UNIVERSITY OF DELHI

MASTER OF BUSINESS ADMINISTRATION
(BUSINESS ANALYTICS)

MBA (BA)

(Effective from Academic Year 2023-24)

PROGRAMME BROCHURE

CONTENTS

Preamble

The objective of any programme at a Higher Education Institution is to create for its students a sound foundation for their character development which directly contributes to the well-being of a nation. The University of Delhi envisions all its programmes in the spirit of its ―motto‖ which is to inspire the youth to show steadfastness and devotion in a fearless pursuit of truth. The MBA (BA) aims at preparing young minds for constructive and productive development by honing their creative and analytical skills for their own betterment as well as for the greater good of the society.

The University of Delhi, a premier seat of teaching, learning, and research in higher education, acclaimed nationally and internationally, has nurtured the quest for reaching the peak in every sphere of education, in its true sense, in the process of its contribution to nation-building. Being a Central University, mandated to act as the torchbearer in expanding the horizons of human resource development through expansion of higher education, it has always paid adequate premium towards constructive and meaningful innovation as a regular feature in its undergraduate curriculum development over the years.

The focus of MBA (BA) is aimed at improving the students 'abilities in data analysis and helping them to become a competent decision maker and business leader who can contribute to nation building. Management education is not related only with knowing how to organize and apply skills related to business, trade, commerce, industry, and economy, but it further accelerates the process of thinking in a pragmatic manner about nation building through effective utilization of skills, resources, manpower, and one's abilities.

One essential aspect of MBA (BA) is to develop a commerce graduate who can meet the present and the future requirements of industry and economy. MBA (BA) emphasizes on developing the competent persons who can work as the contemporary and future leaders of the industry and business. The education system in the emerging scenario demands to enrich the personality of the students so as to develop a holistic personality. Therefore, the focus of MBA (BA) is based on the four pillars of education which are learning to know, learning to do, learning to live together, and learning to be.

The present situation of business education requires total over-hauling and restructuring in the light of the changed socio-economic scenario of the global economy in the context of Industry 4.0. The dynamic nature of global business demands a pool of competent human capital for which relevant education is essential in terms of timeliness, speed, flexibility, and dynamism. There is a need to provide students with appropriate skills and knowledge inputs which would make them globally competent and empower them to work in the changing business environment. Therefore, the focus of the MBA (BA) is to introduce a globally acknowledged choice-based credit system which will offer numerous opportunities to learn various core subjects and also explore additional avenues of learning beyond the routine and standardized framework. The sole purpose of this exercise is to provide opportunities for holistic development of the students.

Thus, the MBA (BA) can help in bringing uniformity in curricula on the one hand and empower the student on the other hand to choose the career options making it more relevant and globally acceptable which would create new benchmark in the world.

I. About the Department

The Department of Commerce was formally set up as a separate entity in the year 1967. Department of Commerce located in the premises of Delhi School of Economics, popularly known as DSE, has always kept the pace with changing times and explored the new frontiers of knowledge and innovation in academics and kept pace with, DSE tradition. In its history spanning over three decades, it has redefined commerce education in the country. The Department has the legitimate claim and pride of being the premier institution in India for course curriculum development, teaching and researches in Commerce discipline. *In 2017, as per Times Higher Education Ranking Department of Commerce was placed at 1st position in India and at 85th position in Asia. In 2018, Department of Commerce was placed at 2nd position in India and at 91st position in Asia.*

The Department of Commerce takes pride to pioneer the two specialized programmes, (MBA (IB) and MBA (HRD) erstwhile known as namely MIB and MHROD. Both programmes have been well received by the industry since 1995 till date. The courses were designed in a manner so that the students gain an in-depth knowledge and analytical skills which will enable them to efficiently and effectively carry out various HR, OD, marketing, finance and international business operations of an organization in the emerging globalized environment.

The Master of Business Administration (Business Analytics) programme of the Department of Commerce has been designed to cater to the growing needs of industry and business for professionally qualified young men and women in the area of Business Analytics. In liberalized framework of the Indian economy, corporate experts in the areas of Business Analytics will be amongst the key resource personnel needed for corporate strategic planning and control. The objective of Master of Business Administration (Business Analytics) –MBA(BA) is to develop research orientation, impart analytical skills and strengthen academic and analytical rigor of highly motivated, bright young men and women so that they can provide ethical, holistic and inclusive professional expertise to business and industry in the area of Business Analytics.

II. Introduction to CBCS (Choice Based Credit System)

Choice Based Credit System:

The CBCS provides an opportunity for the students to choose courses from the prescribed courses comprising core, elective/minor or skill-based courses. The courses can be evaluated following the grading system, which is considered to be better than the conventional marks system. Grading system provides uniformity in the evaluation and computation of the Cumulative Grade Point Average (CGPA) based on student's performance in examinations which enables the student to move across institutions of higher learning. The uniformity in evaluation system also enables the potential employers in assessing the performance of the candidates.

Definitions:

i) Academic Programme means an entire course of study comprising its programme structure, course details, evaluation schemes etc. designed to be taught and evaluated in a teaching Department/Centre or jointly under more than one such Department/ Centre.

ii) Course means a segment of a subject that is part of an Academic Programme.

iii) Programme Structure means a list of courses (Core, Elective, Open Elective) that makes up an Academic Programme, specifying the syllabus, Credits, hours of teaching, evaluation and examination schemes, minimum number of credits required for successful completion of the programme etc. prepared in conformity to University Rules, eligibility criteria for admission

iv) Core Course means a course that a student admitted to a particular programme must successfully complete to receive the degree and which cannot be substituted by any other course.

v) Elective Course means an optional course to be selected by a student out of such courses offered in the same or any other Department/Centre.

vi) Open Elective means an elective course which is available for students of all programmes, including students of same department. Students of other Department will opt these courses subject to fulfilling of eligibility of criteria as laid down by the Department offering the course.

vii) Credit means the value assigned to a course which indicates the level of instruction; One-hour lecture per week equals 1 Credit, 2 hours practical class per week equals 1 credit. Credit for a practical could be proposed as part of a course or as a separate practical course.

viii) SGPA means Semester Grade Point Average calculated for individual semester.

ix) CGPA is Cumulative Grade Points Average calculated for all courses completed by the students at any point of time. CGPA is calculated each year for both the semesters clubbed together.

x) Grand CGPA is calculated in the last year of the course by clubbing together of CGPA of two years, i.e., four semesters. Grand CGPA is being given in Transcript form. To benefit the student a formula for conversion of Grand CGPA into %age marks is given in the Transcript.

III. MBA (BA) Programme Details:

Programme Objectives (POs):

With the vision —*to nurture the young brains, to make them better employable and socially responsible citizens by encapsulating them with the right set of knowledge for a better tomorrow*, Department of Commerce focuses on building conviction with impartiality and modesty, create an enabling environment for innovative thought processes and nurture open- mindedness, equitability and perseverance. In the backdrop of Department vision and mission, MBA (BA) programme aims to:

☐ Provide a conducive environment that holistically engages students through an all– encompassing knowledge impartation and comprehensive practical applications.

☐ Mold them into future visionaries, and management leaders that are benevolent yet efficacious, versed in the leading business and human resource practices of the world and equipped to the hilt to implement themselves and adapt to the mutable global business environment.

☐ Develop an analytical mindset and skills to organize, analyse, interpret and communicate data to solve operational and strategic business problems.

☐ Develop managerial knowledge and strategic agility, providing students with a broader skill set and a fresh perspective and encouraging them to seek out bold, innovative solutions for today's business and societal challenges.

The concept of open electives has been incorporated as per the University's guideline. To better facilitate the self- study of the course by the student, the suggestive readings are provided for each unit of the concerned course. In addition, the course has been designed in line with outcome-based approach which requires specification of Course Outcomes and Course Learning Outcomes.

The following objectives of NEP are kept in perspective while framing MBA (BA) programme objectives:

1. to promote each student's holistic development in both academic and non-academic spheres;

2. to provide flexibility to students so that learners have the ability to choose

their learning trajectories and programmes, and thereby choose their paths in life according to their talents and interests;

3. to eliminate harmful hierarchies among disciplines/fields of study and silos between different areas of learning;
4. multidisciplinary and holistic education to ensure the unity and integrity of all knowledge;
5. to promote creativity and critical thinking and to encourage logical decision-making and innovation;
6. to promote ethics and human & Constitutional values;
7. to promote multilingualism and the power of language in learning and teaching;
8. to impart life skills such as communication, cooperation, teamwork, and resilience;
9. to promote outstanding research as a corequisite for outstanding education and development.

Programme Specific Outcomes (PSOs):

MBA (BA) Programme is mainly oriented towards professional augmentation in business analytics taking place in the global as well as domestic business analytics arena and the curriculum thus intends to reduce the gap between industry and academia, with the right blend of theory and practice, furthering students to nurture their talent for becoming good leaders and assets for an organization. Students shall gain an in-depth knowledge and analytical skills which will enable them to effectively and efficiently carry out various Trade and Marketing operations of an organization in the emerging globalized environment.

Programme Development Process:

Department of Commerce followed the consultative process in the development of MBA (BA) Programme, the following were the stages of development:

a. Proposal with concept note was sent to university for in-principal approval.
b. In-principal approval was received from Hon'ble Vice Chancellor.
c. A working group was formed.
d. Benchmarking of leading institutions in the domain of business analytics was done.
e. Draft curriculum was framed and e-mail was sent to all the stakeholders including corporate houses.
f. Feedback was received and incorporated as per suitability of the programme.
g. Approval by Statutory Committees including Committee of Courses, Faculty of Commerce and Business, Academic Council and Executive Council.

Programme Structure:

The MBA(BA) programme is a two-year course divided into four-semester. The course is of 112 Credits and for the award of degree a student will be required to complete the credits as per the University norm.

