Express your points on a place recently visited.

Practical component (if any) - NIL

Essential/recommended readings

Essential/recommended readings/Suggestive readings

Learning/Teaching Material: Any of the textbooks given below may be prescribed.

1. Alondo, Elcina. Corpas, Jaime. (2018). Diverso A1 Libro de alumno. Madrid, Madrid: SGEL.

2. Alvarez Martinez, María Angeles. Canales, Ana Blanco. et al. (2017). Sueña 1 Libro de alumno. Salamanca. Salamanca: Grupo Anaya.
3. Baulenas, Neus Sans. Peris, Ernesto Martín. et al. (2016). Bítacora 1 Libro de alumno. Barcelona, Barcelona: Editorial Difusión.
4. Campo, Cristina, Cuadrado, Charo et.al. (2017) Protagonistas A1- Libro de alumno. Madrid, Madrid: Ediciones SM.
5. Sanz, N. (2016). Aula Internacional 1. Barcelona. Barcelona: Editorial Difusión
6. Martí Peris, E., Sans, N. (2016). Gente 1 Libro del alumno. Barcelona: Editorial Difusión.

Additional material may be provided by the Department. Additional material may be provided by the Department.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Suggestive readings

DISCIPLINE SPECIFIC CORE COURSE – 6:

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course(if any) |
|----------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Language Through Texts (2) | 4 | 3 | 1 | 0 | Passed XII Class | Nil |

Learning Objectives

Objective: Enable students to read and understand a short literary/journalistic/ad/song text adapted for students of level A1 and to answer questions on the same.

SYLLABUS OF DSC-6

UNIT I Literary Texts

(9 hours)

(A selection will be made from the list below)

Sin Noticias de Marlene, Lola Lago & asociados Las nuevas aventuras de Lola Lago de N. Sans y L. Miquel

Un nuevo caso: Netflix puede esperar Lola Lago & asociados Las nuevas aventuras de Lola Lago de N. Sans y L. Miquel

Los hackers nunca duermen, Lola Lago & asociados Las nuevas aventuras de Lola Lago de N. Sans y L. Miquel

Un poco de tranquilidad, solo un poco Lola Lago & asociados Las nuevas aventuras de Lola Lago de N. Sans y L. Miquel

Fin de escapada Lola Lago & asociados Las nuevas aventuras de Lola Lago de N. Sans y L. Miquel

El misterio hombre de la gabardina Lola Lago & asociados Las nuevas aventuras de Lola Lago de N. Sans y L. Miquel

Rinconete y Cortadillo, Miguel de Cervantes, adaptado por Raquel García Prieto

Todas las voces. Curso de cultura y civilización de N. Murillo

UNIT II Journalistic Texts

(9 hours)

(A selection will be made from the list below)

Hoy en clase de Campus Difusión

Los espejuelos de Lennon -- Cuba de Dolores Soler-Espiauba

Con Frida en el altiplano -- Bolivia de Dolores Soler-Espiauba

Guantanamo -- Cuba de Dolores Soler-Espiauba

Ojalá que te vaya bonito -- México de Dolores Soler-Espiauba

Los espejuelos de Lennon -- Cuba de Dolores Soler-Espiauba

Dos semanas con los ticos -- Costa Rica de Dolores Soler-Espiauba

UNIT III Simple poems

(9 hours)

(A selection as per language level will be made from the list below. Any extra material will be provided by the Department)

Poemas de Antonio Colinas

Poemas de Gloria Fuertes

Poemas de Juan Ramón Jiménez

Poemas de Gabriela Mistral

Poemas de Amado Nervo

Poemas de Federico García Lorca

Poemas de Federico García Lorca

Poemas de Pablo Neruda

Poemas de Antonio Machado

Poemas de Mario Benedetti

Poemas de Luis Cernuda

UNIT IV Simple Audio / Visual Texts/Songs

(9 hours)

(A selection will be made from the list below)

Songs (A1)

El Barrio felicidad

Vivir mi vida de Marc Antony

Me voy de Julieta Venegas (2006)

Todos me miran de Gloria Trevi

Me quedo contigo, de Los Chunguitos (1981), de Rocío Márquez (2019), de Manu Chao

El viajero, de Seguridad Social (2011)

Inmortal, La oreja de Van Gogh (2009)

Documentaries

Aldea Latinoamericana – Por la Geografía de América Latina

Historia del Arte en 10 minutos

Historia del imperio romano en 10 minutos

UNIT V Advertisement

(9 hours)

Suggestive readings

Learning / Teaching Material: To be compiled and provided by the Department.

1. Murillo, N. (2010). Todas las voces. Curso de cultura y civilización. Barcelona: Editorial
2. Difusión (cap. 4 Literatura: novelas, cuentos y leyendas, poesía, leer)
3. Sans, N., Miquel, L. Lola Lago (2003). Sin noticias (A1). Barcelona: Editorial Difusión.
4. Sans, N., Miquel, L. Lola Lago (2003). Por amor al arte (A1). Barcelona: Editorial
5. Difusión.
6. Soler-Espiauba, D. (2002). Con Frida en el altiplano (A1-A2). España: Editorial
7. Difusión.
8. Soler-Espiauba, D. (2008). Dos semanas con los ticos (A1-A2). Costa Rica: CEGAL.
9. Soler-Espiauba, D. (2014). Los espejuelos de Lennon (A1). Cuba: CEGAL.
10. Soler-Espiauba, D. (2012). Guantnameras (A1-A2). Cuba: Editorial Difusión.
11. Soler-Espiauba, D. (2015). Ojalá que te vaya bonito(A1-A2). México: Editorial Difusión.
12. Hoy en clase. Campus Difusión. <https://campus.difusion.com/dashboard>
13. Aldea Latinoamericana – Por la Geografía de América Latina
<https://www.youtube.com/watch?v=2jN3kP-gM2o>
14. Historia del Arte en 10 Minutos, <https://www.youtube.com/watch?v=rUHxLrZwSIY>
15. Historia del imperio romano en 10 minutos,
<https://www.youtube.com/watch?v=N4Ljm78end4>
16. 100 Anuncios Publicitarios con Eslogan

Additional material may be provided by the Department.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category III

B.A. Programme with Spanish as Minor

DISCIPLINE SPECIFIC CORE COURSE (DSC-2): Spanish in Context: Basic Level – 2

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Spanish in Context: Basic Level – 2 | 4 | 3 | 1 | 0 | Class XII pass | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

At the end of Semester 2, a student will be able to

- read simple texts and answer questions on them;
- write short texts, about subjects pertaining to his/her immediate environment;
- complete Level A1 of the Common European Framework (CEF).

Learning outcomes

The Learning Outcomes of this course are as follows:

- Enable students to attain A1 Level of listening, speaking, reading and writing skills in the concerned language.
- Reading simple texts and answering questions on them.
- Equip students to write about subjects pertaining to his/her immediate environment.

SYLLABUS OF DSC - 2

Content:

Listening: Listen to and understand basic phrases/ dialogues concerning one's hobbies, vacations, purchases, recipes etc.

Speaking, which includes,

Monologue: Present orally, one's travel plans, one's likes and dislikes, express one's opinion, etc.

Dialogue: Engage in a simple conversation in everyday situations such as inviting someone, talking about the weather, ordering a meal etc.

Reading: Read and understand simple documents, texts, emails describing one's vacations, educational institutions, sports, menus, recipes, weather report, travelogues etc.

Writing: Guided writing activities. A few sentences, short text, email describing one's weekly schedule, hobbies, preparing menus, writing recipes, weather report, travelogues etc.

Morphosyntax and Vocabulary: Simple grammatical structures and vocabulary used to describe one's favourite destinations, hobbies, meals, weather etc.

Intercultural and co-cultural: Introduction to Spanish-speaking regions/countries, celebrities from Spanish speaking countries, fashion, cinema, comic strips etc.

Unit 1

9 hours

Talking about food and drinks. Asking for food and drinks in a restaurant or a bar. Expressing preferences using 'lo que más, lo que menos me gusta'. The meals of the day. Time of the day when eaten. What you like and what you don't like to eat. Favourite food/preferred food. Se + tercera persona del presente de indicativo. Good eating habits. Nutritional food. The verbs 'almorzar' and 'merendar'. Reading and making a menu. Los pronombres de objeto directo (OD). Vocabulary related to the cooking processes, measurements and quantities. Expressing how often something is done using 'una vez' 'entre' 'más de' 'menos de' 'siempre', 'ocasionalmente' 'nunca', etc. Preparing a dish - listing the ingredients and reading and writing a recipe. Comparing food habits, dishes and recipes of Spanish speaking countries with your own country.

Unit 2

9 hours

Vacation plans – proposing a plan, accepting it, rejecting it. Making an alternative plan. Vocabulary related to this. Writing an e-mail from the place of vacation to your family or friends. Talking of plans using 'ir a + infinitivo'. Expressing desires and intentions using 'querer', 'preferir', 'tener ganas de + infinitivo'. Inviting someone and accepting or rejecting an invitation. Using the verbs 'gustar', 'encantar', 'interesar', 'parecer'. Where and when to meet using 'quedar'. Vocabulary related to cinema and documentaries on culture, travel, nature. Reading and discussing film reviews. Expressing opinions using 'pienso que', 'me parece que', 'creo que', etc. Expressing total or partial agreement or disagreement with someone. Vocabulary related to entertainment. Reading an article from a youth magazine on whether entertainment is necessary and agreeing or disagreeing with the given viewpoints. Giving your own views on the importance of entertainment.

Unit 3

9 hours

Talking about the weather, the temperature, the seasons. Discussing the weather in your country, city. Reading a map with weather forecast. Connecting Words - 'además', 'aunque', 'pero'. Reading and discussing an article on the influence of climate on our lives. Types of climate – 'tropical/cálido/seco', etc. Colours. Discussing how colours are related to seasons and to different aspects of culture of one's country. Comparing the climate of travel destinations using 'más/menos que...', 'mejor/peor que..', etc. Indicating how things are the

same in two places using 'tan + adjetivo + como', 'tanto/a/os/as + nombre + como', 'el mismo/la misma/los mismos/las mismas + nombre (+ que). Selecting destinations for vacations in one's own country and in Spanish speaking countries, looking for information on them and deciding upon the best option.

Unit 4

9 hours

Different types of vacations – cultural/on the beach/ with relatives/related to sports, health, etc. Vocabulary related to the geography of a place – lakes, volcanos, beaches, forests, etc. Discussing the geography of a place or places with your classmates. Making a list of places you know in your country and informing your classmates about it. Use of 'saber' and 'conocer'. The double negation in Spanish – 'No...ni'. Verbs which are irregular in the first person – 'conocer, saber, conducir', etc. Ordinal numbers. Reading and discussing a blog on the topic of travel. Use of 'por/porque/para'. El Pretérito Perfecto. Sending a message to friends on Facebook about places one has travelled and activities one has done during that time. Writing about what one has done this weekend/this summer, etc. Some adjectives describing the personality of a person. Reading Travel Forums and discussing the personality traits of persons who are writing them.

Unit 5

9 hours

Expressions related to study habits, both good and bad. Different definitions of education and which you think is the best. Finding out through a questionnaire as to how creative you are. Verbo + sustantivo. Nombre + adjetivo. Deber + infinitivo.

What you think should be the characteristics of a good student/a good musician/a good painter, etc. Discussing strategies which can help one to learn better – use of colour and pictures, underlining, etc. El Gerundio. Listening to an interview with an expert on education. Discussing all that is changing in the education system and what continues to remain the same. Talking about activities one does in an educational institution and activities one does outside them. Expressing duration using 'desde', 'desde hace' 'hace...que', etc. Antes de/después de + infinitivo. Reading a Timetable or a Schedule and discussing what the person does before something and after something. Writing your own weekly Schedule and comparing it with a friend. Writing messages on Facebook telling about one's activity/activities. Empezar a + infinitivo, acabar de + infinitivo, tener que + infinitivo, poder + infinitivo, ir a + infinitivo.

Practical component (if any) - NIL

Essential/recommended readings

Any of the following textbooks may be prescribed and will be partially completed.

1. Alonso, Encina, et al, (2018), *Diverso A1-A2*, Libro de alumno, Madrid: SGEL.
2. Sans, N., et al. (2016). *Aula Internacional I*. Barcelona. Barcelona: Editorial Difusión
3. Campo C., et al. (2017). *Protagonistas A1*, Libro de alumno, Madrid: SM.
4. Baulenas, Neus Sans, et al. (2016). *Bítacora I*, Libro de alumno, Barcelona: Editorial Difusión.

5. Alvarez Martinez, María Angeles. Canales, Ana Blanco. et al., (2017). *Sueña I* Libro de Alumno, Salamanca: Grupo Anaya.
6. Martín Peris, E., Sans, N. (2016). *Gente I* Libro del alumno. Barcelona: Editorial Difusión.

Additional material can be also used.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category-IV

GENERIC ELECTIVES (GE-2)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Communicative Spanish (2) | 4 | 3 | 1 | 0 | Passed Class XII | Nil |

Learning Objectives

Enable student to

- read simple texts and answer questions on them;
- be able to write short texts, about subjects pertaining to his/her immediate environment;
- attain Level A 1 of the Common European Framework (CEF).

Learning Outcomes

- Enable students to fully attain A1 Level of reading and writing skills in the concerned language.
- Reading simple texts and answering questions on them.
- Equip students to write about subjects pertaining to his/her immediate environment.

Content:

Reading: Read and understand simple documents, texts, emails containing personal information, cultural aspect of the language, gastronomia, food items and their preparation, describe an ideal locality, express preferences and its frequency, read and understand how to express in an impersonal manner, free time activities, read texts in present continuous and present perfect tense etc.

Writing: Guided writing activities. A few sentences, short text or email describing gastronomia, writing recipes, preferences, free time activities, messages o facebook, articles on different, my ideal locality, climate and its influence on the culture. writing on vacations, blogs on travel, activities related to the recent past etc.

Morphosyntax and Vocabulary: Simple grammatical structures and vocabulary used to write recipes of different dishes, travelling vocabulary, impersonal verbs, vocabulary related to the activities in the free time, blogs, vocabulary related to emails, climate, moods, colors etc.

Intercultural and cocultural: Introduction to Hispanic gastronomy, places to visit in Hispanic world, means of transports, leisure activities, comic strips, Latin America fashion, cinema, comic strips etc.

SYLLABUS OF GE-2

UNIT – I (9 hours)

The influence of the culture on your diet

Reading a text related to the topic, writing a recipe of your favourite dish and writing dialogues between a waiter and a client in a restaurant. Listen to an audio activity related to the topic. Talk to your classmates about a recipe of your favourite dish.

Read a text on the diversity of gastronomy. Write a menu and the contents of breakfast, lunch and dinner in the Hispanic world. Listen to a text related to the topic. Role-play activity of a waiter and clients.

UNIT – II (9 hours)

Leisure activities

Read a text related to the topic.

Write plan and intentions, write your opinion, write an email to a friend telling about what you do in your free time. Listen to a text related to the topic.

Exchange your plans and intentions, accept and reject, and learn to express your opinion. Read a text related to a topic. Write on the pictures given. Listen to a text related to a topic. Express your opinion on a video clip or audio activity.

UNIT – III (9 hours)

Climate

Read a text related to a topic.

Learn Impersonal verbs: LLueve, Nieva, Hace frío/calor, está nublado, hay viento etc.

Read a text related to a topic. Listen to a text related to a topic. Express different climatic conditions. Write a note on different seasons and its influences on daily life. Write pamphlets, articles, and interview a person about his preference for the season. Interview a person in the class about his/her preference for the season and record the audio.

UNIT – IV (9 hours)

An ideal locality

Read a text related to a topic.

Write a note on your locality. Quantificators: algún, ningún, muchos etc. Preposiciones and adverbs of place: a, en al, al lado de, lejos, cerca etc. Write a brief note on your ideal locality and its direction. Listen to a text related to a topic and answer the

questions. Listen to a text on an ideal locality and its direction. Talk to your classmates about your vision for an ideal place.

UNIT – V (9 hours)

Travelling

Read a text related to the topic.

Contents: saber and conocer, Irregular verbs and its participle form, Préterito perfecto, por, para, porque marcadores de lugar: a la derecha, al lado de... etc. Mercadores temporales: hoy, este año, esta mañana etc. Write on a series of pictures. Write a blog on a place recently visited and the activities. Listen to a text related to the topic. Express your points on a place recently visited.

Essential/recommended readings

Essential/recommended readings/Suggestive readings

Learning/Teaching Material: Any of the textbooks given below may be prescribed.

1. Alondo, Elcina. Corpas, Jaime. (2018). Diverso A1 Libro de alumno. Madrid, Madrid: SGEL.

2. Alvarez Martinez, María Angeles. Canales, Ana Blanco. et al. (2017). Sueña 1 Libro de alumno. Salamanca. Salamanca: Grupo Anaya.

3. Baulenas, Neus Sans. Peris, Ernesto Martín. et al. (2016). Bítacora 1 Libro de alumno. Barcelona, Barcelona: Editorial Difusión.

4. Campo, Cristina, Cuadrado, Charo et.al. (2017) Protagonistas A1- Libro de alumno. Madrid, Madrid: Ediciones SM.

5. Sanz, N. (2016). Aula Internacional 1. Barcelona. Barcelona: Editorial Difusión

6. Martí Peris, E., Sans, N. (2016). Gente 1 Libro del alumno. Barcelona: Editorial Difusión.

Additional material may be provided by the Department. Additional material may be provided by the Department.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Department of Modern Indian Languages & Literary Studies

(MIL&LS)

Category I

BA (Hons.) Bengali

DISCIPLINE SPECIFIC CORE COURSE -4 (DSC-4) – : Bangla Sahityer Itihas : Madhyajug - 2

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|--|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Bangla Sahityer Itihas : Madhyajug - 2 | 4 | 3 | 1 | 0 | Class 12 th pass in any subject | Studied Bengali Up to 10 th & Above |

Learning Objectives:

The whole range of literary creations in Bangla cannot be searched and studied in detail by any student of Bengali Literature in UG course. A history of Literature, thus, is a holistic approach towards the development of the literature. This paper will discuss the medieval period literature.

Learning outcomes:

It is impossible for a student of literature to know the vast number of written-literature intricately in a particular language. History of Literature will let the students know and study about the outline of Bengali literature and its development time to time with special reference to its background.

SYLLABUS OF DSC-4

Unit I (18 Hours)

সংরূপ পরিচিতি, উদ্ভব ও ক্রমবিকাশ, কবি পরিচিতি :

চৈতন্য জীবনী কাব্য (বৃন্দাবন দাস, কৃষ্ণদাস কবিরাজ), মঙ্গলকাব্য (বিজয়গুপ্ত, মুকুন্দরাম, ঘনরাম চক্রবর্তী, রূপরাম চক্রবর্তী, ভারতচন্দ্র)

Unit II (27 Hours)

সংরূপ পরিচিতি, উদ্ভব ও ক্রমবিকাশ, কবি পরিচিতি :

শান্ত পদাবলী (রামপ্রসাদ সেন, কমলাকান্ত ভট্টাচার্য), ময়মনসিংহ গীতিকা (মহুয়া ও মলুয়া), আরাকান রাজসভা (আলাওল, দৌলত কাজী), কবিওয়ালা ও কবিগান

Practical component (if any) - 0

Essential/Recommended Reading

অসিতকুমার বন্দ্যোপাধ্যায়, ২০০৪-২০০৫, *বাংলা সাহিত্যের সম্পূর্ণ ইতিবৃত্ত*, মডার্ন বুক এজেন্সী, কলকাতা
ক্ষেত্র গুপ্ত, ২০০২, *বাংলা সাহিত্যের সমগ্র ইতিহাস*, গ্রন্থনিলয়, কলকাতা

Suggested Reading

অসিতকুমার বন্দ্যোপাধ্যায়, ২০০৬-০৭, *বাংলা সাহিত্যের ইতিবৃত্ত*, দ্বিতীয় খণ্ড, মডার্ন বুক এজেন্সী, কলকাতা
অসিতকুমার বন্দ্যোপাধ্যায়, ২০০৯-২০১০, *বাংলা সাহিত্যের ইতিবৃত্ত*, তৃতীয় খণ্ড, প্রথম পর্ব, মডার্ন বুক এজেন্সী, কলকাতা
অসিতকুমার বন্দ্যোপাধ্যায়, ২০০৯-২০১০, *বাংলা সাহিত্যের ইতিবৃত্ত*, তৃতীয় খণ্ড, দ্বিতীয় পর্ব, মডার্ন বুক এজেন্সী, কলকাতা
আব্দুল করিম ও মুহম্মদ এনামুল হক, ২০১৭, *আরাকান-রাজসভায় বাঙ্গালা সাহিত্য*, সোপান, কলকাতা
আশুতোষ ভট্টাচার্য, ২০০৬, *বাংলা মঙ্গলকাব্যের ইতিহাস*, এ. মুখার্জী, কলকাতা
আহমদ শরীফ, ২০১১, *বাঙালী ও বাঙলা সাহিত্য*, দ্বিতীয় খণ্ড, নয়া উদ্যোগ, কলকাতা
দীনেশচন্দ্র সেন, ২০১৭, *প্রাচীন বাঙ্গালা সাহিত্যে মুসলমানের অবদান*, বাতিঘর, চট্টগ্রাম
দেবেশ কুমার আচার্য্য, ২০০৪, *বাংলা সাহিত্যের ইতিহাস*, আদি ও মধ্য যুগ, ইউনাইটেড বুক এজেন্সি, কোলকাতা
মুহম্মদ শহীদুল্লাহ, ২০০৬, *বাংলা সাহিত্যের কথা*, প্রথম খণ্ড, প্রাচীন যুগ, মওলা ব্রাদার্স, ঢাকা
রমাকান্ত চক্রবর্তী, ২০০৭, *বঙ্গ বৈষ্ণবধর্ম*, আনন্দ পাবলিশার্স, কলকাতা
সুকুমার সেন, ১৪১৪ বঙ্গাব্দ, *বাঙ্গালা সাহিত্যের ইতিহাস*, দ্বিতীয় খণ্ড, আনন্দ, কলকাতা
সুখময় মুখোপাধ্যায়, ১৯৭৪, *মধ্যযুগের বাংলা সাহিত্যের তথ্য ও কালক্রম*, জি ভরদ্বাজ অ্যান্ড কোং, কলকাতা

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 5 (DSC-5: Prachin O Madhyajuger Sahitya)

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------------|---------|-----------------------------------|----------|---------------------|--|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Prachin O Madhyajuger Sahitya) | 4 | 3 | 1 | 0 | Class 12 th pass in any subject | Studied Bengali Up to 10 th & Above |

Learning Objectives:

In accordance to the literary history, we ought to cater our students with a number of literary pieces from the ancient period to the end of the medieval period. This paper will include some best literary works starting from the Charyas.

Learning outcomes:

Going through the literature of old and medieval period the students may follow both the development of the language as well as the shifting of philosophical approach from time to time. They will know about the authors of those periods also who had to work hard to remain focused in a society mostly full of hurdles.

SYLLABUS OF DSC- 5

Unit I

চর্যাপদ (9 Hours)

নগর বাহিরে ডোষি তোহোরি কুড়িআ, টালত মোর ঘর নাহি পড়বেষী

Unit II (15 Hours)

শ্রীকৃষ্ণকীর্তন — বংশীখণ্ড (বড়ায়ি লইয়া রাহা গেলী সেই থানে ... তভেঁ তোর ভাল মতে), রাধাবিরহ (মেঘ আন্ধারী অতি ভয়ঙ্কর নিশি), রামায়ণ(রামের বিলাপ) — কৃতিবাস ওঝা, চণ্ডীমঙ্গল — ফুল্লরার বারমাস্যা, অনন্যদামঙ্গল — ভবানন্দ ভবনে যাত্রা, পদ্মাবতী — কন্যা বিদায়

Unit III

বৈষ্ণব পদাবলী (21 Hours)

নীরদ নয়নে নীর ঘন সিঞ্চনে, সেই কেবা শুনাইল শ্যাম-নাম, রাধার কি হৈল অন্তরে ব্যথা, রূপ লাগি আঁখি বুঝে গুণে মন ভোর, কন্টক গাড়ি কমল-সম পদতল, অব মথুরাপুর মাধব গেল, এ সখি হামারি দুখের নাহি ওর, বহুদিন পরে বধুয়া এলে

শান্ত পদাবলী

কি হলো নবমী নিশি, ফিরে চাও গো উমা, কবে যাবে বল গিরিরাজ, মা আমায় ঘুরাবে কত।

Practical component (if any) - 0

Essential/Recommended Reading

অমরেন্দ্রনাথ রায় (সম্পা.), ২০০২, *শান্ত পদাবলী চয়ন*, কলিকাতা বিশ্ববিদ্যালয়, কলকাতা
অমিত্রসূদন ভট্টাচার্য (সম্পা.), ২০০৪, *বড় চণ্ডীদাসের শ্রীকৃষ্ণকীর্তন সমগ্র*, দে'জ পাবলিশিং, কলকাতা
খগেন্দ্রনাথ মিত্র প্রমুখ, (সম্পা.), ১৯৯০, *বৈষ্ণব পদাবলী চয়ন*, কলিকাতা বিশ্ববিদ্যালয়, কলকাতা
দেবনাথ বন্দ্যোপাধ্যায়, ২০০১, *রাজসভার কবি ও কাব্য*, বঙ্গীয় সাহিত্য সংসদ, কলকাতা
নির্মল দাশ, ২০১০, *চর্যাপদে পরিচয়*, দে'জ পাবলিশিং, কলকাতা
ব্রজেন্দ্রনাথ বন্দ্যোপাধ্যায় ও সজনীকান্ত দাস (সম্পা.), ১৪২১ বঙ্গাব্দ, *ভারতচন্দ্র-গ্রন্থাবলী*, বঙ্গীয়-সাহিত্য-পরিষৎ, কলকাতা
সুকুমার সেন (সম্পা.), ১৯৭৫, *কবিকঙ্কন মুকুন্দ বিরচিত চণ্ডীমঙ্গল*, সাহিত্য অকাদেমি, কলকাতা
সুকুমার সেন (সম্পা.), ১৯৯১, *বাংলা কবিতা সমুচ্চয়: প্রথম খণ্ড*, সাহিত্য অকাদেমি, নতুন দিল্লী

Suggested Reading (if any)

আশিসকুমার দে, ১৯৯৭, *মধ্যযুগের বাংলা সাহিত্য: ভাষাপট ও ভাবকথা*, প্রথম খণ্ড, শৈলী, কলকাতা
আশুতোষ ভট্টাচার্য, ২০০৬, *বাংলা মঙ্গলকাব্যের ইতিহাস*, এ. মুখার্জী, কলকাতা
আহমদ শরীফ, ২০০০, *মধ্যযুগের সাহিত্যে সমাজ ও সংস্কৃতির রূপ*, সময় প্রকাশন, ঢাকা
আহমদ শরীফ, ২০০২, *মধ্যযুগের বাংলা সাহিত্য*, আগামী প্রকাশনী, ঢাকা
কালিদাস রায়, ২০০৪, *পদাবলী সাহিত্য*, করুণা, কলকাতা
ক্ষুদীরাম দাশ, ২০১৫, *বৈষ্ণব-রস-প্রকাশ*, দে'জ পাবলিশিং, কলকাতা
জহর সেনমজুমদার, ২০০৯, *মধ্যযুগের কাব্য: স্বর ও সংকট*, বঙ্গীয় সাহিত্য সংসদ, কলকাতা
ত্রিপুরাশঙ্কর সেনশাস্ত্রী, ১৯৮৮, *শান্তপদাবলী সাধনতত্ত্ব ও রস বিশ্লেষণ*, এস ব্যানার্জী, কলকাতা
দীনেশচন্দ্র সেন, ২০১৭, *প্রাচীন বাঙ্গালা সাহিত্যে মুসলমানের অবদান*, বাতিঘর, চট্টগ্রাম
ধ্রুবকুমার মুখোপাধ্যায় (সম্পা.) ১৩৬৫ বঙ্গাব্দ, *শান্ত পদাবলী*, বেঙ্গল পাবলিশার্স, কলকাতা

রমাকান্ত চক্রবর্তী, ২০০৭, *বঙ্গ বৈষ্ণব ধর্ম*, আনন্দ, কলকাতা
 শঙ্করীপ্রসাদ বসু, ২০০৭, *মধ্যযুগের কবি ও কাব্য*, জেনারেল, কলকাতা
 শঙ্করীপ্রসাদ বসু, ২০০৮, *চণ্ডীদাস ও বিদ্যাপতি*, দে'জ পাবলিশিং, কলকাতা
 সত্যব্রত দে, ১৯৯৭, *চর্যাগীতি পরিচয়*, জিজ্ঞাসা এজেন্সিজ, কলিকাতা
 সুকুমার সেন, ২০০৯, *চর্যাগীতি পদাবলী*, আনন্দ, কলকাতা
 সুখময় মুখোপাধ্যায়, ১৯৭৪, *মধ্যযুগের বাংলা সাহিত্যের তথ্য ও কালক্রম*, জি ভরদ্বাজ, কলকাতা

DISCIPLINE SPECIFIC CORE COURSE– 6 (DSC-6): Bangla Chotogalpo

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|--|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Bangla Chotogalpo | 4 | 3 | 1 | 0 | Class 12 th pass in any subject | Studied Bengali Up to 10 th & Above |

Learning Objectives:

The world of Bengali Fiction is growing day by day with authors experimenting the genre with various subjects and narrative styles. Bangla Chotogalpo dates back to the later part of nineteenth century. This paper will focus the development of this genre through reading of some Bengali Short stories.

Learning outcomes:

Students who have just passed the 12th standard examination will be introduced to the abundance of their literature and they will be expected to know after going through this paper that studying literature is not only to read some stories but they have to inculcate the habit of working and research of the given literature. Students will be able to study the development of their society and culture through literature.

SYLLABUS OF DSC-6

Unit I (9 Hours)

ছোটগল্পের সংজ্ঞা ও বৈশিষ্ট্য

Unit II (36 Hours)

- প্রভাতকুমার মুখোপাধ্যায় — দেবী
- পরশুরাম — ভূশভীর মাঠে
- বিভূতিভূষণ বন্দ্যোপাধ্যায় — কিন্নরদল
- তারাশঙ্কর বন্দ্যোপাধ্যায় — জলসাঘর
- বনফুল — নিমগাছ

- প্রেমেন্দ্র মিত্র — শুধু কেরানী
- সুবোধ ঘোষ — ফসিল
- নারায়ণ গঙ্গোপাধ্যায় — টোপ
- মহাশ্বেতা দেবী — ভাত
- আবুল বাশার — দুই অক্ষরের গল্প

Practical component (if any) - 0

Essential/Recommended Reading

অশ্রুকুমার সিকদার ও কবিতা সিংহ (সংক. ও সম্পা.), ২০১৩, *বাংলা গল্প সংকলন, দ্বিতীয় খণ্ড*, সাহিত্য অকাদেমি, নতুন দিল্লি
 আবুল বাশার, ১৯৫৭, *দুই অক্ষরের গল্প*, একই বৃত্তে(গল্পসংগ্রহ), প্রভা, কলকাতা
 জগদীশ ভট্টাচার্য (সম্পা.), ১৪২৪ বঙ্গাব্দ, *সুবোধ ঘোষের শ্রেষ্ঠ গল্প*, প্রকাশ ভবন, কলকাতা
 জগদীশ ভট্টাচার্য (সম্পা.), ১৪২৫ বঙ্গাব্দ, *প্রভাতকুমার মুখোপাধ্যায়ের শ্রেষ্ঠ গল্প*, প্রকাশ ভবন, কলকাতা
 দীপংকর বসু (সম্পা.), ২০০৩, *পরশুরাম গল্পসমগ্র*, এম. সি. সরকার এন্ড সন্স, কলকাতা
 বনফুল, ২০০৬, *বনফুলের শ্রেষ্ঠ গল্প*, বাণীশিল্প, কলকাতা
 মহাশ্বেতা দেবী, ১৯৯৩, *ছোটগল্প সংকলন*, ন্যাশান্যাল বুক ট্রাস্ট, ইন্ডিয়া, নতুন দিল্লি
 সৌরীন ভট্টাচার্য (সম্পা.), ২০১৫, *প্রেমেন্দ্র মিত্রের শ্রেষ্ঠ গল্প*, দে'জ পাবলিশিং, কলকাতা

Suggested Reading

অরিন্দম গোস্বামী, ২০১৮, *সুবোধ ঘোষ : কথা সাহিত্য*, তবুও প্রয়াস, চাপড়া
 অরুণকুমার মুখোপাধ্যায়, ২০০৪, *কালের পুত্রলিকা : বাংলা ছোটগল্পের একশ' দশ বছর : ১৮৯১-২০০০*, দে'জ পাবলিশিং কলকাতা
 উজ্জ্বলকুমার মজুমদার (সম্পা.), ২০০৮, *গল্পচর্চা*, বঙ্গীয় সাহিত্য সংসদ, কলকাতা
 জগদীশ ভট্টাচার্য, ১৯৯৪, *আমার কালের কয়েকজন কথাশিল্পী*, ভারবি, কলকাতা
 তরুণ মুখোপাধ্যায় ও শীতল চৌধুরী (সম্পা.), ২০০০, *প্রেমেন্দ্র মিত্র ও আধুনিক বাংলা সাহিত্য*, সাহিত্যলোক, কলকাতা
 নারায়ণ গঙ্গোপাধ্যায়, ১৪০৫ বঙ্গাব্দ, *সাহিত্যে ছোটগল্প*, মিত্র ও ঘোষ পাবলিশার্স, কলকাতা
 রথীন্দ্রনাথ রায়, ১৯৯৬, *ছোটগল্পের কথা*, পুস্তক বিপণি, কলকাতা
 রফিকউল্লাহ খান, ২০০২, *কথাসাহিত্যের বিচিত্র বিষয় ও নন্দনতত্ত্ব*, অনন্যা, ঢাকা
 শিশিরকুমার দাশ, ২০০৭, *বাংলা ছোটগল্প : ১৮৭৩-১৯২৩*, দে'জ পাবলিশিং, কলকাতা

Category II

B.A. Programmes with Bengali as Major discipline

DISCIPLINE SPECIFIC CORE COURSE – 3 (DSC-3): Prak-Uponibesher Bangla Sahitya – II (10th to 18th Shatak)

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|--|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Prak-Uponibesher Bangla Sahitya – II (10 th to 18 th Shatak) | 4 | 3 | 1 | 0 | Class 12 th pass in any subject | Studied Bengali Up to 10 th standard Or working knowledge of Bengali Language |

SYLLABUS OF DSC-3

Learning Objectives:

To give the students a detail idea about Pre-Colonial Bengali Literature.

Learning outcomes:

The course will enlighten the students about Pre-Colonial Bengali Literature, it's characteristics and features. It will also introduce students about their socio – cultural background of Bengal.

SYLLABUS OF DSC- 3

UNIT – I (12 Hours)

বৈষ্ণব পদাবলী(বিদ্যাপতি, চণ্ডীদাস, জ্ঞানদাস, গোবিন্দদাস), শাক্ত পদাবলী(রামপ্রসাদ সেন, কমলাকান্ত ভট্টাচার্য)

UNIT – II (21 Hours)

ময়মনসিংহ গীতিকা, জঙ্গনামা, নাথ সাহিত্য, রায়মঙ্গল ও শীতলা মঙ্গল, পীর সাহিত্য

UNIT - III (12 Hours)

বাউল ও ফকিরী গান, কবিওয়ালা ও কবিগান

Practical component (if any) - 0

Essential/recommended readings

অমরেন্দ্রনাথ রায় (সম্পা.), ২০০২, শান্ত পদাবলী চয়ন, কলিকাতা বিশ্ববিদ্যালয়, কলিকাতা
অমিত্রসূদন ভট্টাচার্য (সম্পা.) ২০০৪, বড় চণ্ডীদাসের শ্রীকৃষ্ণকীর্তন সমগ্র, দে'জ পাবলিশিং, কলিকাতা
খগেন্দ্রনাথ মিত্র প্রমুখ, (সম্পা.), ১৯৯০, বৈষ্ণব পদাবলী চয়ন, কলিকাতা বিশ্ববিদ্যালয়, কলিকাতা
বৃন্দাবন দাস, ১৯৯৩, শ্রীচৈতন্যভাগবত, শ্রীচৈতন্যমঠ, মায়াপুর, পশ্চিমবঙ্গ
ব্রজেন্দ্রনাথ বন্দ্যোপাধ্যায় ও সজনীকান্ত দাস(সম্পা) ১৪২১ বঙ্গাব্দ, ভারতচন্দ্র-গ্রন্থাবলী, বঙ্গীয়-সাহিত্য-পরিষৎ, কলিকাতা
মুহম্মদ এনামুল হক (সম্পা.), ১৯৯৯, শাহ মুহম্মদ সগীর বিরচিত ইউসুফ-জোলেখা, মাওলা ব্রাদার্স, ঢাকা

Suggestive readings (if any)

আশুতোষ ভট্টাচার্য, ২০০৬, বাংলা মঙ্গলকাব্যের ইতিহাস, এ, মুখার্জী এন্ড কোং, কলিকাতা
জহর সেনমজুমদার, ২০০৯, মধ্যযুগের কাব্য : স্বর ও সংকট, বঙ্গীয় সাহিত্য সংসদ, কলিকাতা
তারাপদ মুখোপাধ্যায়, ১৯৭১, শ্রীকৃষ্ণকীর্তন, মিত্র ও ঘোষ, কলিকাতা

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 4 (DSC-4): Bangla Bhasha, Sahitya O Itihas Parichay- II

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|--|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Bangla Bhasha, Sahitya O Itihas Parichay- II | 4 | 3 | 1 | 0 | Class 12 th pass in any subject | Studied Bengali up to 10 th standard Or Working knowledge of Bengali language |

Learning Objectives

To give the students a brief idea about Bengali Language, Literature & History.

Learning outcomes

The course will enlighten the students about rise and development of Bengali Language, History of early Bengal and selected literature of ancient and mediaeval Bengal.

SYLLABUS OF DSC- 4

UNIT – I (15 Hours)

বাক্যের সংজ্ঞা, বাক্যের গঠন ও শ্রেণিবিভাগ

বাক্যের প্রকার – সরল, জটিল, যৌগিক

UNIT – II (15 Hours)

বাঙালি জাতি সত্ত্বার ইতিহাস (আধুনিক যুগ)

রাজা রামমোহন রায়, হেনরি ডিরোজিও, লালন ফকির

UNIT – III (15 Hours)

আধুনিক যুগের বাংলা সাহিত্য

গদ্য - ফোর্ট উইলিয়াম কলেজ, বিদ্যাসাগর

কবিতা – মাইকেল মধুসূদন দত্ত, রবীন্দ্রনাথ ঠাকুর

নাটক – দীনবন্ধু মিত্র, গিরিশচন্দ্র ঘোষ

Practical component (if any) - 0

Essential/Recommended Reading:

সুকুমার সেন, ২০০১, ভাষার ইতিবৃত্ত, আনন্দ পাবলিশার্স, কলকাতা

নিহাররঞ্জন রায়, বাঙালির ইতিহাসঃ আদি পর্ব, ১৪২২, দে'জ, কলকাতা

অসিতকুমার বন্দ্যোপাধ্যায়, ২০০৪-২০০৫, বাংলা সাহিত্যের সম্পূর্ণ ইতিবৃত্ত, মডার্ন বুক এজেন্সী, কলকাতা

ক্ষেত্র গুপ্ত, ২০০২, বাংলা সাহিত্যের সমগ্র ইতিহাস, গ্রন্থনিলয়, কলকাতা

Suggested Reading:

অসিতকুমার বন্দ্যোপাধ্যায়, ২০০৯-২০১০, বাংলা সাহিত্যের ইতিবৃত্ত, পঞ্চম খণ্ড, মডার্ন বুক এজেন্সী, কলকাতা

অসিতকুমার বন্দ্যোপাধ্যায়, ২০০৭, বাংলা সাহিত্যের ইতিবৃত্ত, ষষ্ঠ খণ্ড, মডার্ন বুক এজেন্সী, কলকাতা

অসিতকুমার বন্দ্যোপাধ্যায়, ১৯৯২, বাংলা সাহিত্যের ইতিবৃত্ত, সপ্তম খণ্ড, মডার্ন বুক এজেন্সী, কলকাতা

অসিতকুমার বন্দ্যোপাধ্যায়, ২০০৭, বাংলা সাহিত্যের ইতিবৃত্ত, অষ্টম খণ্ড, মডার্ন বুক এজেন্সী, কলকাতা

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category III

B.A. Programmes with Bengali as non-Major or minor discipline

DISCIPLINE SPECIFIC CORE COURSE- 2 (DSC-2): Bangla Bhasha, Sahitya O Itihas Parichay- II

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|--|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Bangla Bhasha, Sahitya O Itihas Parichay- II | 4 | 3 | 1 | 0 | Class 12 th pass in any subject | Studied Bengali up to 10 th standard Or Working knowledge of Bengali language |

Learning Objectives

To give the students a brief idea about Bengali Language, Literature & History.

