UNIVERSITY OF DELHI

STRUCTURE, COURSES & SYLLABI OF SKILL ENHANCEMENT COURSES

(<u>SEMESTER – 1)</u>

based on Undergraduate Curriculum Framework 2022 (UGCF) (Effective from Academic Year 2022-23)



University of Delhi

(GENERAL POOL OF COURSES OFFERED TO STUDENTS OF ALL UNDERGRADUATE PROGRAMMES)

Course Title	Nature	Total	Components			Contents of the
	of the	Credits	Lecture	Tutorial	Practical	course and
	Course					reference is in
Communication	SEC-1.	2	2	0	0	
in Everyday Life						Annexure-I (Page No. 2-4)
Communication in Professional Life	SEC-2.	2	2	0	0	Annexure-I (Page No. 5-7)
Creative Writing	SEC-3.	2	2	0	0	Annexure-I (Page No. 8-10)
Public Speaking in English Language and Leadership	SEC-4.	2	2	0	0	Annexure-I (Page No. 11-13)
PERSONALITY DEVELOPMEN T AND COMMUNICATI ON	SEC-5.	2	1	0	1	Annexure-I (Page No. 14-15)
Business Communication	SEC-6.	2	1	0	1	Annexure-I (Page No. 16-18)
Political Leadership and Communication	SEC-7.	2	1	0	1	Annexure-I (Page No. 19-21)
Cyber Sphere and Securty: Global Concerns	SEC-8.	2	1	0	1	Annexure-I (Page No. 22-24)

Basic IT Basic	SEC-9.	2	0	0	2	Annexure-I
IT Tools Tools	050.40			<u> </u>		(Page No. 25-27)
ADVANCED SPREADSHEE	SEC-10.	2	0	0	2	Annexure-I (Page No. 28-31)
TS TOOLS						(
FINANCIAL	SEC-11.	2	0	0	2	Annexure-I
DATABA:			_	_		(Page No. 32-34)
STATISTICAL						,
SOFTWARE						
PACKAGE SE						
AND ANALYSIS						
SOFTWARE						
Statistics with	SEC-12.	2	0	0	2	Annexure-I
'R'						(Page No. 35-37)
STATISTICAL	SEC-13.	2	0	0	2	Annexure-I
SOFTWARE						(Page No.38-39)
PACKAGE	050.44	0	0		0	A
Essentials of	SEC-14.	2	0	0	2	Annexure-i
Python		2	0	0	2	(Page No. 40-42)
	SEC-15.	2	0	0	2	(Page No. 43-45)
	SEC-16	2	0	0	2	(Fage No. 45-45)
	SLC-10.	2	0	0	2	(Page No 46-47)
WITH PYTHON						(1 uge 110: +0 +1)
Business	SFC-17	2	0	0	2	Annexure-I
Intelligence and	0_0	-	0	U	-	(Page No. 48-50)
Data						(1.4.90 1101 10 00)
Visualisation						
Digital	SEC-18.	2	0	0	2	Annexure-I
Marketing						(Page No. 51-53)
Big Data	SEC-19.	2	0	0	2	Annexure-I
Analytics						(Page No. 54-56)
Back-End Web	SEC-20.	2	0	0	2	Annexure-I
Development		-				(Page No. 57-58)
Front End Web	SEC-21.	2	0	0	2	Annexure-I
Design and						(Page No. 59-61)
Development		0	0	0	0	A 10 10 0 1 1
APP Dovelopment	SEC-22.	2	0	0	2	Annexure-i (Paga No. 62 62)
						(Page NO. 02-03)
Introduction to	SEC-23	2	0	0	2	Anneyure-I
Cloud	SLC-23.	2	0	0	2	(Page No. 64-65)
Computing						(1 age 110: 04 00)
(AWS)						
Introduction to	SEC-24.	2	0	0	2	Annexure-I
Blockchain		_		•	_	(Page No. 66-67)
VISUAL	SEC-25.	2	0	0	2	Annexure-I
COMMUNICATI						(Page No. 68-70)
ON AND						,
PHOTOGRAPH						
Y						
: CAD FOR	SEC-26.	2	0	0	2	Annexure-I
FASHION						(Page No. 71-73)