		Semester	*Semester*
Part - I	First Year	Semester I	Semester II
Part - II	Second Year	Semester III	Semester IV

Course Credit Scheme

Semester	Core Courses			Elective Courses			Open Elective Courses			Total Credits
	No. of papers	Credits (L+T/P)	**Total Credits**	No. of papers	Credits (L+T/P)	**Total Credits**	No. of papers	Credits (L+T/P)	**Total Credits**	
I	8	4	**28#**	-	-	-	-	-	-	28
II	8	4	**28#**	-	-	-	-	-	-	28
III	7	4	**24#**	-	-	-	1	4	4	28
IV	6	4	**24#**	1	4	4	-	-	-	28
Total Credits for the Course			**104**			**4**			**4**	**112**

#2 courses of 2 credits each are covered
*For each Core and Elective Course there will be 4 lecture hours of teaching per week.
* Duration of examination of each paper shall be 3 hours.
* Each paper will be of 100 marks out of which 70 marks shall be allocated for semester examination and 30 marks for internal assessment.
* Open-source software wherever required may be used for pedagogy purpose and for internal examination

Semester Wise Details of MBA (Business Analytics) Course

Semester I				
Number of core Courses			**Credits in each core course**	
Course Code	Paper Title	Lecture	Practical	Credit

MBABACC101	Management and Organisational Behaviour	3	1	4
MBABACC102	Marketing Management	3	1	4
MBABACC103	Accounting for Managers	3	1	4
MBABACC104	Economics for Managers	4	0	4
MBABACC105	Business Statistics and Research Methods	3	1	4
MBABACC106	Introduction to Analytics	3	1	4
MBABACC107	Data Visualisation	1	1	2
MBABACC108	Indian Knowledge System	2	0	2
	Total credits in Semester I: 28			

	Semester II			
Number of core Courses			**Credits in each core course**	
Course Code	**Paper Title**	**Lecture**	**Practical**	**Credit**
MBABACC201	Corporate Finance	3	1	4
MBABACC202	Human Resource Management	3	1	4
MBABACC203	Big Data and Cloud Computing	3	1	4
MBABACC204	Using R for Analytics	2	2	4
MBABACC205	Operations Management	3	1	4
MBABACC206	Management Science	3	1	4
MBABACC207	Data Warehousing and Data Mining	1	1	2
MBABACC208	Life Skills and Communication	2	0	2
	Total credits in Semester II: 28			

	Semester III			
Number of core Courses			**Credits in each core course**	
Course Code	**Paper Title**	**Lecture**	**Practical**	**Credit**
MBABACC301	Corporate Governance, Ethics and Sustainability	4	0	4
MBABACC302	Using Python for Analytics	1	1	2
MBABACC303	Artificial Intelligence and Machine Learning	3	1	4
MBABACC304	HR Analytics	3	1	4
MBABACC305	Marketing Analytics	3	1	4
MBABACC306	Financial Analytics	3	1	4
MBABACC307	Summer Internship Project Report			2
	Open Electives (Any one from list)			

COMOE	Open Elective Course	*	*	4
	Total credits in Semester III: 28			

Please note that the combination of lecture and practical depends upon the subject opted by the student in Elective Course.

	Semester IV			
	Number of core Courses		**Credits in each core course**	
Course Code	**Paper Title**	**Lecture**	**Practical**	**Credit**
MBABACC401	Entrepreneurship and New Venture Planning	3	1	4
MBABACC402	Strategic Management	4	0	4
MBABACC403	Supply Chain Analytics	3	1	4
MBABACC404	Healthcare Analytics	3	1	4
MBABACC405	Social Media Analytics	1	1	2
MBABACC406	Cyber Threats and Security	3	1	4
MBABACC407	Indian Ethos and Leadership	2	0	2
	Electives Courses (Select any one from list)			
MBABAEC	Elective Course	#	#	4
	Total credits in Semester IV: 28			

Please note that the combination of lecture and practical depends upon the subject opted by the student in the Elective Course.

#**List of Open Elective Course** (Select any one)

S. No.	Paper Code	Title of the Paper	Lecture	Practical	Credit
1.	COMOE03	Skills and Techniques of Accounting	3	1	4
2.	COMOE04	Business Analysis using Financial Statements	3	1	4
3.	COMOE08	Financial Markets and Institutions	4	0	4
4.	COMOE09	Planning for Personal Finance	3	1	4
5.	COMOE10	Investment Management	3	1	4
6.	COMOE11	Project Management Professional-1	3	1	4
7.	COMOE12	International Financial Management	3	1	4
8.	COMOE13	Startup-1	3	1	4
9.	COMOE14	Enterprise Risk Management	4	0	4
10.	COMOE15	World Law Prospects	3	1	4

List of Elective Course (Select any one)

S. No.	Paper Code	Title of the Paper	Lecture	Practical	Credit
1.	MBABAEC01	Project Management Professional-2**	3	1	4
2.	MBABAEC02	Startup-2#	3	1	4
3.	MBABAEC03	Internet of Things	3	1	4
4.	MBABAEC04	Compensation Management	3	1	4
5.	MBABAEC05	Learning and Development	3	1	4
6.	MBABAEC06	Digital Marketing Analytics	2	2	4
7.	MBABAEC07	Financial Modeling using Excel	0	4	4
8.	MBABAEC08	Knowledge Management	3	1	4
9.	MBABAEC09	Human Resource Information System	3	1	4
10.	MBABAEC10	Advanced Machine Learning	3	1	4
11.	MBABAEC11	Time Series Analytics	3	1	4
12.	MBABAEC12	Predictive Analytics	2	2	4
13.	MBABAEC13	Enterprise Performance Management	3	1	4
14.	MBABAEC14	Robotic Process Automation in Business	3	1	4

** Only those who have studied Project Management Professional-1 may opt for Project Management Professional-2.

Only those who have studied Startup-1 may opt for Startup-2.

Selection of Open Elective Courses:

h. Options for Open Elective Courses will be floated according to availability of faculty and minimum number of students. The minimum number to be reviewed in the due course of time which may vary programme-wise.

i. Open Elective Courses as placed in semester III would be announced at the beginning of the Semester II and accordingly students will be asked to select any one option at that time.

j. At least 10% of the proposed seats in open elective courses should be open to students from outside the discipline subject to fulfilling eligibility criteria.

k. Students opting for Finance area as a Major or Minor Elective in M. Com cannot opt the Open Elective Courses i.e. Financial Markets and Institutions (Paper No. „COMOE08" of MBA (IB) and MBA (HRD) and Planning for Personal Finance (Paper No. „COMOE09 ") of MBA (IB).

Eligibility Criteria for Open Elective Courses:

Eligibility Criteria for Open Elective Courses will be announced at the time of floating of courses as approved by Committee of Courses in due course of time.

Teaching:

The faculty of the Department is primarily responsible for organizing lecture work for MBA (BA). Faculty from some other Departments, constituent colleges and Industry are also associated with the teaching of the courses in the Department. There shall be 90 instructional days excluding examination in a semester. A student opting for dissertation project as elective course will be allotted a faculty as supervisor in the beginning of Semester III.

Eligibility for Admissions: Seats:

The Number of seats for MBA (BA) Programme is 60 (General -22, OBC – 15, SC – 8, ST – 4, EWS-5, PwD-3 and FS-3). As per University rules, the seats for PWD CW, and foreign students (FS) categories are supernumerary. Further, Bulletin of Information may be referred for relevant details.

Selection Procedure

The admission to MBA (BA) programme is done through three layered process including CAT percentile, matriculation and 10+2 marks; Group discussion, extempore; and Interview score. This is done with a view to identify and process the interpersonal skills in addition to the overall knowledge of the students. Bulletin of Information may be referred for further relevant details.

Reservations/Relaxations

There will be reservation for SC, ST, PWD, OBC, CW and FS categories as per University of Delhi rules.

Assessment of Students' Performance and Scheme of Examinations:

1. English shall be the medium of instruction and examination.

2. Assessment of students' performance shall consist of:

   (i) Each paper shall carry 100 marks of which 30 marks shall be reserved for internal assessment based on class room participation, seminar, term papers, study reports, tests, viva-voce and attendance. The weightage given to each of these factors shall be decided and announced at the beginning of the Semester.

   (ii) The remaining 70 marks in each paper shall be awarded on the basis of a written examination at the end of each semester. The duration of the written examination of each paper shall be three hours.

Pass Percentage & Promotion Criteria:

   (i) The minimum marks for passing the examination shall be 45% in each paper and 50% in the aggregate of the semester. If a student fails to secure 45 percent marks in any of the papers, he/she can reappear in those paper/papers in the subsequent semesters. If a candidate admitted to the examination in any semester secures the minimum marks to pass in each paper but fails to secure the minimum marks to pass in the aggregate, he/she may appear in any of

the paper/s of the Semester concerned according to his/her choice in order to be able to secure the minimum marks prescribed to pass in the aggregate in each semester.

(ii) Only those candidates who have secured at least 45 per cent in each paper and 50 percent in aggregate in each of the semesters of the MBA (BA) programme shall be eligible for the award of the Degree. Successful candidates will be classified on the basis of the combined results of Part – I and Part – II examination as follows:
Candidates securing 60% and above: I Division
All others: II Division

(iii) The conditions of passing the programme shall not be deemed to have been satisfied unless a student undergoes practical training under the supervision of the Department in approved organizations for at least two months. Summer training is not an evaluative course but will be mandatory for students to undergo summer training and certificate of completion will be issued after submission of training report.

(iv) A candidate must qualify for the award of the Degree within four years of his/her admission to the MBA (BA) programme.

Part I to Part II Progression:

(i) Admission to Part-II of MBA (BA) Programme shall be open to those who have cleared successfully at least 10 papers out of 14 papers offered for the MBA (BA) Part –I programme comprising of Semesters I and II taken together. However, he/she would have to clear the remaining papers while studying in MBA (BA) Part – II in the second year.

(ii) If a student fails to appear in any of the papers in MBA (BA) Semester – I of Part-I of the University examination, he/she will be allowed to take examination in that paper/papers along with second semester examination of Part – I.

(iii) If a student fails or fails to appear in any of the papers in third semester examination of Part-II, he/she will be allowed to take the examination in the subjects along with examination in the subjects of fourth semester of Part-II Examination.

(iv) Candidates who fail or failed to appear the MBA (BA) examination after pursuing a regular programme may be allowed to reappear at the examination on being enrolled as an ex-student as per the rules of the University. The old programme will remain in force for ex-student only for a period of three years from the year in which the revised programme introduced.

(v) No candidate shall be considered to have pursued a regular course of study unless he/she is certified by the Department to have attended at least three-fourth of the total number of lectures, tutorials, special lectures and seminars conducted in each semester during his course of study. Provided that he/she fulfills other conditions, the Department may permit a student to proceed to the next semester who falls short of the required percentage of attendance by not more than 10% lectures, tutorials, special lectures and seminars conducted during the whole of that semester of the course but a student so permitted shall not be deemed to have completed a regular course of study in the next succeeding semester unless he/she makes up the shortage so condoned.

(vi) No revaluation of answer books is permitted as per the rules of the University applicable to the professional courses.

Conversion of Marks into Grades:
As per University Examination rule.

Grade Points:
Grade point table as per University Examination rule.

CGPA Calculation:
As per University Examination rule.

SGPA Calculation:
As per University Examination rule.

Grand SGPA Calculation:
As per University Examination rule.

Conversion of Grand CGPA into Marks:
As per University Examination rule.

Division of Degree into Classes:
Post Graduate degree to be classified based on CGPA obtained into various classes as notified
into Examination policy.