Learning outcomes

The course will enlighten the students about rise and development of Bengali Language, History of early Bengal and selected literature of ancient and mediaeval Bengal.

SYLLABUS OF DSC- 2

UNIT – I (15 Hours)

বাক্যের সংজ্ঞা, বাক্যের গঠন ও শ্রেণিবিভাগ

বাক্যের প্রকার – সরল, জটিল, যৌগিক

UNIT – II (15 Hours)

বাঙালি জাতি সত্ত্বার ইতিহাস (আধুনিক যুগ)

রাজা রামমোহন রায়, হেনরি ডিরোজিও, লালন ফকির

UNIT – III (15 Hours)

আধুনিক যুগের বাংলা সাহিত্য

গদ্য - ফোর্ট উইলিয়াম কলেজ, বিদ্যাসাগর

কবিতা – মাইকেল মধুসূদন দত্ত, রবীন্দ্রনাথ ঠাকুর

নাটক – দীনবন্ধু মিত্র, গিরিশচন্দ্র ঘোষ

Practical component (if any) - 0

Essential/Recommended Reading:

সুকুমার সেন, ২০০১, ভাষার ইতিবৃত্ত, আনন্দ পাবলিশার্স, কলকাতা

নিহাররঞ্জন রায়, বাঙালির ইতিহাসঃ আদি পর্ব, ১৪২২, দে'জ, কলকাতা

অসিতকুমার বন্দ্যোপাধ্যায়, ২০০৪-২০০৫, বাংলা সাহিত্যের সম্পূর্ণ ইতিবৃত্ত, মডার্ন বুক এজেন্সী, কলকাতা
ক্ষেত্র গুপ্ত, ২০০২, বাংলা সাহিত্যের সমগ্র ইতিহাস, গ্রন্থনিলায়, কলকাতা

Suggested Reading:

অসিতকুমার বন্দ্যোপাধ্যায়, ২০০৯-২০১০, বাংলা সাহিত্যের ইতিবৃত্ত, পঞ্চম খণ্ড, মডার্ন বুক এজেন্সী, কলকাতা
অসিতকুমার বন্দ্যোপাধ্যায়, ২০০৭, বাংলা সাহিত্যের ইতিবৃত্ত, ষষ্ঠ খণ্ড, মডার্ন বুক এজেন্সী, কলকাতা
অসিতকুমার বন্দ্যোপাধ্যায়, ১৯৯২, বাংলা সাহিত্যের ইতিবৃত্ত, সপ্তম খণ্ড, মডার্ন বুক এজেন্সী, কলকাতা
অসিতকুমার বন্দ্যোপাধ্যায়, ২০০৭, বাংলা সাহিত্যের ইতিবৃত্ত, অষ্টম খণ্ড, মডার্ন বুক এজেন্সী, কলকাতা

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES

GENERIC ELECTIVES (GE-1): Introductory Bengali

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department offering the course |
|-----------------------------|---------|-----------------------------------|----------|---------------------|---|-----------------------------|--------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| Introductory Bengali | 4 | 3 | 1 | 0 | Class 12 th pass in any subject except Bengali | None | Bengali |

Learning Objectives:

The Learning Objectives of this course are as follows:

- This course is aimed to teach the basic language skills in Bengali.
- It will introduce basic skills of the Bengali Language: its alphabets, essential words and simple sentence construction methods.
- The course intends to facilitate students acquiring primary skills of reading, writing and speaking Bengali along with building up an elementary vocabulary.

Learning outcomes:

The Learning Outcomes of this course are as follows:

- The course will enable the students to obtain the basic skills of reading, writing and speaking in Bengali along with building up a primary vocabulary.
- After the course they can read and write simple Bengali sentences, can figure out words having conjunct character.
- Students will learn basic everyday conversation.

SYLLABUS OF GE-1

UNIT – I (12 Hours)

Introduction to Bengali Vowel & Consonant sounds along with the sound-images

Introduction to vowel allographs

Introduction to Bengali Consonant Conjuncts

UNIT – II (11 Hours)

Introduction to Bengali Pronoun

Introduction to Bengali Noun, Numbers & Case Markers

UNIT – III (11 Hours)

Introduction to Verb & Time/Tense

Conjugation of different verbs

Bengali qualifiers/adjectives

Bengali postpositions

Conjunctions and its usage

UNIT – IV (11 Hours)

Making simple sentences in Bengali (basic syntactical rules)

Making Negative sentences in Bengali

Making Interrogative sentences in Bengali

Practical component (if any): 0

Essential/Recommended Reading:

Mahapatra, Tushar Kanti. (1999), Bengali for Non-Bengalis, Shishu Sahitya Samsad, Kolkata.

Mahapatra, Tushar Kanti. (1999), Bengali for Benginners, Shishu Sahitya Samsad, Kolkata.

Suggested Reading:

Study Materials will be provided by the respective department.

GENERIC ELECTIVES (GE-2): Introductory Bengali - II

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department offering the course |
|----------------------------------|---------|-----------------------------------|----------|---------------------|---|-----------------------------|--------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| Introductory Bengali - II | 4 | 3 | 1 | 0 | Class 12 th pass in any subject except Bengali | None | Bengali |

Learning Objectives:

This course is aimed to teach the basic language skills in Bengali. It will introduce basic skills of the Bengali Language: its alphabets, essential words and simple sentence construction methods. The course intends to facilitate students acquiring primary skills of reading, writing and speaking Bengali along with building up an elementary vocabulary.

Learning outcomes:

The course will enable the students to obtain the basic skills of reading, writing and speaking in Bengali along with building up a primary vocabulary. After completing the course they can read and write simple Bengali sentences, can figure out words having conjunct character, and can have basic everyday conversation.

SYLLABUS OF GE-1

UNIT – I (11 Hours)

Revision of the previous lesson

UNIT – II (12 Hours)

Compound verbs

Transitive and intransitive verbs

Making compound sentences in Bengali using conjunction

Making complex sentences in Bengali

UNIT – III (11 Hours)

Paragraph and letter Writing

UNIT – IV (11 Hours)

Conversation Writing

Practical component (if any): 0

Essential/Recommended Reading:

Mahapatra, Tushar Kanti. (1999), Bengali for Non-Bengalis, Shishu Sahitya Samsad, Kolkata.

Mahapatra, Tushar Kanti. (1999), Bengali for Benginners, Shishu Sahitya Samsad, Kolkata.

Suggested Readings:

Study Materials will be provided by the respective department.

GENERIC ELECTIVES (GE-3: Bangla Sahityer Sankhipta Parichay

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|------------------------------------|---------|-----------------------------------|----------|---------------------|--|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Bangla Sahityer Sankhipta Parichay | 4 | 3 | 1 | 0 | Class 12 th pass in any subject | Studied Bengali Up to 10 th standard Or working knowledge of Bengali Language |

Learning Objectives:

To introduce the general history of the history of Bengali language and literature, periodization of Bengali literature, important genres, institutions and litterateurs of Bengali literature.

Learning outcomes:

This course will enable students to understand the general history of Bengali language and literature along with basic knowledge of important genres, institutions and litterateurs of Bengali literatures.

SYLLABUS OF GE-2

UNIT – I (15 Hours)

বাংলা সাহিত্যের সংক্ষিপ্ত পরিচয়: বাংলাসাহিত্যের যুগবিভাগ ও যুগবৈশিষ্ট্য

UNIT – II (15 Hours)

প্রাচীন ও মধ্যযুগ : চর্যাপদ, শ্রীকৃষ্ণকীর্তন, অনুবাদ সাহিত্য(কৃত্তিবাস ও বা), মঙ্গলকাব্য(মুকুন্দরাম, ভারতচন্দ্র), বৈষ্ণব পদাবলী(বিদ্যাপতি, চণ্ডীদাস), শান্ত পদাবলী(রামপ্রসাদ সেন), প্রণয় কাব্য(সৈয়দ আলাওল)

UNIT – III (15 Hours)

আধুনিক যুগ : বাংলা গদ্যের বিকাশ(ফোর্ট উইলিয়াম কলেজ, রামমোহন রায়, বিদ্যাসাগর) কথাসাহিত্য(বঙ্কিমচন্দ্র চট্টোপাধ্যায়, রবীন্দ্রনাথ ঠাকুর, শরৎচন্দ্র চট্টোপাধ্যায়), নাটক ও প্রহসন(মধুসূদন দত্ত, দীনবন্ধু মিত্র, গিরিশ ঘোষ), কাব্য ও কবিতা (মধুসূদন দত্ত- মহাকাব্য, বিহারীলাল চক্রবর্তী- গীতিকাব্য, রবীন্দ্রনাথ ঠাকুর)

Practical component (if any): 0

Essential/Recommended Readings:

অসিতকুমার বন্দ্যোপাধ্যায়, ২০০৪-২০০৫, *বাংলা সাহিত্যের সম্পূর্ণ ইতিবৃত্ত*, মডার্ন বুক এজেন্সী, কলকাতা
ক্ষেত্র গুপ্ত, ২০০২, *বাংলা সাহিত্যের সমগ্র ইতিহাস*, গ্রন্থনিলয়, কলকাতা

Suggested Reading:

আহমদ শরীফ, ২০১১, *বাঙালী ও বাঙলা সাহিত্য*, দ্বিতীয় খণ্ড, নয়া উদ্যোগ, কলকাতা
আহমদ শরীফ, ২০১৪, *বাঙালী ও বাঙলা সাহিত্য*, প্রথম খণ্ড, নয়া উদ্যোগ, কলকাতা
গোপাল হালদার, ১৪০৪ বঙ্গাব্দ, *বাঙলা সাহিত্যের রূপ-রেখা*, প্রথম খণ্ড, অরুণা প্রকাশনী, কলকাতা
গোপাল হালদার, ১৪১২ বঙ্গাব্দ, *বাঙলা সাহিত্যের রূপ-রেখা*, দ্বিতীয় খণ্ড, অরুণা প্রকাশনী, কলকাতা
দেবেশ কুমার আচার্য্য, ২০০৪, *বাংলা সাহিত্যের ইতিহাস*, আদি ও মধ্য যুগ, ইউনাইটেড বুক এজেন্সি, কোলকাতা
দেবেশ কুমার আচার্য্য, ২০০৭, *বাংলা সাহিত্যের ইতিহাস*, আধুনিক যুগ, ইউনাইটেড বুক এজেন্সি, কোলকাতা
সুখময় মুখোপাধ্যায়, ১৯৭৪, *মধ্যযুগের বাংলা সাহিত্যের তথ্য ও কালক্রম*, জি. ভরদ্বাজ এণ্ড কোং, কলকাতা

GENERIC ELECTIVES (GE- 4): Bingsha Shatabdir Bangla Kathasahitya

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|--|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Bingsha Shatabdir Bangla Kathasahitya | 4 | 3 | 1 | 0 | Class 12 th pass in any subject | Studied Bengali Up to 10 th standard Or working knowledge of Bengali Language |

Learning Objectives:

To introduce the generic features of novel and short story, and important texts of Bengali novel and short story.

Learning outcomes:

This course will enable students to understand the generic features of novel and short story and the artistic achievement of Bengali writers in these genres.

SYLLABUS OF GE-3

UNIT – I (9 Hours)

উপন্যাস ও ছোটগল্পের সংজ্ঞা ও শ্রেণিবিভাগ

UNIT – II (18 Hours)

বিভূতিভূষণ বন্দ্যোপাধ্যায় – পথের পাঁচালী

UNIT – III (18 Hours)

পরশুরাম — চিকিৎসা সংকট

মানিক বন্দ্যোপাধ্যায় – হারানের নাটজামাই

বনফুল — নিমগাছ

প্রেমেন্দ্র মিত্র – শৃঙ্খল

লীলা মজুমদার – নটে মামা

Practical component (if any): 0

Essential/Recommended Reading:

বিভূতিভূষণ বন্দ্যোপাধ্যায়, ১৪১১, পথের পাঁচালী, মিত্র ও ঘোষ পাবলিশার্স প্রা: লি:, কলকাতা

দীপংকর বসু (সম্পা.), ২০০৩, পরশুরাম গল্পসমগ্র, এম. সি. সরকার এন্ড সন্স, কলকাতা

বনফুল, ২০০৬, বনফুলের শ্রেষ্ঠ গল্প, বাণীশিল্প, কলকাতা

যুগান্তর চক্রবর্তী(সম্পা.), ২০০৮, মানিক বন্দ্যোপাধ্যায়ের শ্রেষ্ঠ গল্প, বেঙ্গল পাবলিশার্স (প্রা:) লিমিটেড, কলকাতা

সোমা গঙ্গোপাধ্যায়(সম্পা.), ২০০৮, লীলা মজুমদার রচনাসমগ্র : প্রথম খণ্ড, লালমাটি, কলকাতা

সৌরীন ভট্টাচার্য (সম্পা.), ২০১৫, প্রেমেন্দ্র মিত্রের শ্রেষ্ঠ গল্প, দে'জ পাবলিশিং, কলকাতা

Suggested Reading:

অরুণকুমার মুখোপাধ্যায়, ২০০২, মধ্যাহ্ন থেকে সায়াহ্নে : বিংশ শতাব্দীর বাংলা উপন্যাস, দে'জ পাবলিশিং, কলকাতা

অরুণকুমার মুখোপাধ্যায়, ২০০৪, কালের পুতুলিকা : বাংলা ছোটগল্পের একশ' দশ বছর : ১৮৯১-২০০০, দে'জ পাবলিশিং কলকাতা

অরুণকুমার মুখোপাধ্যায়, ২০১০, কালের প্রতিমা : বাংলা উপন্যাসের পঁচাত্তর বছর : ১৯২৩-১৯৯৭, দে'জ পাবলিশিং, কলকাতা

অশ্রুকুমার সিকদার, ১৯৮৮, আধুনিকতা ও বাংলা উপন্যাস, অরুণা প্রকাশনী, কলকাতা

উজ্জ্বলকুমার মজুমদার (সম্পা.), ২০০৮, গল্পচর্চা, বঙ্গীয় সাহিত্য সংসদ, কলকাতা

জগদীশ ভট্টাচার্য, ১৯৯৪, আমার কালের কয়েকজন কথাশিল্পী, ভারবি, কলকাতা

তরুণ মুখোপাধ্যায় ও শীতল চৌধুরী (সম্পা.), ২০০০, প্রেমেন্দ্র মিত্র ও আধুনিক বাংলা সাহিত্য, সাহিত্যলোক, কলকাতা

দেবীপদ ভট্টাচার্য, ১৯৬১, উপন্যাসের কথা, সুপ্রকাশ, কলকাতা

নারায়ণ গঙ্গোপাধ্যায়, ১৪০৫ বঙ্গাব্দ, সাহিত্যে ছোটগল্প, মিত্র ও ঘোষ পাবলিশার্স, কলকাতা

রথীন্দ্রনাথ রায়, ১৯৯৬, ছোটগল্পের কথা, পুস্তক বিপণি, কলকাতা

রফিকউল্লাহ খান, ২০০২, কথাসাহিত্যের বিচিত্র বিষয় ও নন্দনতত্ত্ব, অনন্যা, ঢাকা

শিশির চট্টোপাধ্যায়, ১৯৬২, উপন্যাস-পাঠের ভূমিকা, বুকল্যান্ড, কলকাতা

শিশিরকুমার দাশ, ২০০৭, বাংলা ছোটগল্প : ১৮৭৩-১৯২৩, দে'জ পাবলিশিং, কলকাতা

শ্রীকুমার বন্দ্যোপাধ্যায়, ২০১০-২০১১, বঙ্গসাহিত্যে উপন্যাসের ধারা, মডার্ন বুক এজেন্সী, কলকাতা

সত্যেন্দ্রনাথ রায়, ২০০০, বাংলা উপন্যাস ও তার আধুনিকতা, দে'জ পাবলিশিং, কলকাতা

সরোজ বন্দ্যোপাধ্যায়, ২০১২, বাংলা উপন্যাসের কালান্তর, দে'জ পাবলিশিং, কলকাতা

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-5): Byabaharik Bangla Bhasha O Byakaran

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-------------------------------------|---------|-----------------------------------|----------|---------------------|--|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Byabaharik Bangla Bhasha O Byakaran | 4 | 3 | 1 | 0 | Class 12 th pass in any subject | Studied Bengali Up to 10 th standard Or working knowledge of Bengali Language |

Learning Objectives:

To give the students an idea of introductory grammar of Bengali language. It also offers a general idea of writing skills, such as letter writing, paragraph writing etc. to the students.

Learning outcomes:

The course will enlighten the students with basic level of Bengali Grammar and language.

SYLLABUS OF GE-3

UNIT – I (12 Hours)

সমোচ্চারিত ভিন্নার্থক শব্দ, বিপরীতার্থক শব্দ, সমার্থক শব্দ

UNIT – II (11 Hours)

বাক্য সংশোধন

UNIT – III (11 Hours)

পত্ররচনা

UNIT – IV (11 Hours)

বোধ পরীক্ষণ

Practical component (if any): 0

Essential/ Recommended Reading:

তারকনাথ গঙ্গোপাধ্যায়, ১৯৮৮, প্রবন্ধ বিচিত্রা, খণ্ড ১ ও ২, গ্রন্থভারতী, কলকাতা

বাংলা কি লিখবেন কেন লিখবেন আনন্দবাজার পত্রিকা ব্যবহার বিধি, ২০১৪, আনন্দ, কলকাতা

সুনীতিকুমার চট্টোপাধ্যায়, ২০১১, সরল ভাষাপ্রকাশ বাঙলা ব্যাকরণ, প্রকাশ ভবন, কলকাতা

Suggested Reading:

মুহম্মদ শহীদুল্লাহ, ২০১২, বাঙ্গালা ভাষার ইতিবৃত্ত, মাওলা ব্রাদার্স, ঢাকা

সুকুমার সেন, ২০০১, ভাষার ইতিবৃত্ত, আনন্দ পাবলিশার্স, কলকাতা

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-6): Bangla Byakaran Parichay – I

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-------------------------------------|---------|-----------------------------------|----------|---------------------|--|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Bangla Byakaran Parichay – I | 4 | 3 | 1 | 0 | Class 12 th pass in any subject | Studied Bengali Up to 10 th standard Or working knowledge of Bengali Language |

Learning Objectives:

- To make the students aware about basic grammar of Bengali language.
- To make students familiar with various forms of Bengali modern grammar.

Learning outcomes:

- The course would enlighten the students on the topic such as Dhawani, Barna, Pada etc.
- The students could be able to understand and analyse the basic knowledge of Bengali language.

SYLLABUS OF GE-3

UNIT – I (15 Hours)

ধ্বনি ও বর্ণ (সংজ্ঞা, পার্থক্য, শ্রেণিবিভাগ - স্বরধ্বনির শ্রেণীবিভাগ এবং উচ্চারণস্থান অনুযায়ী ব্যঞ্জনধ্বনির শ্রেণিবিভাগ)

UNIT – II (15 Hours)

ধ্বনি পরিবর্তনের কারণ, ধারা ও নির্বাচিত সূত্র (অপিনিহিত, অভিশ্রুতি, স্বরসঙ্গতি, সমীভবন)

UNIT – III (15 Hours)

পদ (সংজ্ঞা ও শ্রেণিবিভাগ), কারক (সংজ্ঞা ও শ্রেণিবিভাগ), ক্রিয়ার কাল (মৌলিক কাল)

Practical component (if any): 0

Essential/Recommended Reading:

আবুল কালাম মনজুর মোরশেদ, ২০১৩, আধুনিক ভাষাতত্ত্ব, মাওলা ব্রাদার্স, ঢাকা
রামেশ্বর শ', ১৪১৯ বঙ্গাব্দ, সাধারণ ভাষাবিজ্ঞান ও বাংলা ভাষা, পুস্তক বিপণি, কলকাতা
সুনীতিকুমার চট্টোপাধ্যায়, ২০১১, সরল ভাষাপ্রকাশ বাঙলা ব্যাকরণ, প্রকাশ ভবন, কলকাতা

Suggested Reading:

পরেশচন্দ্র মজুমদার, ২০০৮, বাঙলা ভাষা পরিক্রমা, ২-খণ্ড, দে' জ, কলকাতা

মুহম্মদ শহীদুল্লাহ, ২০১২, বাঙ্গালা ভাষার ইতিবৃত্ত, মাওলা ব্রাদার্স, ঢাকা

সুকুমার সেন, ২০০১, ভাষার ইতিবৃত্ত, আনন্দ পাবলিশার্স, কলকাতা

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-7): Tagore through Texts (Tagore ka Sahitya)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--|---------|-----------------------------------|----------|---------------------|--|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Tagore through Texts (Tagore ka Sahitya) | 4 | 3 | 1 | 0 | Class 12 th pass in any subject | Studied Bengali Up to 10 th standard Or working knowledge of Bengali Language |

Tagore through Texts (Tagore ka Sahitya)

Learning Objectives:

Rabindranath Tagore, the first Nobel Laurette from Asia, is one of the most important litterateur and philosopher from Bengal and India. His influence spanned over India and beyond. At the same time, he remains one of the post popular author whose literary works continue to engage people. This course will provide an introduction to his writings and though through close study of selected texts.

Learning outcomes:

The students will be able to appreciate the literary and philosophical contribution of Tagore through close reading of selected literary works.

UNIT-I (11 Hours)

Tagore: A biographical outline

UNIT-II (11 Hours)

Geetanjali (selected poems)

UNIT-III (12 Hours)

Gora (selected chapters)

UNIT-IV (11 Hours)

Short Stories (selected stories)

Practical component (if any): 0

Essential/Recommended Reading:

Rabindranath Tagore, The Complete Work of Rabindranath Tagore, 2017, General Press, Daryagang, New Delhi.

Rabindranath Tagore, 2002, Gora, Rupa Publication India Pvt. Ltd, Daryagang, New Delhi .

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

GENERIC ELECTIVES (GE-8): Bengali Culture (Bangali Sanskriti)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|-------------------------------------|---------|-----------------------------------|----------|---------------------|--|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Bengali Culture (Bangali Sanskriti) | 4 | 3 | 1 | 0 | Class 12 th pass in any subject | Studied Bengali Up to 10 th standard Or working knowledge of Bengali Language |

Bengali Culture (Bangali Sanskriti)

Learning Objectives:

Bengalis have added to our Great Indian tradition with an abundant Cultural heritage of their own. This paper aims at catering to the students with no knowledge of Bengalis & their Cultural. This paper would let the students know about Bengali Culture and its rich Tradition. It will include Bengali Language, Literature, Performing Arts, Paintings, Rituals etc.

Learning outcomes:

This course will enable the students from Non-Bengali background to have the knowledge of Bengali Music, Dances, Paintings, Arts and Artifacts, folk culture of Bengal. By knowing Bengali Cultural Heritage, their own knowledge, belief, Sense of beauty and Human values will grow side by side.

UNIT-I (15 Hours)

Bengal: Its Geographical Boundaries

UNIT-II (15 Hours)

Cultural History of Bengal: Architecture, Paintings, Dances

UNIT-III (15 Hours)

19th Century Bengal 20 UNIT-IV Bengali Folk Culture: An Outline

Practical component (if any): 0

Essential/Recommended Reading:

- Banejee, Sumanta (2016) Memoirs of Roads, Oxford University Press
- Bhattacharya, Ashutosh (2011) Bangal : Loksanskriti Aur sahitya, NBT, Delhi
- Dutt, R.C. (1962) Cultural heritage of Bengal, Punthi Pustak, Calcutta
- Ray, R. (1994). History of the Bengali People. Orient BlackSwan.
- Das, S.N. (2005). The Bengalis: The People, Their History and Culture.
- Sengupta, Nitish (2001). History of the Bengali-speaking People. UBS Publishers'
- Sengupta, Nitish (2011). Land of Two Rivers: A History of Bengal from the Mahabharata to Mujib. Penguin UK.
- Murshid, Ghulam (2012). Bengali Culture. (Online ed.). Dhaka, Bangladesh

TELUGU (MIL&LS)

Category I

**(B.A (Prog.) Courses for Undergraduate Programme of study with
Tamil Discipline –Minor as one of the Core Disciplines)**

SEMESTER-II

CORE (DSC)

(DSC - 3)

HISTORY OF TELUGU LANGUAGE

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE
COURSE**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre- requisite of the course (if any) |
|---|---------|--------------------------------------|----------|------------------------|--|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| HISTORY OF TELUGU LANGUAGE | 4 | 03 | 01 | 0 | Students who have studied Telugu up to 8 th Standard | NIL |

Learning Objectives

The course intends to furnish a comprehensive account of the origin and development of the Telugu language in the light of studies during the modtimestime. It is broadly divided into three main periods: (i) Influence of Prakrit and Dravidian languages up to A.D. 1100, (ii) Influence of Sanskrit from A.D. 1100 to 1800 and (iii) European influence and modern trends from A.D.1800. It discusses phonological, morphological, semantic and syntactic changes taken place in the language.

Learning outcomes

This course would enlighten the students the place of Telugu in Dravidian family of languages, various dialects of Telugu and the impact of Sanskrit and other languages in Telugu.

SYLLABUS OF DSC

Unit-I

15 hours

- (i) Dravidian Languages and Telugu.
- (ii) Evolution of Telugu Script.
- (iii) Mentions of Telugu, Tenugu and Andhramu.

Unit-II

15 hours

- (i) Evolution of Telugu Language: B.C.200 to A.D. 1100.
- (ii) Phonological, Morphological and syntactic changes: A.D.1100 to 1900.

Unit-III

15 hours

- (i) Semantic changes.
- (ii) Dialects in Telugu

Essential/recommended readings

1. Krishnamurthy, Bh., (Ed.) 2004, *Telugu Bhasha Caritra*, Hyderabad: PS Telugu University.
2. Simmanna, V., 2004, *Telugu Bhasha Carita*, Visakhapatnam: Dalita Sahitya Peetam.
3. Somayaji, GJ., 1969. *Andhra Bhasha Vikasamu*, Machilipatnam: Triveni Publishers.
4. Sphurtisree, 1972, *Telugu Bhasha Caritra*, Kakinada: Prashanthi publishers.
5. Subrahmanyam, P.S., 1997, *Dravida Bhashalu*, Hyderabad: PS Telugu University.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

**(B.A (Prog.) Courses for Undergraduate Programme of study with
Tamil Discipline –Major as one of the Core Disciplines)**

(DSC - 4)

TELUGU NOVEL

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE
COURSE**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|--|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| TELUGU NOVEL | 4 | 03 | 01 | 0 | Students who have studied Telugu up to 10 th Standard | NIL |

Learning Objectives

In fictional writings, novel is considered as one of the popular writing in Telugu. Though it was begun in Telugu with influence of western literature, it has been representing Telugu culture and society.

Learning outcomes :

This course will give an understanding of Learning about varied techniques of fiction and socio-political issues in fiction writing.

SYLLABUS OF DSC

Unit-1. The origin and development of Telugu Novel.

15 Hours

Unit-2. Features of Novel and trends and various approaches in fiction writing.

10 Hours

Unit-3. Select Texts:

20 Hours

Chaduvu by Kodavatiganti Kutumbarao.

Chillara Devullu by Dasharathi rangacharya

Boyakottamulu pannendu by Karanam Balasubramanyam pillai

Essential/recommended readings

Kutumbarao, Kodavatiganti., 2004, *Chaduvu*, Hyderabad: Vishalandra Publishing house. (1982).

Keshava Reddy., 2014, *Atadu Adavini Jayinchadu*, Hyderabad: Vishalandra Publishing house. (1987).

Rangacharya, Dasharathi, 2001, *Chillara Devullu*, Hyderabad: Vishalandra Publishing house. (1963).

Kutumbarao, Boddapati Venkata., 1971, *Andhra Navala Parinamamu*, Hyderabad: Gayatri Prachiranal.

Balasubramanyam pillai, Karanam. 2013, *Boyakottamulu pannendu*, Madanapalle:_____.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

**POOL OF GENERIC ELECTIVE
(GE-2)
CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE
COURSE**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|---|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introductory Telugu | 4 | 03 | 01 | 0 | Students who have not studied Telugu up to 8th Standard | NIL |

Learning Objectives

The aim of the course is to teach basic language skills in Telugu and it intends to facilitate students in acquiring foundational skills of reading, writing and speaking in Telugu along with synonyms to expand vocabulary. This course is divided into three units and it will cover the basic language structures, the activities and functions normally explored by a beginners' syllabus, i.e. the learning Telugu syllables, making simple sentence construction and use the same sentences with fellow students, it goes further, covering situations such as working, studying and including materials focused on the Telugu media i.e., cinema, television, the press and advertising. In terms of grammar structures, the exercises are at the basic level only.

Learning outcomes

The course will enable the students to obtain the basic skills of reading, writing and speaking in Telugu along with building up a primary vocabulary. After completing the course, they can read and construct simple Telugu sentences, figure out words having conjunct character, and can learn functional, everyday conversation in different language usage situations. Students interact with classmates by using simple sentences about their daily routine matters on official and informal occasions.

SYLLABUS OF GE

Unit I

12 Hours

Introduction to Telugu Vowel & Consonant sounds & along with the sound-image
Introduction to Telugu Consonant Conjunct

Unit II

12 Hours

Introduction to Telugu Pronoun & its Subjunctives
Introduction to Telugu Noun, Numbers & its Subjunctives
Telugu qualifiers/adjectives
Telugu prepositions
Conjunctions and its usage

Unit III

12 Hours

Introduction to Verb & Time/Tense
Conjugation of different verbs

Unit IV

9 Hours

Making simple sentences in Telugu (basic syntactical rules)
Making Negative sentences in Telugu
Making Interrogative sentences in Telugu

Essential/recommended readings

Arden, A H., 1905, *A progressive grammar of the Telugu language*. 2nd ed. Madras: Society for promoting Christian knowledge.

Krishnamurti, B. and Gwynn, J. P. L. 1986, *A Grammar of Modern Telugu*. USA: Oxford University Press,.

Parandhama Reddy, M. and Venkateswara Shastri, J. 1997. *Telugu Velugu- I*. Mysore: Central Institute of Indian Languages.

Ramanarasimham, Parimi. 1985, *An Intensive Course in Telugu*. Mysore: Central Institute of Indian Languages,

Sanjay, D., 2019, *Spoken Telugu for Absolute Beginners*. _____: _____.

Venkatavadhani, Divakarla. 2017, *Telugu in Thirty Days*. Hyderabad. Andhra Pradesh Sahitya academy.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

**GENERIC ELECTIVE
(GE-2)**

**INTERMEDIATE TELUGU – (For those who have completed
Introductory Telugu)**

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE
COURSE**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre- requisite of the course (if any) |
|---|---------|--------------------------------------|----------|------------------------|--|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| INTERMEDIATE TELUGU – (For those who have completed Introductory Telugu) | 4 | 03 | 01 | 0 | Students who have not studied Telugu up to 10 th Standard | NIL |

Learning Objectives

This course has been designed for students who have the primary knowledge of the Telugu language and can make as well as to figure out simple sentences. The course enables students to construct compound and complex sentences in Telugu. Furthermore, the course empowers the students to acquire skills to comprehend small passages, writing short paragraphs, and having better conversational skills and teach them the basic rules of translation as well. The course offers a wide range of exercises from the book and challenging activities can be given to students i.e. vocabulary-based activity or a grammar drill, a language manipulation exercise or an up-to-date reading comprehension. A unit focuses on particular topic and also to those students who want to practice the language through additional independent study and open-ended exercises will be included to encourage learners to communicate more spontaneously and to allow some autonomy and encourage creativity.

Additional materials and support will be given to the students.

Learning outcomes

The course will enable students to understand the distinctions of the language by empowering them with better reading, writing and conversational skills. Students will try to capture radio and TV advertisements, news, advertisements and other programs broadcast. They will read short paragraphs in a language related to books, newspapers, magazines, notice boards, posters, personal and other types of letters, etc., as well as the use of dictionaries and reference texts. They will also try to write a short portion on select topics and write personal and other types of letters, directly on familiar and simple topics, and write independent articles. Students will be able to translate any prose words from Telugu to English and vice versa with the help of a dictionary or through online sources.

SYLLABUS OF GE

Unit I

15 Hours

Compound verbs
Transitive and intransitive verbs
Making compound sentences in Telugu using conjunction
Making complex sentences in Telugu

Unit II

15 Hours

Reading comprehension, Paragraph and letter Writing, Conversation writing

Unit III

15 Hours

Translation from English to Telugu
Translation from Telugu to English

Essential/recommended readings

Arden, A H., 1905. *A progressive grammar of the Telugu language*. 2nd ed. Madras: Society for promoting Christian knowledge.

Krishnamurti, B. and Gwynn, J. P. L., 1986, *A Grammar of Modern Telugu*. USA: Oxford University Press.

Parandhama Reddy, M. and Venkateswara Shastri, J. *Telugu Velugu- I*. 1997, Mysore: Central Institute of Indian Languages.

Ramanarasimham, Parimi., 1985, *An Intensive Course in Telugu*. Mysore: Central Institute of Indian Languages.

Ramanarasimham, Parimi, 1974. *Telugu Velugu -III*. Mysore: Central Institute of Indian Languages.

Reddy G.N. and Matson D.M. 1966. *Glossaries for graded readings in newspaper Telugu and modern literary Telugu*: USA: U.S. Department of health, education & welfare.

Sanjay, D., 2019, *Spoken Telugu for Absolute Beginners*. _____: _____.

Venkataramana Rao, Y., 1976. *Telugu Velugu -IV*. Mysore: Central Institute of Indian Languages.

Venkatavadhani, Divakarla., 2017, *Telugu in Thirty Days*. Hyderabad. Andhra Pradesh Sahitya academy.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

TAMIL (MIL&LS)

Category II

(B.A (Prog.) Courses for Undergraduate Programme of study with Tamil Discipline –Major as one of the Core Disciplines)

DISCIPLINE SPECIFIC CORE COURSE (DSC-3): History of Tamil Literature- (Ancient)

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------------------|---------|-----------------------------------|----------|---------------------|-----------------------------|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| History of Tamil Literature (Ancient) | 04 | 03 | 01 | 00 | Class 12 th pass | Students who have studied the Tamil language up to Class XII |

Learning Objectives:

The aim of the course is to give a complete survey of ancient Tamil literature in chronological order. Since Tamil has a vast collection of literature from the ancient to modern time, it is necessary to introduce to the students of ancient literature with literary texts in historical background. This course explains the types of Tamil literature, their social and historical background of Sangam period. The earliest available literature of Tamil, the *Sangam Anthology* and *Tolkāppiyam* are taken as the source to discuss the structure of ancient Tamil.

Learning Outcomes:

This course will enable students to understand the ancient literary history in a comprehensive method. The evolution, changes, and transition in literary production, emergence, and development of various literary genres are discussed with specific examples.

SYLLABUS OF DSC -3

Total Hours of Teaching: 60 Hrs

(Lecture-45 Hrs, Tutorials -15 Hrs)

Unit -I (L-09 Hrs.)

- History of Three Tamil Sangams & Sangam Literature: Tholkappiam, Eighteen Upper Anthologies (Ettuthokai & Pathuppaattu)

Unit -II (L-09 Hrs.)

- Sangam Literature: Eighteen Lower Anthologies (Thirukkural & 18 Ethical Literature)

Unit -III (L-09 Hrs.)

- Five Major Epics & Five Minor Epics

Unit -IV (L-09 Hrs.)

- Bakthi Literature: Saiva Naayanmars, Manickavasagar (Thevaram, Thiruvvasagam)

Unit -V (L-09 Hrs.)

- Vaishnava Aazhvaars Naalaayira Divya Prabhandam)

Essential/recommended Readings:

- Varadarajan, M., 1972, *Tamiḻ Ilakkiya Varalāru*, New Delhi: Sahitya Akademi.
- Meenakshisundaram, T.P., 1965, *History of Tamil Literature*, Annamalai Nagar: Annamalai University.
- Thamizhannal.2000. Puthiya Nokkil Thamizh Ilakkiya Varalaru, Madurai: Meenakshi Puththaka Nilaiyam.

Suggestive Readings:

- M.R.Adaikkalasamy. 1991. Tamil Ilakkiya Varalaaru, Chennai: Saiva Sidhantha Nurpathippuk Kazhagam.
- Pakkiyarnary, T., 2014, *Vagaimai Nōkkil Tamiḻ Ilakkiya Varalāru*, Chennai: Meenakshi Puttaga Nilayam.
- Subash Chandra Bose, S., 2008, *Tamiḻ Ilakkiya Varalāru*, Chennai: Pavai Publication.
- G.Devaneyap Paavanar, Thamizh Ilakkiya Varalaru, Ilankumaran Pathippakam, Chennai: 2017.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category III

(B.A (Prog.) with Tamil Discipline as Minor

DISCIPLINE SPECIFIC CORE COURSE – 4(DSC-4): An Introduction of Tamil Literature

(This course is Common in B.A (Programme) with Tamil as Major Discipline)

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|-----------|-----------------------------------|-----------|---------------------|-----------------------------------|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| An Introduction of Tamil Literature (Modern) | 04 | 03 | 01 | 00 | Class 12th pass | For students who have studied the Tamil language up to Class Xth & above. |

Learning Objectives:

The aim of the course is to give a complete survey of Modern Tamil literature in chronological order. Since Tamil has a vast collection of literature from the ancient to modern time, it is necessary to introduce to the students modern literature with literary texts in historical background.

Learning Outcomes:

This course explains the types of Tamil literature, their social and historical background from Modern period. The evolution, changes, and transition in literary production, emergence, and development of various literary genres are discussed with specific examples.

SYLLABUS OF DSC

Total Hours of Teaching: 60 Hrs

(Lecture-45 Hrs, Tutorials -15 Hrs)

Unit -I (L-09 Hrs.)

- Poetry literature: Traditional Poetry,

Unit -II (L-09 Hrs.)

New Verses & Hycoo.

Unit -III (L-09 Hrs.)

- Prose & Drama Literatures

Unit -IV (L-09 Hrs.)

- Short story & Novel Literatures

Unit -V (L-09 Hrs.)

- Christian & Islamic Literatures

Essential/recommended Readings:

1. Varadarajan, M., 1972, *Tamiḷ Ilakkiya Varalāru*, New Delhi: Sahitya Akademi.
2. Meenakshisundaram, T.P., 1965, *History of Tamil Literature*, Annamalai Nagar: Annamalai University.

Suggestive Readings (if any):

1. Vasudevan, K., 2007, *Paṇmuga Nōkkil Tamiḷ Ilakkiya Varalāru*, Tiruchy: Devan Padippagam.
2. Subash Chandra Bose, S., 2008, *Tamiḷ Ilakkiya Varalāru*, Chennai: Pavai Publication.
3. G.Devaneyap Paavanar, *Thamizh Ilakkiya Varalaru*, Ilankumaran Pathippakam, Chennai: 2017.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES

GENERIC ELECTIVES (GE-3): Pre-Intermediate Tamil

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department offering the course |
|------------------------|---------|-----------------------------------|----------|---------------------|--|--|---|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| Pre-Intermediate Tamil | 04 | 03 | 01 | 00 | Class 12 th pass in any subject | For students who have not studied the Tamil language | Department of Modern Indian Languages-Tamil |

Learning Objectives:

This course is designed for students who have the primary knowledge of the Tamil language and can make as well as figure out simple sentences. The course aims to enable them figuring out as well as constructing compound and complex sentences in Tamil. Furthermore, the course will enable the students achieving skills to comprehend small passages, writing short paragraphs, and having better conversational skills. The course will teach them the basic rules of translation as well.

Learning Outcomes:

The course will facilitate the students to understand the nuances of the language by empowering them with better reading, writing and conversational skills. It will also enable them to translate from Tamil to English and vice versa.

SYLLABUS OF GE-3

Total Hours of Teaching: 60 Hrs

(Lecture-45 Hrs, Tutorials -15 Hrs)

Unit I (L-09 Hrs.)

- Compound verbs
- Transitive and intransitive verbs

Unit II(L-09 Hrs.)

- Making compound sentences in Tamil using conjunction
- Making complex sentences in Tamil

Unit III (L-09 Hrs.)

- Reading comprehension

Unit IV (L-09 Hrs.)

- Paragraph and letter Writing
- Conversation writing

Unit V (L-09 Hrs.)