SKILL ENHANCEMENT COURSES

(GENERAL POOL OF COURSES OFFERED TO STUDENTS OF ALL UNDERGRADUATE PROGRAMMES)

Introduction

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. (PLEASE SEE and ADD)

A student who pursues any undergraduate programme in the University and its Colleges is offered a pool of Skill Enhancement Courses, from which she has to choose one to study in the first Semester. A generic structure of the first Semester of an undergraduate programme is provided below for reference:

Semester	Core	Elective	Generic	Ability	Skill	Internship/	Value	Total
	(DSC)	(DSE)	Elective	Enhance-	Enhance-	Apprentice-	addition	Credits
	4 credits	4 credits	(GE)	ment	ment	ship/Project/	course	
			4 credits	Course	Course	Community	(VAC)	
				(AEC) - 2	(SEC) –	outreach	2 credits	
				credits	2 credits	2 credits		
Ι	DSC - 1				Choose one			
	DSC - 2	NIL	GE-1	AEC -I	from a	NIL	VAC-I	22 credits
	DSC - 3				pool of			
					SEC			
					courses			

STRUCTURE OF FIRST SEMESTER

SEC – 1: Communication in Everyday Life

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course	Credits	Credit di	stribution	of the course	Eligibility	Pre-requisite
title &		Lecture	Tutorial	Practical/	criteria	of the course
Code				Practice		(if any)
	2	2				
						•

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 communication skills of students.

SYLLABUS OF SEC-1

THEORY	(8 hrs.)
UNIT 1 Theory of Communication • Meaning, Features, Uses, Cycle, Feedback, Advantages	(4 hrs.)
 Barriers 7 C's of Communication 	
UNIT 2 Reading Skills • Close Reading • Skimming • Scanning	(1 hr.)
 UNIT 3 Writing Skills Summarising Paraphrasing Note-making Essays- Expository Essay, Descriptive Essay, Narrative Essay Letter Writing- Formal Letter, Informal Letter 	(4 hrs.)

PRACTICE SESSIONS

Speaking Skills

- Oral Presentation- Audio-Visual aids, Audience & Feedback, Delivery of Presentation, Handling Questions (3 hrs.)
- Group Discussion- Culture & History, Current Affairs, Society-related (3 hrs.)

(24 hrs.)

(12 hrs.)

(5 hrs.)

(7 hrs.)

- Public Speaking- Public Speech, Extempore (3 hrs.)
- Interview- Personal, Conversational, Public (3 hrs.)

Listening Skills

- Netiquettes (1 hr.)
- Audio-book Listening & Discussions (3 hrs.)
- Note-taking (1 hr.)

Writing Skills

- Reports- Incidence, Newspaper, Organisational Report (3 hrs.)
- Analysis & Interpretation- Textual (2 hrs.)
- Intra & Inter-personal Skills Monologue, Dialogue (2 hrs.)

Total Hours for Theory= 8 Total Hours for Practice Sessions= 24 Total Hours of classes= 32

Suggested Readings

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

SEC –2: Communication in Professional Life

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course	Credits	Credit di	stribution	of the course	Eligibility	Pre-requisite
title &		Lecture	Tutorial	Practical/	criteria	of the course
Code				Practice		(if any)
	2	2				
						•

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 focussed 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 OF SEC-2

THEORY

UNIT 1

- Theory of Business Communication (1 hr.) -
- Introduction
- What is Business Communication?
- Language of Business Communication
- Cultural Components Cross-Cultural Communication, Cultural Shock, Stereotyping, Ethnocentrism
- Miscommunication & Effective Communication (1hr.)