Attendance Requirement:
10 marks are allocated for attendance in the class. The marks for attendance shall be as follows:

(i)	75% or more but less than 77.5% = 1	
(ii)	77.5% or more but less than 80% = 2	
(iii)	80% or more but less than 82.5% = 3	
(iv)	82.5% or more but less than 85% = 4	
(v)	85% or more but less than 87.5% = 5	
(vi)	87.5% or more but less than 90% = 6	
(vii)	90% or more but less than 92.5% = 7	
(viii)	92.5% or more but less than 95% = 8	
(ix)	95% or more but less than 97.5% = 9	
(x)	97.5% and above = 10	

Span Period:
No student shall be admitted as a candidate for the examination for any of the Parts/Semesters after the lapse of four years from the date of admission to the Part-I/Semester-I of the MBA (BA) Programme.

Guidelines for the Award of Internal Assessment Marks MBA (BA) Programme (Semester Wise)

(i) For each core and elective course there are 30 marks allocated for internal examination and 70 marks for the Semester- End Examination. Out of 30 marks allocated for internal assessment for each course:

- 10 marks are assigned for class test / written assignment or any other method and will be evaluated by the concerned faculty as part of their continuous evaluation.

- 10 marks are assigned for class presentation / project work

- 10 marks are assigned for attendance in the class. The marks for attendance will be assigned as mentioned under the heading "Attendance Requirement".

  (ii)   For open elective course there are 30 marks allocated for internal examination and 70 marks for the Semester- End Examination. Out of 30 marks allocated for internal assessment for each course:

- 10 marks are assigned for project.
- 20 marks are assigned for class test.

  (iii)   Open-source software wherever required may be used for pedagogy purpose and for internal examination.

**Master of Business Administration (Business
Analytics) MBA (BA)
Semester I**

Marks: 100   **Duration: 60 Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Management And Organisational Behaviour MBABACC101	**4**	**3**	**0**	**1**	**Pass in Graduation**	**NIL**

Learning Objectives: To develop an understanding of basic concepts of management and its functions and to familiarize them with different components of organizational behaviour.

Learning Outcomes:

After completion of the course, learners will be able to:

1. understand the basics of management theory, its functions and practice.
2. interpret the functions of management.
3. evaluate individual, group and organizational components of organizational behaviour.
4. develop skills related to working for motivation and leadership.
5. analyse the importance of conflict and change and develop an attitude to manage them in a changing work environment better.

Syllabus:

Unit I: Management Concept (12 Hours)

Evolution of management thoughts; Approaches to management practice; Nature of management; Managerial roles; Functional areas of management.

Unit II: Management Functions (12 Hours)

Basic functions of management, planning, organizing, directing, staffing, controlling and coordinating the human effort, organisation structure.

Unit III: Foundations of Organizational Behavior (12 Hours)

Management and organizational behaviour, individual behaviour characteristics, personality, Emotional Intelligence, perception, attitude and learning; Interpersonal behaviour, communication and transactional analysis and Johari window; OB Models; Foundations of group behaviour, formation of groups, groups versus teams, group dynamics.

Unit IV: Motivation and Leadership (12 Hours)

Work motivation, need theories, Theory X – Theory Y, Two Factor Theory, Ouchi's theory Z, Alderfer's ERG theory, McClelland's theory, Vroom's expectancy theory, Adams equity theory, contemporary issues in the practice of motivation; Leadership concept; Leadership styles; Theories - trait theory, Fielder's contingency theory; leadership continuum, managerial grid; contemporary issues in leadership development, power and politics; Spiritual leadership.

Unit V: Management of Organizational Behavior (12 Hours)

Organizational culture, managing conflict, work stress and its management, work-life balance; Managing change- nature, forces, resistance and resolution.

Practical Exercises:

The learners are required to:

1. analyse and interpret case studies on various organisations.

2. visit an organisation and analyse the functions of the management.

3. participate in simulation exercises in the classroom on work-life balance, thereby identifying their needs. Students may be assigned to draft an organisational policy to combat work-life issues assuming themselves as an HR manager and as employees of the organisation.

4. conduct an event and try to understand the dynamics that go on in the group.

5. develop a set of structured questions, so students can interact with employees in the organisation and observe leadership personality traits.

6. Students can meet the organisational leader and observe the management of subordinates under his supervision.

7. Evaluate the leadership skills of select famous leaders.

8. Analyse a case study on conflict and change management.

Essential/ Recommended readings

Suggested Reading:

- Warren, Bennis (1992). *Leaders on Leadership-Interviews with top executives*. HBR Press.
- Rodrigues, Carl A. (2001). Fayol‟s 14 principles of management then and now: a framework for managing today‟s organizations effectively, *Management Decision*, 39(10), 880-889.
- George, C.S. (1996). *The History of Management Thought*. Englewood Cliffs, NJ: Prentice-Hall.
- Ghoshal, S. (2005). Bad Management Theories destroying good management practices. *Academy of Management Learning and Education*, 4(1) 75-01.
- Herzberg, F. (2003). One more time: how do you motivate employees*. Harvard Business Review*, 46 (1), 53-62.
- Kotter, J.P. (2007). Leading change: Why transformation efforts fail. *Harvard Business Review,*
  - 73(2): 59–67.
- Lane, Henry W., Martha, L. Maznevski, Joseph, J. DiStefano & Joerg, Dietz (2010). *International Management Behaviour – Leading with a global mindset*. Wiley.
- Luthans, Fred (2016). *Organizational Behaviour*. McGraw-Hill, Indian Edition.
- Paul, R. Lawrence (1987). Historical Development in OB in Chapter 1, Handbook of OB by Jaw W Lorsch (ed) Englewood Cliffs, NJ : Prentice-Hall, 1-10.
- Peters, Tom & Waterman, R.H. (2006). In Search of Excellence: Lessons from America‟s Best-run Companies. *New York: Harper & Row.*
- Pierce & Gardner (2001). *Management and Organizational Behavior*. Thomson.

Additional Readings

- Avolio, Walumbwa & Weber (2009). Leadership: Current Theories, Research, and Future Directions.
- *Annual Review of Psychology*. 60, 421-449.
- Bartlett & Ghoshal (1992). What is a global manager? *HBR* Sept Oct 1992, 124-131.
- Hofstede, Geert (1993). Cultural Constraints in Management Theories. *Academy of Management Executive*, 7(1), 81-94.

Note: Readings will be updated by the Department of Commerce and uploaded on Department's website.

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

**Master of Business Administration (Business
Analytics)**

**MBA (BA)
Semester I**

Marks: 100   **Duration: 60 Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Marketing Management MBABACC102	**4**	**3**	**0**	**1**	**Pass in Graduation**	**NIL**

Learning Objective:

To enable students to learn the basic concepts and principles of marketing and understand tools that they can use for managing a firm's marketing operations.

Learning Outcomes:

After completion of the course, learners will be able to:

1. understand the importance and nature of marketing, evolution of major marketing philosophies, marketing management tasks and process, meaning and impact of marketing environment on marketing decision making and nature, buying process of household and institutional customers.
2. analyse target market selection and positioning process.
3. discuss issues and processes involved with product planning and price determination.
4. evaluate the processes involved with promotion planning and distribution strategy.
5. identify and describe developments and contemporary issues in marketing.

Syllabus:

Unit I: Introduction (10 Hours)

Nature, functions and scope of marketing; Core marketing concepts; Evolution of marketing concept; Holistic Marketing and its key components; Marketing management-Major tasks and process.

Marketing Environment: Meaning and significance; Micro and macro marketing environments and their impact on marketing decisions

Consumer Behaviour- Nature and importance, Consumer Decision Making- Process, Types and Influencing Factors.

Household and Institutional Buying Behaviour- Nature and Importance

Unit II: Market Segmentation, Targeting and Positioning (12 Hours)

Segmenting markets – meaning and bases; Market segmentation and product differentiation; Target market selection- positioning-meaning, importance and process.

Unit III: Product Planning and Development (16 Hours)

Product - Meaning and types, product layer concept, major product decisions; Product life cycle –concept and types, New product development process; Innovation diffusion and consumer adoption process.

Pricing Decisions and Strategies: Factors affecting price determination; Procedure for setting price; Pricing policies and strategies, Initiating and responding to price changes.

Ethical issues related to product and pricing decisions

Unit IV: Promotion Decisions (14 Hours)

Promotion-Its meaning and importance; Communication process and flows; Promotion mix decision- major promotion tools and their characteristics; Integrated Marketing Communication- Concept and importance, Ethical issues related to promotion decision

Distribution Decisions: Distribution- Meaning and nature; Channels of distribution- concept, importance and types; Retailing- meaning and major types of store and non-store-based retailing; Wholesaling - meaning and major types of wholesaling; Distribution channel planning- issues and process; Physical distribution/logistics- meaning and major logistic decisions.

Unit V: Contemporary Development and Issues in marketing (8 Hours)

Internal marketing, Green marketing, Social marketing, Sustainability marketing, Digital marketing, Influencer marketing- Concept, need and issues, legal aspects of marketing.

Practical Exercises:

The learners are required to:

1. analyze the marketing mix strategy of a durable goods/ non-durable goods/ service/ ideas/ event/ organization/ people.

2. select any product and analyse its segmentation strategy in comparison to its immediate competitive product.

3. examine the marketing strategies followed by companies to prolong the maturity stage and defer its decline.

4. suggest an appropriate distribution strategy of a product of your choice.

5. study the promotional strategies followed by companies selling products through digital mode.

Essential/ Recommended readings
Suggested Reading:

- Etzel, Michael J., Walker, BruceJ., Staton, William J., & AjayPandit (2010). *Marketing Concepts and Cases*.Tata McGraw Hill (Special Indian Edition).

- Kotler, P., Chernev, A., Keller, K. L. (2022). Marketing Management. United Kingdom: Pearson Education.
- Levy, M., Grewal, D. (2022). Marketing. United States: McGraw-Hill Education.
- Sharma, K., Aggarwal S. (2021). Principles of Marketing. Taxmann Publications.
- Kotler, P., Armstrong, G., Agnihotri, P. (2018). Principles of Marketing. Pearson Education. Indian edition.
- Kotler, Philip, Keller, Kevin Lane, Koshy, Abraham,&Mithileshwar Jha(2012).
- *MarketingManagement: ASouth AsianPerspective*. Pearson.
- Kotler,Philip&Keller,Kevin Lane(2012).*MarketingManagement*. Pearson.
- Czinkota, Michael R. & Kotabe, Masaaki (2010). *Marketing Management*. Thomson Learning.
- Lamb, Charles W., Hair, Joseph, F. & McDaniel, Carl (2012). *Marketing.* Cengage Learning.
- Perrault, Willim, D., Cannon, Joseph, P. & McCarthy, E. Jerome (2012). *Essentials of Marketing: AMarketingStrategy Planning Approach*, McGraw-HillIrwin.
- Pride,William M. , & Ferrell,O.C. (2014).*Marketing*.South-WesternCengageLearning.