- Translation from English to Tamil
- Translation from Tamil to English

Essential/recommended Readings:

1. Arokianathan, S. *Spoken Tamil for Foreigners, (Lesson 1-5) A-team Info Media Publishers Pvt. Ltd, Chennai. 2012.*
2. *Tamil Alphabet in Hart, Kausalya. Tamil for Beginners Part I & II, (Lesson 1- 5 & 10) Centre for South and South East Asia, University of California at Berkeley, 1992.*
3. *Hart, Kausalya. Tamil for Beginners Part I & II, (Lesson 1- 5 & 10) Centre for South and South East Asia, University of California at Berkeley, 1992.*
4. *Asher, R.E. Colloquial Tamil, Routledge (Lesson 1), London. 2002.*
5. *Karunakaran, K. & Balakrishnan.R. Elementry Tamil (Introductory Course), Sabanayagam Printers, Chidambaram, 2001.*
6. *Rajaram, S. An Intensive Course in Tamil (Unit. 4), CIIL, Mysore, 1987.*
7. *Arangarajan. Maruthur. Thavarinrrith Thamizh Ezhutha, Ainthinaip Pathippagam, Chennai, 2007*
8. *Aranamuruval & Amarantha, Mozhipeyarppu-k Kalai: Inru Paavai Pathippagam, Chennai, 2005. ,*

Suggestive readings: NIL

GENERIC ELECTIVES (GE-4: Introduction to Comparative Studies in Tamil

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department offering the course |
|---|-----------|-----------------------------------|-----------|---------------------|-----------------------------------|---|--|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| Introduction to Comparative Studies in Tamil | 04 | 03 | 01 | 00 | Class 12th pass | For students who have studied the Tamil language up to 10th standard and above. | Department of Modern Indian Languages-Tamil |
| | | | | | | - | |

Learning Objectives:

The aim of the course is to teach the students to read literature as the source to understand and explain the Comparative Literature. Comparative Literature is an academic area dealing with the study of literature and cultural expression across Linguistic, National, Geographic and Disciplinary boundaries. It will train the students to write on the specialized subject of Comparative Literature and Culture with the help of literary texts and to incorporate this knowledge in understanding of literature and other studies. This course will enhance the ability in language usage by developing the technical terminology of the specific fields of knowledge. The teaching method of this course includes the identification of texts which contains the elements of Comparative Literature, translation and Culture in Tamil.

Learning Outcomes:

The intense study will equip the students to understand the particular field of knowledge in Tamil and inculcate an ability to write on these disciplines. This study shall explain the role of literature to understand Comparative Literature, Translation and Culture and the need of these disciplines in understanding and production of literary texts.

SYLLABUS OF GE-4

Total Hours of Teaching: 60 Hrs
(Lecture-45 Hrs, Tutorials -15 Hrs)

Unit I (L-09 Hrs.)

- Introduction to Tamil Comparative Literature Studies- Comparison and Comparative Literature.

Unit II(L-09 Hrs.)

- Definition on Comparative Literature- World View of Literature.

Unit III (L-09 Hrs.)

- Use of Comparative Literature- Literature and Fine Arts- Literature and other Disciplines of Knowledge.

Unit IV (L-09 Hrs.)

- Two major theories of Comparative Literature-Four dimensions of literary views- Influence theory- Parallel theory.

Unit V (L-09 Hrs.)

- Themetology in Comparative Literature- Translation and Comparative Literature- Source Language and Target Language.

Essential / recommended Readings:

1. Thamizhannal, Oppilakkiya Arimugam, Meenakshi Puthaka Nilaiyam, Madurai: 1973.
2. M.Thirumalai, Oppilakkiyam: Kolkaikalum Payilmuraiyum, Meenakshi Puthaka Nilaiyam, Madurai: 2003.

Suggestive Readings:

1. Kailasapathy, Oppiyal Ilakkiyam, Paari Nilaiyam, Chennai: 1969.
2. V.Sachithanandan, Oppilakkiyam- Oor Arimukam, Oxford University Press , Chennai:1985
3. P.Anandakumar, Inthiya Oppilakkiyam Meenakshi Puthaka Nilaiyam, Madurai: 2003.
4. R.Kanchana, Oppilakkiyam: Marapum Thiranum, Publication Division, Madurai Kamaraj University: 2003.
5. S.Sarathambal, Adikkaruththiyai, Santhana Hari Pathippakam, Madurai: 2004.
6. N.Murugesu Pandian, Mozhipeyarppu Kalai, NCBH, Madurai : 2014
7. Aranamuruval, Amarantha, Mozhipeyarppu Kalai-Intru, Paavai Pathippakam, Chennai-2005.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DEPARTMENT OF SLAVONIC & FINNO-UGRIAN STUDIES (SFUS)

**COMMON POOL OF GENERIC ELECTIVES (GE)
COURSES OFFERED BY SFUS**

**GENERIC ELECTIVE– 1
BASIC RUSSIAN LANGUAGE I**

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Russian Language | 4 | 3 | 1 | 0 | Class XII Pass | NIL |

Learning Objectives:

The Learning Objectives of this course are as follows:

1. To make them familiar with the basic Russian language.
2. To acquaint them with Russian Alphabet and Russian vocabulary
3. To improve their grip on the language.
4. Learners will practice sentences based on the prescribed grammatical points.
5. Learners will be able to read and write simple sentences based on basic applied grammar.

Learning outcomes :

The Learning Outcomes of this course are as follows:

By studying this course the student will be able to:

1. Recognize, read and write Russian Alphabet.
2. Read simple sentences in Russian.
3. Use basic interrogative sentences in Russian.
4. Utter the basic vocabulary of the things around them in Russian.
5. Form simple sentences based on basic grammar.
6. Identify the errors and make sentences corrected.

SYLLABUS OF G.E.-1 Unit 1 (15 hours)

Reading & Writing Russian

1. Russian Alphabets (Capital & Small)
2. Printed & Written Form
3. Types of Vowels
4. Classifications of Consonants

5. Words with different vowels
6. Reading text with vowels
7. Taking dictation
8. Make Simple Sentences.

Unit 2 (15 hours)

Basic Vocabulary

Frequently used Russian words. Frequently used vocabulary of the following heads:

| | |
|---------------|--------------------|
| 1. House | 7. Vegetables |
| 2. Kitchen | 8. Fruits |
| 3. Office | 9. Name of Days |
| 4. Class Room | 10. Name of Months |
| 5. College | 11. Numbers (1-10) |
| 6. Human Body | |

Unit 3 (15 hours)

- Basic Grammar

| | |
|---------------------------|------------------------------------|
| 1. Gender of Nouns | 7. Possessive pronouns |
| 2. Adverbs | 8. Detached dual pronouns |
| 3. Personal pronouns | 9. The u menya construction |
| 4. Verb (E conjugation I) | 10. Adjectives & their declensions |
| 5. Plural of Nouns | 11. The objective clause |
| 6. Few Phrases | 12. Cardinal Numbers (1-10) |

Practical component (if any) – NIL

Essential/recommended readings

1. Ovsienko, Y.G. Russian for beginners. Part I. Moscow: "Ruski Yazik" 2013. Chapter 1 - 6.

Suggestive readings

1. Wagner, V.N. and Ovsienko, Y.G. Russian. Moscow 2008. Chapter 6 - 12.
2. Khavronina, S.A., Shirochenskaya, A.I. Russian in Exercises. Moscow: Progress. 2007.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

43. Amendment to Appendix -II-A to the Ordinance V (2-A) of the Ordinances of the University vide EC Resolution 38-1-11 dated 08.12.2022 regarding Syllabi of 2nd Semester of BA (Vocational Studies) under College of Vocational Studies

Add the following:

Syllabi of Semester-II of BA (Vocational Studies) under the College of Vocational Studies based on UGCF-2022 to be implemented from academic year 2022-2023

Category-I

B.A. (VS) MODERN OFFICE MANAGEMENT

DISCIPLINE SPECIFIC CORE COURSE -2.1 (DSC-2.1) –:

Basic Phonography- I

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basic Phonography- I DSC-2.1 | 4 | 3 | 0 | 1 | Pass in class XII | Nil |

Learning Objectives

The course aims to orient the students to learn the need of writing accurately based on phonetic sounds. In order to make them a good writer, it is necessary for them to master the fascinating

art of good writing. As it is very important for a learner to write accurately, the knowledge of art of writing through spoken sounds with the help of principles of Sir Isaac Pitman would help the students to take notes and carry out office work accurately.

Learning Outcomes

After completion of the course, learners will be able to:

1. demonstrate the basic concepts of stenography with grammalogues and logograms.
2. analyse the basic concepts of alternative forms of 'R & H' and Phraseography.
3. interpret the use of stroke and circles.
4. use Loops.
5. summarize the hooks use in stenography.

SYLLABUS OF DSE-2.1

Unit 1: Basics of Phonography & Vowels

11 hours

Phonography – Meaning and importance, brief history of Pitman's Shorthand, types of other writing methods. Consonants – Definition, types of consonants, classification of consonants, form of strokes, number, size and direction of strokes, joining of strokes.

Vowels – Its definition, long and short vowels, vowels signs and their places, position of outlines according to vowels, Intervening vowel, Grammalogues: Definition & meaning of Grammalogues and Logograms, importance of Grammalogues.

Unit 2: Diphthongs, Triphones, Alternative forms of 'R' & 'H' and Phraseography.

11 hours

Definition of Diphthong, Diphthong Signs, Rules of Diphthongs. Triphones, Abbreviated 'W'. Alternative forms of Strokes R & H. Upward and downward forms of 'R' and H. Abbreviated 'W' and its use. Punctuation signs and their application. Phraseography, Definition, meaning of Phraseogram, its essential qualities of facility, linearity, and legibility.

Unit 3: Circles and Loops

11 hours

Circles 'S' & 'Z', use of small circles with straight and curved strokes, exceptions to the use of circle 'S' & 'Z', Large Circles 'SW', 'SS or 'SZ', use of large circles with straight and curved strokes, use of different circles initially, medially and finally, Use of large circles in Phraseography. Use of stroke 'S' and 'Z' with various rules. Loops 'ST' and 'STR', use of small and big loops with straight and curved strokes, use of small loops initially, medially and finally, exceptions to the use of loops.

Unit 4: Initial and Final Hooks

12 hours

Small Hooks: 'R' and 'L', use of initial hooks with straight and curved strokes. Alternative Forms for 'FR', 'VR' etc. Use of circles and loops preceding initial hooks. Small Final hooks: 'N', 'F\V', use of final hooks with straight and curved strokes, medial use of small final hooks, use of small final hooks in Phraseography, Exceptions to the use of small final hooks, circles and loops to final hooks. Large final hook 'Shun'. Use of Shun Hook with straight and curved strokes, medial use of Shun Hook, use of Shun Hook after Circle 'S' and 'NS', Use of Shun Hook in Phraseography.

Note: There shall be 3 lecture period per class and 2 Practical Lab periods per batch to be taught in Computer Laboratory.

Practical Exercises:

30 hours

The learners are required to

1. understand and demonstrate the Basics of Stenography.
2. practice Alternatives, Diphthongs and Phraseography.
3. practice Small and Large Circles.
4. learn different Loops.
5. understand about Initial Final Hooks.

Note:

1. There shall be a theory examination of 100 marks including 25 marks for internal assessment
2. There shall be 3 lecture periods per class and 2 practical periods per batch to practice shorthand

Suggested Readings:

- Ajjar, K.S.: Reporter's Phrase Book", A.H. Wheeler Publications. (India)
- Bhatia, R.C., "Principles of Short-hand Theory", G.Lal & Co.(India)
- Hynes James: The Practical Phraser, Wheeler Publications. (India)
- Kuthiala, O.P., Shorthand Made Easy, Pitman S.S.Publications. (India)
- Pitman, Isaac: Pitman's Shorthand Instructor, A.H. Wheeler Publications. (India)
- Pitman, Isaac: The New Phonographic Phrase Book.
- Sir, Pitman Issac: "Pitman Shorthand Instructor and Key", Pearson Education. (India)
- Thorpe, E and Kuthiala, O.P.: You too can write 200 wpm and above, Pitman SS Publication. (India)

Note: Suggested Readings will be updated and uploaded on college website from time to time.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

B.A. (VS) MODERN OFFICE MANAGEMENT

Computer Applications in Business -1

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------------|--|-----------------|----------------------------|-----------------------------|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Computer Applications in Business -1 DSC-2.2 | 4 | 2 | 0 | 2 | Pass in class XII | Nil |

Learning Objectives

To provide computer skills and knowledge to the students and make them aware of the usefulness of information technology tools for office operations.

Learning Outcomes

After completion of the course, learners will be able to:

1. explain the various concepts and terminologies associated with computers.
2. describe the basic terminologies used in computer networks and internet.
3. create and modify word document for report making and communication.
4. create and develop good presentations.
5. apply spreadsheet applications for basic calculations and for making charts.

SYLLABUS OF DSE-2.2

Unit1: Basic knowledge of Computers, Networking and Internet

8 hours

Computers: meaning, history, generations, characteristics, advantages, limitations and functions of computers; Classification of computers based on size, digital vs analogue computers; input-output devices; software, hardware, firmware and live ware; types of software: system software and application software; Computing Interfaces: Graphical User Interface (GUI), Command Line Interface (CLI), Touch Interface, Natural Language Interface (NLI); role of CPU in data processing; applications of computers in business.

Computer Networks: Meaning of computer network; objectives/ need for networking; Applications of networking; Basic Network Terminology; Types of Networks; Network Topologies; Wireless Networking; Securing Networks: firewall.

Unit 2: Word Processing**8 hours**

Introduction to word-Processing, Word-processing concepts, Use of Templates and styles, working with word document: Editing text, Find and replace text, Formatting, spell check, Autocorrect, Auto-text; Bullets and numbering, Tabs, Paragraph Formatting, Indent, Page Formatting, Header and footer, page break; Tables: Inserting, filling and formatting a table; Inserting Pictures and Video; Mail Merge; Printing documents; Citations, references and Footnotes.

Unit 3: Preparing Presentations**8 hours**

Basics of presentations: Slides, Fonts, Drawing, Editing; Inserting: Tables, Images, texts, Symbols, hyperlinking, Media; Design; Transition; Animation; and Slideshow, exporting presentations as pdf handouts and videos.

Unit 4: Basics of Spreadsheet**6 hours**

Spreadsheet concepts: Managing worksheets; Formatting, Entering data, Editing, and Printing and Protecting worksheets; controlling worksheet views; graphical presentation of data using bar chart and pie chart; use of simple formulas in spreadsheets; cell referencing- absolute, relative and mixed cell referencing; Functions: logical functions, financial functions, statistical and mathematical functions.

Sorting, multilayer sorting; data validation; find and replace; paste special; Filter and advanced filter; Conditional Formatting; Tabulation.

Practical Exercises:**60 hours**

The learners are required to do practical exercise from unit 2, 3 & 4.

Notes:

1. The General-Purpose Software referred in this course will be notified by the College/University Departments every three years. If the specific features, referred in the detailed course above, is not available in that software, to that extent it will be deemed to have been modified.
2. There shall be a practical examination of 60 Marks (including workbook of 10 marks) from Unit 2, 3, & 4 of 2 hours' duration, theory examination of 30 marks from unit 1 of 1-hour duration and Internal Assessment of 10 marks
3. There shall be 2 lecture period per class and 4 Practical Lab periods per batch to be taught in Computer Laboratory.

Suggestive Readings:

1. Goel, A, “*Computer Fundamentals*” Pearson, Delhi
2. ITL Education Solutions Limited, “*Introduction to Information Technology*”, Pearson Publishers, New Delhi
3. Jain, H. C. & Tiwari, H. N. “*Computer Applications in Business*” Taxmann, Delhi.
4. Madan, S. “*Computer Applications in Business*” Scholar Tech Press, Delhi.
5. Mathur, S. & Jain, P. “*Computer Applications in Business*” Galgotia Publishing Company, Delhi.
6. Sharma, S.K. & Bansal, M. “*Computer Applications in Business*” Taxmann, Delhi.
7. Walkenbach, J. “*MS Excel 2016, Bible*”. John Wiley & Sons, USA.

Note: Suggested Readings will be updated and uploaded on college website from time to time.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

B.A. (VS) MODERN OFFICE MANAGEMENT**Financial Accounting****CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre- requisite of the course (if any) |
|--|---------|-----------------------------------|----------|------------------------|-------------------------|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Financial Accounting DSC-2.3 | 4 | 2 | 0 | 2 | Pass in class XII | Nil |

Learning Objectives

The course aims to help learners to acquire conceptual knowledge of financial accounting, to impart skills for recording various kinds of business transactions and to prepare financial statements.

Learning Outcomes

The learning outcomes of this course are as follows:

1. apply the generally accepted accounting principles while recording transactions and preparing financial statements.
2. demonstrate the accounting process under a computerized accounting system.
3. measure business income applying relevant accounting standards.
4. evaluate the impact of depreciation and inventories on Business Income.

5. prepare the Financial Statements of sole proprietor firms and Not-For-Profit Organisations.
6. prepare the accounts for Inland Branches, Departments and Leases.

SYLLABUS OF DSE-2.3

Unit 1: Theoretical Framework and Accounting Process:

06 hours

(A) Theoretical Framework

- (i) Accounting as an information system, the users of financial accounting information and their needs. An overview of Artificial Intelligence and Data Analytics in Accounting.
- (ii) Qualitative characteristics of accounting information. Functions, advantages and limitations of accounting. Branches of accounting. Basis of accounting: cash basis and accrual basis. Capital and revenue expenditures and receipts. Events occurring after the balance sheet date, Extraordinary Items, Prior Period Items, Accounting Estimate. Accounting Policies, Fair Value, Meaning, Recognition and Disclosure Requirements of Provision, Contingent Liability and Contingent Asset.
- (iii) Financial Accounting Principles: Meaning and need; Generally Accepted Accounting Principles (GAAP): Entity, Money Measurement, Going Concern, Cost, Revenue Recognition, Realization, Fundamental Accounting Assumptions, Accruals, Periodicity, Full Disclosure, Consistency, Materiality, and Prudence (Conservatism). Fundamental Accounting Assumptions as per AS 1.
- (iv) Accounting Standards: Concept, benefits, and Process of formulation of Accounting Standards including Ind AS (IFRS converged standards) and IFRSs; convergence vs adoption; Application of accounting standards (AS and Ind AS) on various entities in India. International Financial Accounting Standards (IFRS) –meaning, need, and scope.

(B) Accounting Process

From the recording of a business transaction to the preparation of trial balance including adjusting, transfer and closing entries. Application of Generally Accepted Accounting Principles in recording financial transactions and preparing financial statements and accounting treatment of GST.

Unit 2: Business Income, Accounting for Property, Plant and Equipment, and Valuation of Inventory:

06 hours

- (a) Business income: Concept of Revenue and Business Income, Measurement of business income; relevance of accounting period, continuity doctrine and matching concept in the measurement of business income; Objectives of measurement of Business income.
- (b) Revenue recognition with reference to AS 9.
- (c) Accounting for Property, Plant, and Equipment with reference to AS 10. Impact of Depreciation on measurement of business income. Accounting for Intangible Assets with reference to AS 26.
- (d) Valuation of Inventory with reference to AS 2. Impact of inventory valuation on measurement of business income by using FIFO, LIFO, and Weighted Average Method.

Unit 3: Financial Statements of Sole Proprietorship and Not-for-Profit Organisations:

06 hours

Preparation of Financial Statements of Sole Proprietorship and Not-for-Profit Organisations

Unit 4: Accounting for Inland Branches, Departments and Leases:

06 hours

- (a) Accounting for Inland Branches: Concept of Dependent branches; Branch Accounting as per- Debtors System, Stock and Debtors' System
- (b) Accounting for Departments (excluding Mark-up Account)
- (c) Accounting for Leases with reference to AS 19

Unit 5: Computerized Accounting Systems:

06 hours

Computerized Accounting Systems: Computerized Accounts by using any popular accounting software Creating a Company; Configure and Features settings; Creating Accounting Ledgers and Groups; Creating Stock Items and Groups; Vouchers Entry including GST; Generating Reports - Cash Book, Ledger Accounts, Trial Balance, Profit and Loss Account, Balance Sheet, Cash Flow Statement. Selecting and shutting a Company; Backup, and Restore data of a Company.

Notes:

- (1) The relevant Accounting Standards (both AS and Ind AS) for all of the above topics should be covered.
- (2) Any revision of the relevant Indian Accounting Standard/Accounting Standard would become applicable.

Practical Exercises:

60 hours

The learners are required to:

1. download 'Framework for the Preparation and Presentation of Financial Statements from the websites of the Institute of Chartered Accountants of India (ICAI) to analyse the qualitative characteristics of accounting information provided therein.

2. collect and examine the balance sheets of business Organisations to study how these are prepared.
3. examine the accounting policies and revenue recognition policies by collecting necessary data from small business firms.
4. prepare Trading and Profit & Loss Account and Balance Sheet collecting necessary data from small business firms.
5. prepare financial statements manually and using appropriate software.
6. prepare accounts of Inland Branches.
7. collect data from your college and prepare a Receipt and Payment Account, Income and Expenditure Account and Balance Sheet.

Suggested Readings:

- Anthony, R. N., Hawkins, D., & Merchant, K. A. *“Accounting: Text and Cases”* McGraw-Hill Education India.
- Dam, B. B., & Gautam, H. C. *“Financial Accounting”* Gayatri Publications, Guwahati.
- Goldwin, N., Alderman, W., & Sanyal, D. *“Financial Accounting”* Cengage Learning, Boston.
- Goyal, B. K., & Tiwari, H. N. *“Financial Accounting”* Taxmann Publication, New Delhi.
- Horngren, C. T., & Philbrick, D. *“Introduction to Financial Accounting”* Pearson Education, London.
- Kumar, A. *“Financial Accounting”* Singhal Publication.
- Lal, J., Srivastava, S. & Abrol. Shivani. *“Financial Accounting Text & Problems”* Himalaya Publishing House, Mumbai.
- Lt Bhupinder *“Financial Accounting – Concepts and Applications”* Cengage.
- Maheshwari, S. N., Maheshwari, S. K., & Maheshwari, S. K. *“Financial Accounting”* Vikas Publishing House Pvt. Ltd., New Delhi.
- Monga, J. R. & Bahadur, R. *“Financial Accounting: Concepts and Applications”* Scholar Tech Press, New Delhi.
- Sah, R.K. "Concept Building Approach to Financial Accounting" Cengage Learning India Pvt. Ltd.
- Sehgal, A. & Sehgal D. *“Fundamentals of Financial Accounting”* Taxmann.
- Sehgal, D. *“Financial Accounting”* Vikas Publishing House Pvt. Ltd., New Delhi.
- Shukla, M. C., Grewal, T. S., & Gupta, S. C. *“Advanced Accounts. Vol.-I.”* Sultan Chand Publishing, New Delhi.
- Tulsian, P. C. *“Financial Accounting”* S CHAND LTD., New Delhi.

Additional Resources:

- Accounting Standards at the Website of the Institute of Chartered Accountants of India
- Indian Accounting Standards at the Website of the Ministry of Corporate Affairs.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

CATEGORY-I

B.A. (VS) HUMAN RESOURCE MANAGEMENT

HUMAN RESOURCE PLANNING AND PROCUREMENT

DSC: 2.1

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------|-----------------------------------|----------|---------------------|--------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| HUMAN RESOURCE PLANNING AND PROCUREMENT (DSC- 2.1) | 4 | 3 | 1 | 0 | Pass in class XII | NIL |

Learning Objectives

The aim of this course is to acquaint students with knowledge of the concept of human resource planning and the ability to forecast HR needs in an organisation. It focuses on issues and strategies required to select and develop manpower resources along with tools for effective manpower planning and evaluation.

Learning Outcomes

After completion of the course, learners will be able to:

1. to design an HR plan
2. examine various job analysis methods in different organisational settings
3. evaluate effectiveness of different HR demand forecasting techniques
4. describe the efficacy of different recruitment & selection methods
5. design the appropriate retention strategies for different types of organisations

SYLLABUS OF DSE-2.1

Unit 1 Overview of Human Resource Planning (HRP) (12 hours)

Human Resource Planning – meaning, features, scope, approaches, levels of HRP, types, tools, activities for HRP, requirements for effective HR planning, HRP as a tool to enhance organizational productivity, barriers in effective implementation of HRP and ways to overcome, job analysis and design, factors influencing job design methods, job analysis techniques, assessing job analysis methods

HRP Management Process: establish HRP department goals and objectives, creating HRP department structure, resolving conflicts, communicating, planning for needed resources

Unit 2 HRP: Forecasting and Evaluation (11 hours)

Manpower Forecasting: concept, factors affecting HRP, integration of strategic planning and HRP, Process of HRP – steps in HRP, HR demand forecasting – factors, techniques – managerial judgement, ratio trend analysis, regression analysis, work study technique, delphi

technique. HR Supply Forecasting – factors, techniques –skills inventories, succession plans, replacement charts, staffing tables.

HRP Evaluation – meaning, need, process, issues to be considered during HRP evaluation. Selected Strategic Options and HRP Implications: restructuring and its impact on HRP, outsourcing and its impact on HRP.

Unit 3 Employee Recruitment and Selection (11 hours)

Employee recruitment: nature, recruitment challenges, recruitment sources, methods of recruitment, legal compliances in recruitment and selection, pre-employment testing, background and reference checks, selection process. Selection methods- types of tests and interviews. Ethical issues in the selection process. Role of HR analytics in effective R&S, influences on recruitment and selection

Trends in Recruitment: corporate talent network, building an end-to-end talent brand, use of applicant tracking system (ATS), predictive analysis, gamification in recruitment, application of AI and VR in recruitment.

Unit 4 Employee Retention (11 hours)

Retention of Manpower- models of retention. Succession Planning. Retention Strategies - executive education, flexi timing, telecommuting quality of work, work life balance, participative management, employee empowerment, employee involvement, autonomous work teams

Practical Exercises:

The learners are required to:

1. Design a simulated human resource plan
2. Examine the appropriateness of each job analysis method for different job profiles
3. Identify the relative effectiveness of different HR demand forecasting techniques for different business environments
4. Examine the reasons for preference of certain recruitment & selection methods in prevalent times
5. Create a hypothetical plan demonstrating different retention strategies for a corporation

Suggested Readings:

- Belcourt M.; McBey K.J. (2016). Strategic human resource planning. Nelson Education.
- Bhattacharya, K. Deepak (2006). Human Resource Planning. Excel Books.
- Chungyalpa, W., & Karishma, T. (2016). Best practices and emerging trends in recruitment and selection. Journal of Entrepreneurship & Organization Management, 5(2), 1-5.
- Edwin B. Flippo, (1984). Principles of Personnel Management, McGraw-Hill Publications.
- Khanka, S. S. (2019) Human resource management. S. Chand Publishing.

- Roberts, G. (2007). Recruitment and selection. Jaico Publishing House.

Note:

1. Suggested Readings will be updated and uploaded on college website from time to time.
2. Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

B.A. (VS) HUMAN RESOURCE MANAGEMENT

INDUSTRIAL RELATIONS

DSC-2.2

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|----------|-----------------------------------|----------|---------------------|--------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| INDUSTRIAL RELATIONS (DSC- 2.2) | 4 | 3 | 1 | 0 | Pass in class XII | NIL |

Learning Objectives

To acquaint students with concepts of Industrial Relations and various legislations related to Labour Welfare and Industrial Relations.

Learning Outcomes: After completion of the course, learners will be able to:

1. examine the implications of employer-employee relations on effective organisational functioning
2. evaluate the significance of various legal provisions for safety & welfare in organisations
3. analyse the scope of trade unions
4. discuss the benefits provided by various legal provisions protecting the conditions of employment

SYLLABUS OF DSE-2.2

Unit 1: Overview of Industrial Relations

(12 hours)

Concept of industrial relations, aspects of industrial relations, conflict and cooperation, parties in industrial relations, workers employers and government, trade unions, objectives collective bargaining. Workers' participation in management, levels of participation, mode of participation works committee, joint management councils, worker director, grievance procedure, quality circles

Unit 2: Safety and Welfare**(11 hours)**

The Factories Act 1948, definition, approval, licensing and registration, health and welfare measures, employment of women and young persons, leave with wages and weekly holidays. The Payment of Bonus Act, The Maternity Benefit Act, The Workmen's Compensation Act.

Unit 3: Trade Unionism**(11 hours)**

Trade Union Act 1926, immunity granted to registered trade unions, recognition of trade unions. The Industrial Employment (Standing Orders) Act 1946: scope, coverage, certification process, modification, interpretation, and enforcement. The Industrial Disputes Act 1947: forum for settlement of disputes, instruments of economic coercion, strikes, lockouts and closure.

Unit 4: Conditions of Employment**(11 hours)**

Salient features and benefits relating to The Payment of Wages Act 1936, The Payment of Gratuity Act 1972, The Minimum Wages Act, benefits under The Provident Fund and Miscellaneous Provisions Act 1952 and Employees' Pension Scheme and Employees State Insurance Act 1948.

Practical Exercises:

The learners are required to:

1. examine power dynamics in the context of employer-employee relations in India
2. discuss the significance of safety & welfare in organisations with examples and cases
3. examine the powers of trade unions in India by discussing the notable cases
4. describe the latest judgments pertaining to various compensation legal provisions in India

Suggested Readings:

- Katz, Harry., Kochan, Thomas A., & Colvin, A. J.S. (2007) An Introduction to Collective Bargaining and Industrial Relations, McGraw Hill Companies.
- Mallik P L, (2021). Handbook of Labour and Industrial Laws, Eastern Book Company
- Padhi, P K, (2017), Industrial Relations, Prentice Hall India
- Singh B. P., Chhabra T. N., Taneja P. L. (2021). Personnel Management and Industrial Relations, Dhanpat Rai Publishing House
- Srivastava S C, (2022). Industrial Relations and Labour Laws, Vikas Publishing House
- Venkat Ratnam, (2018) C.S. Industrial Relations: Text and Cases, Oxford University Press, Delhi.

Note:

1. Suggested Readings will be updated and uploaded on college website from time to time.
2. Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

**B.A. (VS) HUMAN RESOURCE MANAGEMENT
MACROECONOMICS
DSC-2.3**

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------------------|----------|-----------------------------------|----------|---------------------|--------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| MACROECONOMICS (DSC- 2.3) | 4 | 3 | 1 | 0 | Pass in class XII | NIL |

Learning Objectives:

This course introduces students to the basic concepts in Macroeconomics beginning with the definition and measurement of the macroeconomic variables. It describes how the macro system operates and how and why the economy grows and fluctuates over time based on the decisions made, in the aggregate, by consumers, businesses, governments as well as global factors. As the world is shifting towards a global economy, the study of Macroeconomics helps the students to understand the overall macroeconomic environment under which one has to take economic decisions. This course also introduces the students to the macroeconomic environment which affects HRM.

Learning Outcomes:

Students will understand various macroeconomic phenomena that they come across at local, national and global levels regularly. This will enable them to understand the market scenarios based on present trend and government policies. This will give added advantage to students as managers since they can take informed decisions.

SYLLABUS OF DSE-2.3

Unit-I (09 hours)

Introduction: Basic concepts and issues of Macroeconomics. Circular flow of income.
National Income Accounting: Concepts of GDP and National Income; measurement of national income and related aggregates; nominal and real income; limitations of the GDP concept.
Lipsey & Chrystal Chapters 15,16
Case & Fair Chapters 20, 21

Unit-II (09 hours)

Determination of GDP: consumption and saving functions, investment function, equilibrium GDP; concepts of MPS, APS, MPC, APC; Concept of multiplier, fiscal and monetary policies.
Lipsey & Chrystal Chapter 16
Case & Fair Chapters 23,24

Unit-III (09 hours)

Good & services market and Money market: Derivations of the IS and LM functions; effects of fiscal and monetary policies on equilibrium income. Derivation of Aggregate Demand.

Lipsey & Chrystal Chapters 21 appendix on page 499-504

Case & Fair Chapters 26,27

Unit-IV

(09 hours)

The labour market: wage determination, employment. Aggregate supply curves; interaction of aggregate demand and supply to determine equilibrium output, price level and employment.

Case & Fair Chapters 28 (pages 559-567), 29 (pages 581-586)

Unit-V

(09 hours)

Firms Behaviour in the Macroeconomy: Investment and Employment decisions, Productivity and the Business cycle.

Balance of payments and exchange rate: Meaning, factors, current account, capital account, determination of exchange rate.

Case & Fair Chapters 31 (pages 624-631), 34 (pages 670-671), 35 (pages 687-691)

Suggested Readings:

1. Case, Karl E. & Ray C. Fair, Principles of Economics, Pearson Education, Inc., 10th edition, 2012.
2. Lipsey, R. and Alec Chrystal, Economics, Oxford University Press, Twelfth Edition, 2011

Note:

1. **Suggested Readings will be updated and uploaded on college website from time to time.**
2. **Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.**

Category-I
BA (VS) INSURANCE MANAGEMENT
DSC- 2.1 Fundamentals of Insurance

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Fundamentals of Insurance DSC – 2.1 | 4 | 3 | 1 | 0 | Pass in class XII | Nil |

Objectives: The course aims to familiarize the students with the origin of insurance and explain the terms frequently used in the insurance industry. It covers the fundamental principles on which insurance contracts are based and provides an overview of the different life & non-life insurance products. The student shall be exposed to the recent developments and challenges in the field of insurance.

Learning Outcomes: After completion of the course, learners will be able to:

1. describe the origin and growth of insurance
2. explain the basic concepts applicable to insurance contracts
3. differentiate the various principles of insurance and their application
4. compare the types of insurance and explain the need for different products.
5. appraise the contemporary insurance scenario and its challenges.

Unit 1: Origin & basic concepts of Insurance

11 hours

Origin and growth of Insurance in India and at global level, law of large numbers, insurance premium (building blocks, factors), insurable loss exposure, adverse selection and moral hazard

Unit 2. Principles of Insurance-I

11 hours

Principle of Indemnity, Principle of Insurable Interest. Principle of Utmost good faith (Uberrimae Fidei)

Unit 3. Principles of Insurance-II

11 hours

Principle of proximate cause, Principle of Contribution, Principle of Mitigation of Loss, Principle of Subrogation

Unit 4. Types of Insurance & contemporary developments

12 hours

Types, need, scope, and coverage of insurance (Life, Health, Property, Fire, Marine, Motor, Agricultural and Liability). Liberalisation, Globalisation and reforms in the Indian insurance sector, Contemporary issues: future opportunities and challenges in India and the world; Bancassurance, Re-insurance

Exercises:

The learners are required to:

1. Organise group discussions in class comparing the origin and growth of insurance in India & the world

(Unit1)

2. Organise presentations in class comparing the insurance premia for same/similar products offered by different insurance companies in India (Unit1)
3. Make group presentations covering case studies that explain the principles of insurance with respect to the compensation received by the insured (Unit2 & 3)
4. Conduct a survey (physical or online mode) of individuals regarding the different insurance products purchased by them and their need for it. (Unit4)
5. Examine the opportunities and challenges facing the Indian and global Insurance sector as reported in newspapers/business magazines (print or online). (Unit4)

Suggested Readings:

1. Dorfman, M. S. (2012). *Introduction to Risk Management and Insurance* (10th ed.). Prentice-Hall.
2. Gupta, P. K. (2017). *Fundamentals of Insurance*. Himalaya Publishing House.
3. Hansell, D. S. (1979). *Elements of Insurance* (3rd ed.). Macdonald & Evans Ltd.
4. Holyoake, J. & Weipers, W. (2002). *Insurance* (4th ed.). CIB Publishing.
5. Huebner, S. S. & Black, K. (1972). *Life insurance* (8th ed.). Appleton-Century-Crofts.
6. Pal, K. (2019). *Insurance management principles and practice*. Deep & Deep Publications.
7. Rejda, G. E. (2017). *Principles of Risk Management and Insurance* (13th ed.). Pearson Education.
8. Skipper, D. Harold & Kwon, W. Jean (2008) Risk Management & Insurance Blackwell Publishing, Wiley India
9. Vaughan, E.T. & Vaughan, T., (2015) Fundamentals of Risk Management and Insurance.

Note: Suggested readings shall be updated and uploaded on the college website from time to time.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BA (VS) INSURANCE MANAGEMENT
DISCIPLINE SPECIFIC CORE COURSE -2.2 (DSC- 2.2)

Fundamentals of Organisational Behaviour

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Fundamentals of Organisational Behaviour DSC – 2.2 | 4 | 3 | 1 | 0 | Pass in class XII | Nil |

Objectives: The course aims to familiarise students with an understanding of individual and group behaviour at the workplace, focusing on the Indian experience and cases.

Learning Outcomes: After completion of the course, learners will be able to:

1. measure the types of personalities using standard instruments
2. examine interpersonal relationships by using standard models
3. discuss implementation of change and managing of resistance to change.
4. differentiate the styles of leadership
5. critique the roles of power, politics and conflict at the work place.

Unit 1: Core Concepts of Organisational Behaviour

11 hours

Conceptual foundation and importance of organizational behaviour; Perception and Attribution: Concept, factors affecting perception, Attribution theory, perceptual organization and errors in perception; Personality: concept, factors affecting personality and theories, standard instruments of measurement. Learning: concept and theories of learning, concept and schedules of reinforcement.

Unit 2: Motivation at work, interpersonal relations and change management 11 hours

Motivation: Concepts and their application, Content theories (Maslow, McClelland and Herzberg's Theories); Process theories (Expectancy theory, Equity theory). Analysis of Interpersonal Relationship: Transactional Analysis, Johari Window. Organisational; Change: Concept, Resistance to change, managing resistance to change, Kurt Lewin's Theory of Change.

Unit 3: Leadership and Group processes 11 hours

Leadership: Trait Approach, Behavioural theories (Ohio and Michigan State Studies, and Blake & Mouton's Managerial grid), and Contingency theories (Fiedler's Contingency Model, Hersey & Blanchard's Situational Leadership Model) Contemporary Leadership issues: Charismatic, Transactional and Transformational Leadership; Groups: Definition, stages of group development, processes-group cohesiveness, group think, group shift.

Unit 4: Managing power, politics and conflict 12 hours

Organisational Power and Politics: concept, sources of power, tactics to gain power in organizations. nature of organisational politics. Conflict: concept, sources, types, stages of conflict, management of conflict.

Exercises:

The learners are required to:

1. engage in group discussion after measuring individual personality types through standard instruments (unit1)
2. examine interpersonal relationships by using the model of the Johari window and transactional analysis in small groups (unit2)
3. study in small groups to evaluate the motivational theories at work in the Indian and international corporate context (unit2)
4. conduct a survey in small groups on the resistance to change among different stakeholders to the introduction of the UGCF in Delhi University in 2022 (Unit2)
5. make group presentations on leadership styles seen in Indian companies across sectors (unit3)
6. to engage in group projects based on corporate information available in public domain to explain the role of power, politics and conflict in family controlled Indian businesses. (Unit4)

Suggested Readings:

1. Kaul, Kumar Vijay (2012). Business Organization & Management - Text and Cases, Pearson.
2. Luthans, Fred (2017), Organisational Behaviour, Tata Mc Graw Hill.
3. Robbins, P. Stephen and Judge, T.A. (2019) Organisational Behaviour, 18th ed. Pearson.
4. Singh, Kavita (2015) Organisational Behaviour, Vikas Publishing house, Noida, India.
5. Robbins, Stephen P. and Judge, T. A. (2016) Organisational Behavior. Pearson.
6. Robbins, P. Stephen and Robbins, Coulter Mary (2020) Management. 15th ed. Pearson.

Note: Suggested readings shall be updated and uploaded on the college website from time to time.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BA (VS) INSURANCE MANAGEMENT

DISCIPLINE SPECIFIC CORE COURSE -2.3 (DSC- 2.3) –:

Macroeconomics for Insurance

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Macroeconomics for Insurance DSC – 2.3 | 4 | 3 | 1 | 0 | Pass in class XII | Nil |

Objectives: The course aims to expose students to various macroeconomic policy actions that affect the insurance business. It explains how the broader macroeconomic policy making affects the choices of individuals and of the insurance firm. The course enables an understanding of the macroeconomic environment in which all enterprises including the insurance sector

Learning Outcomes: After completion of the course, learners will be able to:

1. explain the concepts of national income and flow of income at the local and national levels.
2. calculate and differentiate different national income aggregates.
3. identify and explain the relationship between money, monetary policy and its impact on the insurance sector.
4. locate the insurance market in the larger financial system.
5. translate the global insurance market scenarios based on present trends.

Unit 1: National Income Aggregates 11 hours

Economic units and circular flow of income, measurement of National Income, Nominal and Real Income, Measured and Purchasing Power Parity Income

Unit 2: Money 11 hours

Difficulties of barter exchange, concept and functions of money, theory of money supply, Monetary policy, goals, targets and indicators, instruments of monetary control.

Unit 3: Banking and Insurance 11 hours

Credit and financial system, financial markets, central bank, banking structure and insurance.