UNIT 2

Writing Skills

- Summarising & Paraphrasing (1 hr.)
- Job-Oriented Skills- CV, Resume & Bio- Data, Job Application Letter (1hr.)
- Documentation (1)
- Advertisements & Invitation (1 hr.)
- Letter Writing- Applications, Business Letters (1 hr.)
- Report- Analytical Report, Project Report (1 hr.)

PRACTICE SESSIONS

Speaking Skills (14 hrs.)

- Presentation Skills- Oral Presentation, Ppt. Preparation, Ppt. Presentation (3 hrs.)
- Group Discussion (3 hrs.)
- Talks- Domain-specific, Ted-Talks, Business Meets, Motivational Talks (2 hrs.)
- Telephonic Skills (1 hr.)
- Persuasion Skills (1 hr.)
- Meeting & Negotiation (1 hr.)
- Interview- Promotion Interview, Job Interview, Business Interview (2 hrs.)
- Functions and activities of PR (1 hr.)

Listening Skills (5 hrs.)

- Netiquettes (1 hr.)
- Audio-book Listening & Discussions (3 hrs.)
- Note-taking (1 hr.)

Writing Skills (5 hrs.)

- Digital Communication in Social Space- Social Media Posts (Twitter, Facebook), Blog Writing, Review Writing (2 hrs.)
- Advertisement/Invitation/Poster Designing- Canva/MS Word/Coral (1 hr.)
- Memo, Office Order, Minutes (1 hr.)
- Making Online Academic/Work Profile- LinkedIn (1 hr.)

(24 hrs.)

(8 hrs.)

(2 hrs.)

(6 hrs.)

Total Hours for Theory= 8 Total Hours for Practice Sessions= 24 Total Hours of classes= 32

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.

SEC – 3: Creative Writing

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course	Credits	Credit di	stribution	of the course	Eligibility	Pre-requisite
title &		Lecture	Tutorial	Practical/	criteria	of the course
Code				Practice		(if any)
	2	2				
						•

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 observatory 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 OF SEC-3

THEORY

Credit: 1.

UNIT 1

- Introduction to Creative Writing- Meaning, Importance, Imagination & Writing (1 hr.)
- Craft of Writing- Figure of Speech, Word Play, Character Creation (1 hr.)

UNIT 2

- Close Reading (0.5 hr.)
- Analysis and Interpretation (0.5 hr.)
- Proofreading & Editing (1 hr.)

UNIT 3

- Steps of Creative Writing- Pre-Writing, Writing, Post-Writing/Final Draft (1 hr.)
- Types of Creative Writing- Poetry, Fiction, Non-Fiction (Life Narratives), Drama (2 hrs.)
- Creative Writing & Media- Film Review, Book Review, Other Writings in Media, Submission, Publication (1 hr.)

PRACTICE SESSIONS

- Imagination & Writing- Peer-interaction, Activities on Imagination (1 hr.)
- Tropes, Motifs and Figures- Learning tropes, motifs and figures through videos, Discussion on the findings (2 hrs.)
- 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.) (3 hrs.)
- Reading, Analysis and Interpretation- Reading different works in Literature, Discussion in small groups, Practice Writing Session (2 hrs.)
- Proofreading & Editing- Practice sessions on Proofreading & Editing of different types of writing (2 hrs.)
- Learning to write Poetry- Reading & understanding Poetry; Practising tone, rhyme, metre, verses; Writing sessions (3 hrs.)
- Learning to write Fiction- Reading & understanding Fiction; Practicing different elements of fiction (Short story, Novella, Novel); Writing sessions (3 hrs.)
- Learning to write Non-Fiction- Reading & understanding Non-Fiction (Biographies & Autobiographies); Practicing different elements of non-fiction; Writing sessions (3 hrs.)
- Learning to write Drama- Reading & understanding Drama; Practicing different elements (plot, character, climax, verbal & non-verbal cues) of Drama; Writing sessions (3 hrs.)

(24 hrs.)

(2 hrs.)

(2 hrs.)

(4 hrs.)

• Submission & Publication (in Print & Digital) - Discussions over how & where to submit and publish (online/offline), Hands-on activities (2 hrs.)