Note: Readings will be updated by the Department of Commerce and uploaded on Department's website.

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

**Master of Business Administration (Business
Analytics) MBA (BA)
Semester I**

Marks: 100   **Duration: 60 Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Accounting for Managers **MBABACC103**	**4**	**3**	**0**	**1**	**Pass in Graduation**	**NIL**

Learning Objective

To familiarise the learner to acquire knowledge and skills relating to the application of accounting concepts and techniques for business decisions, short-term and long- term/strategic decision-making models, cost management ideas along with budgeting and associated performance measurement practices.

Learning Outcomes

After completion of the course, learners will be able to:

- apply the Generally accepted accounting principles while recording transactions and preparing financial statements.
- analyze and interpret the qualitative and quantitative features of information provided in the Financial Statements of a company
- conduct cost, volume, and profit analysis of companies, and solve short run decision making problems by applying marginal costing and Break- Even technique.
- prepare various budgets and measure the performance of the business firm by applying budgetary control measures.
- analyze the fundamentals and significance of Sustainability Reporting, Forensic Accounting, Human Resource Accounting, and Integrated Reporting.

Syllabus:

Unit I: **Financial Accounting (12 Hours)**

Meaning of financial accounting; Accounting as an information system;   Accounting concepts and principles; Accounting equation; Emerging Issues in Financial Accounting and Reporting Systems Capital and revenue items; Inventory Valuation; Property, Plant and Equipment Accounting; Generally accepted accounting

principles, accounting standards and International Financial Reporting Standards (IFRS); IndAS.

Accounting process using accounting software: Journals; Ledger accounts, trial balance; Financial statements of corporate entities.

Unit II: **Financial Statement Analysis (12 Hours)**

Analyzing financial statements through ratios: Liquidity analysis ratios, Profitability analysis ratios; Activity analysis ratios; Coverage ratios; limitations of Ratio Analysis; Analytical comparative statement; Cash flow statement; Du-Pont Analysis.

Unit III: **Introduction to Cost Accounting (12 Hours)**

Meaning, objectives and importance of cost accounting; Comparative implications of Financial Accounting and Cost Accounting; Elements of cost; Classification of cost including cost for managerial decision making; Cost centre; Cost unit; Cost allocation, Cost apportionment and ascertainment; Cost sheet analysis; Methods of costing; Cost control and Cost reduction.

Costing and Control of Materials: Introduction control of material, cost of inventory a costing methods, Just in time Inventory.

Unit IV: **Cost Volume Profit Analysis and Budgetary Control (12 Hours)**

Marginal cost statement/equation; P/V ratio; Break Even Point (BEP), Break even chart; Margin of safety; Decisions relating to key factor, Price fixation, Export order, Make or buy, Deletion or addition to product/Services, Sell or process further, Continue or shut down, etc.

Budgetary Control: Basic concepts of budgeting; Preparation of functional budgets and Fixed budget and flexible budgets.

Unit V – Recent Developments in Accounting (12 Hours)

Sustainability Reporting; Forensic Accounting; Human Resource Accounting; Integrated Reporting

Note: Case-based analysis and relevant software will be used for pedagogical purposes. Evaluation of practical exercise using software will be part of internal assessment.

Practical Exercises:

The learners are required to:
1. prepare Trading and Profit & Loss Account and Balance Sheet after collecting necessary data for small business firms.
2. download 'Framework for the Preparation and Presentation of Financial Statements' from the websites of the Institute of Chartered Accountants of India (ICAI). Analyze the qualitative characteristics of accounting information provided therein.
3. prepare a cost statement for manufacturing and/ or service organization.
4. compute Break Even Sales for small shops like Grocery (Kirana) store, pharmacy, etc. by finding out monthly sales volume, variable expenses, and fixed expenses.
5. prepare a monthly cash budget, expense budget, activity budget, for a small retail shop, club, learner association, college. Also, prepare a purchase/production/sales budget for a small factory. Additionally, prepare a time budget for specific jobs or functions.
6. analyze the modus operandi of any international/national accounting fraud(s).

Essential/ Recommended readings

Suggested Reading:

- Atkinson, Anthony A., Banker, Rajiv, D., Kaplan, Robert &Young, S. Mark (2001). *Management Accounting.* Prentice Hall.

- Bologna, Jack and Lindquist, Robert J. (1995). Fraud Auditing and Forensic Accounting. Wiley.
- Chakraborty, S.K. (1976). *Human Asset Accounting: The Indian Context in Topics in Accounting and Finance.* Oxford University Press
- Colin, Drury (2001). *Management and Cost Accounting.* Thomas learning.
- Flamholtz, Eric G. (1999). *Human Resource Accounting: Advances in Concepts, Methods and Applications.* London, San Francisco: Jossey Eass Publishers.
- Garison, R.H. & Noreen, E.W. (2000). *Managerial Accounting*. McGraw Hill Education.
- Goldwin, Alderman & Sanyal (2016). *Financial Accounting.* Cengage Learning.
- Horngren, Charles T. (1998). *Introduction to Management Accounting.* Prentice Hall of India.
- Horngren (2013). *Introduction to Financial Accounting.* Pearson Accounting.
- Lal, Jawahar (2016). *Advanced Management Accounting, Text and Cases*. S. Chand & Company,New Delhi.
- Manning, George A. (2019). *Financial Investigation and Forensic Accounting.* CRC Press: Taylor & Francis Group.
- Marry, Buffett & Clark, David (2011). *Interpretation of Financial Statement – Companies with durable Competitive Advantage.*

Note: Readings will be updated by the Department of Commerce and uploaded on Department's website.

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

Master of Business Administration (Business Analytics)

MBA (BA)
Semester I

Marks: 100   **Duration: 60 Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Economics for Managers **MBABACC104**	**4**	**4**	**0**	**0**	**Pass in Graduation**	**NIL**

Objective: The objective of this course is to acquaint the students with the economic concepts and principles and to enable them to use them to address business problems in a globalized economic environment.

Learning Outcomes:

After completion of the course, learners will be able to:

1. understand the nature and scope of managerial economics, demand analysis and firm & its organization.
2. analyse the techniques of production function, cost analysis and forms of market.
3. apply the pricing techniques to determine the price of factors of production.
4. evaluate the knowledge of national income accounting, inflation and monetary and fiscal policies in real world situations.
5. describe the trade cycles in the open economy and exchange rate determination**.**

Syllabus :

Section A: Firm and Market

Unit I: Demand and The Firm (12 Hours)

Nature and scope of managerial economics, principles of managerial economics, demand function; Determinants of demand; Elasticity of demand – Price, income and cross elasticity, demand estimation, demand forecasting; Supply function; Firm and its organization: Nature of the firm and types of organizations; The Corporation: Ownership and control.

Unit II: Production, Cost and Market Forms (12 Hours)

Production function; Concept of productivity and technology; Production with one variable input, Returns to scale; Production with two variable inputs; Isoquants, ridge lines, Isoclines; Producer"s Equilibrium.
Cost function- Classification of costs, short run cost functions; Relationship between return to scale and return to a factor; Long-run cost functions.
Market Forms- Shapes of AR, MR curve and their relationship in different market forms, perfect competition; Market Imperfections–monopoly, monopolistic, collusive oligopoly and price discrimination.

Unit III: Pricing (12 Hours)

Pricing practices; Commodity Pricing: Economics of advertisement costs; Types of pricing practices; Factor Pricing: demand and supply of factor of production; Collective bargaining; Concept of rent, profit, interest- Rate of return and interest rates; Real vs. Nominal interest rates; Basic capital theory–Interest rate and return on capital; Measurement of profit.

Section B: Macroeconomic environment
Unit IV: National Income Accounting and Macro-Economic Markets (12 Hours)

National income accounting; Measuring the cost of living; unemployment and inflation; Product market and financial market.

Unit V: Trade Cycles and the Open Economy (12 Hours)

Economic fluctuations and business cycle; Open economy macroeconomics; Determination of exchange rate; Purchasing power parity; Fixed and flexible exchange rate.

Practical Exercises:

The learners are required to:

1. conduct a demand and supply survey
2. make a production and cost analysis of a product
3. analyse the pricing policy of the select manufacturing firm
4. evaluate national income of India based on reports of Ministry of Finance
5. compute and compare flexible exchange rate of India and USA

Essential/ Recommended readings
Suggested Reading:

- Dominick, S. (2014). *Managerial Economics a Global Economy*. McGraw Hill Inc., Princeton.
- Dornbusch, R. & Stanley, Fisher (2012). *Macroeconomics*. McGraw Hill, New York.
- Koutsoyiannis, A. (2008). *Modem Micro Economics*. Macmillian Press Ltd.
- Mankiw, N. Gregory (2016). *Macro Economics.* Macmillan.
- Paul. A. Samuelson & William, D. Nordhaus (2010). *Economics, (Indian adaptation by SudipChaudhuriand AnindyaSen)*. Tata McGraw Hill.

Note: Latest edition of the readings may be used.
Latest and relevant case studies to be used.

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Master of Business Administration (Business Analytics)

MBA (BA)
Semester I

Marks: 100   **Duration: 60 Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Business Statistics and Research Methods **MBABA105**	4	3	0	1	**Pass in Graduation**	**NIL**

Learning Objectives

The objective of the course is to provide a conceptual understanding of statistics and its applications.

The objective of the course is to introduce the concepts and practices of research and to show how research tools, skills and understanding can be applied in solving management problems. The focus of the course is applied.

Learning outcomes

After completion of the course, learners will be able to:

1. apply statistical techniques and tools
2. demonstrate Managerial applications of Statistics
3. extrapolate from data the important trends in order to forecast
4. calculate and interpret numerous statistical values and apply it for decision making
5. carry out a sample survey, qualitative interviews and analyze and present the results and findings.

SYLLABUS

Unit I: Introduction and Forecasting Techniques (8 hours)
Statistics and Role of Statistics in Research, Uni- variate, bivariate and multivariate data. Frequency distributions; Dot plot, histogram, ogive, pie chart. Measures of Central Tendency and Dispersion. Introduction to Skewness and Kurtosis. Correlation, Scatter diagram Method, Karl Pearson's Coefficient of Correlation Spearman's Rank Correlation. Simple Linear Regression Model, Least squares Method, Coefficient of Determination, Interpreting computer output of solution. Components of Time Series, Smoothing Methods, Trend-Seasonal Analysis.

Unit II: Statistical Inference (16 hours)

Sampling and Sampling Distribution, Estimation: Point Estimates, Interval estimation for Mean and Proportion. Determining the sample size in estimation. Testing Hypotheses: Developing Null and Alternative Hypothesis. Type I and Type II errors. One Sample Tests for Mean and Proportion. Two Sample Tests for Mean and Proportion and Inferences about population variances. Tests of Goodness of Fit and Independence. Analysis of Variance and Experimental design.