Unit 4: International monetary framework and open economy 12 hours

Functions of International Monetary Fund and World Bank; exchange rate regime and crises, global insurance

Exercises:**The learners are required to:**

1. engage in a group project to study the flow of income and savings at the household, firm and national level and specifically into the insurance sector (Unit1).
2. solve numerical exercises related to measurement of various national income aggregates. (Unit 1)
3. make a group presentation on the interlinkages between money, fractional reserves, interest rates and government policies related to insurance in industry and agriculture. (Unit2)
4. conduct a classroom discussion on the relationship between the insurance sector and the financial system (Unit3)
5. make a group presentation on the globalisation of insurance and technological advances (Unit4)

Suggested Readings:

1. Baye, M.R. and Jansen, D.W. (2006) Money, Banking and Financial Markets, ATTBS.
2. Bhole, L.M. and J. Mahakud, (2017) Financial Institutions and Markets, Tata McGraw Hill, 5th ed.
3. Sodersten, Bo (1994) International Economics, 3rd ed. Palgrave MacMillan.
4. Gupta, S. B. (2010) Monetary Economics: Institutions, Theory and Policy, S Chand and Sons.
5. Gupta, G.S. (2017) Macroeconomics: Theory and Applications, 4th ed., McGraw Hill Education (India) Private Limited.
6. Soumyen Shikdar, (2020) Principles of Macroeconomics, Oxford University Press.
7. Sethi, Jyotsna and Nishwan Bhatia (2012) Elements of Banking and Insurance, Phi learning Private Ltd.

Note: Suggested readings shall be updated and uploaded on the college website from time to time.

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BA (VS) MATERIALS MANAGEMENT

DISCIPLINE SPECIFIC CORE COURSE -2.1 (DSC-2.1)

Introduction to Supply Chain Management

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|------------------------|-------------------------|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction to Supply Chain Management DSC 2.1 | 4 | 3 | 1 | 0 | Pass in class XII | Nil |

Objectives: The course aims to acquaint the students with

1. fundamentals of supply chain management (SCM) in an organization as well as the role of Relationship Marketing in SCM and understand the forecasting methods for demand of material and plan supply in Supply Chain process.
2. different strategies used in Supply Chain and the concepts of Inventory and Vendor Management.
3. measurement of performance using various indicators, Supply Chain Metrics (KPIs), Balanced Score Card Approach and Benchmarking;
4. the understanding of the emerging Trends and Challenges in SCM.

Learning Outcomes: After completion of the course, learners will be able to:

1. Explain the concepts of supply chain management (SCM) in an organization and explain the relationship marketing in SCM.
2. apply forecasting methods for demand of material and plan supply in supply chain process. They can also explain the different factors of SCM.
3. develop strategies in Supply Chain as well as explain the concepts of Inventory and Vendor Management.
4. measure the performance using various indicators, Supply Chain Metrics (KPIs), Balanced Score Card Approach and Benchmarking;
5. analyses the emerging Trends and Challenges in SCM.

Course Contents:

Unit 1: Introduction to Supply Chain Management (SCM) and Planning 12 hours

Concept of Supply Chain Management- Evolution, Importance, Scope, Functions, Logistics Vs SCM. Value chain for SCM, Role of relationship marketing in SCM; Managing relationships with suppliers and customers; Types of intermediaries. Planning demand and Supply in a Supply Chain; Demand forecasting in SCM; Aggregate planning in supply chain; Planning supply and demand in Supply Chain: Managing predictable variability

Unit 2: Supply Chain Strategy and Implementations

11 hours

Web-centric Supply Chain- Supply Chain in E-business, E-collaboration, E-Procurement; Structure of Supply Chain Management; Management of the Inventory in the Supply Chain Analysis including Vendor Management.

Unit 3: Supply Chain Performance Measurement

11 hours

Methods of performance measurement- balanced score card approach, benchmarking, supply chain metrics (KPIs). Performance measurement and continuous improvement.

Unit 4: Trends and Challenges in Supply Chain Management

11 hours

Third party and fourth party logistic outsourcing- Challenges and future directions. Global Supply Chain Management; Green supply chain management; Use of Information Technology in SCM; Re-engineering the supply chain- Future directions.

Exercises

The learners are required to:

1. study the practical benefits accrued by relationship marketing in SCM by conducting a survey of some organisations;
2. prepare forecasting schedule for assessing the use of demand and supply planning methods in an uncertain environment;
3. analyse the SCM strategies and inventory management used by different companies;
4. measure the comparative supply chain performance of few companies by doing case study.
5. prepare a report on latest trends and the impact of emerging issues in SCM.

Suggested Readings:

1. Branch, Alan. E. (2008) Global Supply Chain Management and International Logistics. Routledge, New York.
2. Chopra, S. & Meinde, P. (2000) Supply Chain Management- Strategy, Planning & Operation. Pearson Education.
3. Gattorna, J. L and Walters, D.W. (1996) Managing the Supply Chain: A Strategic Perspective. Macmillan, Hampshire.
4. Hult, M. G., Closs, D., Frayer, D. Global, (2013), Supply Chain Management: Leveraging Processes, Measurements, and Tools for Strategic Corporate Advantage. McGraw Hill Ltd.
5. Sarika Kulkarni and Ashok Sharma, (2004) Supply Chain Management. Tata McGraw-Hill Publishing Company Limited, New Delhi.
6. Simchi-Levi, D., Kaminsky, P., Simchi-Levi, E. & Ravi, Shankar (2008). Designing and Managing the Supply Chain. Tata McGraw Hill Education Private Limited.

Note: The suggested readings will be updated and uploaded on college website from time to time. The latest edition of the readings may be used.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BA (VS) MATERIALS MANAGEMENT

DISCIPLINE SPECIFIC CORE COURSE -2.2 (DSC-2.2)

Business Organisation and Management

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|------------------------|-------------------------|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Business Organisation and Management DSC-2.2 | 4 | 3 | 1 | 0 | Pass in class XII | Nil |

Objective: The course aims to

1. develop understanding of dynamics of business organisations and recent management practices and levels of management and their competencies.
2. develop an understanding various perspectives related to business environment and entrepreneurship.
3. develop an understanding how the organisations adapt to an uncertain environment and decipher decision making techniques.
4. develop an understanding of the relationship amongst functions of management *i.e.*, planning, organizing, directing and controlling.
5. to analyse the change in working pattern of modern organisations.

Learning Outcomes: After completion of the course, learners will be able to:

1. explain the dynamics and forms of business organisations and choose the appropriate form of business organisation as per recent management practices, distinguish different levels of management and their competencies
2. analyse various perspectives related to business environment and perform SWOT analysis.
3. analyse how the organisations adapt to an uncertain environment and decipher decision making techniques.
4. analyse relationship amongst functions of management *i.e.*, planning, organizing, directing and controlling.
5. analyse the change in working pattern of modern organisations and frame the strategy

Course Contents:

Unit 1: Introduction

11 hours

Role of organisations and management in our lives; Nature and Functions of Management (An overview); Managerial Competencies, Ownership forms; Business formats- Brick & Mortar; Click; Brick & Click; E-commerce; Franchising; Outsourcing

Unit 2: Business Environment and Entrepreneurship

12 hours

Meaning and layers of Business Environment (micro/immediate, meso/intermediate, macro and international); SWOT analysis; Business ethics and social responsibility; Entrepreneurship and its relevance, Business and social entrepreneurship as a process of opportunity/problem; Micro, small and medium Enterprises; Government Policy regarding MSMEs

Unit 3: Planning, Organizing and Staffing

10 hours

Strategic Planning – Business and Corporate Level Strategies; Decision-making- process and techniques; Organizing, Formal and Informal Organisations, Centralisation and Decentralisation, Organisational structures – Divisional, Product, Matrix, Project and Virtual Organisation, staffing,

Unit 4: Motivation, Directing and Controlling

12 hours

Motivation- needs (including Maslow's theory), incentives, Equity and two factor theory (Herzberg); McGregor Theory X and Theory Y; Leadership – Leadership Styles, Transactional Vs. Transformational Leadership; Followership – meaning, importance and Kelley's Followership Model; Communication – New trends and directions (Role of IT and social media); Controlling – Techniques of Controlling Relationship between planning and controlling, contemporary trends in business and organisational management: Business process re-engineering, Work life Balance, Freelancing, Flexi-time and work from home, Co-sharing/co-working.

Exercises:

The learners are required to:

1. complete the exercises wherein they are given different situations and scenarios to start their own business (in terms of capital, liability, scale of operations, etc.) and are asked to select the most appropriate form of business organisation and justify the same highlighting the advantages and disadvantages of their choice.
2. participate in role play activity for describing the various levels of Management and competencies.
3. identify various elements affecting the business environment and conduct SWOT analysis for the company identified.
4. participate in simulation activity wherein each learner is asked to prepare strategic plans with respect to increasing the effectiveness.
5. present a role play on bounded rationality or on any aspect of decision making.
6. create a simulation exercise in class to demonstrate various types of authority, delegation, and decentralization of authority.
7. using Maslow's Need-Hierarchy Theory, analyse various needs and prepare a report.
8. demonstrate various types of Leadership Styles in the form of Role Play by identifying real life leaders from the corporate world.

Suggested Readings

- Basu, C. (2007), *Business Organisation and Management*. McGraw Hill Education.
- Chhabra, T. N. (2022) *Business Organisation and Management*. Sun India Publications. New Delhi.
- Drucker, P. F. (2006) *The Practice of Management*. New York: Harper & Row.
- Kaul, V. K. (2012) *Business Organisation Management*. Pearson Education.
- Koontz, H., & Weihrich, H. (2015) *Essentials of Management: An International and Leadership Perspective*. Paperback.
- Singh, B. P., & Singh, A. K. (2002) *Essentials of Management*. New Delhi. Excel Books Pvt. Ltd.

Note: The suggested readings will be updated and uploaded on college website from time to time. The latest edition of the readings may be used.

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BA (VS) MATERIALS MANAGEMENT

DISCIPLINE SPECIFIC CORE COURSE -2.3 (DSC-2.3) –:

Macroeconomics

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------------|---------|-----------------------------------|----------|------------------------|-------------------------|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Macroeconomics DSC-2.3 | 4 | 3 | 1 | 0 | Pass in class XII | Nil |

Course Objectives:

This course introduces students to the basic concepts in Macroeconomics beginning with the definition and measurement of the macroeconomic variables. It describes how the macro system operates and how and why the economy grows and fluctuates over time based on the decisions made, in the aggregate, by consumers, businesses, governments as well as global factors. As the world is shifting towards a global economy, the study of Macroeconomics helps the students to understand the overall macroeconomic environment under which one has to take economic decisions. This course also introduces the students to the macroeconomic environment which affects materials management.

Course Learning Outcomes: After completion of the course, learners will be able to:

1. Acquire knowledge on various macroeconomic concepts
2. Explain the measurement of various macroeconomic aggregates like national income, consumption, saving, investment, inflation and exchange rate and how these aggregates affect retail business decision making.
3. Understand the role of inflation and inflationary expectations in economic decisions.
4. Analyze goods market and money market interactions influencing the businesses and overall macroeconomic environment.
5. Evaluate the firm's decisions on employment and investment and its' influence in macroeconomy

Unit-I**09 hours**

Introduction: Basic concepts and issues of Macroeconomics. Circular flow of income. National Income Accounting: Concepts of GDP and National Income; measurement of national income and related aggregates; nominal and real income; limitations of the GDP concept.

Lipsey & Chrystal Chapters 15,16

Case & Fair Chapters 20, 21

Unit-II**09 hours**

Determination of GDP: consumption and saving functions, investment function, equilibrium GDP; concepts of MPS, APS, MPC, APC; Concept of multiplier, fiscal and monetary policies.

Lipsey & Chrystal Chapter 16

Case & Fair Chapters 23,24

Unit-III**09 hours**

Good & services market and Money market: Derivations of the IS and LM functions; effects of fiscal and monetary policies on equilibrium income. Derivation of Aggregate Demand.

Lipsey & Chrystal Chapters 21 appendix on page 499-504

Case & Fair Chapters 26,27

Unit-IV**09 hours**

The labour market: wage determination, employment.

Aggregate supply curves; interaction of aggregate demand and supply to determine equilibrium output, price level and employment.

Case & Fair Chapters 28 (pages 559-567), 29 (pages 581-586)

Unit-V**09 hours**

Firms Behaviour in the Macroeconomy: Investment and Employment decisions, Productivity and the Business cycle.

Balance of payments and exchange rate: Meaning, factors, current account, capital account, determination of exchange rate.

Case & Fair Chapters 31 (pages 624-631), 34 (pages 670-671), 35 (pages 687-691)

Exercises:

The learners are required to:

1. Discuss the highlights of the 'economic survey' and annual budget by GOI in the classroom.
2. Conduct classroom discussions on how the recent macroeconomic events both at national and international levels are affecting retail businesses.
3. Make group presentations inviting different ideas on how government rules and regulations and policies with respect to taxation and subsidies can have both positive and negative impact on retail business.
4. conduct classroom discussions on role of inflation and inflationary expectations in the decision making of retail businesses.
5. conduct a group project and enquire into the wage and employment determining mechanism in any retail business.

Suggested Readings:

1. Case, Karl E. & Ray C. Fair, 2012 Principles of Economics, Pearson Education, Inc.,
2. Lipsey, R. and Alec Chrystal, 2011 Economics, Oxford University Press, Twelfth Edition,
3. Bo Sodersten and Geoffrey Reed, International Economics (1994), Red Globe Press London.

Note: The suggested readings will be updated and uploaded on college website from time to time. The latest edition of the readings may be used.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BA (VS) SMALL AND MEDIUM ENTERPRISES

DISCIPLINE SPECIFIC CORE COURSE -2.1 (DSC-2.1) –: MSMEs Policy Framework

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| MSMEs Policy Framework (DSC - 2.1) | 4 | 3 | 1 | 0 | Pass in class XII | NIL |

This course is designed to make students understand the policies which were initiated with respect to MSMEs and their growth. Students will be able to understand the importance of professionalism in MSMEs operations. It will give an overview of taxation benefits available to MSMEs and how the MSMEs can survive in the competitive era and will also enable students to become successful entrepreneur.

Learning Objectives: The objectives of the paper are to:

1. Make the students understand pre and post liberalization industrial policies for MSMEs.
2. Learn the rationale for reservation of items for MSMEs.
3. Make the students understand the role, functions and objectives of Ministry of MSME.
4. Enable the students to understand the different tax concessions and benefits provided by governments from time to time which help MSMEs to establish themselves more strongly.
5. Know the measures taken by the government for export promotion with respect to MSMEs.

Learning Outcomes: After completion of the course, learners will be able to:

1. Analyse the pre and post liberalization industrial policies for MSMEs.
2. Assess the rationale for reservation of items for MSMEs.
3. Evaluate the role, functions and objectives of Ministry of MSME.
4. Suggest and avail the different tax concessions and benefits provided by governments from time to time which help MSMEs to establish themselves more strongly.
5. Evaluate and implement the measures taken by the government for export promotion with respect to MSMEs.

SYLLABUS OF DSC-2.1

UNIT 1: Introduction

09 Hours

Pre and post liberalization industrial policies for MSMEs, Differences in regulatory measures with respect to MSMEs, Future policy initiatives for MSMEs, Present policy framework and focus areas, Public Private Participation (PPP), Role of MSMEs policy framework in growth and development of Indian economy, Ganguly Committee Report: Purpose, Objectives, findings and recommendations.

UNIT 2: Support Mechanism

09 Hours

Reservation of items for small scale industries, Rationale for reservation of items for SSIs, Reasons for de-reservation, Relationship between de-reservation and employment, Removal of quantity restrictions, Causes and consequences of sickness in MSMEs, Policy measures taken by various governments to prevent sickness in MSMEs, Relationship between MSMEs sickness and lack of professionalism in MSMEs, Financial support to MSMEs in ZED (Zero Defect & Zero Effect Certification Scheme), Credit Guarantee Trust Fund for Micro & Small Enterprises (CGTMSE), Role of “The Make in India and Atmanirbhar Bharat” initiative in the growth of MSMEs.

UNIT 3: Regulatory Framework and Mechanism

09 Hours

Ministry of MSME: Its role, functions and objectives, Concept of equity participation, Equity issues by small enterprises through OTCEI, Role, features and functions of OTCEI in relation to MSMEs, Technology up gradation in small scale Industries, Support of MSMEs on ISO Certification & skills up gradation, Technology Bureau for Small Enterprises (TBSE): Purpose, Functions and role in the growth of MSMEs, Entrepreneurial and Managerial Development of MSMEs through Incubators.

UNIT 4: Taxation Benefits and MSMEs

09 Hours

Need for tax benefits, Concept of tax holiday and its relevance for MSMEs, Udyog Aadhaar, Tax provisions regarding rehabilitation allowances and amortization of certain preliminary expenses, Tax benefits to MSMEs under Section 115BA, 115BAA, 115BAB, 44AD, 44AE and other relevant sections of Income Tax Act, 1961, GST impact on MSMEs, Tax concession and other benefits to MSMEs in rural and backward areas.

UNIT 5: Measures for Export Promotion

09 Hours

Export assistance and promotion measures including various export promotion scheme and assistance, Export Promotion Council: Role, functions and objectives, Duty Drawback Scheme, Rebate of Duties & Taxes on Export Products (RoDTEP Scheme), Advance Authorisation Scheme (AAS), Export Promotion Zones (EPZs), Special Economic Zones (SEZ), Free Trade Zone (FTZ), Duty Exemption & Remission Schemes, Measures for export promotion taken with respect to MSMEs.

Exercises:

The learners are required to:

1. Analyse the contribution of pre and post liberalisation industrial policies for MSMEs in the development of Indian economy by an assignment. (Unit I)
2. Assess how reservation of items for MSMEs have contributed in growth of MSMEs over the years by a report. (Unit II)
3. Critically evaluate the role and functions of Ministry of MSME in their growth over the years by a case study (Unit III)
4. Assess how different tax concessions and benefits helped MSMEs to avoid sickness and face competition by way of project report (Unit IV)
5. Evaluate how the measures taken by Government for Export Promotion have contributed in the growth of MSMEs in the last decade by a case study (Unit V)

Suggested Readings

- Ahmed, J. Ud-din, (2018), Micro, Small & Medium Enterprises (MSMEs) in India - Institutional Framework, Problems and Policies, New Century Publications.
- Garg, K. (2020), Handbook on MSME's, Bharat Publications.
- Hill, Michal A., Inland Durama R. et al (2015), Strategic Entrepreneurship: Creating a New Mindset, Blackwell Publishers, Oxford.
- Scarborough, N. M., Cornwall, J. R., & Zimmerer, T. (2016), Essentials of Entrepreneurship and Small Business Management, Boston, Pearson.
- Shankar, R. (2012), Entrepreneurship Theory and Practice, Tata McGraw Hill
- Singhania, Vinod. K. (2022), Essentials of income Tax, Taxman publications, New Delhi.
- Shukla, M. B. (2020), Entrepreneurship and Small Business Management, Kitab Mahal,

- Yerram, Raju B. (2019), The Story of Indian MSMEs: Despair to Dawn of Hope, Paperback Publications.
- Zenas Block and Ian C Macmillan, (2011) Corporate Venturing, Harvard Business School Press, Boston.

Note:

1. The suggested readings will be updated and uploaded on college website from time to time. The latest edition of the readings may be used.
2. Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

**BA (VS) SMALL AND MEDIUM ENTERPRISES
DISCIPLINE SPECIFIC CORE COURSE -2.2 (DSC- 2.2) –:
Institutional Support to MSMEs**

**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE
COURSE**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre- requisite of the course (if any) |
|---|----------|-----------------------------------|----------|------------------------|------------------------------|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Institutional Support to MSMEs (DSC-2.2) | 4 | 3 | 1 | 0 | Pass in class XII | NIL |

This course will provide the students with the basic knowledge, understanding and functions of the various institutions supporting MSMEs in India. It will equip the students with the knowledge of various resources available in India for starting a successful business.

Learning Objectives: The objectives of this course are to:

1. Make familiar the students with the various institutional support mechanisms available for MSMEs.
2. Make aware of the various educational and training programs provided to entrepreneurs.
3. Learn about the role of financial institutions in providing financial assistance to MSMEs.
4. Know and understand the financial schemes provided by financial institutions to MSMEs.
5. Conversant with the various infrastructure, procurement and marketing support schemes.

Learning Outcomes: After completion of the course, learners will be able to:

1. Explain the various institutional support mechanisms available for MSMEs.
2. Identify the educational and training programs for acquiring the necessary skills and knowledge in starting a business.
3. Develop knowledge and awareness of the role of financial institutions in providing financial assistance to MSMEs.
4. Identify financial schemes provided by financial institutions and will also explain the necessary steps in availing the financial scheme.
5. Develop awareness of infrastructure, procurement and marketing support schemes.

SYLLABUS OF DSC-2.2

Unit 1: Institutional Support Mechanism I

09 Hours

Need and importance of institutional support mechanisms in MSMEs. SSI Board, SIDCO, NSTEDB, National Productivity Council (NPC), Small Industries Service Institutes (SISIs), Technical Consultancy Organisations (TCOs), NABARD, SIDBI.

Unit 2: Institutional Support Mechanism II

09 Hours

DIs, DICs, SFCs, State Industrial Development/Investment Corporations (SIDC/SIICs), State Infrastructure Development Corporations, State Cooperative Banks, Regional Rural Banks, State Export Corporations, Agro Industries Corporations, Handloom and Handicrafts Corporations.

Unit 3: Educational Institutional Support

09 Hours

Need and importance of educational support for MSMEs. Role and programs offered by educational institutions for entrepreneurship: NIESBUD, EDII, IIE, KVIC, NSIC, NIMSME, MGIRI, SISI.

Unit 4: Institutional Financial Support

09 Hours

Need and importance of financial support for MSMEs, Role of RBI in respect of MSMEs, Role of NABARD in relations to MSMEs, Role of NBFCs in relations to MSMEs, Credit and Financial Assistance: PMEGP, PMMY, CGTMSE, CLCSS, CGSSD, Funding schemes for MSME, SMILE, MSME loan in 59 minutes, MSME loans by Banks.

Unit 5: Infrastructure, Procurement and Marketing Support

09 Hours

Infrastructure Support Schemes: SFURTI, ASPIRE, MSE-CDP, Technology Centres, Promotion of MSMEs in NER and Sikkim.

Procurement and Marketing Support: Procurement and Marketing Support Scheme (PMS), Public Procurement Policy, Government e-Marketplace.

Exercises:

The learners are required to:

1. Discuss various Institutional support mechanism available to MSMEs in class and differentiate the purpose of the various schemes. (Unit I & II)
2. Identify the educational and training programs which will benefit and increase the productivity and efficiency of various types of MSMEs. (Unit III)
3. Identify the financial schemes which will be beneficial for MSMEs. (Unit IV)
4. Discuss the various infrastructure, procurement and marketing support made available to MSMEs. (Unit V)
5. Design a business proposal and identify the educational, financial, infrastructural, procurement and marketing support schemes which will benefit a particular business. (Unit III, IV & V)

Suggested Readings:

1. Baxi A., Bhandari N., Purohit S., Lalwani P., & Bhandari P., (2022) MSME Law and Practice, Tax Publishers
2. Garg K., (2022), Handbook on MSMEs (Micro Small and Medium Enterprises, Bharat Law House.
3. Indian Institute of Business and Finance (2022), Micro, Small and Medium Enterprises (MSMEs), Taxmann Publications.
4. Ministry of Micro, Small and Medium Enterprises – MSME Schemes.
5. Ministry of Micro, Small and Medium Enterprises – Skill Development.
6. Ministry of Micro, Small and Medium Enterprises – Marketing Assistance Scheme.

Suggested websites:

1. www.msme.gov.in
2. www.nsic.co.in
3. www.niesbud.nic.in
4. www.ediindia.org
5. www.iie.gov.in
6. www.kviconline.gov.in
7. www.nimsme.org

Note:

1. The suggested readings will be updated and uploaded on college website from time to time. The latest edition of the readings may be used.
2. Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

BA (VS) SMALL AND MEDIUM ENTERPRISES
DISCIPLINE SPECIFIC CORE COURSE -2.3 (DSC- 2.3) –:
Macroeconomics

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------------|----------|-----------------------------------|----------|---------------------|--------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Macro-economics (DSC- 2.3) | 4 | 3 | 1 | 0 | Pass in class XII | NIL |

Course Objectives:

This course introduces students to the basic concepts in Macroeconomics beginning with the definition and measurement of the macroeconomic variables. It describes how the macro system operates and how and why the economy grows and fluctuates over time based on the decisions made, in the aggregate, by consumers, businesses, governments as well as global factors. As the world is shifting towards a global economy, the study of Macroeconomics helps the students to understand the overall macroeconomic environment under which one has to take economic decisions. This course also introduces the students to the macroeconomic environment which influences retail business.

Course Learning Outcomes: After completion of the course, learners will be able to:

1. Acquire knowledge on various macroeconomic concepts
2. Explain the measurement of various macroeconomic aggregates like national income, consumption, saving, investment, inflation and exchange rate and how these aggregates affect retail business decision making.
3. Understand the role of inflation and inflationary expectations in economic decisions.
4. Analyze goods market and money market interactions influencing the businesses and overall macroeconomic environment.
5. Evaluate the firm's decisions on employment and investment and its' influence in macro-economy

SYLLABUS OF DSC-2.3

Unit-I

09 Hours

Introduction: Basic concepts and issues of Macroeconomics. Circular flow of income.

National Income Accounting: Concepts of GDP and National Income; measurement of national income and related aggregates; nominal and real income; limitations of the GDP concept.

Lipsey & Chrystal Chapters 15, 16

Case & Fair Chapters 20, 21

Unit-II

09 Hours

Determination of GDP: consumption and saving functions, investment function, equilibrium GDP;

concepts of MPS, APS, MPC, APC; Concept of multiplier, fiscal and monetary policies.
Lipsey & Chrystal Chapter 16
Case & Fair Chapters 23, 24

Unit-III

09 Hours

Good & services market and Money market: Derivations of the IS and LM functions; effects of fiscal and monetary policies on equilibrium income. Derivation of Aggregate Demand.
Lipsey & Chrystal Chapters 21 appendix on page 499-504
Case & Fair Chapters 26, 27

Unit-IV

09 Hours

The labour market: wage determination, employment. Aggregate supply curves; interaction of aggregate demand and supply to determine equilibrium output, price level and employment.
Case & Fair Chapters 28 (pages 559-567), 29 (pages 581-586)

Unit-V

09 Hours

Firms Behaviour in the Macroeconomy: Investment and Employment decisions, Productivity and the Business cycle, Free Trade and Protection debate in the context of Small and Medium Enterprises, import substitution strategy, Role of Microfinance for promoting small scale industries
Case & Fair Chapter 31 (pages 624-631), Chapter 34 (pages 676-682), Chapter 36 (pages 720-722)

Exercises:

The learners are required to:

1. Discuss the highlights of the 'economic survey' and annual budget by GOI in the classroom.
2. Conduct classroom discussions on how the recent macroeconomic events both at national and international levels are affecting retail businesses.
3. Make group presentations inviting different ideas on how government rules and regulations and policies with respect to taxation and subsidies can have both positive and negative impact on retail business.
4. Conduct classroom discussions on role of inflation and inflationary expectations in the decision making of retail businesses.
5. Conduct a group project and enquire into the wage and employment determining mechanism in any retail business.

Suggested Readings:

1. Case, Karl E. & Ray C. Fair, Principles of Economics, Pearson Education, Inc., 10th edition, 2012
2. Lipsey, R. and Alec Chrystal, Economics, Oxford University Press, Twelfth Edition, 2011
3. Bo Sodersten and Geoffrey Reed, International Economics (1994), Red Globe Press
4. London.

Note:

1. The suggested readings will be updated and uploaded on college website from time to time. The latest edition of the readings may be used.
2. Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

B.A. (VS) MARKETING MANAGEMENT AND RETAIL BUSINESS

(DSC-2.1) –:Marketing Management-II

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|----------------|--|-----------------|----------------------------|-----------------------------|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Marketing Management-II DSC-2.1 | 4 | 3 | 1 | 0 | Pass in class XII | NIL |

Learning Objectives

To provide the basic knowledge of different concepts of marketing and educate students about recent developments in marketing such as digital marketing, service marketing, direct marketing, social marketing etc. and role of internet in marketing problems in service marketing.

Learning Outcomes

Learning outcomes of the course will be as follows

1. To prepare comparative analysis of traditional and modern marketing techniques.
2. To analyze the marketing decisions involving product mix, product planning and development, product life cycle and pricing strategies.
3. To discuss the concept of distribution channels, factors affecting these channels and various elements of promotion mix.
4. To analyze the role of internet in marketing problems in service marketing.

SYLLABUS OF DSC 2.1:

UNIT- I: Introduction

(09 hours)

Marketing Management: Concept, Philosophy & Process, Traditional Vs. Modern Marketing, Marketing Concept vs. Selling Concept Modern marketing concept of Global marketing, Marketing ethics – Meaning and concepts, Career opportunities in marketing, social responsibility in Marketing

Unit II: Product and Price

(15 hours)

Product – Meaning - product quality - product design - product features Types of products; Product mix decision- Product line, product addition & deletion, Product planning and

development; **Pricing** - Meaning and importance of pricing; Factors affecting price of a product/service; Methods of pricing

UNIT- III: Place and Promotion

(12 hours)

Place – Distribution Channels - concept, meaning role and importance - Types of distribution channels; Factor affecting choice of a distribution channel and Physical distribution of goods choice of a distribution channel **Promotion**– Meaning, importance, Elements of promotion mix – Advertising, publicity, personal selling and salesmanship, public relations Selling process.

UNIT-IV: Recent Developments in Marketing

(09 hours)

Digital Marketing /Virtual Marketing, Service Marketing, Direct Marketing, Social Marketing and Green Marketing Network marketing, Role of Internet in marketing Problems in service marketing

Case Study: Relevant case study should be discussed with the students.

Exercises:

The learners are required to:

1. prepare a comparative analysis report on traditional and modern marketing techniques used in a managerial structure (Unit 1).
2. analyse different modes of pricing strategies applied in selective product category in marketing management (Unit2).
3. discuss a marketing mix strategy for promoting electric cars in India and with reasons and present the same. (Unit 3)
4. make personal interviews on various elements of promotion mix to identify which mode is more effective in capturing market (Unit 3).
5. use the digital marketing in maintaining class room activities and challenge face by them in implementing the same. (Unit 4)

Suggested Readings:

1. Kotler, P., (2021), *Marketing Management*, Englewood Cliffs, Prentice Hall Inc., New Jersey.
2. Govindarajan, M., (2019), *Marketing Management*, PHL Learning Pvt. Ltd., New Delhi.
3. Pride W. M., and Ferrell O.C., (2019), *Marketing: Planning, Implementation and Control*,
4. Cengage Learning India Ltd., New Delhi.Stanton W.J., Etzel M. J. and Walker B. J., (2020),*Fundamentals of Marketing*,McGrawHill, New Delhi.\
5. Khan M. A., (2021), *Marketing Management*, Wisdom Publication, Delhi.

Note: Suggested readings will be updated and uploaded on college website from time to time

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

B.A. (VS) MARKETING MANAGEMENT AND RETAIL BUSINESS

DSC-2.2 - Retail Management

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------------------|----------------|--|-----------------|----------------------------|-----------------------------|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Retail Management DSC-2.2 | 4 | 3 | 1 | 0 | Pass in class XII | NIL |

Learning Objectives

The paper aims to provide a comprehensive understanding of the theoretical and applied aspects of Retail Management and enable student about buying process, retail market strategy and target market.

Learning Outcomes

Learning outcomes of the course will be as follows

1. To explain the concept of retailing and its formats.
2. To discuss the structural changes in retail environment and the dynamics of retail store location.
3. To analyse the conceptualized framework and analyse the retail planning and logistics.
4. To acquire the knowledge about the emerging issues in retailing.

SYLLABUS OF DSC 2.2

Unit 1 Introduction:

(09 hours)

Concept objective and functions of Retail Environment; Types of Retailing Formats: Super Market, Hyper Market, Departmental Stores, Convenience Stores, and Catalogue Retailers. Non-Stores Retailing: Vending Machine, Door to Door selling, Mail Order, and E-Retailing; Credit Card Transaction, Smart Card and E-Payment. Managing retailing in the different atmosphere - growth, boom, depression & recession; Govt. macroeconomics policy in the retail industry

Unit 2 Structural change:

(12 hours)

Types of changes in the retail environment - Socio demographic change, Technology and economic change, socio-economic changes, Impact of changes on the retail industry. Retail Location: Choosing a Store Location: Trading-Area analysis, characteristics of trading areas, Site

selection, Types of locations, and site evaluation; SWOT analyses of the retail sector, shopping at World Stores, The Internationalization Process and Culture.

Unit 3 Store Planning and Logistics:

(15 hours)

Store Planning: Design & Layout, Retail Image Mix, effective retail space management, floor space management; Store Manager –Responsibilities, Inventory Management, Customer Service, Management of Retail Outlet/Store, Store Maintenance, and Store Security; Logistics and Distribution: Shipping the Goods to Market: The Distribution Process, The stages of distribution; Trends in supply chain management, Physical Distribution and Inventory Management, Warehouse Management.

Unit 4 Contemporary issues in retailing:

(09 hours)

Contemporary issues in retailing, Making People Matter: Retail Employment, Planning the Workforce, Management and Organizational Culture, Personnel Management and Administration, Health and Safety; a review of Retailing: Cultural Transformation and Retailing, New Approaches in Retailing, Emerging Themes and Niches, Building for the future: Learning from the past.

Exercises:

The learners are required to:

1. explain an analytical report on the use of vending machines in a retail format of your choice (Unit 1).
2. design the retail business plan analysis of any retail store (Unit 2).
3. study the layout, display and logistics of any store-based retail format (Unit3).
4. perform role play as customer and retailer with respect to different product categories to effectively demonstrate the ability to close the sale (Unit 4).
5. conduct personal interviews of the sales staff in a retail store to identify what motivates them more- monetary or non-monetary incentives (Unit 4).

Case Study: Relevant case study should be discussed with the students.

Suggested Readings:

1. Newman A and Cullen P, (2001), *Retailing: Environment and Operations*, Cengage learning, Andover, UK
2. Bajaj C., Tulsi and R, Shrivastava N.V. (2010) *Retail Management*, Oxford University Press.
3. Barry B., & Evance J.R, (2006), “*Retail Management*” Prentice Hall India.
4. Gibson G. And Vedamani, (2004), *Retail Management*, Jaico Publishing House, Bengaluru.
5. Pradhan, S., (2007), “*Retailing Management- Text and Cases*” Tata McGraw-Hill New Delhi

Note: Suggested readings will be updated and uploaded on college website from time to time

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

B.A. (VS) MARKETING MANAGEMENT AND RETAIL BUSINESS

MACROECONOMICS - 2.3 (DSC-2.3) –:

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|----------------|--|-----------------|--------------------------------|---------------------------------|--|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Macroeconomics DSC-2.3 | 4 | 3 | 1 | 0 | Pass in class XII | Nil |

Learning Objectives:

This course introduces students to the basic concepts in Macroeconomics beginning with the definition and measurement of the macroeconomic variables. It describes how the macro system operates and how and why the economy grows and fluctuates over time based on the decisions made, in the aggregate, by consumers, businesses, governments as well as global factors. As the world is shifting towards a global economy, the study of Macroeconomics helps the students to understand the overall macroeconomic environment under which one has to take economic decisions. This course also introduces the students to the macroeconomic environment which influences retail business.

Learning Outcomes

Learning outcomes of the course will be as follows

Students will understand various macroeconomic phenomena that they come across at local, national and global levels regularly. This will enable them to understand labour market scenarios based on present trend and government policies. This will give added advantage to students as retailer since they can take informed decisions.

SYLLABUS OF DSC 2.3

Unit-I

(09 hours)

Introduction: Basic concepts and issues of Macroeconomics. Circular flow of income, National Income Accounting: Concepts of GDP and National Income; measurement of national income and related aggregates; nominal and real income; limitations of the GDP concept.

Lipsey & Chrystal Chapters 15,16

Case & Fair Chapters 20, 21

Unit-II

(09 hours)

Determination of GDP: consumption and saving functions, investment function, equilibrium GDP; concepts of MPS, APS, MPC, APC; Concept of multiplier, fiscal and monetary policies.

Lipsey & Chrystal Chapter 16

Case & Fair Chapters 23, 24

Unit-III

(09 hours)

Good & services market and Money market: Derivations of the IS and LM functions; effects of fiscal and monetary policies on equilibrium income. Derivation of Aggregate Demand

Lipsey & Chrystal Chapters 21 appendix on page 499-504

Case & Fair Chapters 26, 27

Unit-IV

(09 hours)

The labour market: wage determination, employment.

Aggregate supply curves; interaction of aggregate demand and supply to determine equilibrium output, price level and employment

Case & Fair Chapters 28 (pages 559-567), 29 (pages 581-586)

Unit-V

(09 hours)

Inflation, Role of Inflationary Expectations, Aggregate Demand and Aggregate supply: Inflation, causes of inflation, demand-pull inflation, cost-pull inflation.

Economic gains from trade, absolute advantage, comparative advantage. Balance of payments and exchange rate: Meaning, factors, current account, capital account, determination of exchange rate.

Case & Fair Chapters 28 (pages 567-570), 34 (pages 663-671), 35 (pages 687-691)

Suggested Readings:

1. Case, Karl E. & Ray C. Fair, Principles of Economics, Pearson Education, Inc., 10th edition, 2012
 2. Lipsey, R. and Alec Chrystal, Economics, Oxford University Press, Twelfth Edition, 2011
- Note: Suggested readings will be updated and uploaded on college website from time to time***

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

B.A. (VS) TOURISM MANAGEMENT
DSC-2.1 - TOUR GUIDING AND ESCORTING

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|----------|-----------------------------------|----------|---------------------|--------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| TOUR GUIDING AND ESCORTING (DSC- 2.1) | 4 | 3 | 1 | 0 | Pass in class XII | NIL |

Learning Objective:

This course provides students with extensive knowledge of techniques and best practices for guiding and accompanying domestic and international travelers. This course covers a basic knowledge of tour management and travel business principles. This course also teaches students about actual activities related to travel packaging, such as itinerary planning and travel expenses for creating package tours.

Learning Outcome:

After completing this course, the learners would be able to:

1. Explain the roles, duties and skills of a tour guides and escorts.
2. Describe the various procedures and techniques involved in guiding in different situations and sites.
3. Demonstrate with the responsibilities and dynamics in tour escorting, explain the pros and cons of tour escorting, in-depth and practical knowledge about the tour escorting and guiding through exposure to various case studies.
4. Discuss and implement various skills such as reading, research, communication and leadership for conducting successful tour, planning and organizing of tours.

SYLLABUS OF DSE-2.1

Unit – I

11 Hours

Basics of Tour Guiding: Meaning, Definition and Role of a Guide in Tourism, Types of Guides, Characteristics of Tour guide, Skills required to become a tour guide, Procedure of registration / approval of Guides.

Unit – II

11 Hours

Guiding Techniques: Understanding the dynamics of tour guiding, Duties and Responsibilities of guide pre, post and during tour, guiding at natural, cultural, and historical sites. Handling emergency situation.

Unit – III

11 Hours

Introduction to Tour Escorting: - Personal hygiene and grooming, responsibilities of Escort - pre, post and during tour responsibilities, difference between guide & escort, advantages, and disadvantages of choosing tour escorting as a profession.

Unit – IV

12 Hours

Group Handling Techniques: Leading a group, check list, Group control and Setting Limits, Problem solving skills - lost Baggage, medical assistance, lost of tourist, Tips to keep group happy; Ethical and professional considerations.

Practical Exercises

The learners are required to:

1. Explain relevant concepts of tour guiding and escorting by way of Class presentation.
2. Demonstrate and discuss different skills, concept and function using Focused group discussion.
3. Assess the understanding of theory and practical by objective and subjective assessment (Class test, assignments, MCQs, Fill in the blanks and quiz).

4. Demonstrate the tour guiding/escorting skills at a monument or a National Park or a museum.

Suggested Readings:

- Chowdhary, N. (2013). *Handbook for Tour Guides*. IITTM. India.
- E-Pathshala. (2018). Retrieved from E-Pathshala an MHRD Project Website: <http://epgp.inflibnet.ac.in/ahl.php?csrno=1827>Select-P-09>.
- Lichty, T., & Watson, J. (1998). *The Official America Online Tour Guide*. USA: Coriolis.
- Pond, K. L. (1993). *The Professional Guide: Dynamics of Tour Guiding*. New York: Van Nostrand Reinhold Company.
- Weiler, B., & Black, R. (2014). *Tour Guiding Research: Insights, Issues and Implications*. Bristol. Channel View Publications.
- Marc, M.(2000). *Conducting Tours*. U.S.A. Cengage Learning.
- Syrratt, G.(2003). *Manual of Travel Agency*. Oxford:UK. Butterworth-Heinemann Ltd.