Total Hours for Theory= 8 Total Hours for Practice Sessions= 24 Total Hours of classes= 32

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.

SEC – 4: Public Speaking in English Language and Leadership

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course	Credits	Credit di	stribution	of the course	Eligibility	Pre-requisite
title &		Lecture	Tutorial	Practical/	criteria	of the course
Code				Practice		(if any)
	2	2				
						•

Learning Objectives

The Learning Objectives of this course are as follows:

- To impart leadership skills to students along with adequate communication skills to curate 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 handon 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 instil leadership development among students.
- After studying this course, students will be able to 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.

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SYLLABUS OF SEC-4

Theory

UNIT 1

- Introduction to Effective Communication- Features, Advantages & Disadvantages
- Importance of Listening
- Oral communication- Meaning, Features & Importance

UNIT 2

- Public Speaking- (2 hrs.)
 - 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- (1 hr.)
 - Physical & Online
 - Political, Organisational, Educational & Motivational
 - Ted Talks, Public Speaking in Media

UNIT 3

- 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

UNIT 4

- Importance of Public Speaking in developing Leadership Skills
- Ethics in Public Speaking & Leadership

PRACTICE SESSIONS

- Reading Public Speech- Reading documented speeches delivered in the past; Understanding the art of word play, vocabulary and putting thoughts into words (4 hrs.)
- Listening in groups and Discussion- Listening famous speeches (from history & everyday life); Analysis of its elements & classroom discussion (4 hrs.)
- Writing Public speech- Classroom Practice Sessions (4 hrs.)
- Execution & Delivery of Public Speech- Learning rhetorics through speeches in the form of Audio/ Video; Learning Body Language & Paralanguage through ICT (4 hrs.)

(4 hrs.)

(1 hr.)

(24 hrs.)

(1 hr.)

(3 hrs.)

(8 hrs.)

- Developing leadership competence through Public Speaking- Intra-class Speech Competitions; Extempore; Group Discussion (4 hrs.)
- Mock Parliament/MUNs (2 hrs.)
- Workshop (2 hrs.)

Total Hours for Theory= 8 Total Hours for Practice Sessions= 24 Total Hours of classes= 32

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.

SEC – 5 : PERSONALITY DEVELOPMENT AND COMMUNICATION

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course	Credits	Credit d	istribution	of the course	Eligibility	Pre-requisite
title &		Lecture Tutorial Practical/			criteria	of the course
Code				Practice		(if any)
	2	1		1		

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 OF SEC-5

Unit 1

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

Business Cases and Presentations, Letters within the Organizations, Letters from Top Management, Circulars and Memos, Business Presentations to Customers and other

(4 Weeks)

(4 Weeks)

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stakeholders, presenting a Positive Image through Verbal and Non-verbal Cues, Preparing andDelivering the Presentations, Use of Audio-visual Aids, Report Writing.

Unit 3

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 inbuilding 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.
- Corvette Budjac Conflict Management: A Practical Guide to Developing NegotiationStrategies, 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.

(4 Weeks)

SEC – 6: Business Communication

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course	Credits	Credit d	istribution	of the course	Eligibility	Pre-requisite
title &		Lecture Tutorial Practical/			criteria	of the course
Code				Practice		(if any)
	2	1		1		

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 OF SEC-6

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

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

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

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

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:

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.

(3 weeks)

(3 weeks)

(3 weeks)

(3 weeks)

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.

SEC – 7: Political Leadership and Communication

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course	Credits	Credit distribution of the course			Eligibility	Pre-requisite
title &		Lecture	Tutorial	Practical/	criteria	of the course
Code				Practice		(if any)
	2	1		1		
						•

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/careeroriented 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 OF SEC-7

Unit I: Explaining Political Communication

- Meaning, Nature and Scope
- Evolution and Transformation

Unit II: Exploring Leadership

- Themes, Theories and Typologies
- Participation and Performance

(3 weeks)

(3 weeks)

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 (4 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.