Unit III: Fundamentals of Research (12 hours)

Definitions and types of research; Research Strategies, Relationship of epistemology and ontology to business research; Planning a research project and formulating research questions, writing research proposal. Reviewing and evaluating the existing literature and looking for business information, The Research Process; Problem Identification, Research Objectives and Research Ethics

Unit IV: Designs and Gathering and Collecting Accurate Data (16 hours)

Exploratory Designs: In-Depth Interviews and Focus Groups; Descriptive Research Designs: Survey Methods and Errors; Observation Techniques, Experiments, and Test Markets; Experimental Designs: Validity and Reliability Concerns with Experimental Research Designs, Improving the Internal and External Validity of Experimental Designs. Types of Experimental Research Designs- Pre-experimental Designs, True Experimental Designs and Quasi-experimental Designs.

Sampling: Theory, Designs, and Issues in Research – Sampling Terminology, Determining Appropriate Sample Sizes, Probability and Nonprobability Sampling, Steps in Developing a Sampling Plan. Overview of Measurement: Construct Development - Abstractness of the Construct, Determining Dimensionality of the Construct, Construct Validity. Scale Measurement - The Nature of Scale Measurement, Properties of Scale Measurements, Four Basic Levels of Scales - Nominal Scales, Ordinal Scales, Interval Scales, Ratio Scales, Attitude Scale Measurements Used in Survey Research. Questionnaire Design and Issues

Unit V: Data Preparation and Analysis (8 hours)

Coding, Editing, and Preparing Data for Analysis, Cross Tabs in SPSS, Interpretation of SPSS outputs of - tests appropriate for nominal data - χ^2 test, Contingent Relationship in Cross Tabs and related indices in Cross-Tabs, tests appropriate for ordinal data - Kolmogorov-Smirnov One Sample Test, Mann-Whitney U Test, Kruskal Wallis Test, Friedman Test, Regression Analysis: Model, Least squares method, Coefficient of determination, Testing for significance (F, t and multicollinearity), Dummy Variable, Residual Analysis, Logistic Regression, Stepwise Regression, Advance Multivariate analysis - Factor Analysis for Data Reduction, Cluster Analysis for identifying Segments, Discriminant Analysis.

Practical Exercises:

The learners are required to

1. demonstrate their understanding of 'research methodology' section of a research paper (related to a topic of student's interest) in the form of class presentation.
2. demonstrate their understanding of 'result and findings' section of a research paper (related to a topic of student's interest) in the form of class presentation.
3. collect survey data on a particular topic, apply relevant statistical technique and present its findings in class.
4. conduct qualitative interviews, apply relevant statistical technique and present its findings in class.
5. solve case study-based problems for applying concepts learned.

Essential/ Recommended readings

- Levin, R. & Rubin, D. (2017). Statistics for Management. Pearson Education, Eight Edition.
- Kothari, C.R. & Garg, G. (2019). Research Methodology: Methods and Techniques. New Age International Publishers, Fourth Edition.
- Levine, Stephen, Krihbiel, Berenson (2008). Statistics for Managers: Using Microsoft Excel. Pearson Education.
- Dangi, H.K., & Dewen, S. (2016). Business Research Methods. Cengage Learning.
- Saunders, M., Lewis, P. and Thornhill, A. (2019). Research Methods for Business Students. Pearson Education.
- Recent Research papers in the area of interest of the student.

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Master of Business Administration (Business Analytics)

MBA (BA)
Semester I

Marks: 100   **Duration: 60 Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Introduction to Analytics **MBABACC106**	**4**	**3**	**0**	**1**	**Pass in Graduation**	**NIL**

Learning Objectives

The objective of the course is to provide know-how to evaluate various alternatives by gaining insight from past performance in the essence of business analytics. Business analytics focuses on how business performance can be improved by changing the course of actions and using various tools to perform informed decision making.

Learning outcomes

After completion of the course, learners will be able to:

- Understand the need for effective business analytics within an organization.
- Analyze complex problems using advanced analytics tools.
- Learn descriptive, predictive and prescriptive business analytics.
- Interpret data for better decision-making

SYLLABUS

Unit I: Introduction to Analytics (10 Hours)

Foundations of Business Analytics, Decision making, Introduction to Business Analytics, Models in Business Analytics, Problem solving with analytics, Big data, Stages of analytics (descriptive, predictive, prescriptive).

Unit II: Descriptive Analytics (10 Hours)

Descriptive Statistical Measures: measures of location, dispersion, shape and association. Visualizing and Exploring Data: Overview, Tables, Charts, Advanced data visualization, data dashboards.

Unit III: Predictive Analytics (14 Hours)

Trendlines and Regression Analysis, Forecasting Techniques, Introduction to Data Mining, Spreadsheet Modeling and Analysis, Monte Carlo Simulation and Risk Analysis.

Unit IV: Predictive Analytics (14 Hours)

Linear Optimization, Applications of Linear Optimization, Integer Optimization, Decision Analysis.

Unit V: Business Analytics Applications (12 Hours)

Application of Analytics in Finance, Marketing, Human Resource Management, Supply Chain, Healthcare, Social Media and Cyber Space.

Practical Exercises:

1. Descriptive Statistical Measures.
2. Visualizing and Exploring Data.
3. Trendlines and Regression Analysis.
4. Spreadsheet Modeling and Analysis.

Essential/ Recommended readings

Text Books:
- James, E.R. (2017). Business Analytics. UK: Pearson Education Limited.
- Camm, J.D., Cochran, J.J., Fry, M.J., Ohlmann, J.W., Anderson, D.R. (2015),
- Essentials of Business Analytics, Cengage Learning, Second Edition. Prasad, R. N., Acharya, S. (2011), Fundamentals of Business Analytics, Wiley.
- Schniederjans, M.J., Schniederjans, D.G., Starkey, C.M. (2014), Business Analytics: Principles, Concepts and Applications, Pearson.

Reference Books:
- Liebowitz, J. (2013), Business Analytics: An Introduction, Auerbach Publications.
- Hardoon, D.R., and Shmueli, G. (2016), Getting Started with Business Analytics, CRC Press, Taylor & Francis.
- Rao, P.H. (2014), Business Analytics: An Application Focus, Prentice Hall India.
- Sharma, J.K., Khatua, P.K. (2012), Business Statistics, Pearson.

Suggested Reading:
- Pinsky, M.A., Karlin, S. (2010), An Introduction to Stochastic Modeling, Academic Press, Fourth Edition.
- Provost, F. & Fawcett, T. (2013), Data Science for Business: What you need to know about data mining and data-analytic thinking, O'Reilly Media.

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Master of Business Administration (Business Analytics)

MBA (BA)
Semester I

Marks: 50   **Duration: 30 Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Data Visualisation **MBABACC 107**	**2**	**1**	**0**	**1**	**Pass in Graduation**	**NIL**

Learning Objectives

To enable the students to understand, analyze, and develop insights from the data represented through graphs, charts and maps etc. The course is designed to introduce students to the theory and practical methods to create visual representations of data sets. The data visualizations are beneficial for multiple purposes such as dashboards, annual reports, sales and marketing materials and investor slide decks etc. This course aims to familiarize the students with the top data visualization tools and its utility in business and research.

Learning outcomes

After completion of the course, learners will be able to:
- evaluate skills in building visualizations, organize data, and design charts and dashboards.
- understand data visualization features of Tableau and Power BI
- create charts, work with filters, parameters, and sets.
- evaluate metadata and its usage.
- discuss the tools of Power BI.

SYLLABUS

Unit I: Tableau: (5 hours)

Getting Started with Tableau, Dimensions vs. Measures, Discrete vs Continuous, Application of Discrete and Continuous Fields, Aggregation in Tableau.

Unit II: Tableau: (7 hours)

Working with Metadata, Filters in Tableau, Applying Analytics to the worksheet, Dashboard in Tableau, Modifications to Data Connections, Edit Data Source, Unions, Joins Data blending.

Unit III: Power BI : (18 hours)

Introduction to PowerBI – Working with data – Importing from flat files, excel files, other Sources, Data Sources in Power BI Desktop, Loading Data in Power BI Desktop, Views in Power BI Desktop, Query Editor in Power BI, Transform, Clean, Shape, and Model Data Manage Data Relationship, editing a Relationship, Cross Filter Direction, Saving Workfile Measures. Data Analysis Expressions – Introduction to Power Query – Introduction to Power View – Power View visualizations – Power View filtering options – Introduction to Power Map – Preparing geospatial data – Publish from Power BI desktop – Publish Dashboard to Web.

Practical Exercises:

The learners are required to:

1. apply Discrete and Continuous Fields, Aggregation in Tableau.
2. demonstrate Analytics to the worksheet.
3. create a Dashboard in Tableau.
4. load Data, Query Editor in Power BI, Transform, Clean, Shape, and Model Data Manage Data Relationship, editing a Relationship.
5. publish from Power BI desktop – Publish Dashboard to Web

Essential/ Recommended readings:

- Joshi, P. M., & Mahalle, P. N. (2022). *Data Storytelling and Visualization with Tableau: A Hands-on Approach*. CRC Press.
- Gupta, S., Pinto, S., Savale, S., Gillet, J., & Cherven, K. (2022). *The Tableau Workshop: A practical guide to the art of data visualization with Tableau*. Packt Publishing Pvt. Ltd
- O'Connor, E. (2018). *Microsoft Power BI Dashboards Step by Step*. Microsoft Press.
- Grey, J. (2020). *Power BI: Give Life to Your Data With the Complete and Fastest Crash Course on Data Visualization.*
- Knight, D., Knight, B., Pearson, M., & Quintana, M. (2018). *Microsoft Power BI Quick Start Guide: Build dashboards and visualizations to make your data come to life*. Packt Publishing Ltd.
- Knight, D., Ostrowsky, E., Pearson, M., & Schacht, B. (2022). *Microsoft Power BI Quick Start*

Guide: The ultimate beginner's guide to data modeling, visualization, digital storytelling, and more. Packt Publishing Ltd.

https://www.tableau.com/learn/articles/dashboards/what-is

https://www.tableau.com/learn/articles

https://www.tableau.com/about/newsroom

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Master of Business Administration (Business Analytics)
MBA (BA)
Semester I

Marks: 50   **Duration-30 Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/Practice		
INDIAN KNOWLEDGE SYSTEM	2	2	0	0	**Pass in Graduation**	**NIL**

Learning Objectives

To facilitate the students with the concept of Indian traditional knowledge and to make them understand the importance of roots of knowledge system. Further to make the students understand the traditional knowledge and analyse it and apply it to their day to day life.