Note:

1. **Suggested Readings will be updated and uploaded on college website from time to time.**
2. **Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.**

B.A. (VS) TOURISM MANAGEMENT

DSC-2.2 – : ENTREPRENEURSHIP & NEW VENTURE PLANNING

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|----------------|--|-----------------|-----------------------------|-----------------------------|---|
| | | Lecture | Tutorial | Practical / Practice | | |
| ENTREPRENEURSHIP & NEW VENTURE PLANNING (DSC- 2.2) | 4 | 3 | 1 | 0 | Pass in class XII | NIL |

Learning Objective

This course aims at instituting entrepreneurial skills in the students by giving an overview of entrepreneurship and the competencies that are needed to become an entrepreneur. To enable students to explore and launch entrepreneurial ventures in their own areas of interest.

Learning Outcomes

After completion of the course, learners will be able to:

1. discern distinct entrepreneurial traits.
2. process and nature of entrepreneurship.
3. identify the different ways in which entrepreneur manifests in start-ups .
4. describe the entrepreneurial process for initiating new venture creation.
5. design strategies for the successful implementation of innovative ideas of new ventures.

SYLLABUS OF DSE-2.2

Unit 1: Introduction

09 Hours

Concept and Definitions Entrepreneurship, Entrepreneurial Mind-set, Traits/Qualities of Entrepreneurs, Entrepreneurship process; Theories of entrepreneurship; Factors affecting the emergence of entrepreneurship; Role of an entrepreneur in economic growth as an innovator; Generation of employment opportunities; complementing and supplementing economic growth; Bringing about social stability and balanced regional development of industries.

Unit 2: Types of Entrepreneurs

09 Hours

Classification and Types of Entrepreneurs; Women Entrepreneurs; Social Entrepreneurship; Corporate Entrepreneurs, Family Business: Concept, structure, and kinds of family firms; Culture and evolution of family firm; Managing Business.

Unit 3: Business plan

09 Hours

Creating Entrepreneurial Venture: Generating Business ideas, Team building, Sources of Innovation, Creativity, and Entrepreneurship; Challenges in managing innovation; Entrepreneurial strategy and Scaling up, Business planning process; Drawing business plans; Failure of the business plan.

Unit 4: Mobilizing Resources

09 Hours

Resource Mobilization for entrepreneurship: Resources mobilization, types of resources, Process of resource mobilization, Arrangement of funds; writing a Funding Proposal, Traditional sources of financing, Venture capital, Angel investors, Business Incubators.

Unit 5: Managerial Aspects of Business and Government Initiatives

09 Hours

Managing finance; Understanding capital structure; organisation structure and management of human resources of a new enterprise; Marketing-mix; Management of cash; Relationship management; Cost management, Government initiatives for promoting entrepreneurship.

Practical Exercises:

The learners are required to:

1. discuss various cases of entrepreneurship and distinguish between different entrepreneurial traits.
2. prepare a business plan for a start-up venture in a rural setting after analyzing the various facets of the rural economy.
3. analyse and present the key initiatives of the Government of India for promoting entrepreneurship in the country.
4. analyse and interpret case study on business philosophy of Tata Group, Aditya Birla Group, Reliance Industries Limited, and similar organisations.
5. participate in Business Plan Competition-designing a business plan proposal and identifying alternative sources of raising finance for the start-ups.

Suggested Readings:

- Barringer, B.R. and R. Duane Ireland, Entrepreneurship, (latest edition) Pearson Prentice Hall
- Gersick, K. E., Davis, J. A., Hampton, M. M., & Lansberg, I. (1997). Generation to generation: Life cycles of the family business. Boston: Harvard Business School Press.
- Hisrich, R.D., Manimala, M.J., Peters, M.P., Shepherd, D.A.: Entrepreneurship, Tata McGraw Hill
- Kuratko, D.F., and Rao, T. V., Entrepreneurship: A South-Asian Perspective, (latest edition) Cengage
- M.B. Shukla. Entrepreneurship and Small Business Management: Kitab Mahal Publishers
- Nicholls, A. (Ed.). (2006). Social entrepreneurship new models of sustainable social change. Oxford University Press.
- R.D. Hishrich., Peters, M., Entrepreneurship: Irwin, (latest edition)
- Scarborough, N. M., Cornwall, J. R., & Zimmerer, T. (2016). Essentials of entrepreneurship and small business management. Boston: Pearson
- Shankar, R., Entrepreneurship Theory and Practice, (latest edition) Tata McGraw Hill

Note:

1. **Suggested Readings will be updated and uploaded on college website from time to time.**
2. **Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.**

B.A. (VS) TOURISM MANAGEMENT

DSC-2.3 – : DESTINATION IN TOURISM: CITIES, ROUTES, AND HERITAGE

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|----------------|--|-----------------|----------------------------|-----------------------------|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| DESTINATION IN TOURISM: CITIES, ROUTES, AND HERITAGE (DSC- 2.3) | 4 | 3 | 1 | 0 | Pass in class XII | NIL |

Learning Objective:

This paper intends to introduce students of vocational courses to the process of city making, the emergence of trade routes and establishment of the popular destinations in India, from ancient to contemporary times. Upon completion of this course, students will be equipped to implement the conceptual tools and case studies to further their professional and educational goals. This paper will impart a holistic understanding of urbanism in India and will provide students with vocational courses like Tourism to identify new destinations, places to visit and attractions in their professional work. To students in general, the course will be informative and helpful in expanding their general knowledge or understanding of Indian cities. Finally, students will be able to locate their own experience of living in urban centres in the more extensive timeline of urbanization.

Learning Outcomes:

Upon completion of this course the student shall be able to:

1. Discuss urban centres and their types as well as urban centres as a destination.
2. Explain urban centres in ancient India, trade routes and their importance.
3. Analyze processes of urbanization in Medieval India.

4. Discuss rise of modern cities - Colonial Urbanism: Factory & Fortress towns, Presidencies, Hill-stations, Port Towns and Planned Cities, Urbanization in successor and princely states.

SYLLABUS OF DSE-2.3

Unit 1- Introduction to Urban Centres, Routes and Destinations

11 Hours

Definition and Concepts: Cities as centres; Routes, Circulation and Communication; Role of Surplus, Types of Urban Centres: Religious centres, Commercial centres (guild system), Political capitals and Pilgrimage towns, Urban centres as the Destination, Attractions and places of leisure, Significance of Traveller's account: Megasthenes, Fa-Hien, Hiuen Tsang, Ibn Batuta, Marco Polo, Manucci, Tavernier etc.

Unit 2- Urban Centres in Ancient India

11 Hours

Nature of Harappan Towns and Cities. - Second Phase of Urbanization: Emergence of Urban centres and trade routes in the Gangetic plain, Deccan and Tamilakam, Rise of administrative, trade and religious centres: A case study of Taxila, Kausambi, Patliputra, Mathura or Ujjain, Kondapur, Arikamedu, Kanchipuram etc.

Unit 3- Urban Centres in Medieval India

12 Hours

Delhi sultanate and its urban centres: Metropolitan towns (Delhi and Qannauj), Planned cities (Deogir/Daulatabad), Garrison Towns (Ucch and Multan), Qasbahs, Sarais and Khanqahs, Regional cities and Temple Towns: Ahmadabad, Jaunpur and Kanchipuram, Vijayanagar Kingdom: Case study of Hampi. - Mughals: Capital cities (Agra, Fatehpur Sikri and Shahjahanabad), Sacred City Centres (Ajmer and Benaras) and Port towns (Surat and Musalipatnam).

Unit 4- Urban Centres in Modern India

11 Hours

Colonial encounter: Rise of modern cities, the impact of the European Industrial Revolution on India, Mercantilism and Migration, Colonial Urbanism: Factory & Fortress towns, Presidencies, Hill-stations, Port Towns and Planned Cities, Urbanization in successor and princely states: Jaipur, Lucknow and Hyderabad, Cities of Colonial India: Mumbai, Chennai, Kolkata and New Delhi,

The emergence Of New Urban centres in Post- Colonial India: Case studies of Chandigarh and Bengaluru.

Practical Exercises:

1. Interactive sessions through group discussions or group presentations shall be used to enable learning of Urban Centres, Routes and Destinations, Urban Centres in Ancient India, Urban Centres in Medieval India and Urban Centres in Modern India as well as to facilitate revision of issues outlined in the lectures.
2. Supporting audio-visual aids like documentaries and power point presentations, and an appropriate field-visit will be used where necessary.
3. Assess the understanding of theory and practical by objective and subjective assessment (Class test, assignments, MCQs, Fill in the blanks and quiz).

Essential Readings:

- Mumford, L., (1961) *The City in History* (New York: Harcourt, Brace and World).
- Sjoberg, Gideon. "The preindustrial city." *American Journal of Sociology* 60.5 (1955): 438-445.
- Childe, V. Gordon. "The urban revolution." *The town planning review* 21.1 (1950): 3-17.
- Farooqui, Amar (2012). *Early Social Formations*. Manak Publication.
- Menon, A.G.K (2007) *The Complexity of Indian Urbanism*. Seminar.
- Ramachandran, R., 1989. *Urbanization and Urban Systems in India*, OUP, Delhi.
- Mishra, R. P., 1998.
- Chattopadhyaya, B., (2003) 'The City in Early India: Perspectives from Texts', in B. Chattopadhyaya, *Studying Early India: Archaeology, Texts, and Historical Issues* (Delhi: Permanent Black), pp. 105-34
- Sharma, R. S., (1974) 'Iron and Urbanisation in the Ganga Basin', *Indian Historical Review*, Volume 1, Number 1, pp. 98-103.
- Kaul, S., (2010) *Imagining the Urban: Sanskrit and the City in Early India* (Delhi: Permanent Black).

- Singh, Upinder. *A History of ancient and early medieval india: from the stone age to the 12th century (PB)*. Pearson Education India, 2009.
- Chandra, Satish, (1997) *Medieval India: Delhi Sultanate (1206-1526), Part I* (New Delhi: Har-Anand Publications)
- Habib, Irfan, (1978) 'Economic History of the Delhi Sultanate – An Essay in Interpretation', *The Indian Historical Review*, Vol. IV, No. 2.
- Kumar, Sunil, 'Delhi Sultanate', in *The Princeton Encyclopedia of Islamic Thought*, ed. Gerhard Bowering (Princeton: Princeton University Press)
- Bayly, C. A., (1992) *Rulers, Townsmen and Bazaars: North Indian Society in the Age of British Expansion, 1770-1870* (Delhi: Oxford University Press).
- Gupta, Narayani, (1981) *Delhi Between Two Empires, 1803-1931: Society, Government and Urban Growth* (Delhi: Oxford University Press).
- Farooqui, Amar. *Opium city: The making of early Victorian Bombay*. Three Essays Collective, 2006.
- Chattopadhyay, Swati, (2005) *Representing Calcutta: Modernity, Nationalism and the Colonial Uncanny* (Asia's Transformations; London: Routledge)
- Roy, Ashim Kumar. *History of the Jaipur city*. New Delhi: Manohar, 1978.
- Glover, William, (2008) *Making Lahore Modern: Constructing and Imagining a Colonial City* (Minneapolis: University of Minnesota Press).
- Kaur, Ravinder, (2005) 'Planning Urban Chaos. State and Refugees in Post-Partition Delhi', in Evelyn Hust and Michael Mann (eds.), *Urbanisation and Governance in India* (Delhi: Manohar), pp.229-249.
- Nair, Janaki, (2005) *The Promise of the Metropolis. Bangalore's Twentieth Century*, (Delhi: OxfordUniversity Press). Prakash, Gyan, (2010) *Mumbai Fables, A History of an Enchanted City*, (Princeton: Princeton University Press).
- Chenoy, Shama Mitra, (1998) *Shahjahanabad: A City of Delhi, 1638-1857* (New Delhi:Munshiram Manoharlal Publisher).
- Grewal J.S. and Indu Banga, (1985) *Studies in Urban History* (Amritsar: Guru Nanak Dev University)
- Gupta, I.P., (1986) *Urban Glimpses of Mughal India: Agra the Imperial Capital, 16th and 17th Centuries* (Agra: Discovery Publishing House)

- Khan, Maksud Ahmad, (2004) Sufis and their Contribution in the Process of Urbanisation”, in Neeru Mishra (ed.), Sufis and Sufism: Some Reflections (New Delhi: Manohar Publishers and Distributors).

Suggested Readings

- Fagan, Brian M., and Nadia Durrani. *People of the earth: An introduction to world prehistory*. Routledge, 2018.
- Orans, Martin, (1966) ‘Surplus’, *Human Organization*, Vol. 25, pp. 24-32.
- Pirenne, Henri, (1969) *Medieval Cities: Their Origins and the Revival of Trade* (Princeton: Princeton University Press).
- Shane, Ewen, (2016) *What is Urban History?* (Cambridge: Polity Press).
- Menon, A.G.K (2007) The Complexity of Indian Urbanism. *Seminar*.
- Southall, Aidan, (1998) *The City in Time and Space* (Cambridge: Cambridge University Press).
- Steward, J., (1968) ‘Cultural Ecology’ in *The International Encyclopedia of The Social Sciences*, Vol. 3.
- Ahluwalia, Isher Judge, Ravi Kanbur, and Prasanna Kumar Mohanty, eds. *"Urbanisation in India: Challenges, opportunities and the way forward."* (2014).
- Urbanization in India: Challenges and Opportunities, Regency Publications, New Delhi.
- Clark, Peter, ed. *The Oxford Handbook of Cities in World History*. Oxford: Oxford University Press, 2013.
- Fisher, Kevin D., and Andrew Creekmore, eds. *Making Ancient Cities: Space and Place in Early Urban Societies*. New York: Cambridge University Press, 2014.
- Thakur, V. K., (1981), *Urbanisation in Ancient India* (New Delhi: Abhinav Publications)
- Basant, P. K., (2012) *The City and the Country in Early India: A Study of Malwa* (Delhi: Primus Books).
- Erdosy, G., (1988) *Urbanisation in Early Historic India* (Oxford: BAR International Series).

- Ghosh, A., (1973) *The City in Early Historical India* (Simla: Indian Institute of Advanced Study).
- Ratnagar, S., (2000) *The End of the Great Harappan Tradition* (New Delhi: Manohar).
- Jha, S. K., (1998) *Beginnings of Urbanisation in Early Historic India: A Study of the Gangetic Plains* (Patna: Novelty & Co.)
- Marshall, J. H., (1951 [reprint 2013]) *Taxila: An Illustrated Account of Archaeological Excavations 1913-1934, Volumes I-III* (Cambridge: Cambridge University Press).
- Prasad, K., (1984) *Cities, Crafts and Commerce under the Kusanas* (Delhi: Agam Kala Prakashan).
- Rao, S.R., (1979, 1985) *Lothal: A Harappan Port Town 1955-1962* (New Delhi: Archaeological Survey of India).
- Wright, R.P., (2010) *The Ancient Indus: Urbanism, Economy and Society*. (New York: Cambridge University Press).
- Banga Indu (ed.), (1991) *City in Indian History: Urban Demography, Society and Politics* (Delhi: Manohar).
- Bandyopadhyay, Sekhar. *From Plassey to Partition*. 2004.
- Banerjee-Dube, Ishita. *A history of modern India*. Cambridge University Press, 2014.
- Roy, Tirthankar. "Economic history of India, 1857-1947." *OUP Catalogue* (2011).
- Blake, Stephen, (1993) *Shahjahanabad: The Sovereign City in Mughal India, 1639-1739* (New Delhi: Cambridge University Press)
- Ashraf, K.M., (1970 [2nd edition]) *Life and Conditions of the People of Hindustan*, Delhi: Munshiram Manoharlal).
- Naqvi, Hamida Khatoon, (1986) *Agricultural, Industrial and Urban Dynamics under the Delhi Sultans – 1206-1555* (New Delhi: Munshiram Manoharlal Publishers).
- Siddiqui, I.H., (2011, reprint) *Delhi Sultanate: Urbanization and Social Change* (New Delhi: Viva Books).

- Verma, H.C., (1986) *Dynamics of Urban Life in Pre-Mughal India* (New Delhi: Munshiram Manoharlal).
- Naqvi, H. K., (1972) *Urbanisation and Urban Centres under the Great Mughal, 1556-1707: An Essay in Interpretation* (Shimla: Indian Institute of Advanced Study).
- Banga, Indu (ed.), (1991) *The City in Indian History: Urban Demography, Society, and Politics* (New Delhi: Manohar)
- Hazareesingh, Sandip, (2007) *The Colonial City and the Challenge of Modernity: Urban Hegemonies and Civic Contestations in Bombay City, 1900-1925* (New Perspectives in South Asian History; Hyderabad, India: Orient Longman).
- Kidambi, Prashant, (2007) *The Making of an Indian Metropolis: Colonial Governance and Public Culture in Bombay, 1890-1920* (Aldershot: Ashgate).
- King, Anthony D., (1976) *Colonial Urban Development: Culture, Social Power, and Environment* (London: Routledge & Kegan Paul)
- Nair, Janaki, (2009) 'Beyond Nationalism: Modernity, Governance and a New Urban History for India', *Urban History*, Vol. 36 (Special Issue 02), pp.327-4
- Haynes, Douglas E., (1992) *Rhetoric and Ritual in Colonial India: the Shaping of a Public Culture in Surat City, 1852-1928* (Delhi: Oxford University Press).
- Hosagrahar, Jyoti, (2005) *Indigenous Modernities: Negotiating Architecture and Urbanism* (Architext series; London: Routledge).
- Yang, Anand A., (1998) *Bazaar India: Markets, Society, and the Colonial State in Gangetic Bihar* (Berkeley: London: University of California Press)
- Ray, Rajat Kanta, (1979) *Urban Roots of Indian Nationalism: Pressure Groups and Conflict of Interests in Calcutta City Politics, 1875-1939* (New Delhi: Vikas).
- Oldenburg, Veena Talwar, (1984) *The Making of Colonial Lucknow, 1856-1877* (Princeton: Princeton University Press).
- Correa, Charles, (1973) 'Self-help City', *Seminar*, Vol. 162 (Feb.).
- Dutta, V. N., (1986) 'Punjabi Refugees and Greater Delhi', in R. E. Frykenberg ed., *Delhi through the Ages: Essays in Urban History, Culture and Society* (Delhi: Oxford University Press), pp.442-462.

- Chatterjee, Nilanjan, (1990) 'The East Bengal Refugees. A Lesson in Survival', in Sukanta Chaudhuri (ed.), Calcutta. Volume I: The Past (New Delhi: Oxford University Press), pp.70-77.

Note:

- 1. Suggested Readings will be updated and uploaded on college website from time to time.**
- 2. Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.**

44. Amendment to Appendix -II-A to the Ordinance V (2-A) of the Ordinances of the University vide EC Resolution 38-1-7 dated 08.12.2022 regarding Syllabi of 2nd Semester of Department of Music

Add the following:

Syllabi of Semester-II of the Department of Music under Faculty of Music & Fine Arts based on Under Graduate Curriculum Framework -2022 to be implemented from the Academic Year 2022-23.

**Faculty of Music & Fine Arts
(Department of Music)**

**B.A. (Hons.) I Music - Hindustani Music
Vocal/Instrumental (Sitar/Sarod/Guitar/Violin/Santoor)**

DSC – 4: THEORY OF INDIAN MUSIC

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility Criteria | Pre-requisite of the course |
|-----------------------------|---------|--------------------------------------|---|---|-------------------------|--------------------------------|
| | | L | T | P | | |
| GENERAL THEORY (201) | 4 | 3 | 1 | 0 | Class XII Pass | Nil |

Learning Objectives:

- To initiate the student to the rich history of Indian music, through the study of ancient musical concepts.
- To teach him the concept of every raga being performed according to a specific time
- To make the student aware of the life and contribution of two legends – Pt. Bhatkhande and Pt. Paluskar, credited with the revival of Hindustani Classical

Music

- To introduce him to the basic concepts of Western music
- To enable the student to fully grasp the elements of Instrumental music, used in the art of playing a raga

Learning Outcomes:

- The student will come to know how ragas were performed in ancient times.
- He will learn the principles governing the Time Theory of Ragas, in that every raga is to be performed according to a designated time. This will enhance his understanding of the raga and their associated moods.
- The student will appreciate the pioneering work done by the aforementioned legends of Hindustani music, and how the state of modern music is a direct result of their tireless efforts in reviving the dying art.
- The student will be able to read compositions written in Western notation system and will also be able to make a comparative analysis with the notation system of Hindustani music

Syllabus:

Unit – I (6 hours)

- Margi-Desi
- Gandharava - Gaan
- Nibaddha-Anibaddha Gaan
- Ragalap-Rupkalap

Unit – II (6 hours)

- Sthaya
- Kaku
- Alpatva-Bahutva
- Avirbhav-Tirobhav

Unit – III (6 hours)

Time Theory of Ragas:

- Sandhiprakash ragas
- Daytime prahar ragas
- Nighttime prahar ragas
- Parmel praveshak ragas
- Adhvadarshak ragas

Unit – IV (3 hours)

Life and contribution of the following:

- Pt. Vishnu Narayan Bhatkhande
- Pt. Vishnu Digambar Paluskar

Unit – V (10 hours)

- Rudiments of Staff Notation
- Harmony
- Melody
- Polyphony

Unit – VI (10 hours)

- Maseetkhani Gat and Vilambit Gat
- Razakhani and Drut Gat
- Krintan
- Zamzama
- Ghaseet
- Gitkiri
- Meend
- Sut
- Kan
- Khatka
- Murki

Unit – VII (2 hours)

- Study of the following talas in detail – Chautala, Jhaptala & Kaharva
- Study of the application of talas in musical forms
- Ability to write the notation of the talas in dugun, tigun and chaugun

Unit – VIII (2 hours)

- Study of the ragas of this semester – Jaunpuri, Kafi, Vrindavani Sarang, Durga
- Comparative study of the ragas with each other
- Ability to write the notation of compositions in prescribed ragas

Suggestive readings:

- Clements, E. (1912) Introduction to The Study of Indian Music, Allahabad, U.P., Kitab Mahal
- Vir, Ram Avtar (1980) Theory of Indian music, Delhi, Pankaj Publication
- Bhatkhande V.N. (1975) Bhatkhande Sangeet Shastra, Hathras, UP, Sangeet Karyalay
- Pathak, Jagdish Narayan (1969) Sangeet Shastra Praveen, Allahabad, U.P., Published by Shri Ratnakar Pathak
- Nigam, V.S. (1973) Sangeet Kamudi, Part I, Allahabad, U.P. Indian Art Press

- Nigam, V.S. (1974) Sangeet Kamudi, Part II, Allahabad, U.P. Indian Art Press
- Sharma, Swatantra (1996) Bhartiya sangeet, Delhi, Pratibha Prakashan
- Chakravarty, Indrani (1988) Sangeet Manjusha, Delhi, Mittal Publication
- Sharma, Swatantra (2012) Paschatya Swarlipi Paddhati evam Bhartiya Sangeet, U.P., Anubhav Publication House
- Bhatkhande V.N. (1980) Bhatkhande Sangeet Shastra, Part II, Hathras, U.P., Sangeet Karyalaya

DSC – 5: Stage Performance

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility Criteria | Pre-requisite of the course |
|----------------------------|---------|-----------------------------------|---|---|----------------------|-----------------------------|
| | | L | T | P | | |
| STAGE PERFORMANCE (202) | 4 | 0 | 0 | 4 | Class XII Pass | Nil |

Learning Objectives:

- To continue to focus on the basics of singing/playing.
- To encourage the student to attempt to improvise while singing/playing.
- To focus on his learning of newer talas.
- To further his training in performance, with other basic ragas as prescribed.

Learning Outcomes:

- The basics of the student will get further strengthened.
- The student will start to gain self-belief and make attempts to improvise while performing a raga.
- The student will begin to gain some command over increasingly complex talas.
- With other basic ragas, the student will understand how to use the flat and sharp notes in ragas with varied tonal phrases.
- He will gain confidence with the Tabla accompanying him in performances of larger time-duration

Syllabus:

Prescribed ragas:

1. Jaunpuri
2. Kafi
3. Vrindavani Sarang
4. Durga

Unit I – Vocal Music (120 hours):

- A detailed performance of Vilambit and Drut Khayal with gayaki to be

- presented in any one raga
- Presentation of one semi classical, devotional or folk song

OR

Unit II – Instrumental Music (120 hours):

- A detailed performance of Maseetkhani and Razakhani Gats with elaboration to be presented in any one raga
- Presentation of a dhun, devotional or light music composition

Note: Students of Vocal and Instrumental music will have to prepare according to the requirements of their respective Units.

Suggestive readings:

- Bhatkhande, V.N. (2000) Kramik Pustak Malika, Part-I, Hathras, U.P., Sangeet Karyalaya
- Bhatkhande, V.N. (2000) Kramik Pustak Malika, Part-II, Hathras, U.P., Sangeet Karyalaya
- Patwardhan, V.R., (2001) Raga Vigyan, Part-I, Pune, MH, Dr. Madhusudhan Patwardhan
- Patwardhan, V.R., (1999) Raga Vigyan, Part-II, Pune, MH Dr. Madhusudhan Patwardhan
- Patwardhan, V.R., (1967) Raag Vigyan, Part-III, Pune, MH, Dr. Madhusudhan Patwardhan
- Mishra, Lalmani, (1979) Tantrinada, Kanpur, U.P. Sahitya Ratnalaya
- Aggarwal, V.K. and Nagpal, Alka (2004) Sitar and its Compositions, Part-I-II, Delhi, Sanjay Prakashan
- Mahajan, Anupam (2003) Compositions in Instrumental Music (Traditional and New Creation), Delhi, Sanjay Prakashan

DSC – 6: Practical Assessment

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility Criteria | Pre-requisite of the course |
|----------------------------|---------|-----------------------------------|---|---|----------------------|-----------------------------|
| | | L | T | P | | |
| PRACTICAL ASSESSMENT (203) | 4 | 0 | 0 | 4 | Class XII Pass | Nil |

*Practical assessment is a viva paper.

Learning Objectives:

- To assess the understanding of the student regarding the grammatical rules of the prescribed ragas
- To make an assessment of the student regarding his ability to perform different

compositions in different talas

- To assess the student on his ability to sing Khayal, Dhrupad and Dhamar in different ragas

Learning Outcomes:

- The student shall be able to demonstrate the various aspects of a raga with regard to its various rules and regulations
- The student shall be able to sing Khayal, Dhrupad and Dhamar in different ragas
- The student shall be able to perform a raga in different talas
- The student shall be able to demonstrate his ability to tune his instrument

Syllabus:

Prescribed

Ragas:

1. Bhairav
2. Alhaiya Bilawal
3. Yaman
4. Bhupali

Unit I – Vocal Music (120 hours):

- Vilambit and Drut Khayal with gayaki in all the prescribed ragas mentioned above
- Dhrupad-Dhamar or Sadra composition in each of the prescribed Ragas with Alap, Layakari & Upaj
- Knowledge and demonstration of the following talas - Chautala, Jhaptala & Kaharva
- Basic knowledge of Tanpura and its tuning

OR

Unit II – Instrumental Music (120 hours):

- Maseetkhani and Razakhani gat with elaboration in all the ragas.
- Knowledge and demonstration of the following talas - Chautala, Jhaptala & Kaharva.
- Basic knowledge of the student's respective instrument and its tuning

Note: Students of Vocal and Instrumental music will have to prepare according to the requirements of their respective Units.

Suggestive readings:

- Bhatkhande, V.N. (2000) Kramik Pustak Malika, Part-I, Hathras, U.P., Sangeet Karyalaya
- Bhatkhande, V.N. (2000) Kramik Pustak Malika, Part-II, Hathras, U.P., Sangeet Karyalaya

- Patwardhan, V.R., (2001) Raga Vigyan, Part-I, Pune, MH, Dr. Madhusudhan Patwardhan
- Patwardhan, V.R., (1999) Raga Vigyan, Part-II, Pune, MH Dr. Madhusudhan Patwardhan
- Patwardhan, V.R., (1967) Raag Vigyan, Part-III, Pune,MH, Dr. Madhusudhan Patwardhan
- Mishra, Lalmani, (1979) Tantrinada, Kanpur, U.P. Sahitya Ratnalaya
- Aggarwal, V.K. and Nagpal, Alka (2004) Sitar and its Compositions, Part-I-II, Delhi, Sanjay Prakashan
- Mahajan, Anupam (2003) Compositions in Instrumental Music (Traditional and New Creation), Delhi, Sanjay Prakashan

B.A. (Hons.) I Music - Karnatak Music
Vocal & Instrumental (Veena/Violin)

Category-I

DSC – 4: THEORY OF INDIAN MUSIC

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility Criteria | Pre-requisite of the course |
|-------------------------|---------|--------------------------------------|---|---|-------------------------|--------------------------------|
| | | L | T | P | | |
| GENERAL THEORY (201) | 4 | 3 | 1 | 0 | Class XII Pass | Nil |

Learning Objectives:

- The main focus of the unit is to imbibe the tangible concepts of Indian and western classical music and technical aspects of music like scale system and rhythmic system along with the Indian notation system.

Learning Outcomes:

- Ability to define the terms like embellishments, scales, talas etc and explain other musical concepts.
- Understanding of Western Music Terminologies and biographies of selected prominent Pre and Post-Trinity composers.
- Ability to write notation of musical form -Varnam in two degrees of speed.

Syllabus:

Unit I (6 hours)

- Gamakas – Panchadasa and Dasavidha gamakas
- Alankaras and its varieties
- Kaku and its varieties

Unit II (12 hours)

Ragalakshanas of the prescribed ragas -

- Abhogi
- Hamsadhvani
- Keeravani
- Goula

- Natta
- Shanmughapriya
- Malahari
- Kanada
- Sudha Saveri

Unit III (6 hours)

- Scheme of 72 Melakarta

Unit IV (6 hours)

- Detailed study of Tala Dasa Pranas

Unit V (5 hours)

Explanation of the following –

- Solfa Notation
- Chords
- Symphony
- Acoustics
- Pitch

Unit VI (8 hours)

Life History of the following –

- Annamacharya
- Kshetrajna
- Narayanateertha
- Pattanam Subramanya Iyer
- Poochi Srinivasa Iyengar
- Arunachala Kavirayar
- Gopala Krishna Bharati
- Jayadeva
- Baluswami Dikshitar
- Veena Dhanammal

Unit VII (2 hours)

- Rudiments of writing notation (Sangita lipi)
- Notation of Varnams in two degrees of speed in Adi tala.

Suggestive readings:

- Sambamoorthy, P. Prof. (Vol. 4, 1963), South Indian Music, Madras, Indian Music Publishing House, Page NO. 133 to 145
- Sambamoorthy, P. Prof. (Vol. 3, 1964), South Indian Music, Madras, Indian Music Publishing House, Page NO. 38 to 68, 169 to 185
- Kuppaswamy, Gowry Dr.(1990), Textbook of Comparative Music, Trivandrum, CBH Publications, Page NO. 70 to 100
- Sambamoorthy, P. Prof. (1970), Great Composers, Madras, Indian Book Publishing House, Page Nos. 36 to 52
- Sambamoorthy, P. Prof. (1970), Great Composers, Madras, Indian Book Publishing House, Page 89 to 164.
- Indian Musicology by Accam Isac.

DSC – 5: Stage Performance

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility Criteria | Pre-requisite of the course |
|----------------------------|---------|--------------------------------------|---|---|-------------------------|--------------------------------|
| | | L | T | P | | |
| STAGE PERFORMANCE (202) | 4 | 0 | 0 | 4 | Class XII Pass | Nil |

Learning Objectives:

- The main focus of the course is to develop an aptitude for the classical subject opted and inculcates the ability to maintain classicism in the art along with well-approved principles.

Learning Outcomes:

- Ability to demonstrate Varnam in two degrees of speed and compositions of prominent composers in the prescribed ragas

Syllabus:**Ragas Prescribed:**

- Abhogi
- Hamsadhvani
- Keeravani

- Goula
- Natta
- Shanmughapriya
- Malahari
- Kanada
- Sudha Saveri.

Unit 1 (24 hours)

- Simple Varnams in 2 degrees of speed

Unit 2 (96 hours)

- 3 Kritis of Tyagaraja
- 2 Kritis of Dikshitar including 1 Navagraha Kriti,
- 1 Kriti of Swati Tirunal,
- 1 Kriti of Syama Shastri,
- 1 Kriti of Ramnad Srinivas Iyengar.

Suggestive readings:

- Varna Malika – Panchapakesa Iyer, - Carnatic Music Book centre - Chennai.
- Kriti Mani Malai - T K Govinda Rao

DSC – 6: Practical Assessment

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility Criteria | Pre-requisite of the course |
|--------------------------------------|---------|--------------------------------------|---|---|-------------------------|--------------------------------|
| | | L | T | P | | |
| PRACTICAL ASSESSMENT (203) | 4 | 0 | 0 | 4 | Class XII Pass | Nil |

Learning Objectives:

- The main focus of the course is to develop an aptitude for the classical subject opted and inculcate the ability to maintain classicism in the art along with well-approved principles.

Learning Outcomes:

- Ability to demonstrate Varnam in two degrees of speed and compositions of prominent composers in the prescribed ragas.

Syllabus:**Ragas Prescribed:**

- Abhogi
- Hamsadhvani
- Keeravani
- Goula
- Natta
- Shanmughapriya
- Malahari
- Kanada
- Sudha Saveri.

Unit 1 (24 hours)

- Simple Varnams in 2 degrees of speed

Unit 2 (96 hours)

- 3 Kriti of Tyagaraja
- 2 Kriti of Dikshitar including 1 Navagraha Kriti
- 1 Kriti of Swati Tirunal,
- 1 Kriti of Syama Shastri,
- 1 Kriti of Ramnad Srinivas Iyengar.

Suggestive readings:

- Varna Malika – Panchapakesa Iyer, - Carnatic Music Book centre - Chennai.
- Kriti Mani Malai - T K Govinda Rao

**B.A. (Hons.) I Music - Percussion Music
(Tabla/Pakhawaj)**

Category-I

DSC – IV: BIOGRAPHIES & COMPOSERS OF MUSIC

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility Criteria | Pre-requisite of the course |
|---|---------|--------------------------------------|---|---|----------------------|--------------------------------|
| | | L | T | P | | |
| BIOGRAPHIES & COMPOSERS OF MUSIC | 4 | 3 | 1 | 0 | Class XII Pass | Nil |

Learning Objectives:

- To make the student aware of the life and contribution of various legends from both Tabla and Pakhawaj.
- To make the student aware of the life and contribution of various legends from Hindustani, Karnatak and Western music.
- Initiating students in order to write the proper notation system.

Learning Outcomes:

- The students learn about the life and works of great artistes in the field Tabla & Pakhawaj
- Students learn about the life and contribution of the composers of both Hindustani and Karnatak music
- Students learn to write the practical compositions according to the Notation system
- Student studies about the theoretical aspects of Talas

Syllabus:

Unit - 1 (12 hours)

- Pandit Ram Sahai
- Ustad Haaji Vilayat Ali
- Ustad Habibuddin Khan
- Pandit Kanthe Maharaj
- Ustad Ahmed Jaan Thirkawa
- Pandit Anokhelal Mishra
- Ustad Karamat Khan
- Ustad Inam Ali
- Pandit Kishan Maharaj
- Ustad Allarakha Khan
- Pandit Samta Prasad
- Pandit Chhote Lal Mishra

- Ustad Lateef Ahmed Khan

Unit – II (12 hours)

- Pandit Kudau Singh
- Pandit Nana Panse
- Pandit Purusottam Das
- Babu Jodh Singh Maharaj
- Pandit Parwat Singh
- Pandit Sakharam Mridangacharya
- Pandit Ayodhya Prasad
- Pandit Ghanshyam Pakhawaji
- Pandit Mannuji Mridangacharya
- Pandit Amarnath Mishra
- Pandit Ramshankar Das (Pagal Das)
- Raja Chhatrapati Singh
- Pandit Shankar Rao Bapu Apegaonkar

Unit -III (8 hours)

- Bach
- Mozart
- Beethoven

Unit -IV (6 hours)

- Swami Haridas
- Amir Khusrao
- Tansen
- Sadarang-Adarang
- Raja MansinghTomar

Unit -V (3 hours)

- Tyagaraja
- Muthuswamy Dixitar
- Syama Shastri.

Unit -VI (4 hours)

- Baba Allauddin Khan
- Hafij Ali Khan
- Omkarnath Thakur
- Bade Gulam Ali Khan
- Theory book prepared for prescribed unit.

Suggestive reading:

- Mishra, Pt. Chhote Lal, Taal Prabandh (2004) Kanishka Publishers, Delhi
- Kumar, Dr. Ajay, Pakhawaj ki Utpatti, Vikash ewam Vadan Shaileyen (2010), Kanishka Publishers, Delhi
- Shrivastava, Girish Chandra, Taal Kosh (1999), Rubi Prakashan, Allahabad
- Kumar, Dr. Ajay, Banaras Gharane Ke Prawartak Pandit Ramshai ji ki Tabla Vadan Parampra (2022), Kanishka Publishers, Delhi
- Sharma, Bhagawat Sharan, Taal Prakash (1959) Sangeet Karyalaya, Hathras, U.P.
- Mishra Sushila, Some Immortals of Hindustani Music (1990) Harman Publishing House, New Delhi
- Ranade A.D. On Music and Musicians of Hindustan (1984), Ranade Ashok D. Delhi Promilla & Co, Delhi
- Shrivastava, Girish Chandra (2009) Taal Parichay-II, Rubi Prakashan, Allahabad

DSC – 5 : STAGE PERFORMANCE

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility Criteria | Pre-requisite of the course |
|------------------------------|---------|--------------------------------------|---|---|-------------------------|--------------------------------|
| | | L | T | P | | |
| STAGE PERFORMANCE | 4 | 0 | 0 | 4 | Class XII Pass | Nil |

Learning Objectives:

- To continue to focus on the basics of Tabla/Pakhawaj playing.
- To encourage the student to tune the instrument and attempt to improvise while playing.
- To focus on his playing and padhant of different talas.
- Apart from Building his multi dimensional knowledge of Layakari in prescribed talas he is introduced to different talas .
- A brief knowledge of two talas keherwa and Dadra with laggies in order to accompany in light music.
- This enhances the students skill to face the challenges at his work place too.

Learning Outcomes:

- The student is able to give a practical demonstration of the prescribed Talas
- Student learns to play various compositions
- Student also able to demonstrate various aspects of Talas and their differentiation

Syllabus:

TABLA

Study of Prescribed Talas: Unit -I (60 hours)

- Teentala
- Ektala
- Jhaptala
- Rupak
- Dhamar
- Chautala
- Sooltala
- Tevra
- Addha
- Deepchandi
- Keharwa
- Dadra

Unit -II (24 hours)

- Solo performance of 10 minutes in Teentala with following:
- Peshkar/Uthan
- Kayada
- Baant
- Rela
- Chakradars & Tihai.

Unit -III (6 hours)

- Solo performance in 5 minutes of Jhaptala with various compositions.

Unit -IV (15 hours)

- One Kayada of Ada Laya with four Paltas and Tihai in Teentala.
- Two Sadharan Tukra in Teentala.
- Two Chakradar Tukra in Teentala.
- Two Tihai one Damdar and one Bedamdar in Teentala.

Unit -V (15 hours)

- Palying knowledge of the following Thekas :-Ektala, Rupak, Jhaptala in Tigun laya.
- Two Laggis each in Keharwa and Dadra.
- Basic knowledge of Tabla tuning.
- Notation book to be prepared for compositions writing.

PAKHAWAJ

Prescribed Talas: Unit-IA (60 hours)

- Chautala
- Adachautala
- Deepchandi
- Tilwara
- Ektala
- Dhamar
- Sultala
- Tevra

Unit -IIA (24 hours)

- Solo performance of 10 minutes in Chautala with following:
- One Rela with Prastar & Tihai.
- Three Chakradar Paran.
- Theke ki Badhat.

Unit -IIIA (12 hours)

- Solo performance of 5 minutes in Sultala with following:
- One Rela with Prastar & Tihai.
- Two Chakradar Paran.

Unit -IVA (12 hours)

- Playing knowledge with padhant in Thah, Dugun, Tigun and Chaugun of following Thekas:-
- Tilwara
- Adachautala
- Deepchandi
- Ektala in Thah, Dugun, Tigun and Chaugun.

Unit -VA (6 hours)

- Ability to play one Rela with Prastar & Tihai.
- Three Chakradars , three Parans in Sultaal & Tivra with various layakaris.
- Two Tihai each in Dhamar & Sooltala.