SEC – 8: Cyber Sphere and Securty: Global Concerns

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course	Credits	Credit distribution of the course			Eligibility	Pre-requisite
title &		Lecture	Tutorial	Practical/	criteria	of the course
Code				Practice		(if any)
	2	1		1		
						•

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 OF SEC-8

Unit I: Introducing Cyber 'Sphere' and 'Security'

- 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

- 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

- 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

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

Unit V: Cyber Security: Case Studies

- 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 [dcrc], 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.

(4 Weeks)

(3 Weeks)

(3 Weeks)

(3 Weeks)

(3 Weeks)

- 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.

SEC – 9 : Basic IT Tools

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course	Credits	Credit di	stribution	of the course	Eligibility	Pre-requisite
title &		Lecture	Tutorial	Practical/	criteria	of the course
Code				Practice		(if any)
	2			2		

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 OF SEC-9

Course Contents:

Unit 1: Introduction to Spreadsheets

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 $\frac{25 \text{ of } 75}{25 \text{ of } 75}$

(4 Weeks)

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

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

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.

(4 Weeks)

(3 Weeks)

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, Class tests, Projects, Field Work, Presentations, amongst others as decided by the faculty.

SEC 10 – : ADVANCED SPREADSHEETS TOOLS

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course	Credits	Credit di	istribution	of the course	Eligibility	Pre-requisite
title &		Lecture	Tutorial	Practical/	criteria	of the course
Code				Practice		(if any)
	2			2		Students should have basic knowledge of excel

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 OF SEC-10

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 addin. 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

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

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

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

(4 Weeks)

(4 Weeks)

(4 Weeks)

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.

SEC -11 : FINANCIAL DATABASE AND ANALYSIS SOFTWARE

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course	Credits	Credit distribution of the course			Eligibility	Pre-requisite
title &		Lecture	Tutorial	Practical/	criteria	of the course
Code				Practice		(if any)
	2			2		Basic
						Knowledge of
						Statistics is
						required

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 languagefor 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 ProwessIQ in financial analysis and research.

SYLLABUS OF SEC-11

Unit I (Financial Database)

An Introduction to financial database ProwessIQ from CMIE: Creating company set-, creating spreadsheets, use of elements in Ribbons – Company address and identity identicators, 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

(3 weeks)

for further analysis.

Unit II (Fundamentals of R)

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)

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: <u>https://cran.r-project.org/</u>

(4 weeks)

(4weeks)

(A wooka)

3. hhttps://rstudio.com/products/rstudio/download/ (R studio)

• <u>http://r-statistics.co</u>

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.
SEC – 12: Statistics with 'R'

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course	Credits	Credit di	istribution	of the course	Eligibility	Pre-requisite
title &		Lecture	Tutorial	Practical/	criteria	of the course
Code				Practice		(if any)
	2			2		Basic course in
						Statistics

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 comment R 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 customized graphics
- After studying this course, students will be able to perform basic statistical operations and regression.

SYLLABUS OF SEC-12

Unit 1: Data Extraction and Spread Sheet Exploration

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 DropFunction.
- 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 form 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, ncvTest), 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)
- 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.

SEC – 13 : STATISTICAL SOFTWARE PACKAGE

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course	Credits	Credit d	istribution	of the course	Eligibility	Pre-requisite
title &		Lecture	Tutorial	Practical/	criteria	of the course
Code				Practice		(if any)
	2			2		

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 OF SEC-13

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 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.

editing graphs and charts; Descriptive Statistics Procedures: Frequencies, Descriptive, Explore, Cross Tabulation.

Unit 2: Hypothesis Testing for Means

T-tests: One sample test, Independent samples and paired samples t-test; ANOVA – Oneway analysis of variance with post hoc analysis, Two-way analysis of variance.