Learning outcomes

After completion of the course, learners will be able to:

·   Identify the concept and importance of traditional knowledge system and its framework
·   Understand the significance of Yoga, Ayurveda on health, wellness, mind and soul
·   Understand the traditional governance system and apply the management principles from the epics and compare them with the current practices

Unit I: Bhartiya Gyan Parampara (Indian Knowledge System) – An Overview and its framework (12 Hours)

Importance of Ancient Knowledge; Defining Indian Knowledge System; the Indian Knowledge System Corpus- a Classification Framework; Some unique aspects of Indian Knowledge System: Nuances of an Oral Tradition. History of Traditional Indian Trade and commerce: Silk, cotton, sugar, spices etc., silk route; currency and transportation; Traditional mercantile system, the Concept of Dharma; Tarka: The Indian Art of Debate- The Knowledge Triangle; Knowledge Management; Types of Knowledge Management, Knowledge Barriers, Knowledge Retention.

Unit II: Health, Wellness and Psychology (8 Hours)

Impact of Yoga Way of life on Emotional Intelligence of Managers; Ayurveda- Definition of Health; Tri-dosas – Relationship to Health; The Body- Mind- Intellect- Consciousness Complex; Consciousness- The True Nature of an Individual; Five layered Consciousness of an Individual (Panchkoshas); Chakra System (Energy centres). Consciousness: Management by consciousness, Levels of Individual and Organizational consciousness, Self-consciousness, beyond self- consciousness.

Unit III: Governance and Public Administration (10 Hours)

Ramayana on Great Attributes, Dos, and Don'ts of a King; Arthasastra-Governance; Relevance of Arthasastra; Kautilyan State; Vidura- niti – Advice to a King- TheAmatya, Settlements andLand Use (Janapada),FortifiedCapital city (Durga),Treasury and State Economy (Kosa), Law & Order and Security (Danda), Foreign Policy and Allies (Mitra). Public Administration- Perspectives from the Epics. Indigenous banking system: Methods of the Indigenous banking system; Promissory note, Dastavez, Rahan, Functions of the indigenous banking system;

Practical Exercises:

● Visit a Gurukul/ Ashram and have own experience (anubhooti) of the Indian ancient knowledge system.
● Discuss Case studies relating to

❖ Mathematics of Madhava, Nilakantha Somayaji

❖ Foundational aspect of Ayurveda

❖ Foundational aspect of Ashtanga yoga

❖ Foundational aspects of Sangeeta

❖ Foundational aspect of traditional Bharat trade and commerce

● Practical sessions relating to Ayurveda with reference to self – exploration can be planned (Ayurveda Personality Test).
● Practise of meditation on Panchkoshas and Chakras.Muktchintan (brainstorming) on the perspectives from the epics and the real-life scenario of their applicability in the policies and schemes of the Government of India like Foreign policy, Defence policy, Innovation and Start-up Policy, Global Initiatives like One Sun One World One Grid: India's Initiative; Vaccine Diplomacy, International Yoga Day.

Essential/ Recommended readings

· Aurobindo, S. (2021). The Foundations of Indian Culture. India: Sri Aurobindo Ashram.
· Dharampal. (1995). The Beautiful Tree: Indigenous Indian Education in the Eighteenth Century.Rashtrotthana Sahitya. ISBN-10:8175310952
· Indian Knowledge Systems. (2005). India: Indian Institute of Advanced Study.
· Mahadevan, B., Bhat, V. R., & Pavana, N. (2022) Introduction to Indian Knowledge SystemConcepts and Applications. PHI Learning

· Parthasarathy, S. (2014). Vedanta for Modern World. Sri Siim Research Press.
· Pe, D. (2005). Hidden dangers of meditation and yoga. Payal Books
· Simpson, A. (2019). Leadership Lessons from the Bhagavad Gita. India: SAGE Publications.
· The Arthashastra. (2000). India: Penguin Books Limited.
· Vivekananda, S. (2021). Patanjali Yoga Sutra. Srishti Publishers & Distributors. ISBN- 10:9390441137

Suggestive Readings

•   Attree, A. K., Kumar, V., and Singh, A. K. (2020) Developing and validating the individual andorganisational consciousness scale, International Journal of Work Organisation and Emotion, Vol. 11, No. 2, 154-177

https://iksindia.org/index.php

•   https://indianculture.gov.in/indian-culture-repository

•   https://vedicheritage.gov.in/

•   https://www.rarebooksocietyofindia.org/

•   https://management.cessedu.org/

•   https://indica.in/

•   https://www.bhratiyakritisampada.nic.in

Note: Readings will be updated by the Department of Commerce and uploaded on Department's website.

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

Master of Business Administration (Business Analytics)

MBA (BA)
Semester II

Marks: 100   **Duration: 60 Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	**Tutorial**	**Practical/ Practice**		
Corporate Finance MBABA CC201	4	3	0	1	Pass in Graduation	NIL

Learning Objectives

To make students analyse various issues involved in financial management of a company and equip them with advanced analytical tools and techniques which can enhance their logical ability for making sound financial decisions and policies in a company.

Learning outcomes

After completion of the course, learners will be able to:

- understand the present and future value of cash flows associated with financial decisions using analytical tools
- analyse capital budgeting decisions using appropriate techniques/tools
- evaluate the capital structure of firms, and analyse the agency problems between different stakeholders
- discuss the dividend decisions and working capital policy of firms
- evaluate contemporary issues in Financial Management, and evaluate different forms of corporate restructuring

SYLLABUS

Unit I: Introduction to Financial Management (8 Hours)

Nature, scope and objectives of financial management; Measurement of shareholders' wealth; Finance as a strategic function; Role of a finance manager; Concepts of Risk, Return and Time value of money; Discounted Cash Flows (DCF); Financial decision making and types of financial decisions; Risk-return trade off in financial decisions; Annuity calculators; Introduction to expert systems for financial analysis.

Unit II: Capital Budgeting Decisions (14 Hours)

Nature, significance and types of capital budgeting decisions; Capital budgeting process; Principles of cash flow estimation; Estimation of cash flows; Capital budgeting techniques- ARR, Payback period, Discounted Payback Period (DPB), Net Present value (NPV), Equivalent Annual NPV, and Internal rate of return (IRR), Incremental IRR, Modified IRR and Profitability index; Fisher's rate of intersection; Capital budgeting decision under inflation, capital rationing and multi period budget constraints; Capital budgeting decision under risk and uncertainty; Techniques for incorporating risk and uncertainty in capital budgeting decisions- Risk Adjusted Discount Rate Method (RADR), Certainty Equivalent method, DCF Break Even Analysis, Simulation method, Probability distribution method, Decision tree analysis, Backward induction method, Sensitivity analysis and Scenario analysis.

Unit III: Cost of Capital and Capital Structure Decisions (12 Hours)

Specific costs of capital, weighted average cost of capital, weighted marginal cost of capital; Theories of capital structure- Net Income theory, Net Operating Income theory, Traditional theory, MM Hypothesis without and with corporate taxes, Merton Miller argument with corporate and personal taxes, Trade off theory, Pecking order theory, Market timing theory; Signaling theory and effect of information asymmetry on capital structure; The concept of present value of interest tax shield; Agency Problems and Agency Costs; Financial leverage and evaluation of financial plans (EBIT-EPS analysis); Determination of beta of levered firm and optimal capital structure; Factors affecting choice of Capital structure in practice.

Unit IV: Dividend Decisions and Working Capital Management (18 Hours)

Dividend Decisions

Issues in dividend decision; Dividend rate and dividend yield; Theories of relevance and irrelevance of dividend in firm valuation -Pure residual theory, Walter's model, Gordon's Model, MM Hypothesis, Bird-in-hand theory and Dividend signaling theory; Relevance of dividend under market imperfections; Traditional and Radical position on dividend; Types of dividend polices in practice-Pure residual policy, constant rupee dividend policy, constant dividend payout policy and smooth stream dividend policy; Determinants of dividend policy in practice; Lintner's Model of corporate dividend behavior.

Working Capital Management

Concept and types of working capital; Operating cycle and cash cycle; Estimation of working capital requirement; Approaches of working capital financing; Determinants of working capital; Components of working capital

management; Cash management- Baumol's Model and Miller-Orr Model of managing cash; Receivables management- dimensions of credit policy, credit analysis and evaluation of credit policies; Inventory management.

Unit V: Corporate Restructuring and Contemporary Issues in Financial Management (8 Hours)

Corporate restructuring and its various forms; Mergers and Acquisitions (M&A)- types, motives, benefits, valuation and financing; Leveraged buyouts; Management buyouts; Demerger, split up, Spin offs; Divestiture; Bases for calculation of Share exchange ratio; Determination of minimum and maximum exchange ratio; Contemporary issues in financial management.

Note: Relevant software will be used for pedagogical purposes. Evaluation of practical exercise (if any) using software will be part of internal assessment.

Practical Exercises:

The learners are required to:
1. compute income from various investment alternatives using annuity calculators.
2. estimate cash flows from a hypothetical project. Using appropriate software, evaluate the project's profitability by employing capital budgeting evaluation techniques.
3. extract data from financial statements of different firms/financial databases and estimate the cost of capital using appropriate software.
4. evaluate dividend policies of different firms.
5. estimate the working capital requirements for a firm using relevant software.
6. evaluate any recent Merger or Acquisition. Estimate the firm's value using appropriate software.

Suggested Readings:

- Brealey, R. A. & Myers S. C. (2020). *Principles of Corporate Finance*. McGraw Hill.
- Chandra, P. (2017). *Financial Management-Theory and Practice*. Tata McGraw Hill.
- Damodaran, A. (2007). *Corporate Finance: Theory and Practice.* John Wiley & Sons.
- Ehrhardt, M. C. & Brigham, E. F. (2003). *Corporate Finance*. Cengage Learning
- Hillier, D., Grinblatt, M. & Titman, S. (2011). *Financial Markets and Corporate Strategy.* McGraw Hill
- Khan, M. Y. and Jain, P. K. (2017). *Financial Management: Text, Problems and Cases*. Tata McGraw Hill.
- Pandey, I. M. (2021). *Financial Management.* Vikas Publishing.
- Ross, S. A. and Westerfield, R. W. (2020). *Corporate Finance.* McGraw Hill.
- Van, Horne and Dhamija (2011). *Financial Management and Policy.* Pearson

Note: Latest edition of the readings may be used.

Note: Relevant software will be used for pedagogical purpose. Evaluation of practical exercise using software will be part of internal assessment. Further, case studies related to above topics are required to be discussed.

Note: Suggested readings will be updated by the Department of Commerce and uploaded on Department's website.