Unit - VIA (6 hours)

- Knowledge and Practice of playing in Chautala with one Stuti Paran & two Farmaishi Chakradars.
- Basic knowledge of Pakhawaj tuning.
- Notation book to be prepared for compositions writing.

Note: Students of Percussion Music have to prepare according to the requirements of their respective Units.

Suggestive reading:

- Mishra, Pt. Chhote Lal (2004) Taal Prasoon, Kanishka Publishers, New Delhi
- Mishra, Pt. Chhote Lal (2006) Tabla Granth, Kanishka Publishers, New Delhi
- Das, Ram Shankar Pagal (1964) Tabla Kaumudi, Ramchandra S Publishers
- Das, Ram Shankar Pagal (1976) Mridanga Tabla Prabhakar Bhag I,II, Sangeet Karyalaya, Hathras, U.P
- Mishra, Pt. Chhote Lal (2006) Taal Prabandh, Kanishka Publishers, New Delhi

DSC – 6: PRACTICAL ASSESSMENT

| Course Title & Code | Credits | Credit distribution of the course | | | Eligibility Criteria | Pre-requisite of the course |
|---------------------------------|---------|--------------------------------------|---|---|----------------------|--------------------------------|
| | | L | T | P | | |
| PRACTICAL ASSESSMENT | 4 | 0 | 0 | 4 | Class XII Pass | Nil |

*Practical assessment is a viva paper.

Learning Objectives:

- Enabling the students to face the technical and critical questions both in practical and theoretical aspects of Tabla and Pakhawaj.
- Most importantly the accompanying aspect of the instrument while accompanying with Vocal and Instrumental compositions is rendered to the students.

Learning Outcomes:

- The student is able to demonstrate various aspects of Talas.
- Student is also able to differentiate between similar Talas, thereby making a comparative analysis.

Syllabus

TABLA

Study of Prescribed Talas : Unit-I (60 hours)

- Teentala
- Ektala
- Jhaptala

- Rupak
- Dhamar
- Chautala
- Sooltala
- Tevra
- Addha
- Deepchandi
- Keharwa
- Dadra

Unit -II (18 hours)

- Ability to perform in solo recital in Teentala & Jhaptala.

Unit -III (18 hours)

- Ability to Padhant compositions in Tali-Khali.
- Playing knowledge of the prescribed Tala in Thah, Dugun, & Chaugun laya.

Unit -IV (18 hours)

- Ability to accompany with Vocal- Chhota Khayal, Bhajan and Geet.

Unit -V(6 hours)

- Basic knowledge of Tabla tuning.
- Notation book to be prepared for compositions writing.

PAKHAWAJ

Study of Prescribed Talas: Unit-IA (60 hours)

- Chautala
- Dhamar
- Sultal
- Tevra
- Ektala
- Jhaptala
- Rupak
- Keherwa
- Dadra

Unit -IIA (18 hours)

- Ability to perform solo recital in Chautala & Sultala with various compositions.

Unit -IIIA (18 hours)

- Ability to Padhant compositions in Tali Khali.
- Demonstrate the Theka of prescribed Talas and playing knowledge in Thah, Dugun, & Chaugun layas.

Unit -IVA (18 hours)

- Ability to accompany with Dhurpad & Bhajan.
- Basic knowledge of Pakhawaj tuning.

Unit -VA (6 hours)

- Notation book to be prepared for compositions writing.

Note: Students of Percussion Music have to prepare according to the requirements of their respective Units.

Suggestive reading:

- Mishra, Pt. Chhote Lal (2004) Taal Prasoon, Kanishka Publishers, New Delhi
- Mishra, Pt. Chhote Lal (2006) Tabla Granth, Kanishka Publishers, New Delhi
- Das, Ram Shankar Pagal (1964) Tabla Kaumudi, Ramchandra S Publishers
- Das, Ram Shankar Pagal (1976) Mridanga Tabla Prabhakar Bhag I, II, Sangeet Karyalaya, Hathras, U.P
- Mishra, Pt. Chhote Lal (2006) Taal Prabandh, Kanishka Publishers, New Delhi

B.A. (PROG.) MUSIC – HINDUSTANI MUSIC (VOCAL/INSTRUMENTAL)

DSC-1(A/B): Basics of Indian Musicology

| Course Title | Nature of the Course | Total Credits | Components | | | Eligibility Criteria/Prerequisite |
|-----------------------------|------------------------------|---------------|------------|---|---|-----------------------------------|
| | | | L | T | P | |
| BASICS OF INDIAN MUSICOLOGY | DSC-1(A/B) –CORE (NON MAJOR) | 4 | 2 | 0 | 2 | Class XII Pass |

Paper Name: Basics of Indian musicology

Theory : Component-1

Credit:2

Learning Objectives

- The prime intent of the course is to establish better.
- Understanding of the various terms of musicology.
- Understanding of Ragas, Talas and one prescribed instrument with sketch.
- Biographies of some great musicians and their contributions.

Learning Outcome (LO)

- The students will be able to comprehend and ably illustrate the terminology of the rudimentary principles of musicology.
- The students will be able to acquire knowledge of the lives of illustrious musicians, eventually gaining inspiration from their musical journeys.
- With the study of the specified Ragas and Talas, the students will be able to gain optimum knowledge and skill over them.
- The students will gain fundamental knowledge of the Harmonium and Tabla and clearly sketch and label the instruments.

Contents:- Lectures – 30 Hours

- Discussion and study of the following terms:
- Unit I- Swarmalika, LakshanGeet, Thaata definition, TenThats with their swaras, (4 Hours)
- Unit II- Poorwang-Uttarang, Poorva and Uttar Raga, (2 Hours)
- Unit III- VakraSwara, Varjit-Swara, Alaap, Jod, Jhala. (2 Hours)
- Unit IV- Taan Definition and its various types (2 Hours)
- Unit V- Mela, Raga, Ashraya Raga (2 Hours)
- Unit VI- Varna and its types, Alankars definition and its types (2 Hours)
- Unit VII- Gamak-Definition and various types. (2 Hours)
- Unit VIII -Biographies & contributions of the following: (6 Hours)
- -Jayadeva, Mansingh Tomar, Abdul Kareem Khan, Pt. Bhatkhande, Allauddin

Khan, Tyagaraja, Pt. Ravi Shankar.

- Unit IX- Study of the following Ragas (2 Hours)
- Ragas -Yaman, Ramkali ,Kafi.
- Unit X- Comparative study of Ragas- (2 Hours)
- Bhairav&Ramkali,
- Kafi&Khamaj
- Unit XI- Study of the following Talas: (2 Hours)
- Talas- Ektala, Jhaptala, Teentala, Kaharwa Tala with Dugun.
- Unit XII- Basic knowledge of the following instruments with diagram and labeling: (2 Hours)
- Tabla, Harmonium.

References

- `Matang, (1994), Brihaddeshi, Delhi, Indra Gandhi National Centre for the Arts.
- Paranjapey, S.S (1972), Sangeet Bodh, Bhopal, MP, Madhya Pradesh Hindi Academy.
- Mishra, Lalmani, (2nd Edition: 2002) Bhartiya Sangeet Vadya, New Delhi,
- Delhi, Bhartiya Gyanpeeth.
- Shrivastava, Girish Chandra (2008) Tala Parichaya, Meerut, U.P., Rubi Prakashan. Sambamoorthy, P. (2nd Edition: 1962) Great Composers, Madras, Tamilnadu,
- The Indian Music Publishing House, NeoArt Press.
- Garg, Laxmi Narayan (2013) Bharat Ke Sangeetkar, Hathras, U.P., Sangeet Karyalaya.
- Pathak, Sunanda (1989) Hindustani Sangeet Mein Ragaki Utpatti Evam Vikas, New Delhi, Delhi, Radha Publication
- Saraf, Rama (2016) Sangeet Sarita, Khajuri Khas, Delhi, Vidyanidhi Prakashan.
- Singh, Tejpal (2015) Shastreeya Sangeet Shikshan, New Delhi, Delhi,
- Akanksha Publication.
- Kasliwal, S. (2001) Classical Musical Instruments, 7/16, Ansari Road, Daryaganj, New Delhi, Delhi, Rupa & Co.

Course: DSC- 2(A/B)

Practical: Component -2 (60 Hours)

Performance & Viva-Voce

Learning Objectives:

- Learn to identify Ragas and Talas and perform Drut Khayal/ Gat.
- Ability to recite the Thekas of different Talas along with Dugun.
- Perform one light Bhajan/Lokgeet/Dhun.

Learning Outcome (LO)

- The students will learn to perform and skillfully illuminate various aspects in the requisite ragas.
- The students will be able to demonstrate traditional compositions in Vilambit and Madhyalaya Khayals/Maseetkhani and Razakhani Gats, Alaaps and Taans, thus developing their performance capabilities.
- The students will learn to perform the Swarmalika – giving them a strong foothold of Swaras
- with Laya, as well as the Lakshangeet - which brings out the salient features of the raga.

- The student will learn to identify ragas and talas by the ear ,which helped them to decipher various compositions and ragas by listening.
- The students will be able to effectively recite and demonstrate their learning of the suggested talas, with their divisions–Tali, Khali and Dugun, giving them a distinct command on rhythm.
- Students will learn to play theTalas-Keherwa on the Tabla,which they will exhibit with a practical display.
- The students will acquire basic instruction of playing the Tanpura and Harmonium which will further enabled them to practice their Alankars and compositions independently.

Content

Total – 60 Hours

Prescribed Ragas–Yaman, Ramkali, Kafi

Vocal/Music -

- Swaramalika or Lakshangeet or Madhya Laya Khayal in all the three of the prescribed Ragas.
- Vilambit-Khayal withalaapsandTaansinanyoneoftheaboveRagas.One Raga based Bhajan/Lok geet.

Instrumental Music -

- Razakhani Gat in all the three of the prescribed Ragas.Maseetkhani Gat in any one of the prescribed Ragas.
- AnyGatinothertanTeentala.

Vocal&Instrumental

- Identifying Ragas andTalas of the prescribed syllabus while being sung or played.
- Ability to recite the The kas of the following Talas with Tali & Khali & their
- Dugun–Ektala,Jhaptala,Teentala,Kaharwa.
- Basic knowledge of PlayingTanpuraandHarmonium.
- PracticalfilewithdetailsofRagas,Notations of compositions&TalaswithDugun,Tigun and Chaugun.

References

- Bhatkhande, V.N.,(PartIJan.2000),(PartIIDec.2013)KramikPustakMalika,Hathras,U.P., SangeetKaryalya.
- Patwardhan, V.R.,(1996),RagaVigyan,Pune,MH,Publisher-Dr.Madhusudhanan Patwardhan.
- Mishra,Lalmani(1stEdition:1979)TantriNaad,Kanpur,U.P.,SahityaRatnalaya.
- Bhatkhande, V.N., (5th Edition: 1999), Bhatkhande Sargam Geet Sangrah, Hathras,U.P.,Sangeet Karyalya.
- Ratanjankar, Krishna Narayan (Part-I 3rdEdition: 1990, Part-II 2ndEdition: 1992, Part-III2ndEdition:1994)Abhinav Geet Manjari,Mumbai, Maharashtra,VishvsatMandal.
- Jha, Ramashraya (Part-I 2014, Part-II 7th Edition: 2013, Part-II 4th Edition: 1999,Part-IV5thEdition: 2015, Part-V3rdEdition: 2012) Abhinav Geetanjali,Allahabad,U.P.,Sangeet Sadan Prakashan.
- Singh,Tejpal(2015)ShastreeyaSangeetShikshan,NewDelhi,Delhi,Akanksha Publication.

- Shrivastava, HarishChandra(Part-I7thEdition:2006,Part-II7thEdition:2008,
- Part-III2009, Part-IV14thEdition: 2008) RagaParichaya, Allahabad, Sangeet SadanPrakashan.
- Mishra,Chhotelal(2012)TalaPrasoon,NewDelhi,Delhi,KanishkaPublishers.

DSC-1-C Study of selected works of Pt. V.N. Bhatkhade.

| Course Title | Nature of the Course | Total Credits | Components | | | Eligibility Criteria/Prerequisite |
|--|----------------------|---------------|------------|---|---|-----------------------------------|
| | | | L | T | P | |
| Study of selected works of Pt. V.N. Bhatkhade. | DSC-1-C-CORE (MAJOR) | 4 | 2 | 0 | 2 | Class XII Pass |

Course : DSC -2-C

Paper Name : Study of selected Works of Pt. V. N. Bhatkhade

Theory : Component -1

Credit: 2

Learning Objectives

- The prime intent of the course is to establish better understanding of various Works of Pt. V.N. Bhatkhade .
- Understanding of Notation system of Pt. Bhatkhade.
- Comparison of Talas with relevance to practical use.

Learning Outcome(LO)

- The students will be able to acquire knowledge from the works of Pt. Bhatkhade and eventually gain inspiration from his musical pursuits.
- With the study of the specified Ragas and Talas,the students will be able to gain optimum knowledge and skill over them.
- The students will gain fundamental knowledge of Pt.Bhatkhade's Swarlipi Paddhati.

Content:

Study of following Works :

Unit I – Bhatkhade Sargam Geet Sangrah (Swar-malika) (4 Hours)
 Unit II – Uttar Bharatiya Sangeet ka sankshipt Itihas (4 Hours)
 Unit III – Shrimallakshyasangeetam (4 Hours)
 Unit IV - Kramik Pustak Malika (4 Hours)
 Unit V - Sangeet paddhatiyon ka tulanatmak Adhyayan (4 Hours)
 Unit VI - Bhatkhade Sangeet Shastra (4 Hours)
 Unit VII - Pt. Bhatkhade Notation System (2 Hours)

Unit VIII- Notation writing of compositions in the prescribed Ragas (2 Hours)

Unit IX - Comparison of Talas with relevance to practical use: (2 Hours)

1. Ektala- Choutala
2. Teentala- Tilwada

Referance:

- Bhatkhande,V.N.,(Part I-Part VI)KramikPustakMalika,Hathras,U.P., SangeetKaryalya
- Bhatkhande, V.N., (5th Edition: 1999), Bhatkhande Sargam Geet Sangrah, Hathras,U.P.,Sangeet Karyalya
- Bhatkhande V.N. (2 Edition :1974) Uttar Bhartiya Sangeet ka sankshipt Itihas, Hathras,U.P.,Sangeet Karyalya
- Bhatkhande V.N. Shreemallakshyasangeetam , Hathras,U.P.,Sangeet Karyalya
- Bhatkhande V.N.(Edition: June 2015) Sangeet Paddhatiyon ka Tulnatmak Adhyayan, Hathras,U.P.,Sangeet Karyalya.
- Bhatkhande V.N., Bhatkhande Sangeet Shastra, Hathras,U.P.,Sangeet Karyalya.

Course : - DSC :2-C

Practical: Component -2 (Total – 60 Hours)

Credit : 2

Learning Objectives:

- Learn to identify Ragas and Talas and perform Drut Khyal/ Gat.
- Ability to recite the Thekas of different Talas along with Dugun.

Learning Outcome (LO)

- The students will learn to perform and skillfully illuminate various aspects in the requisite ragas.
- The students will be able to demonstrate traditional compositions in Vilambit and Madhyalaya Khayals/Maseetkhani and Razakhani Gats, Alaaps and Taans, thus developing their performance capabilities.
- The students will learn to perform the Swarmalika – giving them a strong foothold of Swaras with Laya, as well as the Lakshangeet - which brings out the salient features of the raga.
- The student will learn to identify ragas and talas by the ear ,which helped them to decipher various compositions and ragas by listening.
- The students will be able to effectively recite and demonstrate their learning of the suggested talas, with their divisions–Tali, Khali and Dugun, giving them a distinct command on rhythm.
- Students will learn to play the Tala- Teentala on the Tabla, which they will exhibit with a practical display.
- The students will acquire basic instruction of playing the Tanpura and Harmonium which will further enabled them to practice their Alankars and compositions independently

Content:

Ragas : Yaman, Ramkali, Kafi
Talas: Teentaal, Tilwada, Ektaal, Choutala

Vocal Music

1. Raga based five Paltas in the prescribed ragas with tala.
2. Vilambit khyal in any two of the prescribed ragas with alaps and tans.
3. One Drut khyal other than Teentaal .

Instrumental Music:

1. Raga based five Paltas in the prescribed ragas with tala.
2. Maseetkhani Gat in any two of the prescribed ragas with alaps and tans.
3. One Razakhani Gat other than Teentaal.

Vocal and Instrumental Music:

1. Ability to recite the thekas of Talas with leykaari
2. Identification of the prescribed Raagas

References:

- Bhatkhande, V.N., (Part I Jan. 2000), (Part II Dec. 2013) Kramik Pustak Malika, Hathras, U.P., Sangeet Karyalya.
- Patwardhan, V.R., (1996), Raga Vigyan, Pune, MH, Publisher-Dr. Madhusudhanan Patwardhan.
- Mishra, Lalmani (1st Edition: 1979) Tantri Naad, Kanpur, U.P., Sahitya Ratnalaya.
- Bhatkhande, V.N., (5th Edition: 1999), Bhatkhande Sargam Geet Sangrah, Hathras, U.P., Sangeet Karyalya.
- Ratanjankar, Krishna Narayan (Part-I 3rd Edition: 1990, Part-II 2nd Edition: 1992, Part-III 2nd Edition: 1994) Abhinav Geet Manjari, Mumbai, Maharashtra, Vishvasat Mandal.
- Jha, Ramashraya (Part-I 2014, Part-II 7th Edition: 2013, Part-III 4th Edition: 1999, Part-IV 5th Edition: 2015, Part-V 3rd Edition: 2012) Abhinav Geetanjali, Allahabad, U.P., Sangeet Sadan Prakashan.
- Singh, Tejpal (2015) Shastreeya Sangeet Shikshan, New Delhi, Delhi, Akanksha Publication.
- Shrivastava, Harish Chandra (Part-I 7th Edition: 2006, Part-II 7th Edition: 2008, Part-III 2009, Part-IV 14th Edition: 2008) Raga Parichaya, Allahabad, Sangeet Sadan Prakashan.
- Mishra, Chhotelal (2012) Tala Prasoon, New Delhi, Delhi, Kanishka Publishers

**B.A. HINDUSTANI MUSIC VOCAL/INSTRUMENTAL
GENERIC ELECTIVE**

| Course Title& Code | Credits | Credit distributions of the course | | | Eligibility Criteria | prerequisite of the course (if any) | Deapartment offering the course |
|---|---------|------------------------------------|----------|---------------------|----------------------|-------------------------------------|---------------------------------|
| | | Lecture | Tutorial | Practical/practical | | | |
| Basic Concepts of Hindustani Music GE-2 | 4 | 2 | 0 | 2 | Class XII Pass | NIL | Music |

GE-2

PAPER Name : Basic Concepts of Hindustani Music

Theory: Component -1

Credit: 2

Learning Objective

- The course has been adeptly designed to entrust the students with profound awareness of our Indian musical heritage.
- The course objective is to deliver-
- A vivid understanding of the essentials of the Raga, Thaata and Tala methodology, descriptions and terminology
- Study of the principal ancient granthas-a). The Natya Shastra b).The Sangeet Ratnakar.
- Learning accuracy in writing the notations of ancient bandishes (compositions) as well as notations of recommended Talas with their various layakari
- Making a project, on any musical instrument of Hindustani music would further make its comprehension more lucid.

Learning Outcome (LO)

- The basic elements of musicology and a glimpse of the music in ancient period through varied texts is a part of this paper which is a further step towards the study of music.
- By learning the description of Ragas and Talas, the students are introduced to a new level of learning.
- Essays on the prescribed topics increase the writing abilities and also give a better understanding of the subject.
- The students submit a project work on musical instruments, which teaches them the origin, variety and usage of instruments.

Content

Unit 1

- Raga, Thaata (Mela), Vadi, Samvadi, Laya, Tala Matra, Tali-Khali and Vibhag. (4 Hours)

Unit 2

- Brief introduction of Music in ancient period with brief discussion of the following texts: (4 Hours)
- Natyashastra
- Sangeet Ratnakar.

Unit 3

- Detailed description of raga, Yaman and Kafi. (4 Hours)

Unit 4

- Ability to write notation of Drut Khyal/Razakhani Gat in prescribed Ragas. (4 Hours)

Unit 5

- Essay on the following topics : (4 Hours)
- Music and Meditation
- Impact of Classical Music on Film Music

Unit 6

- Description of following Talas: Teentala, Ektala and Dadra. (4 Hours)

Unit 7

- Ability to write tala notation of teentala, ektala and Dadra with Thaah, Dugun & Chaugun. (2 Hours)

Unit 8

- Project work on any one of the musical Instruments of Hindustani music (4 Hours)

Reference

- Bhatkhande, V.N. (Part-I 1st Edition: 1951, Part-II 3rd Edition: April- 1969, Part-III 2nd Edition: April- 1968, Part-IV 2nd Edition: March- 1970) Bhatkhande Sangeet Shastra, Hathras, U.P., Sangeet Karyalaya.
- Garg, Laxmi Narayan (1959) Sangeet Nibandhavalii, Hathras, U.P., Sangeet Karyalaya.
- Govardhan, Shanti. (1st Edition, Part-I 2005, Part-II 2004) Sangeet Shastra Darpan. Allahabad, U.P., Rantakar Pathak.
- Shrivastava, Harish Chandra (1st Edition: 1970) Sangeet Nibandh Sangrah, Allahabad, U.P., Sangeet Sadan Prakashan.
- Chowdhary S. (2000) Sharangdeva krit sangeet ratnakar, New Delhi, Delhi: Radha Publications.
- Garg, Laxmi Narayan (3rd Edition: 2003) Nibandh Sangeet, Hathras, U.P., Sangeet Karyalaya,
- Mishra, Lalmani (4th Edition: 2011) Bhartiya Sangeet Vadya, Delhi, Bhartiya Gyanpeeth.
- Kasliwal, S.(2001), Classical Musical Instruments, New Delhi, Delhi, Rupa & co.
- Mishra, Chhotelal (1st Edition: 2006) Taal Prasoon, New Delhi, Delhi, Kanishka Publishers.
- Gautam, MR (1980) The musical heritage of India, New Delhi, Delhi: Abhinav Publications.

GE-2

Practical: Component -2 : Performance & Viva –Voce (I-XVI Weeks)

Credit: 2 – Total 60 Hours

Learning Objective

- The target is to achieve flexibility of the vocal chords as well as deftness of the fingers on the instruments with the practice of alankars in the three saptaks along with insight into musical embellishments. This would assist in the apt application during demonstration of drut compositions in the suggested Ragas Yaman and Kafi.
- Structure of B.A/B.Com./B.Sc. Hons. (Subject)(Details of courses to be taught)

Learning Outcome (LO)

- The practical learning of alankars and embellishments are part of musical learning for the students essential in the Indian Music system.
- Ability to sing or play compositions in different Ragas enable them for performance, at the ground level.
- Ability to recite the Theka increases the understanding of rhythm.
- The guided listening sessions and discussions have created a healthy atmosphere for the student's to learn and be a part of it.

Content:

Unit 1

- Prescribed Ragas: Yaman, Kafi

Unit 2

- Ability to sing or play five Alankars in prescribed Ragas.

Unit 3

- Knowledge of Musical embellishments/ different stroke patterns: Meend, Kana, Murki, Khatka, Zamzama, Krintan.

Unit 4

- Ability to sing or play Drut Khayal/ Razakhani gat in Raga Yaman and Kafi with five Tanas.

Unit 5

- Ability to keep the theka of following talas by hand beats - Teentaala, Ektala and Dadra with Dugun

Unit 6

- Guided Listening and discussions of compositions/dhun based on Ragas.

Note: The candidate opting the course will start from Level One.

References:

- Bhatkhande, V.N. (2008) Kramik Pustak Malika (Part- II, III, IV), Hathras, U.P., Sangeet Karyalya.
- Patwardhan, V.R. (1996), Raga Vigyan, Pune, MH, Publisher: Dr. Madhusudhanan Patwardhan.
- Bhatkhande, V.N., (6th Edition, 1999), Bhatkhande Sargam Geet Sangrah, Hathras, U.P., Sangeet Karyalya.
- Ratanjankar, Krishna Narayan (1990) Abhinav Geet Manjari, Mumbai, Maharashtra, Acharya S. N. Ratanjankar Foundation.
- Jha, Ramashraya (2014) Abhinav Geetanjali, Allahabad, U.P., Sangeet Sadan Prakashan.
- Singh, Tejpal (1st Edition, 2015) Shastreeya Sangeet Sikshan, New Delhi, Delhi, Akanksha Publishing House.
- Shrivastava, Harish Chandra (June:2002) Raga Parichaya, New Delhi, Delhi, Rubi Prakashan.
- Mishra, Lalmani, (1st Edition: 1979) Tantri Naad Part-I, Kanpur, U.P., Sahitya Ratnawali.

45. Amendment to Appendix -II-A to the Ordinance V (2-A) of the Ordinances of the University vide EC Resolution 38-1-9 dated 08.12.2022 regarding Syllabi of 2nd Semester of Department of Education

Add the following:

Syllabi of Semester-II of Department of Education under Faculty of Education based on Under Graduate Curriculum Framework -2022 to be implemented from the Academic Year 2022-23.

FACULTY OF EDUCATION

DEPARTMENT OF EDUCATION

Category II

BA (Prog) with Education as Major

DISCIPLINE SPECIFIC CORE COURSE – 3 (DSC-3): Understanding Human Development

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------------------|---------|-----------------------------------|----------|---------------------|--------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Understanding Human Development DSC 3 | 4 | 3 | 1 | 0 | • Class Pass XII th | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- This paper attempts to introduce students to theoretical frameworks and perspectives about human development in different socio-cultural contexts.

- It explores notions and experiences of childhood, adolescence and adulthood, situated in the milieu of family, neighborhood, community, educational institutions, workplace and society at large.
- It fosters the understanding and appreciation of inter-linkages between human development, diversity and uniqueness.
- It critically examines crucial developmental theories of human development and their applications from the lens of cross-cultural frames.
- It develops the potential for perspective building located in the Indian socio-cultural context through practicum, academic readings and classroom teaching/discussion.

Learning outcomes

After completion of the course students will be able to:

- Understand the various aspects of human development.
- Derive relationship among social/educational/cultural realities associated with human development.
- Explain the process of human development as it unfolds in the diverse sociocultural context
- Develop a critical perspective about social inclusion and its effect on human development
- Illustrate the process of human development and its implication for education.

SYLLABUS OF DSC- 3

Unit I: Conceptualizing Human Development

(16 Hours)

- Contextualising human development in Indian society
- Characteristics and features of different stages of human development
- Basic principles of human development.
- Debates in human development: nature v/s nurture, continuity v/s discontinuity, universal v/s contextual
- Role of family, neighbourhood, school, community, and society at large in human development

Unit 2: Perspectives on Human Development

(16 Hours)

Understanding the process of human development in Indian society with reference to:

- Erikson's theory of psychosocial development
- Kohlberg's theory of moral development

- Bronfenbrenner's ecological theory of development

Unit 3: Situating Human Development in the Context of Diversity (13 Hours)

- Diversity in the experiences of childhood and adolescence with reference to caste, class, gender, religion, language and region
- Issues and concerns stemming from social interaction: conflicts, prejudices, stereotypes, abuse and violence
- Concept of inclusion: historical background; educational practices for social inclusion

Practicum/ Suggested Projects / Assignments (Any Two)

- Observe and document the developmental patterns in adolescents with reference to identity and factors influencing identity development.
- Engage in self-reflection and document the role of family, education and peer group in their own development.
- Interview five children of any one marginalized community to explore the challenges, issues and concerns with regard to adjustment in school.
- Watch either 'Stanley KaDabba' or 'I am Kalam' (Bollywood Films) and describe how childhood unfolds in them.

Note: On the basis of the above, the teacher may design his/her own relevant projects/ assignments.

Essential/ Recommended Readings

- Balagopalan, S, (2010). Introduction: Children's Lives and the Indian Context. Journal for the History of Childhood and Youth, 18(3), 291-297.
- Berk, L. E. (2013). Child Development. New Delhi: Prentice Hall of India. [Chapter 1 and 2] (pp 3-9 and pp 42-59)
- Bhogle, S. (1981). Socialisation Among Different Cultures. In D. Sinha (Ed.), Socialisation of the Indian Child. New Delhi: Concept Publishing Company. (pp 3-11)
- Brown, B. B., Larson, R. W. & Saraswathi, T. S. (2002). The World's Youth: Adolescence in Eight Regions of the Globe. NY: Cambridge University Press. [Chapter 4: Adolescence in India]
- Kumar, S. (2015). Child Development and Pedagogy. New Delhi: Pearson. [Chapter 2: Socialization, pp 16-31 and Chapter 3: Cognitive and Moral Development, pp 35-60]
- Mukunda, K. (2009). What did you ask at school today? Noida: Harper ColliPublishers. [Chapter 4: Child Development (pp 71-96)]
- Kamble, S. (2009). Naja Goes to School – and Doesn't. In A. Dangle (Ed. Poisoned Bread: Translations from Modern Marathi Dalit Literature. Orient Blackswan. Retrieved from <http://www.dalitweb.org/?p=542>

- Ranganathan, N. (2000). The Primary School Child. New Delhi: Orient Longman [Chapter 4: Social Development, (pp 57-79)]
- Saraswathi, T. S. (Ed.). (1999). Culture, Socialization and Human Development: Theory, Research and Applications in India. New Delhi: Sage Publications. [Chapter 9: Adult-child Continuity in India: Is adolescence a myth or an emerging reality? (pp 213-232)]
- Woolfolk, A. (2017). Educational Psychology (13th Ed.). New Delhi: Pearson. [Chapter 3 (pp 80-126) and Chapter 6 (pp 238-285)]
- Ranganathan, N. & Wadhwa, T. (2017). Guidance and Counselling for Children and Adolescents in School. India: Sage Publication. [Chapter 3: Understanding Children and Adolescents in School (pp. 23-43), Chapter 8: Dealing with Addiction and Abuse (pp. 103-115), Chapter 12: Coping with Stress and Anxiety (151-161)]

Hindi

- कुमार, संदीप (2017) नैतिक एवं संवेगात्मक विकास में मीडिया की भूमिका, भारतीय आधुनिक शिक्षा, एन सी ई आर टी, 2, 37-44
- मुकुंदा, कमलावी (2013) स्कूल में आज तुम ने क्या पूछा?, अनुवाद पूर्वायाशिक कुशवाहा, मध्य प्रदेश : एकलव्य प्रकाशन (पाठ 4, पृष्ठ 73-94)

Additional Readings

- Cole, M., Cole, S.R., & Lightfoot, C. (2004). The Development of Children (6th ed.). New York: Worth Publishers (Chapter 12 pp 429-443)
- Holt, J (1974). Escape from Childhood. Boston: E. P. Dutton. (Chapter 1, 2 and 7)
- Erikson, E. H. (1963). Childhood and Society. New York: Norton.
- Greene, M. (1993). Diversity and Inclusion: Towards a Curriculum for Human Beings. Teachers College Records, 95(2), 211-221.
- Mishra, A. (2007) Everyday life in a slum in Delhi: views of the children. In Deepak Kumar Behera (ed.) Childhood in South Asia. New Delhi: Longman.
- Slavin, R. E. (2012). Educational Psychology: Theory and Practice. USA: Pearson. [Chapter 12 (pp 381-390)]
- Tuli, M. (2012). Belief on Parenting and Childhood in India. Journal of Comparative Family Studies, 43(1), 81-91.
- Vasantha, D. (2004) Childhood, work and schooling: some reflections. Contemporary Education Dialogue 4(2). pp 5-29

Audio Visual Material: Across Units

1. Children of Heaven. 1997. Directed by Majid Majidi. Iran: Miramax Films
2. Dharm. 2007. Directed by Bhavna Talwar.
3. Salaam Bombay. 1988. Directed by Mira Nair
4. Smile Pinky. 2008. Directed by Megan Mylan

5. The Blue Umbrella. 2007. Directed by Vishal Bhardwaj (based on the novel by Ruskin Bond)
6. Stories of Girlhood. 2001. Samina Mishra
7. Children of the Pyre. 2008. Rajesh. S. Jala (for a discussion on childhood/adolescence)

Key words

Human Development

Note: Examination scheme and mode shall be prescribed by the Examination branch, University of Delhi from time to time.

DISCIPLINE SPECIFIC CORE COURSE-4 (DSC-4): Human Learning, Cognition and Schooling

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|----------------------|--------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical / Practice | | |
| Human Learning , Cognition and Schooling DSC 4 | 4 | 3 | 1 | 0 | • Class XII th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:

- The paper attempts to build an understanding about the processes of thinking and learning from different theoretical perspectives.
- It enables the student to visualize the linkages between everyday knowledge and theories of learning and cognition.
- It also builds sensitivity, understanding and perspective about how these processes unfold in the context of inclusion and diversity.

Learning outcomes

After completion of the course students will be able to:

- Understand the various aspects of human development.

- Derive relationship among social/educational/cultural realities associated with human development.
- Explain the process of human development as it unfolds in the diverse socio-cultural context
- Develop a critical perspective about social inclusion and its effect on human development
- Illustrate the process of human development and its implication for education.

SYLLABUS OF DSC-4

Unit 1: Understanding Thinking, Learning and Cognition (16 Hours)

- Key cognitive processes: thinking, perception, attention, memory, language and problem solving
- Factors affecting thinking and learning: personal, socio-cultural, media and technology
- Understanding children's' thinking and learning with reference to diverse socio-cultural contexts

Unit 2: Theoretical Perspectives in Thinking, Learning and Cognition (16 Hours)

- Learning and cognition as processes of adaptation and interaction with the environment, situated in Piaget's theory of cognitive development
- Observational learning as explained in the social cognitive theory of Bandura
- Learning as conceptualized in the information processing approach
- Learning as a social process of knowledge construction as discussed by Vygotsky
- Learning as a process associated with the uniqueness of the individual and evolution of self as proposed by Carl Rogers

Unit 3: Exploring Diversity and Inclusion in Learning Processes (13 Hours)

- Concept of diversity and inclusion and associated practices with reference to learning and cognition
- Uniqueness of children and adolescents in terms of intelligence, creativity and motivation
- Children with special needs: issues, challenges and possibilities

Practicum/ Suggested Projects / Assignments (Any Two)

- Take up a learning task and maintain a journal/diary about the processes of thinking, problem- solving and decision –making involved in it.

- Draw up a concept map of any one topic of learning. Describe how the task was useful.
- Interact with children/young adults and identify the cognitive strategies that they use in solving sudoku, crosswords, puzzles and traditional games.
- Undertake some group problem solving task and discuss the various strategies which can be employed to solve them.
- Interact with children with special needs to explore and document the challenges they face during the learning process. Describe the strategies used by the teacher to facilitate their learning.

Note: On the basis of the above, the teacher may design his/her own relevant projects/ assignments

Essential Readings

- Balagopalan, S. (2004). Understanding 'inclusion' in Indian School, In Nkomo, M. (eds) Reflection on School Education. Cape Town: Human Science Research Council.
- Kumar, S. (2015). Child Development and Pedagogy. India: Pearson (Chapter 8: Children with Special Needs, pp 136-152, Chapter 10: How Children Think and Learn, 176-192 and Chapter 11: Learning and Motivation, pp 195-210)
- Lefrancois, G. (1999). Psychology applied to teaching. New York: Wadsworth. (Chapter 6: Instruction, learning and forgetting)
- Madan, A. & Sharma, N. (2013). Inclusive Education for Children with Disability: Preparing School to Meet the Challenges. Journal for Inclusive Education, 3(1), 1-22
- Mukunda, K. (2009). What did you ask at school today? New Delhi: Harper Collins Publishers. [Chapter 2: Learning, (pp 22-50)]
- NCERT (2006). Psychology (Chapter 5: Sensory, Attentional and Perceptual Process, Chapter 7: Human Memory, Chapter 8: Thinking). Delhi: NCERT
- Ogbu, J. U. (1992). Understanding Cultural Diversity and Learning. Educational Research, 21(8), pp 14-24
- Piaget, J. (1997) In Mary, Gauvian and Micheal Cole. (ed) Development and Learning. In Readings on the development of Learning (2nd Edition) Chapter 6, Development and Learning. New York: W H Freeman and Company
- SantrockJohn.W (2006) (2nd ed.) Educational Psychology Classroom Update: Preparing for Praxis and Practice. New Delhi: Tata McGraw-Hill [Chapter 9 (pp287-295)]

- Snowman, J. & McCown, R. (2012) Psychology applied to teaching. (13th Edition). Belmont, USA: Wadsworth [Chapter 9: Social-cognitive theory. (pp 281-309)]
- Vygotsky, L.S. (1978) Mind in Society. New York: Harvard University Press. (Chapter 6: Interaction between learning and development pp 79-91)
- Woolfolk, A (2005) Educational psychology (3rd edition) New Delhi: Pearson. [Chapter pp 57-84]
- Thambirajah, M.S. & Ramanujan, L.L. (2016). Essentials of Learning Disabilities and Other Developmental Disorders. India: Sage Publication. (Chapter 11: Special Needs Education, pp 167-179)
- Kaushik, B. (2019). Creating Inclusive Schools: Theory, Process and Practice. India: Sage Publication. [Chapter 3: Children with Diverse Needs, pp 46-86]
- कुमार, संदीप (2010) शिक्षण – अधिगम प्रक्रियाएँ और निर्मितिवाद, आधुनिक भारतीय शिक्षा, एन सी ई आर टी, 3, 59-65
- मुकुंदा, कमलावी (2013) स्कूल में आज तुम ने क्या पूछा?, अनुवाद पूर्वायाज्ञिक कुशवाहा, एकलव्य प्रकाशन (पाठ 2)

Additional Readings

- Bell, M. P. (2009) The case of Mandatory Diversity Education, Academy of Management Learning & Education, 8(4), 597-609.
- Bodrova, E. and Leong, D. (1996). Tools of the Mind. New Jersey: Merrill. (Chapter 1: Introduction to the Vygotskian Approach. Chapter 2: Acquiring Mental Tools and Higher Mental Functions)
- Dweck, C. (2006). Mindsets: The New Psychology of Success, Random House: New York; (2012) (Mindsets: How you can fulfill your potential, Constable and Robinson Limited- Related lectures on youtube)
- Holt, J. (1982/1964). How Children Fail. New York: Perseus books (2009 translation)
- Lefrancois, R. (2000). Psychology for Teaching. USA: Wadsworth
- Pollard, A (2006). Reflective Teaching. NY: Continuum
- Piaget, J. (1945). Play, dreams and imitation in childhood. London: Heinemann.
- Piaget, J. (1970). Main trends in psychology. London: George Allen & Unwin.
- Vygotsky, L. S. (1963). Thought and language. Cambridge MA: MIT Press.
- Vygotsky, L. S. (1980). Mind in society: The development of higher psychological processes. USA: Harvard university press.

Key words

Human, Learning, Cognition

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Category III

B.A. Programme Courses for Undergraduate Programme of study with Education discipline as one of the Core Disciplines as non-Major or Minor discipline)

DISCIPLINE SPECIFIC CORE COURSE – 3 (DSC-3):Understanding Human Development

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------------------|---------|-----------------------------------|----------|---------------------|--------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Understanding Human Development DSC 3 | 4 | 3 | 1 | 0 | • Class Pass XII th | Nil |

Learning Objectives

The Learning Objectives of this course are as follows:

- This paper attempts to introduce students to theoretical frameworks and perspectives about human development in different socio-cultural contexts.
- It explores notions and experiences of childhood, adolescence and adulthood, situated in the milieu of family, neighborhood, community, educational institutions, workplace and society at large.
- It fosters the understanding and appreciation of inter-linkages between human development, diversity and uniqueness.
- It critically examines crucial developmental theories of human development and their applications from the lens of cross-cultural frames.
- It develops the potential for perspective building located in the Indian socio-cultural context through practicum, academic readings and classroom teaching/discussion.

Learning outcomes

After completion of the course students will be able to:

- Understand the various aspects of human development.
- Derive relationship among social/educational/cultural realities associated with human development.
- Explain the process of human development as it unfolds in the diverse sociocultural context
- Develop a critical perspective about social inclusion and its effect on human development

- Illustrate the process of human development and its implication for education.