Unit 3: Testing for Association between Variables

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

(3 Weeks)

(4 Weeks)

(4 Weeks)

SEC – 14: Essentials of Python

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course	Credits	Credit di	stribution	of the course	Eligibility	Pre-requisite	of
title &		Lecture	Tutorial	Practical/	criteria	the course	
Code				Practice		(if any)	
	2			2			

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 OF SEC-14

Unit I

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

(3 weeks)

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

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

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

(5 weeks)

(4 weeks)

Unit 4

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 World Page, Database and Views, Static Files and Forms, API and Security

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
- https://docs.djangoproject.com/
- Introduction to Programming using Python by Y. Daniel Liang. Publisher Pearson
- Taneja, S., Kumar, N. Python Programming- A modular Approach, Pearson Education 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.

SEC – 15: Programming using Python

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title &	Credits	Credit	t distributi course	ion of the	Eligibility criteria	Pre-requisite of the course
Code		Lecture	Tutorial	Practical/		(if any)
				Practice		
	2			2		Experience with a high-level language (C/C++, Java, MATLAB) is suggested. Prior knowledge of a scripting language (Perl, UNIX/Linux shells) and Object- Oriented concepts is helpful but not mandatory.

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 OF SEC-15

Unit-1: Introduction

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

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

Standard modules, Packages, Defining Classes, Defining functions, Functions and arguments(signature)

Unit-4: Data structures and Object-oriented design

Data Structures (array, List, Dictionary), Error processing, Exception Raising and Handling Programming types, Object Oriented Programming, Object Oriented Design, Inheritance and Polymorphism

Practical Exercises

- 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.

(4 weeks)

(4 weeks)

(4 weeks)

(4 weeks)

- 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) <= (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.

SEC – 16: ANALYTICS / COMPUTING WITH PYTHON

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course	Credits	Credits Credit distribution	edits Credit distribution of the course Eligibility	Eligibility	Pre-requisite	
title &		Lecture	Tutorial	Practical/	criteria	of the course
Code				Practice		(if any)
	2			2		Basic course
						of Python

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 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 to apply these techniques on data.

SYLLABUS OF SEC-16

Unit I

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

Pandas: Working with Data Frame, Importing fromExcel 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 andhow to build them.

(5 weeks)

(5 weeks)

Unit III

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.

Suggestive 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-withpython- 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.

SEC – 17: Business Intelligence and Data Visualisation

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course	Credits	Credit di	istribution	of the course	Eligibility	Pre-requisite	of
title &		Lecture	Tutorial	Practical/	criteria	the course	
Code				Practice		(if any)	
	2			2			

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 OF SEC-17

Unit-1 (POWER BI)

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)

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)

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 Knaflic : 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

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

(6 weeks)

(6 weeks)

(4 weeks)

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.

SEC – 18: Digital Marketing

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course	Credits	Credit di	istribution	of the course	Eligibility	Pre-requisite
title &		Lecture	Tutorial	Practical/	criteria	of the course
Code				Practice		(if any)
	2			2		

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 OF SEC-18

Unit 1: Marketing in the Digital World

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

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

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

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.

(6 weeks)

(5 weeks)

(2 weeks)

(3 weeks)

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.

SEC – 19: Big Data Analytics

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course	Credits	Credit di	stribution	of the course	Eligibility	Pre-requisite
title &		Lecture	Tutorial	Practical/	criteria	of the course
Code				Practice		(if any)
	2			2		Basic
						knowledge of
						Python/Java

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 OF SEC-19

Unit 1: Fundamentals of Big Data Analysis

(4 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

Hadoop, Requirement of Hadoop Framework, Design principle of Hadoop –Comparison with other system, Hadoop Components – Hadoop 1 vs Hadoop 2, Hadoop Daemon's – HDFSCommands, 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)

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

- 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.

(4 weeks)

(4weeks)

- Tom White, "Hadoop: The Definitive Guide", O'Reilly, 4th Edition, 2015.
- Nick Pentreath, Machine Learning with Spark, PacktPublishing, 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.