Master of Business Administration (Business Analytics)

MBA (BA)
Semester II

Marks: 100   **Duration- 60 Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	**Tutorial**	**Practical/ Practice**		
Human Resource Management **MBABACC202**	**4**	**3**	**0**	1	**Graduation**	**No**

Learning Objective: To familiarize the students with the different aspects of managing people in organizations from the stage of acquisition to development and retention.

Learning Outcomes:

After completion of the course, learners will be able to:
● understand HRM and the role of HRM in effective business administration.
● analyse the role that HRM has to play in manpower planning, job analysis and forecasting the human resource requirements.
● apply the recruitment and selection process in relation to the organization's business and HRM objectives.
● evaluate job-based compensation schemes and performance management systems and appraisals.
● recognise the emerging horizons of HRM and also enduring international HRM, e-HRM, and HRIS.

Syllabus:

Unit I- Introduction: (**12 Hours**)

Conceptual foundations; Human aspect of management; Human resource management- concept, scope and importance; Competencies of HR manager- employer branding and competency mapping; Changing role of HRM- workforce diversity, technological change, restructuring and rightsizing, empowerment, downsizing, VRS, work-life balance.; TQM; Management of ethics.

Unit II- Human Resource Planning, Job Analysis, and Job Design: (12 Hours)

Assessing human resource requirements; Human resource forecasting- concept, scope and importance; Workload analysis; Job analysis; Job description and specifications; Job design; Job characteristic approach to job design, HR policies

Unit III- Recruitment, Selection, Training, and Development: (10 Hours)

Factors affecting recruitment; Sources of recruitment (internal and external); Basic selection model; Psychological tests for selection; Interviewing; Placement, induction and socialization; Job changes- Transfers, Promotions, and Separations; An overview of training and development-concept and importance; Role specific and competency-based training; Responsibilities and challenges to Training Managers; Emerging trends in recruitment, selection, and development.

Unit IV- Compensation Management, Performance Appraisal, and Audit: (14 Hours)

Compensation management- Job evaluation, base compensation and supplementary compensation; Innovations in compensation management- Pay band system, ESOP; Performance appraisal-concept, traditional and modern methods- MBO, 360-degree appraisal, 720-degree appraisal, behaviourally anchored rating scale, balanced scorecard; Potential appraisal, employee counselling, Job changes - Transfers and promotions, HR Audit – meaning, objectives and areas, approaches, frequency of audit

Unit V- Emerging Horizons of HRM: (12 Hours)

International HRM, challenges of international HR managers; Green HRM; E-HRM; HRIS (Human Resource Information System); Contemporary issues in human resource management-moonlighting phenomenon, employee engagement, flexitiming, psychological contract, managing protean career, layoffs, emerging job opportunities; Remote learning – Virtual team building – Upskilling; ethics in HRM

Case Studies: Some cases of the real business world to supplement learning from the course.

Practical Exercises:

The learners are required to

1. Analyse and interpret case studies on various organisations.

2. Participate in simulation exercises in the classroom on work-life balance and thereby identify their needs.

3. Participate in simulation exercises and role play on human resource planning. Learners may be assigned to draft an HR policy to combat issues assuming themselves as an HR manager.

4. To interview HR managers and develop in-depth knowledge of practical applications of HR concepts.

5. To visit a company and identify the training methods adopted in various functional areas.

6. Develop a case study on the applicability and use of different kinds of training and development strategies by various companies in real-life scenarios. Learners may be assigned to draft a training and development module on the basis of selected strategies.

7. Conduct a job analysis for any two positions in a select organisation and present the report of the same.

8. Draft virtual team building schemes for different job roles in their organisation.

Essential/ Recommended readings

- D' Cenzo, David A., Stephen P. Robbins & Susan L. Verhulst (2012). *Human Resource Management.*
- New Delhi: John Wiley and Sons.

- Dessler, Garry (2012). *Human Resource Management*. Prentice Hall of India.

- Dowling, Peter J., Festing M., & Engle A.D. (2013). *International Human Resource Management*. Cengage Learning.

- Gooderham, P. N., Nordhaug, O. & Ringdal, K. (1999). Institutional and rational determinants of organizational practices: Human resource management in European firms. *Administrative Science Quarterly*, 44(3), 507-531.

- Ian, Beardwell, Len, Holden & Tim Claydon (2004). *Human Resource Management: A Contemporary Approach*. Prentice Hall.

- Jiang, K., Lepak, D. P., Hu, J. & Baer, J. C. (2012). How does human resource management influence organizational outcomes? A meta-analytic investigation of mediating mechanisms. *Academy of Management Journal*, 55(6), 1264-1294.

- Noe, R. A., Hollenbeck, J. R., Gerhart, B. & Wright, P. M. (2016). *Fundamentals of human resources management*.

- Oldroyd, J. B. & Morris, S. S. (2012). Catching falling stars: A human resource response to social capital's detrimental effect of information overload on star employees. *Academy of Management Review*, 37(3), 396-418.

- Rao, V. S. P. (2010). *Human resource management: Text and cases.* Excel Books.

- Root, L. S. & Young Jr, A. A. (2011). Workplace flexibility and worker agency: Finding short-term flexibility within a highly structured workplace. *The Annals of the American Academy of Political and Social Science*, 638(1), 86-102.

- Tilcsik, A. (2014). Imprint–environment fit and performance: How organizational munificence at the time of hire affects subsequent job performance. *Administrative Science Quarterly*, 59(4), 639-668.

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Master of Business Administration (Business Analytics)

MBA (BA)
Semester II

Marks: 100   Hours: 60

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	**Tutorial**	**Practical / Practice**		
Big Data and Cloud Computing **MBABACC203**	4	3	0	1	**Pass in Graduation**	**NIL**

Learning Objectives

The course aims to aid the learner in applying problem-solving skills and the knowledge of Big Data & Cloud Computing to solve real-world problems. It would focus on providing the learners with the foundation knowledge and understanding of Big Data, distributed computing systems, and applications, especially in the context of Cloud. It will enable analysis of untapped data for business intelligence and analytics. The objective of the course is to learn tools and techniques to apply analytics on such data which would point to various business benefits.

Learning outcomes

After completion of the course, learners will be able to:
● Acquire comprehensive knowledge and understanding of Big data & Cloud computing
● Understand the challenges of Big data.
● Learn to apply skills and tools to analyze and manage Big data.
● Understand the impact of making Big data decisions on business growth and strategy.
● Perform Big data analysis in cloud

SYLLABUS

Unit I: Introduction to Big Data (12 Hours)

Analytics – Nuances of big data – Value – Issues – Case for Big data – Big data options Team challenge – Big data sources – Acquisition – Nuts and Bolts of Big data. Features of Big Data - Security, Compliance, auditing and protection - Evolution of Big data – Best Practices for Big data Analytics -

Big data characteristics - Volume, Veracity, Velocity, Variety – Data Appliance and Integration tools – Greenplum – Informatica, Big vs Thick data.

Unit II: Data Analysis (10 Hours)

Evolution of analytic scalability – Convergence – parallel processing systems – Cloud computing – grid computing – map reduce – enterprise analytic sand box – analytic data sets – Analytic methods – analytic tools – Cognos – Microstrategy - Pentaho. Analysis approaches – Statistical significance – business approaches – Analytic innovation – Traditional approaches – Iterative

Unit III: Fundamentals of Cloud Computing and Stream Computing (14 Hours)

Introduction to Cloud Computing - History of cloud computing- Understanding the roots and essential characteristics of cloud computing - Understanding basic concepts and terminologies, benefits and limitations of Cloud computing- Introduction to Streams Concepts – Stream data model and architecture - Stream Computing, Sampling data in a stream – Filtering streams – Counting distinct elements in a stream – Estimating moments – Counting oneness in a window – Decaying window - Realtime Analytics Platform(RTAP) applications IBM Infosphere – Big data at rest – Infosphere streams – Data stage – Statistical analysis – Intelligent scheduler – Infosphere Streams.

Unit IV: Predictive Analytics and Visualization (12 Hours)

Predictive Analytics – Supervised – Unsupervised learning – Neural networks – Kohonen models – Normal – Deviations from normal patterns – Normal behaviours – Expert options – Variable entry - Mining Frequent itemsets - Market basket model – Apriori Algorithm – Handling large data sets in Main memory – Limited Pass algorithm – Counting frequent itemsets in a stream – Clustering Techniques – Hierarchical – K- Means – Clustering high dimensional data Visualizations - Visual data analysis techniques, interaction techniques; Systems and applications.

Unit V: Frameworks and Applications (12 Hours)
IBM for Big Data – Map Reduce Framework - Hadoop – Hive - – Sharding – NoSQL Databases - S3 - Hadoop Distributed file systems – Hbase – Impala – Analyzing big data with twitter – Big data for ECommerce – Big data for blogs.

Practical Exercises:

The learners are required to

1. Access HDFS using JAVA API
2. Access HDFS Using COMMAND-LINE INTERFACE Setup Hadoop cluster
3. Run Hadoop sample jobs
4. Perform Workflow Diagram Oozie workflow application
5. Create your First PIG Program

Essential/ Recommended readings

● Ohlhorst, F.J. (2013), Big Data Analytics: Turning Big Data into Big Money, Wiley and SAS Business Series.

● Franks, B. (2012), Taming the Big Data Tidal Wave: Finding Opportunities in Huge Data Streams with Advanced Analytics, Wiley and SAS Business Series.

● Rajaraman, A. & Ullman, J.D. (2014), Mining of Massive Datasets, Cambridge University Press.

● Kudyba, S. (2014), Big Data, Mining, and Analytics: Components of Strategic Decision Making, Auerbach Publications.

● Prajapati, V. (2013), Big Data Analytics with R and Hadoop, Packt Publishing.

● Minelli, M., Chambers, M., Dhiraj, M. (2013), Big Data, Big Analytics: Emerging Business Intelligence and Analytic Trends for Today's Businesses, Wiley Publications.

● Mayer-Schonberger&Cukier, K. (2013), Big Data: A Revolution That Will Transform How We Live, Work and Think, Hodder And Stoughton

● Kulkarni, P., Joshi, S. & Brown M.S. (2016), Big Data Analytics, PHI Learning.

● Acharya, S. &Chellappan, S. (2015), Big Data and Analytics, Wiley.

● Bart Baesens, Analytics in a Big Data World: The Essential Guide to Data Science and its Applications, Wiley, 2014

● Murugesan, S., & Bojanova, I. (Eds.). (2016). Encyclopedia of cloud computing. John Wiley & Sons.

● Srinivasan, A. (2014). Cloud Computing: A practical approach for learning and implementation. Pearson Education India.

● Buyya, R. (2013). Mastering Cloud Computing. Tata McGraw-Hill Education.

● Sosinsky, B. (2010). Cloud computing bible. John Wiley & Sons.