SYLLABUS OF DSC- 3

Unit I: Conceptualizing Human Development (16 Hours)

- Contextualising human development in Indian society
- Characteristics and features of different stages of human development
- Basic principles of human development.
- Debates in human development: nature v/s nurture, continuity v/s discontinuity, universal v/s contextual
- Role of family, neighbourhood, school, community, and society at large in human development

Unit 2: Perspectives on Human Development (16 Hours)

Understanding the process of human development in Indian society with reference to:

- Erikson's theory of psychosocial development
- Kohlberg's theory of moral development
- Bronfenbrenner's ecological theory of development

Unit 3: Situating Human Development in the Context of Diversity (13 Hours)

- Diversity in the experiences of childhood and adolescence with reference to caste, class, gender, religion, language and region
- Issues and concerns stemming from social interaction: conflicts, prejudices, stereotypes, abuse and violence
- Concept of inclusion: historical background; educational practices for social inclusion

Practicum/ Suggested Projects / Assignments (Any Two)

- Observe and document the developmental patterns in adolescents with reference to identity and factors influencing identity development.
- Engage in self-reflection and document the role of family, education and peer group in their own development.
- Interview five children of any one marginalized community to explore the challenges, issues and concerns with regard to adjustment in school.
- Watch either 'Stanley KaDabba' or 'I am Kalam' (Bollywood Films) and describe how childhood unfolds in them.

Note: On the basis of the above, the teacher may design his/her own relevant projects/ assignments.

Essential/ Recommended Readings

- Balagopalan, S, (2010). Introduction: Children's Lives and the Indian Context. *Journal for the History of Childhood and Youth*, 18(3), 291-297.
- Berk, L. E. (2013). *Child Development*. New Delhi: Prentice Hall of India. [Chapter 1 and 2] (pp 3-9 and pp 42-59)
- Bhogle, S. (1981). Socialisation Among Different Cultures. In D. Sinha (Ed.), *Socialisation of the Indian Child*. New Delhi: Concept Publishing Company. (pp 3-11)
- Brown, B. B., Larson, R. W. & Saraswathi, T. S. (2002). *The World's Youth: Adolescence in Eight Regions of the Globe*. NY: Cambridge University Press. [Chapter 4: Adolescence in India]
- Kumar, S. (2015). *Child Development and Pedagogy*. New Delhi: Pearson. [Chapter 2: Socialization, pp 16-31 and Chapter 3: Cognitive and Moral Development, pp 35-60]
- Mukunda, K. (2009). *What did you ask at school today?* Noida: Harper ColliPublishers. [Chapter 4: Child Development (pp 71-96)]
- Kamble, S. (2009). Naja Goes to School – and Doesn't. In A. Dangle (Ed.) *Poisoned Bread: Translations from Modern Marathi Dalit Literature*. Orient Blackswan. Retrieved from <http://www.dalitweb.org/?p=542>
- Ranganathan, N. (2000). *The Primary School Child*. New Delhi: Orient Longman [Chapter 4: Social Development, (pp 57-79)]
- Saraswathi, T. S. (Ed.). (1999). *Culture, Socialization and Human Development: Theory, Research and Applications in India*. New Delhi: Sage Publications. [Chapter 9: Adult-child Continuity in India: Is adolescence a myth or an emerging reality? (pp 213-232)]
- Woolfolk, A. (2017). *Educational Psychology (13th Ed.)*. New Delhi: Pearson. [Chapter 3 (pp 80-126) and Chapter 6 (pp 238-285)]
- Ranganathan, N. & Wadhwa, T. (2017). *Guidance and Counselling for Children and Adolescents in School*. India: Sage Publication. [Chapter 3: Understanding Children and Adolescents in School (pp. 23-43), Chapter 8: Dealing with Addiction and Abuse (pp. 103-115), Chapter 12: Coping with Stress and Anxiety (151-161)]

Hindi

- कुमार, संदीप (2017) नैतिक एवं संवेगात्मक विकास में मीडिया की भूमिका, भारतीय आधुनिक शिक्षा, एन सी ई आर टी, 2, 37-44
- मुकुंदा, कमलावी (2013) स्कूल में आज तुमने क्या पूछा?, अनुवाद पूर्वायाशिक कुशवाहा, मध्य प्रदेश : एकलव्य प्रकाशन (पाठ 4, पृष्ठ सं 73-94)

Additional Readings

- Cole, M., Cole, S.R., & Lightfoot, C. (2004). *The Development of Children* (6th ed.). New York: Worth Publishers (Chapter 12 pp 429-443)
- Holt, J (1974). *Escape from Childhood*. Boston: E. P. Dutton. (Chapter 1, 2 and 7)

- Erikson, E. H. (1963). *Childhood and Society*. New York: Norton.
- Greene, M. (1993). Diversity and Inclusion: Towards a Curriculum for Human Beings. *Teachers College Records*, 95(2), 211-221.
- Mishra, A. (2007) Everyday life in a slum in Delhi: views of the children. In Deepak Kumar Behera (ed.) *Childhood in South Asia*. New Delhi: Longman.
- Slavin, R. E. (2012). *Educational Psychology: Theory and Practice*. USA: Pearson. [Chapter 12 (pp381-390)]
- Tuli, M. (2012). Belief on Parenting and Childhood in India. *Journal of Comparative Family Studies*, 43(1), 81-91.
- Vasantha, D. (2004) Childhood, work and schooling: some reflections. *Contemporary Education Dialogue* 4(2). pp 5-29

Audio Visual Material: Across Units

1. *Children of Heaven*. 1997. Directed by MajidMajidi. Iran: Miramax Films
2. *Dharm*. 2007. Directed by BhavnaTalwar.
3. *Salaam Bombay*. 1988. Directed by Mira Nair
4. *Smile Pinky*. 2008. Directed by Megan Mylan
5. *The Blue Umbrella*. 2007. Directed by Vishal Bhardwaj (based on the novel by Ruskin Bond)
6. *Stories of Girlhood*. 2001. Samina Mishra
7. *Children of the Pyre*. 2008. Rajesh. S. Jala (for a discussion on childhood/adolescence)

Key words

Human Development

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

46. Amendment to Appendix -II-A to the Ordinance V (2-A) of the Ordinances of the University vide EC Resolution 38-1-10 dated 08.12.2022 regarding Syllabi of 2nd Semester of B.Tech under CIC

Add the following:

Syllabi of Semester-II of the B.Tech (Information Technology & Mathematical Innovations) under Cluster Innovation Centre based on Under Graduate Curriculum Framework -2022 to be implemented from the Academic Year 2022-23.

CLUSTER INNOVATION CENTRE

Category-I

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Engineering through Linear Algebra DSC-4 | 4 | 3 | 0 | 1 | Class XII pass | Mathematics till XII |

Learning Objectives

Almost, every area of modern science contains models where equations may be approximated by linear equations and linear algebra plays a vital role for finding their solution and interpreting them. This paper aims to enable the student to learn linear models for various physical problems such as traffic flow, electric-circuit flow etc. and to facilitate their solution using concepts of linear dependence, independence, rank, basis, eigenvalues, eigenvectors etc. This paper intends to provide geometrical interpretation of vectors, basis and vector operations

in 2 & 3 dimensions and lays the groundwork for a more abstract, pure-mathematical treatment of vector spaces. Also, the importance and application of eigenvalues, eigenvectors in computer graphics, face recognition and many other fields is taught. Students will also learn how to use MATLAB for some simple matrix operations, for finding eigenvalues & eigenvectors, rank etc.

Learning outcomes

After completing this course, student should be able to;

- Understand graphical representation of vector and their operations in 2 and 3 dimensions
- Solve linear matrix system $AX=B$
- Understand the concept of Eigen values and Eigen vectors and their applications in computer graphics, face recognition algorithms & many other fields
- Conceptualize vector spaces, subspaces and their basis functions
- Understand inner product spaces, orthogonal sets, projection and orthogonal diagonalisation
- Learn basic arithmetic operations of matrices in MATLAB
- Implement basic loops (for, while, if else etc) of programming in MATLAB
- Write their own programs for solving system of linear equations

SYLLABUS OF DSC-4

Unit I: (09 Hours)

Matrix Algebra

Algebra of matrices – Review of Determinants - Hermitian, Skew-Hermitian and Unitary matrices - Vectors and vector operations in 2 and 3 dimensions - Solution and application of linear matrix system $AX = B$

Unit II: (12 Hours)

Eigenvalues and Eigenvectors

Eigenvalues and eigenvectors, minimal polynomial, Cayley-Hamilton theorem and diagonalization

Unit III: (12 Hours)

Abstract vector spaces, subspaces

Finite dimensional vector spaces - Linear independence and dependence of vectors, bases, dimension of vector spaces - Finite dimensional inner product spaces

Unit IV: (12 Hours)

Orthogonality

Orthogonal sets and projections, Gram Schmidt process, orthogonal diagonalisation

Practical component – 30 Hours

Engineering Kitchen Activity (matrix based numerical mathematics software) [Laboratory]

- Basic arithmetic operations, hierarchy of arithmetic operations

- Declaration and assignment of variables
- Introduction to elementary mathematical functions
- Dealing with matrices and arrays
- Basic programming with loops (for, while, switch), if else statements
- Programs for solving system of linear equations, Orthogonalization
- Creating 2D, 3D plots
- Innovation project

Essential/recommended readings

1. *Linear Algebra and its Applications*, D. C. Lay, Addison Wesley, 2005.
2. *A Modern Introduction*, David Poole, *Linear Algebra*, Brooks Cole, 2011.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 5 (DSC-5): Data Structure and Design

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Data Structure and Design, DSC-5 | 4 | 3 | 1 | 0 | Class XII pass | DSC-3 |

Learning Objectives

This course objective is to give an understanding of the real world data representation, organisation and structuring to the student while writing the programs and software. The course makes them familiar with the several types of data structures and their strengths and weaknesses, particularly in a real-world situation.

Learning outcomes

- Introduction to Data structure and their significance.
- Practical and theoretical understanding of Dynamic optimization
- Basics of Memory Hierarchy and implementation
- Understanding and implementation of Hashing, Networks and Graphs
- Understanding basics and practical aspects of Searching algorithms in the real world through implementation.
- Introduction and implementation of Heaps and Priority Queues and their comparison with other data structure

SYLLABUS OF DSC-5

Unit I: (12 Hours)

Program and data analysis

Introduction to Data structure, Basic concepts of Correctness, Efficiency and Application, Dynamic optimization Concept, Search Algorithms

Unit II: (12 Hours)

Data items arrangements and processing

Sorting Algorithms, Introduction to Linear Data Structures: Linked List, Stack and Queues

Unit III: (12 Hours)

Hierarchical arrangements and processing

Introduction to Hierarchical Data structure: Tree, Introduction to Heap, Priority Queues and Hashing

Unit IV: (09 Hours)

Network arrangements and analysis

Networks arrangements, Complex systems and real-world studies, Computational analysis

Practical component: 30 Hours

Engineering Kitchen Activity [Laboratory]:

- Implementation of Linked list in C/C++
- Implementation of Trees in C/C++
- Implementation of variant of Trees in C/C++
- Implementation of Heaps in C/C++
- Implementation of Hashing in C/C++
- Implementation of Priority Queues in C/C++
- Implementation of Graph and Network based approaches in C/C++
- Innovation Project

Essential/recommended readings

1. *Algorithms and Data Structures*, N. Wirth, Prentice-Hall of India, 2009
2. *Data Structures and Algorithms in C++*, A. Drozdek, Course Technology, 2013

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE– 6 (DSC-6): Object Oriented Programming

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Object Oriented Programming, DSC-6 | 4 | 3 | 0 | 1 | Class XII pass | DSC-3 |

Learning Objectives

The objective is to implement real-world entities like inheritance, hiding, polymorphism etc. in programming. To learn how to bind together the data and the functions that operate on them so that no other part of the code can access this data except that function.

Learning outcomes

Upon Completion of this course the students will be able to:

- Recognise features of object-oriented design such as encapsulation, polymorphism, inheritance, and composition of systems based on object identity.
- Use NetBeans, Eclipse, BlueJ as an Integrated Development Environment. Test a program and, if necessary, find mistakes in the program and correct them.
- Take a problem and develop the structures to represent objects and the algorithms to perform operations.
- Name and apply some object-oriented design patterns and give examples of their use.
- Apply standards and principles to write truly readable code.
- Design a class that serves as a program module or package.
- Design applications with an event-driven graphical user interface using java applets.
- Design different android applications such as web apps for the real-world problems.

SYLLABUS OF DSC-6

Unit I: (12 Hours)

Introduction to Java

Introduction to byte code, security and portability, Data Types, variables, operators, arrays, type conversion and casting, type promotion, Control statements, standard input-output, Designing Classes, constructors, methods. access specifiers - public, private, protected

Unit II: (12 Hours)

Classes and Objects

Introduction, Class revisited, constant objects and constructor, static data members with constructors and destructors, constructor overloading, nested classes, objects as arguments, returning objects, constant parameters and member functions, static data and member functions

Unit III: (12 Hours)

Inheritance, packages and interfaces and Exception Handling

Math, String, polymorphism - function overloading, function overriding, abstract classes, Dynamic objects - Introduction, array of objects, Exception types, nested try-catch, throw, throws and finally statements

Unit IV: (09 Hours)

Multi Thread Programming

Thread creation, synchronization and priorities

Practical component – 30 Hours

Engineering Kitchen Activities [Laboratory]

- Programs implying the use of Arrays, Linked Lists, Strings, Loops
- Programs on Object & Classes from Realistic Environment and Systems
- Programs demonstrating Constructors, Destructors, Methods & other concepts
- Programs Showcasing Inheritance, Polymorphism, Encapsulation & other OOPS features
- Programs on Exception Handling, Packages and Threading
- Reverse Engineering a Java Source/ project/Mobile Application and understanding the concepts
- Mapping the programs with Real life Systems and showcasing the implementation
- Innovation project

Essential/recommended readings

1. *Java: The Complete Reference*, 10th Edition. Herbert Schildt. McGraw-Hill, 2017.
2. *C++: The Complete Reference*, 4th Edition. Herbert Schildt. McGraw-Hill, 2012.
3. *Object Oriented Programming with C++*, 6th Edition. E Balagurusamy. Tata McGraw-Hill, 2001.
4. *C++ For Artists: The Art, Philosophy, and Science Of Object-Oriented Programming*. Rick Miller, Pulp Free Press, 2008
5. *Java For Artists: The Art, Philosophy, and Science Of Object-Oriented Programming*. Rick Miller , Pulp Free Press, 2008

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES

NOTE: The core papers offered in the B.Tech. Course at CIC are Mathematics and Information Technology. Therefore, the students will choose GE offered by Physics and Chemistry faculty members of CIC.

GENERIC ELECTIVES (GE-3): Engineering Physics II

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department offering the course |
|------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|--------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| Engineering Physics II, GE-3 | 4 | 2 | 0 | 2 | Class XII pass | Engineering Physics I, GE-1 | Physics Faculty of CIC |

Learning Objectives

This module intends to provide an understanding of the basics of electrostatics and electrodynamics. It emphasizes on learning of concepts of electric circuits, electromagnets and induction mechanism. Further it gives a day-to-day knowledge of transformers, motors and generators. Also, it provides learning of solar energy usage and its technology. The lab activities provide a hand on experiments on electricity and solar energy. It provides understanding of working of utility devices. It intends to promote projects on robotics and solar energy.

Learning outcomes

- Understanding of physics principles in devices.
- Ability to conceptualize and build electrical devices for real life use.
- Reverse engineering of electrical devices and redesigning of such objects.
- Practical hands-on skills and understanding of simple engineering concepts derived from Electricity & Magnetism.

SYLLABUS OF GE-3

Unit I: (12 Hours)

Electricity

Basics of Electrostatics and Electrodynamics - Electric Circuit elements and function - Current, voltage, capacitance, resistance - Power and efficiency in electrical appliances

Unit II: (12 Hours)

Electromagnetism basics

Joule heating - Electrical safety devices - Basics of Electromagnetism - Electromagnets and induction - Transformers. DC motors and generators

Unit III: (09 Hours)**Electromagnetism applications**

AC motors - Using electromagnetic spectrum - Information transfer and broadcasting

Unit IV: (12 Hours)**Alternate Energy**

Use of Radiation energy and appliances - Photovoltaic cells and conversion of solar energy to electricity - Advantages, limitations and challenges of different solar cell technologies - Different forms of renewable energy and technology.

Practical component – 30 Hours**Engineering Kitchen Activities [Laboratory]**

- Electric circuit, power requirement, cost of electricity, energy efficiency of sample appliances
- Potential divider, measurement of resistances of different scales
- Build a buzzer
- Conversion of solar power to electricity using photovoltaic cells: design, working principle, performance, application
- Build an autonomous robot
- Build a remote-controlled robot
- Understanding physics of devices – one implementation of “Tod-Phod-Jod” concept.
- Innovation project – designing instruments, devices, model & prototyping

Essential/recommended readings

1. *Introduction to Electrodynamics*. David. J. Griffiths, PHI Learning, 2012
2. *Textbook of Electrical Technology – Volume I & II*. B. L. Thareja, and A. K. Thareja, S. Chand Publishing, 2006

GENERIC ELECTIVES (GE-4): Engineering Chemistry II**Credit distribution, Eligibility and Pre-requisites of the Course**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department offering the course |
|--------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-------------------------------|--------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| Engineering Chemistry II, GE-4 | 4 | 2 | 0 | 2 | Class XII pass | Engineering Chemistry I, GE-2 | Chemistry Faculty of CIC |

Learning Objectives

This course has an aim of making students aware of the structure and properties of engineering materials, polymers and composites, which are most commonly used around us for various applications daily. Also, an elaborative discussion will be done, on one of the most important constituents of life i.e. water, it's properties, types, analysis etc., so that aspects related to water

impurities and its different types of treatment methods become clear to them and they can further contribute towards the cause of providing this basic amenity to our society, as and when they get a chance, either by indulging themselves in research with academia or industry. At the end, students will be exposed to various characterization instrumentation techniques, through which they should be able to get a better understanding about various kinds of materials (biomolecules, drugs, nanomaterials etc.)

Learning outcomes

- Students will develop a good understanding about the engineering materials, polymers and composites which are used in our daily life.
- Knowledge about one of the basic amenities of life i.e. water will be enhanced, so that students can further contribute towards solving various related problems in due course of life.
- Further, through learning characterization techniques, students will be able to understand better about various kinds of materials like nanomaterials, drugs and biomolecules.

SYLLABUS OF GE-4

Unit-I. (12 Hours)

Engineering Materials, Polymers and composites

Glass, Ceramics, Magnetic materials, Classification, functionality, general properties and types of polymers; (addition polymerization, step polymerization, copolymerization) Different types of polymers; natural and synthetic polymers; Linear, branched and cross-linked polymers; Thermoplastic and thermosetting polymers, their applications; Plastics: Properties of Polyethylene Plastics; Vinyl Plastics, Nylons, Phenol-formaldehyde resins (Bakelite) and Glyptal; Speciality Polymers: Engineering thermoplastics, Conducting polymers, Electroluminescent polymers, liquid crystalline polymers and biodegradable polymers.

Unit-II. (12 Hours)

Analysis of Water

Analytical aspects of water: Sources, conservation of water, impurities in water and their effects. WHO guideline and BIS guideline for drinking water. Water quality standards, physical, chemical and biological characteristics; hardness of water, disadvantages of hardness, determination of hardness (EDTA method). Alkalinity and its determination; Boiler problems with hard water and their prevention: Municipal water supply – its treatment and disinfection using break -point chlorination. Desalination, Reverse Osmosis, Electrodialysis and defluoridation of water.

Unit-III. (12 Hours)

Material characterization Techniques

Spectroscopy, General features of spectroscopy, Discussion on various kinds of spectra obtained using various spectroscopic techniques like UV-Visible spectroscopy, Fourier-Transform Infra-red spectroscopy, Fluorescence spectroscopy, Circular Dichroism spectroscopy etc.

Unit-IV. (09 Hours)

Nanomaterials and their Characterization

Characterization of Nanomaterials using UV-Visible Absorption spectroscopy, Fourier transform Infra-red spectroscopy, Transmission electron microscopy (TEM), Scanning Electron Microscopy and FESEM etc.

Practical component – 30 Hours

1. Experimental demonstration of the synthesis of various types of polymers (like nylon, rayon fibre/ artificial silk etc.)
2. Molecular dynamics simulation of small molecules like water using softwares like LAAMPS
3. Demonstration of different experiments for determination of hardness of water
4. Interpretation and analysis of experimental data/ figures of various structures (biomolecules, and nano-structures) from some already published research papers/ reviews for understanding various spectroscopic and physicochemical techniques

Essential/recommended readings

1. Engineering Materials: Polymers, Ceramics and Composites, 2nd ed. Kindle Edition by A.K. Bhargava
2. Engineering Chemistry by O.G. Palanna, McGraw Hill, 2017.
3. Water Treatment (Hardness of Water) by Subodh Bhandarkar
4. Materials Science and Engineering: An Introduction, by Callister, 8th Edition, John Wiley and sons inc., Jan 2010.
5. Plastics Materials, Newness, Butterworths and Brydson, J.A., London, 1975
6. Spectroscopy and Characterization of Nanomaterials and Novel Materials: Experiments, Modelling, Simulations, and Applications, by Prabhakar Misra
7. Optical Properties and Spectroscopy of Nanomaterials, 2009 by Jin Zhong Zhang

B.A. (Honours) Humanities & Social Sciences

COURSE OFFERED BY CLUSTER INNOVATION CENTRE

Category II

DISCIPLINE SPECIFIC CORE COURSE - 4 (DSC-04): To be offered in Colleges of UoD

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|---|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| To be offered in Colleges of UoD (DSC-04) | 4 | As per the course structure of the respective disciplines | | | | |

DISCIPLINE SPECIFIC CORE COURSE - 5 (DSC-05): To be offered in Colleges of UoD

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|---|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| To be offered in Colleges of UoD (DSC-05) | 4 | As per the course structure of the respective disciplines | | | | |

DISCIPLINE SPECIFIC CORE COURSE – 6 (DSC-06): To be offered in Colleges of UoD

Credit distribution, Eligibility and Prerequisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---|---------|---|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| To be offered in Colleges of UoD (DSC-06) | 4 | As per the course structure of the respective disciplines | | | | |

COMMON POOL OF GENERIC ELECTIVES (GE) COURSES

GENERIC ELECTIVES (GE-02A): To be offered in Colleges of UoD

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department offering the course |
|--|---------|---|----------|---------------------|----------------------|-----------------------------|--------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| To be offered in Colleges of UoD (DSC-02A) | 4 | As per the course structure of the respective disciplines | | | | | Faculty of concerned Dept. |

GENERIC ELECTIVES (GE-02B): To be offered in Colleges of UoD

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department offering the course |
|--|---------|---|----------|---------------------|----------------------|-----------------------------|--------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| To be offered in Colleges of UoD (DSC-02B) | 4 | As per the course structure of the respective disciplines | | | | | Faculty of concerned Dept. |

GENERIC ELECTIVES (GE-02C): To be offered in Colleges of UoD

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course | Department offering the Course |
|--|---------|---|----------|---------------------|----------------------|-----------------------------|--------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | | |
| To be offered in Colleges of UoD (DSC-02B) | 4 | As per the course structure of the respective disciplines | | | | | Faculty of concerned Dept. |

40. Amendment to Appendix -II-A to the Ordinance V (2-A) of the Ordinances of the University vide EC Resolution 38-1-12 dated 08.12.2022 regarding Syllabi of 2nd Semester of Vocational courses

Add the following:

Syllabi of Semester-II of the following vocational courses based on Undergraduate Curriculum Framework -2022 under Ramanujan College, Jesus & Mary College & Kalindi College to be implemented from the Academic Year 2022-23.

**B.Voc.– Software Development
(Ramanujan College)
Category-I**

B.VOC - Software Development course for Undergraduate Programme of study with Software Development as a Single Core Discipline

DISCIPLINE SPECIFIC CORE COURSE – 4: Database Management Systems

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Database Management Systems | 4 | 2 | 0 | 2 | Class XII pass with Mathematics | NIL |

Learning Objectives:

- 1. To introduce the fundamentals of database management system and its architecture.*
- 2. Students will learn about the importance of database structure and it's designing using conceptual approach using Entity Relationship Model and formal approach using Normalization.*
- 3. The course would give students hands-on practice of structured query language in a relational database management system.*

Learning Outcomes:

- 1. Use database management system software to create and manipulate the database.*
- 2. Create conceptual data models using entity relationship diagrams for modeling real-life situations and designing the database schema.*
- 3. Use the concept of functional dependencies to remove redundancy and update anomalies.*
- 4. Apply normalization theory to get a normalized database scheme.*
- 5. Write queries using relational algebra, a procedural language.*
- 6. Implement relational databases and formulate queries to get solutions of a broad range of data retrieval and data update problems using SQL.*

Unit I

(6 Hours)

Introduction to Database: Purpose of database system, Characteristics of database approach, data models, database management system, database system architecture, three-schema architecture, components of DBMS, data independence, and file system approach vs. database system approach.

Unit II

(6 Hours)

Entity Relationship Modeling: Conceptual data modeling - motivation, entities, entity types, attributes, relationships, relationship types, constraints on relationship, Entity Relationship diagram notation.

Unit III

(6 Hours)

Relational Data Model: Update anomalies, Relational Data Model - Concept of relations, schema-instance distinction, keys, relational integrity constraints, referential integrity and foreign keys, relational algebra operators and queries.

Unit IV

(6 Hours)

Structured Query Language (SQL): Querying in SQL, DDL to create database and tables, table constraints, update database-update behaviors, DML, aggregation functions group by and having clauses, retrieve data from the database, generate and query views. Access and manipulate databases using ODBC. Basic Database administration SQL commands.

Unit V

(6 Hours)

Database Design: Mapping an Entity Relationship model to relational database, functional dependencies and Normal forms, 1NF, 2NF, 3NF and BCNF decompositions and desirable properties of them.

Essential/Recommended readings:

- 1. Elmasri, R., Navathe, B. S. Fundamentals of Database Systems, 7th Edition, Pearson Education, 2015.*
- 2. Krogh, J. W. MySQL Connector/Python Revealed: SQL and NoSQL Data Storage Using MySQL for*

Python Programmers, Apress, 2018.

3. *Murach J. Murach's MySQL, 3th Edition, Pearson, 2019.*

Practical Component: (60 Hours)

I. Create and use the following student-society database schema for a college to answer the given (sample) queries using the standalone SQL editor.

| STUDENT | <u>Roll No</u> | StudentName | Course | DOB |
|---------|----------------|-------------|-------------|------|
| | Char(6) | Varchar(20) | Varchar(10) | Date |

| SOCIETY | <u>SocID</u> | SocName | MentorName | TotalSeats |
|---------|--------------|-------------|-------------|--------------|
| | Char(6) | Varchar(20) | Varchar(15) | Unsigned int |

| ENROLLMENT | <u>Roll No</u> | <u>SID</u> | DateOfEnrollment |
|------------|----------------|------------|------------------|
| | Char(6) | Char(6) | Date |

Here Rollno (ENROLLMENT) and SID (ENROLLMENT) are foreign keys.

1. Retrieve names of students enrolled in any society.
2. Retrieve all society names.
3. Retrieve students' names starting with letter 'A'.
4. Retrieve students' details studying in courses 'computer science' or 'chemistry'.
5. Retrieve students' names whose roll no either starts with 'X' or 'Z' and ends with '9'
6. Find society details with more than N TotalSeats where N is to be input by the user
7. Update society table for mentor name of a specific society
8. Find society names in which more than five students have enrolled
9. Find the name of youngest student enrolled in society 'NSS'
10. Find the name of most popular society (on the basis of enrolled students)
11. Find the name of two least popular societies (on the basis of enrolled students)
12. Find the student names who are not enrolled in any society
13. Find the student names enrolled in at least two societies
14. Find society names in which maximum students are enrolled
15. Find names of all students who have enrolled in any society and society names in which at least one student has enrolled
16. Find names of students who are enrolled in any of the three societies 'Debating', 'Dance' and 'Sashakt'.
17. Find society names such that its mentor has a name with 'Gupta' in it.
18. Find the society names in which the number of enrolled students is only 10% of its capacity.
19. Display the vacant seats for each society.
20. Increment Total Seats of each society by 10%
21. Add enrollment fees paid ('yes'/'No') field in the enrollment table.
22. Update date of enrollment of society id 's1' to '2018-01-15', 's2' to current date and 's3' to '2018-01-02'.
23. Create a view to keep track of society names with the total number of students enrolled in it.
24. Find student names enrolled in all the societies.

25. Count number of societies with more than 5 student enrolled in it
26. Add column Mobile number in student table with default value '9999999999'
27. Find the total number of students whose age is > 20 years.
28. Find names of students who are born in 2001 and are enrolled in at least one society.
29. Count all societies whose name starts with 'S' and ends with 't' and at least 5 students are enrolled in the society.
30. Display the following information:
Society name, Mentor name, Total Capacity, Total Enrolled, Unfilled Seats

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 5: Programming in JAVA

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Programming in JAVA | 4 | 2 | 0 | 2 | Class XII pass with Mathematics | DSC -1 |

Learning Objectives:

1. To develop structured as well as object-oriented programming skills using JAVA Programming.
2. The course provides a complete understanding of the object-oriented programming features, namely Encapsulation, Abstraction, Inheritance and Polymorphism.

Learning Outcomes:

1. Implement Exception Handling and File Handling.
2. Implement multiple inheritance using Interfaces.
3. Logically organize classes and interfaces using packages.
4. Use AWT and Swing to design GUI applications.

Unit I

(4 Hours)

Review of Object Oriented Programming and Java Fundamentals: Structure of Java programs, Classes and Objects, Data types, Type Casting, Looping Constructs.

Unit II

(6 Hours)

Interfaces Interface basics; Defining, implementing and extending interfaces; Implementing multiple inheritance using interfaces Packages Basics of packages, Creating and accessing packages, System packages, Creating user defined packages

Unit III

(4 Hours)

Exception handling using the main keywords of exception handling: try, catch, throw, throws and finally; Nested try, multiple catch statements, creating user defined exceptions

Unit IV

(4 Hours)

File Handling Byte Stream, Character Stream, File I/O Basics, File Operations.

Unit V

(6 Hours)

AWT and Event Handling: The AWT class hierarchy, Events, Event sources, Event classes, Event Listeners, Relationship between Event sources and Listeners, Delegation event model, Creating GUI applications using AWT.

Unit VI

(6 Hours)

Swing Introduction to Swing, Swing vs. AWT, and Hierarchy for Swing components, Creating GUI, Applications using Swing.

Essential/Recommended readings:

1. *Schildt, H. (2018). Java: The Complete Reference. 10th edition. McGraw-Hill Education.*
2. *Horstmann, C. S. (2017). Core Java - Vol. I – Fundamentals (Vol. 10). Pearson Education.*

List of Practical(60 Hours)

1. Design a class Complex having a real part (x) and an imaginary part (y). Provide methods to perform the following on complex numbers:
 - a. Add and Multiply two complex numbers.
 - b. toString() method to display complex numbers in the form: $x + i y$
2. Create a class TwoDim which contains private members as x and y coordinates in package P1. Define the default constructor, a parameterized constructor and override toString() method to display the coordinates. Now reuse this class and in package P2 create another class ThreeDim, adding a new dimension as z as its private member.
Define the constructors for the subclass and override toString() method in the subclass also. Write appropriate methods to show dynamic method dispatch. The main() function should be in a package P.
3. Define an abstract class Shape in package P1. Inherit two more classes: Rectangle in package P2 and Circle in package P3. Write a program to ask the user for the type of shape and then using the concept of dynamic method dispatch, display the area of the appropriate subclass. Also write appropriate methods to read the data. The main() function should not be in any package.
4. Create an exception subclass UnderAge, which prints “Under Age” along with the age value when an object of UnderAge class is printed in the catch statement. Write a class exceptionDemo in which the method test() throws UnderAge exception if the variable age passed to it as argument is less than 18. Write main() method also to show working of the program.
5. Write a program to implement stack. Use exception handling to manage underflow and overflow conditions.
6. Write a program that copies content of one file to another. Pass the names of the files through command-line arguments.
7. Write a program to read a file and display only those lines that have the first two characters as '/' (Use try with resources).
8. Write a program to create an Applet. Create a frame as a child of applet. Implement mouseClicked(), mouseEntered() and mouseExited() events for applet. Frame is visible when mouse enters applet window and hidden when mouse exits from the applet window.
9. Write a program to display a string in frame window with pink color as background.
10. Write a program to create an Applet that has two buttons named “Red” and “Blue”. When a button is pressed the background color of the applet is set to the color named by the button’s label.
11. Create an applet which responds to KEY_TYPED event and updates the status window with message (“Typed character is: X”). Use adapter class for other two events.
12. Create an applet with two buttons labeled ‘A’ and ‘B’. When button ‘A’ is pressed, it displays your personal information (Name, Course, Roll No, and College) and when button ‘B’ is pressed, it displays your CGPA in previous semester.
13. Write a program that creates a Banner and then creates a thread to scrolls the message in the banner from left to right across the applet’s window.
14. Rewrite the applet programs using Swing.

DISCIPLINE SPECIFIC CORE COURSE – 6: Mathematics for Computing - II

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------------|---------|-----------------------------------|----------|---------------------|---------------------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Mathematics for Computing - II | 4 | 3 | 1 | 0 | Class XII pass with Mathematics | DSC - 3 |

Learning Objectives:

1. To study the fundamental concepts and topics of probability and statistics.
2. The study of this course is important for students to learn machine learning and similar courses in later semesters.

Learning Outcomes:

1. Use probability theory to evaluate the probability of real-world events.
2. Describe discrete and continuous probability distribution functions and generate random numbers from the given distributions.
3. Find the distance between two probability distributions
4. Define and quantify the information contained in the data.
5. Perform data analysis in a probabilistic framework.
6. Visualize and model the given problem using mathematical concepts covered in the course.

Unit I

(9 Hours)

Basic Probability: Introduction to the notion of probability, Random experiment, Sample space and Events, Probability defined on events, Algebra of events. Conditional probabilities, independent events, Bayes' theorem.

Unit II

(12 Hours)

Random Variables: Introduction to Random Variables, Probability mass/density functions, Cumulative distribution functions. Discrete Random Variables (Bernoulli, Binomial, Poisson, Multinomial and Geometric). Continuous Random Variables (Uniform, Exponential and Normal). Expectation of a Random Variable, Expectation of Function of a Random Variable and Variance. Markov inequality, Chebyshev's inequality, Central Limit Theorem, Weak and Strong Laws of Large Numbers.

Unit III

(12 Hours)

Joint Distributions: Jointly distributed Random Variables, Joint distribution functions, Independent Random Variables, Covariance of Random Variables, Correlation Coefficients, Conditional Expectation.

Unit IV

(12 Hours)

Markov Chain and Information Theory: Introduction to Stochastic Processes, Chapman–Kolmogorov equations, Classification of states, Limiting and Stationary Probabilities. Random Number Generation, Pseudo Random Numbers, Inverse Transformation Method, Rejection Method, Uncertainty, Information and Entropy, Mutual Information, KL Divergence.

Essential/Recommended readings:

1. *Sheldon Ross, Introduction to Probability Models, 12th Edition, Elsevier, 2019.*
2. *K.S. Trivedi, Probability and Statistics with Reliability, Queuing and Computer Science Applications, 2nd Edition, Wiley, 2015.*
3. *Marc Peter Deisenroth, A. Aldo Faisal and Cheng Soon Ong, Mathematics for Machine Learning, 1st Edition, Cambridge University Press, 2020.*
4. *Ian F. Blake, “An Introduction to Applied Probability”, John Wiley.*

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

POOL OF GENERIC ELECTIVE

GENERIC ELECTIVE – 2: Database Management Systems

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Database Management Systems | 4 | 2 | 0 | 2 | 12 th Pass | NIL |

Learning Objectives:

1. To introduce the fundamentals of database management system and its architecture.
2. Students will learn about the importance of database structure and it's designing using conceptual approach using Entity Relationship Model and formal approach using Normalization.
3. The course would give students hands-on practice of structured query language in a relational database management system.

Learning Outcomes

1. Identify the basic concepts and various data model used in database design.
2. Use relational database management software to create and manipulate the database.
3. ER modelling concepts and architecture use and design queries using SQL.
4. Create conceptual data models using entity relationship diagrams for modelling real-life situations and map it to corresponding relational database schema.
5. Use the concept of functional dependencies to remove redundancy and update anomalies.
6. Implement relational databases and formulate queries for data retrieval and data update problems using SQL.
7. Use of PHP to connect with database and understand how to design web applications.

Unit-1:

(6 Hours)

Introduction and applications of DBMS, Basic Concepts: DBMS Architecture, Data Independence, Data modelling for a database, abstraction and data integration, three level architecture of a DBMS, Database users and DBA.

Unit-2:

(6 Hours)

Database Design: Entities and attributes, Entity types, Entity set, Attribute and keys, Defining the E-R diagram, Concept of Generalization, Aggregation and Specialization.

Unit-3:

(6 Hours)

Relational Model: Relational Data Manipulations: Relation, conversion of ER diagrams to relations, integrity constraints, Functional dependencies and Normalization.

Unit-4:**(6 Hours)**

Structured Query Language: DDL, DML, DDL queries like create database, drop database, create table, drop table, alter table.

DML Queries like inserting into a table, update a table, delete data from table, and filter data. Create relationships between tables, SQL sub queries, SQL clauses, SQL aggregate functions, SQL Joins.

Unit-5:**(6 Hours)**

PHP with MYSQL: PHP MYSQL Database, PHP Connecting to Database, PHP Creating Records, PHP Selecting Records, PHP Deleting Records, PHP Updating Records, PHP Limit Data, PHP Insert Multiple.

Essential/recommended readings:

1. R. Elmasri, S.B. Navathe *Database Systems Models, Languages, Design and application Programming*, 7th Edition, Pearson Education.
2. R. Ramakrishnan and J. Gehrke, *Database Management Systems*, 3rd Edition, McGraw Hill, 2014.
3. A. Silberschatz, H. Korth and S. Sudarshan, *Database System Concepts*, 6th Edition, McGraw Hill, 2014.
4. Robin Nixon, *Learning PHP, MYSQL, JavaScript, CSS & HTML5 3ed: A Step-by-Step Guide to Creating Dynamic Websites*, O'Reilly.

Practical component: 60 Hours

1. Create a database having two tables with the specified fields, to computerize a library system of a Delhi University College.

- LibraryBooks (Accession number, Title, Author, Department, PurchaseDate, Price)
 - IssuedBooks (Accession number, Borrower)
- a) Identify primary and foreign keys. Create the tables and insert at least 5 records in each table.
 - b) Delete the record of a book titled "Database System Concepts".
 - c) Change the Department of the book titled "Discrete Maths" to "BVoc".
 - d) List all books that belong to the "BVoc" department.
 - e) List all books that belong to the "BVoc" department and are written by author "Navathe".
 - f) List all computers (Department = "BVoc") that have been issued.
 - g) List all books which have a price less than 500 or purchased between "01/01/2022" and "31/12/2022".

2. Create a database having three tables to store the details of students of Computer Department in your college, as per the given schema.

- Personal information about Student (College roll number, Name of student, Date of birth, Address, Marks(rounded off to whole number) in percentage at 10 + 2, Phone number)
 - Paper Details (Paper code, Name of the Paper)
 - Student's Academic and Attendance details (College roll number, Paper code, Attendance, Marks in home examination).
- a) Identify primary and foreign keys. Create the tables and insert at least 5 records in each table.
 - b) Design a query that will return the records (from the second table) along with the name of student from the first table, related to students who have more than 75% attendance and more than 60% marks in paper 2.
 - c) List all students who live in "Delhi" and have marks greater than 60 in paper 1.
 - d) Find the total attendance and total marks obtained by each student.
 - e) List the name of student who has got the highest marks in paper 2

3. Create the following tables and answer the queries given below:

- Customer (CustID, email, Name, Phone, ReferrerID)
 - Bicycle (BicycleID, DatePurchased, Color, CustID, ModelNo) BicycleModel (ModelNo, Manufacturer, Style)
 - Service (StartDate, BicycleID, EndDate)
- a) Identify primary and foreign keys. Create the tables and insert at least 5 records in each table.
 - b) List all the customers who have the bicycles manufactured by manufacturer “Honda”.
 - c) List the bicycles purchased by the customers who have been referred by customer “C1”.
 - d) List the manufacturer of red colour bicycles.
 - e) List the models of the bicycles given for service.

4. Create the following tables, enter at least 5 records in each table and answer the queries given below.

- EMPLOYEE (Person_Name, Street, City) WORKS (Person_Name, Company_Name, Salary)
 - COMPANY (Company_Name, City)
 - MANAGES (Person_Name, Manager_Name)
- a) Identify primary and foreign keys.
 - b) Alter table employee, add a column “email” of type varchar (20).
 - c) Find the name of all managers who work for both Samba Bank and NCB Bank.
 - d) Find the names, street address and cities of residence and salary of all employees who work for “Samba Bank” and earn more than \$10,000.
 - e) Find the names of all employees who live in the same city as the company for which they work.
 - f) Find the highest salary, lowest salary and average salary paid by each company.
 - g) Find the sum of salary and number of employees in each company.
 - h) Find the name of the company that pays the highest salary.