SEC – 20: Back-End Web Development

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course	Credits	Credit di	stribution	of the course	Eligibility	Pre-requisite
title &		Lecture	Tutorial	Practical/	criteria	of the course
Code				Practice		(if any)
	2			2		
	2			2		

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 serverside/backend data
- After studying this course, students will be able to use GET and POST methods for sending data within client and server.

SYLLABUS OF SEC-20

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

(7 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

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

Essential/recommended readings

• <u>https://docs.djangoproject.com/</u>

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.

SEC – 21: Front End Web Design and Development

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course	Credits	Credit di	istribution	of the course	Eligibility	Pre-requisite	of
title &		Lecture	Tutorial	Practical/	criteria	the course	
Code				Practice		(if any)	
	2			2			

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 contents of the website using different features of CSS.

SYLLABUS OF SEC-21

Unit 1

Introduction: Introduction to internet and web design. Basic concepts of webarchitecture.

Unit 2

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

Unit 3

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

(4 weeks)

(4 weeks)

(4 weeks)

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

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 thesum 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, Tata McGrawHill, 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.

SEC – 22: APP Development using Flutter

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course	Credits	Credit di	istribution	of the course	Eligibility	Pre-requisite
title &		Lecture	Tutorial	Practical/	criteria	of the course
Code				Practice		(if any)
	2			2		

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 OF SEC-22

Unit 1

(4 weeks)

Introduction to Flutter, Flutter – installation, Widgets, Gestures(Title, Body, Layouts, Columns, Root, 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

- 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.

SEC – 23: Introduction to Cloud Computing (AWS)

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course	Credits	Credit di	stribution	of the course	Eligibility	Pre-requisite
title &		Lecture	Tutorial	Practical/	criteria	of the course
Code				Practice		(if any)
	2			2		
						•

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 onpremises, 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 OF SEC-23

Unit 1

(6 weeks)

Introduction to cloud computing, Creating AWS account, AWS Management Console, AWS Documentation overview, Availability Zones, AWS Global Infrastructure.

Unit 2

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

Create an AWS account and implement AWS cloud for deploying any application.

Suggested Weblinks

• <u>https://aws.amazon.com</u>

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.

(5 weeks)

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course	Credits	Credit di	stribution	of the course	Eligibility	Pre-requisite
title &		Lecture	Tutorial	Practical/	criteria	of the course
Code				Practice		(if any)
	2			2		
						•

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 OF SEC-24

Unit 1

weeks)

Blockchain: Basics And Applications: Node Fundamentals,Blockchain Basics, Blockchain Features, Ethereum Fundamentals, Smart Contract Development In Ethereum, Dapp Development In Ethereum.

(8

Unit 2

weeks)

Building A Distributed Application On Hyperledger Fabric: Hyperledger Fundamentals, Fabric Network Setup, Chaincode Development, DAPP Development.

CAPSTONE PROJECT

• 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.

SEC – 25: VISUAL COMMUNICATION AND PHOTOGRAPHY

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course	Credits	Credit distribution of the course			Eligibility	Pre-requisite
title &		Lecture	Tutorial	Practical/	criteria	of the course
Code				Practice		(if any)
	2			2		

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 OF SEC-25

Unit 1: Historical Background and Basics of Visual Communication (4 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

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

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

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.

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(4 Weeks)

(4 Weeks)

(4 Weeks)

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.
SEC – 26: CAD FOR FASHION

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course	Credits	Credit distribution of the course			Eligibility	Pre-requisite
title &		Lecture	Tutorial	Practical/	criteria	of the course
Code				Practice		(if any)
	2			2		

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 garment sketching and fabric rendering manually.
- After studying this course, students will be able to gain the knowledge about various computer design softwares Adobe Photoshop, CorelDraw, Adobe Illustrator and Open source
- After studying this course, students will be able to learn the application of selected computer design softwares for fashion sketching.
- After studying this course, students will be able to develop proficiency in CAD for the 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 OF SEC-26

Unit I: Fashion sketching

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 technical flats on any vector-based computer design software

Unit II: Fabric rendering

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

- Abling, 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

(8 weeks)

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.