5. Create the following tables, enter at least 5 records in each table and answer the queries given below.

- Suppliers (SNo, Sname, Status, SCity)
 - Parts (PNo, Pname, Colour, Weight, City)
 - Project (JNo, Jname, Jcity)
 - Shipment (Sno, Pno, Jno, Quantity)
- a) Identify primary and foreign keys.
 - b) Get supplier numbers for suppliers in Paris with status>20.
 - c) Get supplier details for suppliers who supply part P2. Display the supplier list in increasing order of supplier numbers.
 - d) Get suppliers names for suppliers who do not supply part P2.
 - e) For each shipment get full shipment details, including total shipment weights.
 - f) Get all the shipments where the quantity is in the range 300 to 750 inclusive.
 - g) Get part nos. for parts that either weigh more than 16 pounds or are supplied by suppliers S2, or both.
 - h) Get the names of cities that store more than five red parts.
 - i) Get full details of parts supplied by a supplier in London.
 - j) Get part numbers for parts supplied by a supplier in London to a project in London. k) Get the total number of projects supplied by a supplier (say, S1).
 - k) Get the total quantity of a part (say, P1) supplied by a supplier (say, S1)

B.Voc.-(Banking & Financial Services and Insurance) (Ramanujan College)

Category-I

**BVOC –Banking, Financial Services and Insurance course for Undergraduate
Programme of study with Banking, Financial Services and Insurance as a Single Core
Discipline**

DISCIPLINE SPECIFIC CORE COURSE – 4: Business Environment

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------------------|----------------|--|-----------------|--------------------------------|---------------------------------|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Business Environment | 4 | 3 | 1 | 0 | Class XII Pass | NIL |

Learning Objective

The objective of this course is to make learner aware and sensitive towards the overall Business environment within country and at global level. During the course the student shall learn the interaction of business with different dimensions of business environment.

Learning Outcomes

After completion of the course, learners will be able to:

1. Understand and critically evaluate the factors affecting business environment.
2. Identifying business opportunities both in the country and abroad.
3. Understand Economic Survey and its implications for Indian Business Environment.
4. Critically evaluate the government policies related to business environment.

SYLLABUS OF DSC-4

UNIT-I: Business and its Environment

(9 Hours)

Concept and Significance of Business Environment, Corporate Social Responsibility of Business, Business Ethics, Cultural and Social Environment, Concepts of Culture, Interface between Business and Cross-cultural Communication, Environment Scanning – Concept, Types, Objectives and Process of Environment Scanning, Economic System – Capitalism, Socialism, Mixed Economy, Salient Features of Indian Economy.

UNIT-II: Economic Environment

(12 Hours)

Component of Economic Environment, NITI-Ayog Concept, Significance, Objectives and Machinery. Government Policies relating to Industrial Development, New Economic Policy, Major Thrusts, Economic Role of Government, Rationale of State Intervention in Economy, New Industrial Policy 1991.

UNIT-III: Public Sector Enterprises and India's Macroeconomy (12 Hours)

Characteristics and Significance of Mixed Economy, Genesis and Growth of Public Sector Enterprises in India, Problems and Prospects of Public Sector Enterprise in India- Present Scenario, Privatization of PSUs. General Political Environment in India affecting Economy and Economic Reforms.

UNIT-IV: Technological Environment and Indian Economy (12 Hours)

Features of Technology, Technology Transfer, Levels of Technology Transfer, Mechanism of Technology Transfer, Impact of Technology on Business and Society, Technology Selection, Major R&D Institutions and their Research and Development Activities, Broad feature of Managerial Trend such as Professionalization of Management, Restructuring of Organization, Technology Policy in India. The Advertising Council of India, Code for Self-regulation in Advertising, Consumer Protection Act, 2019 - Objects, Reasons and Salient Features of the Act. The Consumer Disputes Redressal Agencies, MNCs, Implications of Globalization and WTO on Indian Economy

Suggested Readings:

- Keith Davis: Business and Society: Environment and Responsibility Management, Tata McGraw Hill, New Delhi.
- Cherunilam F.: Business Environment, Himalaya Publishing House, Noida.
- Kazi Karim: Economic Environment of Business, Sultan Chand & Sons, New Delhi
- Chakravarty, S: Development Planning, Oxford University Press, Delhi.
- Ramaswamy, VS and S. Namakumari: Strategic Planning for Corporate Success, MacMillan India, New Delhi.
- Sengupta N.K: Government and Business in India, Vikas Publishing House, Noida.
- Aswathappa K.: Essential of Business Environment, Himalaya Publishing House, New Delhi.

Additional Resources:

- Justin Paul: Business Environment: Text and Cases, Tata McGraw Hill, New Delhi.
- Cherrunilam, Francis: Business Environment, Himalaya Publishing House, New Delhi.
- Ghosh P.K. and G. K. Kapur.: Business Policy and Environment, Sultan Chand & Sons, New Delhi.
- Adhikari M.: Economic Environment of Business, Sultan Chand & Sons, New Delhi.
- Gupta, C.B.: Business Environment, Sultan Chand & Sons, New Delhi.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 5: Computer Applications in Business

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-----------------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Computer Applications in Business | 4 | 3 | 0 | 1 | 12 th Pass | NIL |

Learning Objective

This paper aims to impart computer knowledge that will enable them to handle and analyse data for decision making and present it in the form of presentations and/or reports.

Learning Outcomes

After completion of the course, learners will be able to:

1. Create, edit and design document for communication & reporting.
2. Make good presentations.
3. Analyse various computations using various functions in the area of accounting and finance and represent the business data using suitable charts.
4. Create, work and manage the database.

SYLLABUS OF DSC-5

UNIT-1: Word Processing

(12 Hours)

Introduction to word Processing, Word processing concepts, Use of Templates and styles, Working with word document: Editing text, Find and replace text, Formatting, spell check, Autocorrect, Auto-text; Bullets and numbering, Tabs, Paragraph Formatting, Indent, Page Formatting, Header and footer, page break, table of contents, Tables: Inserting, filling and formatting a table; Inserting Pictures and Video; Mail Merge (including linking with spreadsheet files as data source); Printing documents; Citations, references and Footnotes.

UNIT-II: Preparing Presentations

(9 Hours)

Basics of presentations: Slides, Fonts, Drawing, Editing; Inserting: Tables, Images, texts, Symbols, hyperlinking, Media; Design; Transition; Animation; and Slideshow, exporting presentations as pdf handouts and videos.

UNIT-III: Spreadsheet basics

(12 Hours)

Spreadsheet concepts, managing worksheets; Formatting, conditional formatting, Entering data, Editing, and Printing and Protecting worksheets; Handling operators in formula, Project involving multiple spreadsheets, Organizing Charts and graphs; Flashfill; Working with Multiple worksheets; controlling worksheet views, naming cells and cell ranges. Spreadsheet functions: Mathematical, Statistical, Financial, Logical, Date and Time, Lookup and reference, Text functions and Error functions. Working with Data:

Sort and filter; Consolidate; Tables; Pivot tables; What-if-analysis: Goal seek, Data tables and Scenario manager.

UNIT-IV: Database Management System

(12 Hours)

DBMS Software: Environment; Tables; Forms; Queries; Reports; Modules; Applying DBMS in the areas of Accounting and Business; Managing the data records of Employees, Suppliers, and Customers.

Practical component (30 Hours)

Students will perform practical problems based upon the concepts such as word processing software, power point presentations, spreadsheet and database and practice the same on relevant software.

Suggested Readings:

- Lambert, J. (2019). Microsoft Word 2019 Step by Step. United States: Pearson Education.
- Jain, H. C. & Tiwari, H. N. "Computer Applications in Business" Taxmann, Delhi.
- Mathur, S. & Jain, P. "Computer Applications in Business" Galgotia Publishing Company
- Madan, S. "Computer Applications in Business" Scholar Tech Press, Delhi.

Additional Resources:

- Walkenbach, J. "MS Excel 2016, Bible". John Wiley & Sons, USA.
- Elmasari, Ranez and Shamkant B. Navathe Fundamentals of Database Systems, 7th Edition, (2016), Pearson Education
- Winston, W. L. "MS Excel 2013, Data Analysis & Business Modeling" Microsoft Press, USA.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 6: Basics of Banking Operations

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------------|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Basics of Banking Operations | 4 | 3 | 1 | 0 | 12 th Pass | NIL |

Learning Objective

This paper aims to acquaint the students about the Indian banking system and provide them knowledge of banking legislations, instruments and reforms.

Learning Outcomes

After completion of the course, learners will be able to:

1. Understand the basic concept of Bank and banking system, functions and retail banking products.

2. Learn about the basics products offered by banks.
3. Develop understanding of the overall operations of banks.
4. Acquainted with bank's objectives, roles, functions and structure.
5. Learn about the basic terminology used in banking system.

SYLLABUS OF DSC-6

Unit I: Introduction to banking (12 Hours)

Meaning and Definition of Bank and Banking, functions, need and importance; legal framework; structure, organisation and working of banks, need for proper regulation and supervision; banker and customer relationship, general and special types of customers. Types of banks in India; Role of Foreign Banks in India; Advantages and Disadvantages of Foreign banks, Road Map for Foreign Banks in India; India's approach to Banking Sector reforms; Achievements of financial sector reforms and areas of concern, Credit Allocation Policies of Commercial banks, Credit Market Reforms. Instruments of Monetary Control-CRR, SLR, Repo, Reverse Repo, Bank rate, OMO; Regulatory Restrictions. Banker & customer relationship.

Unit II: Indian Banking System, Operations and instruments (12 Hours)

Apex bank & role of Central Bank, RBI's credit policy & Monetary policy, structure and functions of commercial banks in India, Banking Ombudsman scheme. Cheque: definition, features and types of cheque; Endorsement: meaning and essentials of a valid endorsement, types of endorsement; Era of Internet Banking and its benefits, Mobile Banking, Home banking, Virtual Banking, Electronic Clearing System (ECS), E-payments, Electronic Fund Transfer (EFT), E-money, Unified Payment Interface (UPI), Safeguard for internet banking, Critical comparison of traditional banking methods and e-banking; Balance Sheet of a Bank, special items of a Balance Sheet, off Balance Sheet Items; Anti-money Laundering Guidelines. Basics of Negotiable Instruments.

Unit III: Liability Products (12 Hours)

Remittance and payment Services (Draft, RTGS, IMPS, NEFT, etc); Types of Accounts, Opening of accounts, Universal Banking; Cross Selling, Bancassurance and ancillary services, Locker's facilities, custodial, Standing instructions, ATMs, POS; emerging opportunities, Stand by letter of credit. KYC, Internet banking and mobile banking, International transactions and FDI remittances.

Unit IV: Asset Products (9 Hours)

Home Loans, Personal Loans; consumer loans; Education loans and others; introduction to business loans (terms loans and cash credit); Priority sector lending-agricultural, SME and Microfinance.

Suggested Readings:

- Legal Regulatory Aspects of Banking, M/s Macmillan India Limited by K.D. Zacharias, C.P. Ravindranath, P.R. Kulkarni, B. Gopalakrishnan.
- Indian Financial System: Evolution and Present Structure, New Century Publications, by Bhasin, Niti.
- Banking and Financial Institution, New Century Publications, by Suri, Niti.
- Banking and Insurance, Himalya Publishing House, by Agarwal, O.P.
- H.R., Practical and Law of Banking, Himalya Publishing House by . Suneja.
- Legal Aspects of Banking Operations, Sultan Chand and Sons by Saxena, G.S.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

B.Voc. – Healthcare Management (Jesus & Mary College)

Category-I

DISCIPLINE SPECIFIC CORE COURSE – 4 Medical Terminology- 2

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Medical Terminology- 2 | 4 | 3 | 1 | 0 | Class XII Pass | NIL |

Learning Objectives

Includes structure, recognition, analysis, definition, spelling, pronunciation, and combination of medical terms from prefixes, suffixes, roots, and combining forms.

Learning outcomes

- Lectures, discussions, presentations, case discussions, exercises, practical and exposure to current practices. The pedagogy for the course is more student centric; Visit to healthcare facilities.
- Lectures would be delivered by experts drawn from the fields of both management and healthcare

SYLLABUS OF DSC-4

General Terminology (procedures, diseases, treatment) related to following body system

Unit-1 (10 hours)

Circulatory System- procedures, diseases, treatment

Unit-2 (10 hours)

Digestive System- procedures, diseases, treatment

Unit-3 (10 hours)

Respiratory system- procedures, diseases, treatment

Unit-4 (5 hours)

Urinary System- procedures, diseases, treatment

Unit-5 (10 hours)

Obstetrics & Gynecology- procedures, diseases, treatment

Practical component (if any) -

N/A

Essential/recommended readings

N/A

Suggestive readings

Reference texts and online material

Books:-Medical Terminology Systems by Barbara A.Gyls, Mary Ellen Wedding

STEDMAN'S Medical Dictionary

Note: Examination scheme and mode shall be as prescribed by the Healthcare Sector Skill Council(HSSC) from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 5: Medical Software Applications-1

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Medical Software Applications-1 | 4 | 3 | 1 | 0 | Class XII pass | NIL |

Learning Objectives

- Basic Understanding of functioning of computers & its application in Healthcare with a perspective on Hospital operations
- Create basic awareness on Healthcare record systems and infrastructure.

Learning outcomes

- Lectures, discussions, presentations, case discussions, exercises, practical and exposure to current practices. The pedagogy for the course is more student centric; Visit to healthcare facilities.
- Lectures would be delivered by experts drawn from the fields of both management and healthcare

SYLLABUS OF DSC-5

Unit-1 (10 Hours)

Introduction To HIS

- a. Concept Of HIS
- b. Role Of HIS
- c. Characteristics Of HIS
- d. Pre Requisites Of HIS

Unit-2 (05 Hours)

Need & Importance Of HIS

Unit-3(5 Hours)

Electronic Health Record (EHR) Vs Manual Records

Unit-4(10 Hours)

Computerized Patient Record System (CPRS)

Unit 5(15 Hours)

Modules used in HIS

1. Front office Module in HIS – Introduction, Process of Registration, admitting, billing, discharging of Patients, bed management system, OP & IP modules
2. Financial Management Module – Introduction to Tally
3. Management Information System
4. OT Management System
5. Lab Management and reporting System

Practical component (if any) –

N/A

Essential/recommended readings

N/A

Suggestive readings

Business Journals, case studies, Hospital system

Books:-Hospital Informations System by S.A.Kelkar

Note: Examination scheme and mode shall be as prescribed by the Healthcare Sector Skill Council(HSSC) from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 6: Planning of Hospital Functions

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--------------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Planning of Hospital Functions | 4 | 3 | 1 | 0 | Class XII pass | NIL |

Learning Objectives

After completion of the module student should be able to describe all aspects of planning and commissioning of different types of hospital including specialty hospitals and project management

Learning outcomes

Class room sessions, interactive learning, visit to hospital

SYLLABUS OF DSC-6

Unit-1(5 Hours)

Changing health care concept in planning / designing.

Unit-2 (5 Hours)

Site surveys for planning a hospital (Techno-Commercial)

Unit-3 (10 Hours)

Hospital building, architectural patterns, landscaping, Internal arrangements, sanitation, lighting, ventilation and traffic control

Unit-4 –(15 Hours)

Planning of Hospital-Planning of 30,100,250 bedded hospital(general/specialty)

- Planning of 500, 750 and above bedded hospital(teaching/super-specialty/non-teaching specialty hospitals)

Unit-5 (10 Hours)

Project cost and total budget : Feasibility and viability study of Hospital
Project conceptualization, functional requirements. Implementation

Practical component (if any) –
N/A

Essential/recommended readings
N/A

Suggestive readings

Textbooks, and on-line reference and training materials

Books:-Hospital:Facilities Planning & Management by G.D.Kunders

Principles of Hospital Administration and Planning by B.M.Sakharkar

Note: Examination scheme and mode shall be as prescribed by the Healthcare Sector Skill Council(HSSC) from time to time.

GENERIC ELECTIVES (GE-2)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction to Human Resource Management | 4 | 3 | 1 | 0 | Class pass XII | NIL |

Learning Objectives

The objective of the course is to acquaint students with the techniques and principles to manage human resource of an organization.

Learning outcomes

1. Lectures, discussions, presentations, case discussions, exercises, practical and exposure to current practices. The pedagogy for the course is more students centric.
2. Apply and evaluate a learning process starting with training needs, analysis, assessment and evaluation process.
3. Explore the role of training needs of employees.
4. Evaluate the training methods used in industry.

SYLLABUS OF GE-2 (Lecture-45 Hours)

Unit 1

Introduction

Human Resource Management: Concept and Functions, Role, Status and competencies of HR Manager, HR Policies, Evolution of HRM, HRM vs HRD. Emerging Challenges of Human Resource Management like Workforce diversity, Downsizing, Work life balance

Unit 2

Acquisition of Human Resource

Human Resource Planning- Quantitative and Qualitative dimensions; job analysis — job description and job specification; Recruitment - Concept and sources; Selection — Concept and process; test and interview; placement and induction

Unit 3

Performance Appraisal

Nature, objectives and importance; Modern techniques of performance appraisal; potential appraisal and employee counseling; job changes - transfers and promotions; Compensation: concept and policies; job evaluation; methods of wage payments and incentive plans; fringe benefits; performance linked compensation.

Unit 4

Maintenance

Employee health and safety; employee welfare; social security; Employer-Employee relations- an overview; grievance-handling and redressal; Industrial Disputes: causes and settlement machinery

Practical component (if any) -

N/A

Essential/recommended readings

N/A

Suggestive readings

1. Gary Dessler. A Framework for Human Resource Management. Pearson Education.
2. DeCenzo, D.A. and S.P. Robbins, Personnel/Human Resource Management, Pearson Education.
3. Bohlander and Snell, Principles of Human Resource Management, Cengage Learning
4. Ivancevich, John M. Human Resource Management. McGraw Hill.
5. Wreather and Davis. Human Resource Management. Pearson Education.
6. Robert L. Mathis and John H. Jackson. Human Resource Management. Cengage Learning.
7. TN Chhabra, Human Resource Management, Dhanpat Rai & Co., Delhi
8. Biswajeet Pattanayak, Human Resource Management, PHI Learning

GENERIC ELECTIVES (GE-2)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Communication Management | 4 | 3 | 1 | 0 | Class XII pass | NIL |

Learning Objectives

The course aims to train students to enhance written as well as oral communication in management. This course will help students in understanding the principles and techniques of communication

Learning outcomes

1. Analyze the need of communication in management.
2. Interpret the need for effective listening.
3. Understand the basics of written and spoken communication.
4. Demonstrate the role of group discussion and interviews.
5. Summarize business reports and proposals.

SYLLABUS OF GE-2 – (Lecture-45 Hours)

Unit 1

Meaning and Objectives of Communication. Process of Communication. Forms of communication: formal and informal; upward, downward, diagonal and lateral. Role of a Manager. Barriers to effective Communication and Overcoming them. Effectiveness in Managerial Communication. Make use of grapevine. Role of verbal and non-verbal communication; interpreting non-verbal communication.

Unit 2

Meaning and objectives of Listening. Features of a good listener. Analyzing poor listening. Effective listening skills and barriers to effective listening.

Unit 3

Nature, forms and classification of Groups. Role of managers in Group Discussions. Effective Group Decision Making. Group Conflict.

Unit 4

Planning and conducting meetings. Meeting Process. Ways to Effectively lead a meeting. Evaluating meeting and drafting minutes of a meeting. E-mail, Business Reports and Proposals: E-mail Etiquettes, smartness and presentation. Business Reports and proposals: Writing and purpose.

Practical component (if any) -

N/A

Essential/recommended readings

N/A

Suggestive readings

1. Bell, Reginald & Martin, Jeanette (2014). Managerial Communication. Business Expert Press.
2. Lesikar, R.V. & Flatley, M.E. (2001). Basic Business Communication Skills for Empowering the Internet Generation, Tata McGraw Hill Publishing Company Ltd. New Delhi.
3. Ludlow, R. & Panton, F.(1992). The Essence of Effective Communications, Prentice Hall of India Pvt. Ltd., New Delhi.
4. Owen Hargie, David Dickson, Dennis Tourish (1999). Communication in Management. Gower Publishing, Ltd.
5. R. C. Bhatia (2008), Business Communication, Ane Books Pvt Ltd, New Delhi.

**B.Voc. – Retail Management & IT,
Jesus & Mary College**

Category-I

DISCIPLINE SPECIFIC CORE COURSE – 4 Store Display and Visual Merchandising

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria/ | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|-----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Store Display and Visual Merchandising | 4 | 3 | 1 | 0 | Class XII Pass | NIL |

Learning Objectives

Create basic knowledge of store display and visual merchandising and its various aspects.

Learning outcomes

- An in-depth understanding of store design and display
- Understanding of store image, security and managing communication
- Proficiency in managing visual merchandising
- An introduction to different aspects of visual merchandising
- Knowledge about the growth and future of visual merchandising

SYLLABUS OF DSC-4 (Lecture-45 Hours)

Unit 1

Store Design and Display: Introduction, Objectives, Concept of Store Design and Display, Objectives of store design, Purpose and importance of display, Components of display, Some Useful Display Fixtures, Shelves, Gondolas, Round racks, Four ways, Saccades and fixation, Replenishes, Plano gramming.

Unit 2

Managing Communication for a Retail Store Offering: Introduction, Objectives, Marketing Communication, Thematic Communication, Methods of Communication, Graphics, Signage, The Loop for Guiding the Shoppers through a Store, Organize the display of products at the store.

Unit 3

Introduction to Visual Merchandising (VM): Introduction, Objectives, Concept of Visual Merchandising, Objectives of Visual Merchandising, Growth of Visual Merchandising, Visual Merchandising in India, Scope of visual merchandising in India, Visual Merchandising as a Support for Positioning Strategy, Prospects of Visual Merchandising, Challenges in Visual Merchandising, Plan visual merchandising.

Unit 4

The Merchandise Mix: Introduction, Objectives, Concept of Merchandise Mix, Merchandise line, The Assortment of Products, Assortment strategy, Merchandise Mix of Show Off, Role of a merchandiser, Other Atmospherics in Merchandising, Colour scheme, Lighting.

Practical component (if any) -

N/A

Essential/recommended readings

N/A

Suggestive readings

- David Gilbert. (2003) Retail Marketing Management, Dorling Kindersley (India) Pvt. Ltd. New Delhi.
- Fleming P (2003) “Guide to Retail Management” Jaico publications.
- Newman, Andrew J. and Peter Cullen (2007) Retailing Environment and Operations, Thomson Learning, India.
- Neelesh Jain (2008) Retail Management, Global India Publications Pvt. Ltd. New Delhi.
- R.Sudarshan (2007) Retail Management, New Century Publications, New Delhi 2007.
- Swapan Pradhan (2007) Retailing Management- text and cases, Tata Mc Graw Hill, 2012

Note: Examination scheme and mode shall be as prescribed by the Retailer’s Association Skill Council of India, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 5 Sales Management

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|---------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Sales Management | 4 | 3 | 1 | 0 | Class XII pass | NIL |

Learning Objectives

The course aims at providing in-depth understanding of sales management in retail stores.

Learning outcomes

- Introduction to sales management and personnel selling
- Understanding of the compensation and supervision of salesmen besides setting sales territories and targets
- Proficiency in evaluation of sales performance and sales cost analysis
- Understanding of sales personnel training

SYLLABUS OF DSC-5 (Lectures- 45 Hours)

Unit 1

Sales Management; Objectives and Functions; Setting and Formulating Personal Selling Objectives, Personal selling - nature, scope & objectives, Formulating Personal selling strategy.

Unit 2

Designing and Administering Compensation Plans; Supervision of Salesmen; Standards and Performance; Motivating Sales Personnel; Sales Meetings and Sales contests.

Unit 3

Planning the Sales Effort - Sales planning and Budgeting, Estimating Market Potential and Sales forecasting, Setting the sales territory & quotas, Sales and cost Analysis.

Unit 4

Developing and conducting Sales Training Programmes. Sales organization, Sales function & policies, Retail markets - Competition and Best Practices.

Practical component (if any) –

N/A

Essential/recommended readings

N/A

Suggestive readings

- Still, R. R., Cundiff, E. W. & Govoni, N. A. P(1998) Sales Management: Decision Strategies and Cases, Dorling Kindersley.
- Gupta, S.L (2005) Sales and Distribution Management: Text and Cases – An Indian Perspective, Excel Books.
- Havaladar, K. K. & Cavale, V. M. (2007) Sales and Distribution Management: Text & Cases, Tata McGraw-Hill.

Note: Examination scheme and mode shall be as prescribed by the Retailer's Association Skill Council of India, from time to time.

DISCIPLINE SPECIFIC CORE COURSE – 6: Profitability Management in Retail Store**CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|--|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Profitability Management in Retail Store | 4 | 3 | 1 | 0 | Class XII pass | NIL |

Learning Objectives

The course will enhance the understanding the profitability management in retail stores and its various aspects.

Learning outcomes

- Lectures, discussions, presentations, case discussions, exercises, practical and exposure to current practices. The pedagogy for the course is more students centric.
- Class room sessions, interactive learning, Role plays
- Introduction to inventory management.
- Understanding of merchandise management.

SYLLABUS OF DSC-6 (Lecture-45 Hours)

Unit 1

Inventory management, Managing inventory turnover , Controlling cost and inventory shrinkage, labour scheduling, store maintenance, calculation of shrinkage, preventing shop lifting, reducing employee theft.

Unit 2

Merchandise Management Process and types of Merchandise, Evaluating merchandise management performance (GMROI), Plan visual merchandise

Unit 3

Develop Sales Strategy and Campaigns, Monitor and manage store performance, Technology in Retail, Manpower planning and training

Unit 4

Point of purchase communication- Significance of POP communication, POP display materials - leaflets, special fittings, Demonstrators, Managing sales and service delivery to increase store profitability, Manage a budget.

Practical component (if any) –

N/A

Essential/recommended readings

N/A

Suggestive readings

- Vedmani G Gibson - Retail Management - Functional Principles and Practice (Jaico Publication).
- SwapnaPradhan - Retailing Management- Tata McGraw Hill.
- Mrs.Suja R Nair - Retailing Management - Himalaya Publication House.
- Angadi, Ansuya - A Text Book of Retailing Management, S. Chand Group.
- Chetan Bajaj, RajnishTuli and Nidhi V Srivastava - Retail Management, Oxford University Press

Note: Examination scheme and mode shall be as prescribed by the Retailer's Association Skill Council of India, from time to time.

GENERIC ELECTIVES (GE-2)**Credit distribution, Eligibility and Pre-requisites of the Course**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction to Human Resource Management | 4 | 3 | 1 | 0 | Class pass XII | NIL |

Learning Objectives

The objective of the course is to acquaint students with the techniques and principles to manage human resource of an organization.

Learning outcomes

1. Lectures, discussions, presentations, case discussions, exercises, practical and exposure to current practices. The pedagogy for the course is more students centric.
2. Apply and evaluate a learning process starting with training needs, analysis, assessment and evaluation process.
3. Explore the role of training needs of employees.
4. Evaluate the training methods used in industry.

SYLLABUS OF GE-2 (Lecture -45 Hours)**Unit 1****Introduction**

Human Resource Management: Concept and Functions, Role, Status and competencies of HR Manager, HR Policies, Evolution of HRM, HRM vs HRD. Emerging Challenges of Human Resource Management like Workforce diversity, Downsizing, Work life balance

Unit 2**Acquisition of Human Resource**

Human Resource Planning- Quantitative and Qualitative dimensions; job analysis — job description and job specification; Recruitment - Concept and sources; Selection — Concept and process; test and interview; placement and induction

Unit 3**Performance Appraisal**

Nature, objectives and importance; Modern techniques of performance appraisal; potential appraisal and employee counseling; job changes - transfers and promotions; Compensation: concept and

policies; job evaluation; methods of wage payments and incentive plans; fringe benefits; performance linked compensation.

Unit 4

Maintenance

Employee health and safety; employee welfare; social security; Employer-Employee relations- an overview; grievance-handling and redressal; Industrial Disputes: causes and settlement machinery

Practical component (if any) -

N/A

Essential/recommended readings

Suggestive readings

1. Gary Dessler. A Framework for Human Resource Management. Pearson Education.
2. DeCenzo, D.A. and S.P. Robbins, Personnel/Human Resource Management, Pearson Education.
3. Bohlander and Snell, Principles of Human Resource Management, Cengage Learning
4. Ivancevich, John M. Human Resource Management. McGraw Hill.
5. Wreather and Davis. Human Resource Management. Pearson Education.
6. Robert L. Mathis and John H. Jackson. Human Resource Management. Cengage Learning.
7. TN Chhabra, Human Resource Management, Dhanpat Rai & Co., Delhi
8. Biswajeet Pattanayak, Human Resource Management, PHI Learning

GENERIC ELECTIVES (GE-2)

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|--------------------------|---------|-----------------------------------|----------|---------------------|----------------------|-----------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Communication Management | 4 | 3 | 1 | 0 | Class XII pass | NA |

Learning Objectives

The course aims to train students to enhance written as well as oral communication in management. This course will help students in understanding the principles and techniques of communication

Learning outcomes

6. Lectures, discussions, presentations, case discussions, exercises, practical and exposure to current practices. The pedagogy for the course is more students centric.

7. Analyze the need of communication in management.
8. Interpret the need for effective listening.
9. Understand the basics of written and spoken communication.
10. Demonstrate the role of group discussion and interviews.
11. Summarize business reports and proposals.

SYLLABUS OF GE-2 (Lecture – 45 Hours)

Unit 1

Meaning and Objectives of Communication. Process of Communication. Forms of communication: formal and informal; upward, downward, diagonal and lateral. Role of a Manager. Barriers to effective Communication and Overcoming them. Effectiveness in Managerial Communication. Make use of grapevine. Role of verbal and non-verbal communication; interpreting non-verbal communication.

Unit 2

Meaning and objectives of Listening. Features of a good listener. Analyzing poor listening. Effective listening skills and barriers to effective listening.

Unit 3

Nature, forms and classification of Groups. Role of managers in Group Discussions. Effective Group Decision Making. Group Conflict.

Unit 4

Planning and conducting meetings. Meeting Process. Ways to Effectively lead a meeting. Evaluating meeting and drafting minutes of a meeting. E-mail, Business Reports and Proposals: E-mail Etiquettes, smartness and presentation. Business Reports and proposals: Writing and purpose.

Practical component (if any) - N/A

Essential/recommended readings

N/A

Suggestive readings

1. Bell, Reginald & Martin, Jeanette (2014). Managerial Communication. Business Expert Press.
2. Lesikar, R.V. & Flatley, M.E. (2001). Basic Business Communication Skills for Empowering the Internet Generation, Tata McGraw Hill Publishing Company Ltd. New Delhi.
3. Ludlow, R. & Panton, F.(1992). The Essence of Effective Communications, Prentice Hall of India Pvt. Ltd., New Delhi.
4. Owen Hargie, David Dickson, Dennis Tourish (1999). Communication in Management. Gower Publishing, Ltd.
5. R. C. Bhatia (2008), Business Communication, Ane Books Pvt Ltd, New Delhi.

B.Voc. - Web Designing (KALINDI COLLEGE)

Category-I

DISCIPLINE SPECIFIC CORE COURSE – 4 Programming with Python

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|-------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Programming with Python | 4 | 3 | 0 | 1 | Class XII Pass | NIL |

Learning Objectives

The course is designed to introduce programming concepts using Python to students. The course aims to develop structured as well as object-oriented programming skills using Python. The course also aims to achieve competence amongst its students to develop correct and efficient Python programs to solve problems in their respective domains.

Learning Outcomes

On successful completion of the course, students will be able to:

1. Write simple programs using built-in data structures in Python.
2. Implement arrays and user defined functions in Python.
3. Solve problems in the respective domain using suitable programming constructs in Python.
4. Solve problems in the respective domain using the concepts of object oriented programming in Python.

SYLLABUS OF DSC-04

Unit 1 Introduction to Programming: (6 Hours)

Problem solving strategies; Structure of a Python program; Syntax and semantics; Executing simple programs in Python.

Unit 2 Creating Python Programs: (12 Hours)

Identifiers and keywords; Literals, numbers, and strings; Operators; Expressions; Input/output statements; Defining functions; Control structures (conditional statements, loop control statements, break, continue and pass, exit function), default arguments.

Unit 3 Built-in data structures: (15 Hours)

Mutable and immutable objects; Strings, built-in functions for string, string traversal, string operators and operations; Lists creation, traversal, slicing and splitting operations, passing list to a function; Tuples, sets, dictionaries and their operations.

Unit 4 Object Oriented Programming: (6 Hours)

Introduction to classes, objects and methods; Standard libraries.

Unit 5 File and exception handling: (6 Hours)

File handling through libraries; Errors and exception handling.

Practical Component – 30 Hours

The practical assignment must include installation of software like Anaconda, Jupyter and Spyder notebook and list of python programs for implementation.

Essential readings

1. Taneja, S., Kumar, N., Python Programming- A modular Approach, Pearson Education India, 2018.
2. Balaguruswamy E., Introduction to Computing and Problem-Solving using Python, 2nd edition, McGraw Hill Education, 2018.

Suggested readings

1. Brown, Martin C., Python: The Complete Reference, 2 nd edition, McGraw Hill Education, 2018.
2. Guttag, J.V. Introduction to computation and programming using Python, 2 nd edition, MIT Press, 2016

DISCIPLINE SPECIFIC CORE COURSE – 5 Introduction to Web Programming

| Course title& Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre- requisiteof the course (if any) |
|--|----------|--------------------------------------|----------|------------------------|-------------------------------|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Introduction to Web Programming | 4 | 3 | 0 | 1 | Class XII Pass | NIL |

Learning Objectives

The course aims at introducing the basic concepts and techniques of client-side web programming. The student shall be able to develop simple websites using HTML, CSS and JavaScript.

Learning Outcomes

On successful completion of this course, the student will be able to:

1. Build websites using the elements of HTML.
2. Build dynamic websites using the client-side programming techniques with CSS, JavaScript and jQuery.
3. Learn to validate client-side data.

SYLLABUS OF DSC-05

Unit 1 Introduction: (6 Hours)

Introduction to internet and web design. Basic concepts of web architecture.

Unit 2 HTML: (12 Hours)

Introduction to hypertext mark-up language (html), creating web pages, lists, hyperlinks, tables, web forms, inserting images, frames.

Unit 3 Cascading style sheet (CSS): (12 Hours)

Concept of CSS, creating style sheet, importing style sheets, CSS properties, CSS styling (background, text format, controlling fonts), CSS rules, Style Types, CSS Selectors, CSS cascade, working with block

elements and objects, working with lists and tables, CSS id and class, box model (introduction, border properties, padding properties, margin properties)

Unit 4 JavaScript: (9 Hours)

Document object model, data types and variables, functions, methods and events, controlling program flow, JavaScript object model, built-in objects and operators, validations.

Unit 5 jQuery and JSON: (6 Hours)

Introduction to jQuery, syntax, selectors, events. JSON file format for storing and transporting data.

Practical component-30 Hours

The practical assignments must include exercises on creating static and dynamic websites using HTML, CSS and JavaScript on platforms like Notepad/Notepad++/Visual Studio.

Essential Readings

1. Nixon, R. (2018). Learning PHP, MySQL & JavaScript with jQuery, CSS and HTML5, O'Reilly.
2. Powell, T.A. (2010).HTML & CSS: The Complete Reference. 5th edition. Tata McGrawHill.
3. Duckett, J.(2014). JavaScript and JQuery: Interactive Front-End Web Development. Wiley

Suggested Readings

1. Minnick, J. (2015). Web Design with HTML5 and CSS3. 8th edition. Cengage Learning. DRAFT
2. Boehm, A., & Ruvalcaba, Z. (2018). Munarch's HTML5 and CCS(4th Edition). Mike Murach & Associates.
3. J. A. Ramalho (2007), Learn Advanced HTML 4.0 with DHTML, BPB Publications
4. Ivan Bayross (2009), Web Enabled Commercial Application Development Using Html, Dhtml, Javascript, Perl CGI , BPB Publications.

DISCIPLINE SPECIFIC CORE COURSE – 6**Fundamentals of Statistics**

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre- requisite of the course (if any) |
|-------------------------------|---------|--------------------------------------|----------|------------------------|-------------------------|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Fundamentals of Statistics | 4 | 3 | 0 | 1 | Class XII Pass | NIL |

Learning Objectives

The objective of this course is to introduce the basic knowledge of data analysis using basic statistical tools.

Learning Outcomes

On successful completion of the course, students will be able to:

1. Analyze simple primary data numerically and graphically.
2. Gain the knowledge about probability theory and apply discrete and continuous probability distribution in real life situations.

SYLLABUS OF DSC-06**Unit 1: Data Visualization and Measures of Central Tendency: (12 Hours)**

Diagrammatic presentation of data- bar graph, pie chart, histogram, frequency polygon, Ogive, scatter plot for bivariate data. Measures of central tendency (including graphical determination). Partition values (quartiles, deciles, and percentiles).

Unit 2: Measure of Variation: (9 Hours)

Absolute and relative. Range, quartile deviation, mean deviation, standard deviation, and variance. Moments, kurtosis and skewness.

Unit 3: Probability theory: (9 Hours)

Introduction of probability theory, types of events, concept of conditional probability, Bayes Theorem.

Unit 4: Probability Distribution: (15 Hours)

Introduction to random variable, concept of discrete and continuous Probability Distribution Function (PDF). Discrete PDF- binomial, poisson. Continuous PDF- uniform, exponential, normal.

Practical Component: 30 Hours

The practical assignments must include exercises on implementing the statistical concepts covered in theory using Spreadsheet – open source software.

Essential Readings:

1. S.P Gupta, Statistical Methods, 46th Edition, Sultan Chand & Sons, 2021.
2. J E Freund, Mathematical Statistics with Applications, 8th edition, Pearson Education, 2014.

Suggested Readings:

1. S C Gupta and V K Kapoor, Fundamental of Mathematical statistics, latest edition, Sultan Chand & Sons.
2. J. K. Sharma, Business Statistics, latest edition, Pearson Education.
3. Richard Levin and David S. Rubin, Statistics for Management, latest edition, Prentice Hall of India.

GENERIC ELECTIVES (GE-2)

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course (if any) |
|----------------------------|---------|-----------------------------------|----------|---------------------|----------------------|--------------------------------------|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Database Management System | 4 | 3 | 0 | 1 | Class XII Pass | NIL |

Learning Objectives

The course will give an overview of categories of data models used by database management systems and writing queries in relational algebra. The importance of file indexing and controlled execution of transactions will be taught. The course would give students hands-on practice to write complex queries, nested queries using aggregate functions in SQL and to use basic database administration commands.

Learning Outcomes

On successful completion of this course, a student will be able to:

1. Write queries using relational algebra, a procedural language.
2. Use the concept of functional dependencies to remove data anomalies and arrive at normalized database design.
3. Understand the data storage system, file organization and need of file indexing.
4. Learn the importance of transaction processing and concurrency control.
5. Write complex and nested SQL queries, and learn basic database administration commands.
6. Acquire information about emerging technologies.

SYLLABUS OF GE-2

Unit 1 Data models and Relational Algebra: (9 Hours)

Categories of data models, types of database users, Relational Algebra Operations from SET Theory, SELECT, PROJECT, JOIN, DIVISION Operations.

Unit 2 Normalization: (6 Hours)

Functional dependencies, minimal cover, normalizing database with multiple keys till 3NF, Boyce-Codd Normal Form DRAFT

Unit 3 Database Storage and index Structures: (6 Hours)

Storage of data, file structure, file organization and its types: Sequential, Heap and Indexed, Hash file, need for file Indexing, single- and multi-level indexing.

Unit 4 Transaction Processing: (6 Hours)

Concurrent execution of transactions and their handling, ACID properties, need of data recovery and log files.

Unit 5 Advanced SQL: (9 Hours)

Nested and complex queries using Inner JOIN, Left JOIN, Right JOIN, Full JOIN, views, Database Administration Commands: COMMIT, ROLLBACK, drop database, control permissions etc.

Unit 6 Emerging Technology: (9 Hours)

Distributed Database concepts, Introduction to emerging technologies like Data Warehousing and OLAP, Data Mining

Practical component – 30 Hours

The practical assignments must include exercises on implementing the simple SQL concepts covered in theory using MySQL - open source software.

Essential readings

1. Elmasri R. and Navathe B. S. Fundamentals of Database Systems, 7 th Edition, Pearson Education, 2016.
2. Murach J. Murach's MySQL, 3rd Edition, Pearson, 2019.

Suggested Readings:

1. Silberschatz, A., Korth, H.F., & Sudarshan, S. Database System Concepts, 8 th Edition, McGraw Hill, 2019.
2. Ramakrishnan, R. & Gehrke, J. Database Management Systems, 3rd Edition, Tata McGraw Hill Education, 2014.