● Rungta, K. (2016), LearnHadoop in 1 Day: Master Big Data with this complete Guide, Amazon Digital.

● Meir-Huber, M. (2015), Kick Start: Hadoop: Learn Hadoop in Hours!, Amazon Digital.

Notes:

1. **Latest edition of the readings may be used.**

2. **Relevant software will be used for pedagogical purpose. Evaluation of practical exercise using software will be part of internal assessment. Further, case studies related to above topics are required to be discussed.**

3. **Suggested readings will be updated by the Department of Commerce and uploaded on Department's website.**

Master of Business Administration (Business Analytics)

MBA (BA)
Semester II

Marks: 100   **Hours: 60**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Using R for Analytics **MBABACC204**	4	2	0	2	**Pass in Graduation**	**NIL**

Learning Objectives

The course aims to train students in R programming language and its applications in the business world as well as to provide hands-on-training to use various tools and packages of R for advanced data analytics with real and simulated datasets to analyze and solve real and complex analytics problems including data visualization and machine learning.

Learning outcomes:

After completion of the course, learners will be able to:

1. learn R Programming language and data wrangling in R,
2. visualize the Business Data using R for key insights,
3. analyze statistical models and estimate future prospects for Business,
4. leverage data mining techniques using R to solve real life problems,
5. apply machine learning techniques to solve Business Analytics Problems.

SYLLABUS

Unit I: Introduction to R & R Environment and Exploratory Data Analysis (12 Hours)
Overview of R Language, Installation of R and RStudio, Scripts, Data Types in R, Data Structure in R, Loading Packages, Operators and functions in R, Data Extraction and Wrangling, Exporting Data from R. Pre-processing of data, Exploratory Data Analysis.

Unit II: Data Visualization for insights using R (6 Hours)
Perceptual mapping through Advanced R packages: ggplot2, Lattice, highcharter, RColorBrewer, Plotly, etc. Charts, Graphs, and Maps.

Unit III: Inferential Statistics (10 Hours)

Testing assumptions, Parametric and non-parametric tests, Correlation, Regression: Linear & Logistic, Dimensionality Reduction techniques: EFA & PCA, Multidimensional Scaling, ANOVA, Time Series Analysis: Stationarity, AR, MA, ARMA and ARIMA, Forecasting

Unit IV: Cluster Analysis and Classification (12 Hours)
Introduction to Cluster Analysis, Clustering models and Analysis, Hierarchical Clustering, Non-Hierarchical Clustering, K means Clustering, C means Clustering, KNN Classification, Decision Tree and Random Forests,

Unit V: Data Mining and Machine Learning using R (20 Hours)
Text Mining, Text Mining Algorithms, Sentiment Analysis, Supervised and Unsupervised Machine Learning Algorithms, R-packages for Machine Learning: caret, e1071, xgboost, randomForest, data.table.

Note: All the classes will be held in the computer lab. Latest versions and packages of R programming will be used to provide hands-on training / demonstration in the class. One Capstone Project as an assignment must be made compulsorily.

Practical Exercises:

The learners are required to:
1. conduct an exploratory study on real data..
2. apply R and obtain the results from a data set regarding data visualisation.
3. evaluate the survey results of a pilot study related to primary data.
4. analyse the results related to the Decision Tree by taking primary data.
5. collect a stock market data set and apply data mining tools.

Essential/ Recommended readings

- Gardener, M. (2012). *Beginning R: the statistical programming language*. John Wiley & Sons.
- Wickham, H., & Grolemund, G. (2016). *R for data science: import, tidy, transform, visualize, and model data*. " O'Reilly Media, Inc.".
- Field, A., Miles, J., & Field, Z. (2012). Discovering statistics using R (2012). *Great Britain: Sage Publications, Ltd*, *958*.
- Kumar, M. (2022). *Business Analytics using R.* Excellence Brings Success
- Cornillon, P. A., Guyader, A., Husson, F., Jegou, N., Josse, J., Kloareg, M., ... & Rouvière, L. (2012). *R for Statistics*. CRC press.

Master of Business Administration (Business Analytics)

MBA (BA)
Semester II

Marks: 100   **Hours: 60**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	**Tutorial**	**Practical/ Practice**		
Operations Management **MBABA206**	4	3	1	0	**Pass in Graduation**	**NIL**

Learning Objectives

The course aims to familiarize the learner with the formulation of business problems using mathematical modelling techniques. To provide an understanding of the applications of Operational Research and how to use Excel to solve these problems

Learning outcomes

After completion of the course, learners will be able to:

- Understand the role of operations in both manufacturing and service organizations and the significance of operations strategy in the overall business.

- Understand the importance of facilities location and layout

- Understanding aggregate planning strategies

- Learn different quality tools and the tools of statistical process control for analyzing a process in terms of quality and also develop an understanding of six sigma quality.

- Learn the process of Just in time and lean production system

Syllabus

Unit I: Nature, Evolution and Scope of Operations Management (12 Hours)

Nature, Evolution and Scope of Operations Management. Emerging trends in Operations Management. Operations Strategy: Linkage with Competitive Strategy and formulation of Operations Strategy.

Unit II: Facilities location and Layout (12 Hours)

Site Selection and its methods, factors affecting location decisions, location planning methods, Types of layout, Production process

Unit III: Planning (12 Hours)

Aggregate Production Planning (APP), Master production schedule (MPS), Materials requirements planning (MRP).

Unit IV: Quality: (12 Hours)

Quality Management, Statistical Process Control (SPC), Process capability and Six Sigma.

Unit V: Methods (12 Hours)

Just-in-time, Lean operations and Toyota Production System Theory of Constraints, Role of technology in Operations Management

Essential/ Recommended readings

● Stevenson, W.J., (2018). Operations Management (12th ed.). McGraw Hill, Chennai..
● Krajewski, L.J., Malhotra, M.K., and Ritzman, L.P. (2016).Operations Management: Processes and Supply Chains (11th ed.), Pearson Education, Delhi.
● Mahadevan, B. (2015). Operations Management (3rd ed.). Pearson Education, Delhi
● Chase, R. B., Shankar, R., and Jacobs, R. F. (2019). Operations and Supply Chain Management (15th Ed.) Mc Graw Hill, Chennai.

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Master of Business Administration (Business Analytics)

MBA (BA)
Semester II

Marks: 100   **Hours: 60 Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Management Science **MBABACC206**	4	2	0	2	**Pass in Graduation**	**NIL**

Learning Objective:

The course aims to develop the knowledge of quantitative tools for decision making and to prepare for application of their tools in application of these tools in different organizational settings.

Learning Outcomes:

After completion of the course, learners will be able to:

- understand different decision making situations in business and the role of different quantitative approaches in solving them.
- evaluate the quantitative approaches to problem solving in different business situations constrained by availability of resources and alternatives.
- create prudent and cost effective decision making transportation, assignment and transshipment problems.
- evaluate various models of EOQ by using simulated situations to solve the problems related to inventory and queuing management.
- apply Markov Chains decision process and Theory of Games to the decision situations requiring prediction about outcomes.

Syllabus:

Unit I– Fundamental of decision making: **(10 Hours)**

Types of decisions; Steps in decision making; Quantitative analysis and decision making; Different types of models and their uses; Model building steps.

Unit II- Linear Programming: (10 Hours)
Basic concepts; Mathematical formulation and applications; Solution of LP problem using graphic and simplex method; Sensitivity analysis and interpretation of solution; Duality in linear programming – formulation and solution, integer linear programming - solution.

Unit III– Transportation, Assignment and Trans-shipment: (10 Hours)

Formulation; Solving transportation and assignment problems; Dealing with special cases of transportation and assignment problems.

Unit IV- Simulation and Queuing Management: (10 Hours)

Concepts of heuristics; Simulation: Monte Carlo Simulation, Application of simulation in business scenario. Queuing models: Elements of a queuing system; Models with Poisson arrival and Exponential services rates- single server and infinite and finite population; Cost behaviour analysis. Stochastic analysis and Utility function.

Unit V– Project Scheduling: (20 Hours)

Concepts of PERT & CPM techniques and their applications; Network analysis- Scheduling activities, determining critical path, calculation of floats; Time-cost trade-off, resource allocation & resource levelling. Use of Software for Project Management. Markov Chains- decision processes; Market share analysis; Game Theory- Pure strategy games; Mixed strategy games; Value of the game; Rules of Dominance, Graphical methods. Algebraic methods and LPP for solving games. Orientation to Optimization package for Games and Markov analysis.

Note: List of cases to be discussed shall be announced at the beginning of the semester.

Practical Exercises:

The learners are required to:

1. solve a manufacturing problem based on LPP model.
2. evaluate transportation scenario in supply chain management .
3. apply Monte Carlo simulation in service industry.
4. conduct network analysis in IT Industry.
5. conduct a game theory simulation.

Essential/ Recommended readings

Suggested Reading:

- Hendriks, T.H.B. (2007). *Decision Science: Theory and Applications*. Wageningen Academic Publishers.
- Hillier, F.S., Lieberman, G.J., Nag , B. Basu, P. (2017*). Introduction to Operations Research.*
- McGraw Hill Education.
- Powell, S.G, & Baker, K.R. (2017). *Management Science - The Art of Modeling with Spreadsheets*. Wiley.
- Taha,H.A.(2014.*) Operations Research : An Introduction*. Pearson Publication.

Additional Readings

Winston, W.L. (1994*). Operations Research: Applications and Algorithms.* Duxbury Press.

Master of Business Administration (Business Analytics)

MBA (BA)
Semester II

Marks: 50   **Duration-30 Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Data Warehousing and Data Mining MBABACC207	2	1	0	1	**Pass in Graduation**	**NIL**

Course Objectives:

To mine interesting and useful patterns from the explosive volume of data by application of analytical techniques. The course is designed to extract new and valuable information by learning core concepts of data mining, which when properly implemented can yield to business solutions and profitable enterprises.

Learning Outcomes:

After completion of the course, learners will be able to:

SYLLABUS:

Unit I: Introduction to data mining (8 Hours)
Why data mining? What is data mining? Kinds of data, kinds of patterns, technologies, Kinds of applications, Major issues in data mining.

Data exploration and preprocessing
Data objects and attribute types, basic statistical descriptions of data, data visualization, measuring data similarity & dissimilarity, Data preprocessing: Overview, data cleaning, data integration, data reduction, data transformation & data discretization

Unit II: Data Warehousing & Online Analytical Processing (12 Hours)
Data Warehouse: Basic Concepts, Data warehouse modeling: Data cube & OLAP, Data warehouse design & usage, data warehouse implementation, data generalization by attribute-oriented induction

Clustering: Basic concepts & Methods
Cluster Analysis, Partitioning methods, hierarchical methods, density-based methods, grid-based methods, evaluation of clustering

Unit III: Data Mining Trends & Research Frontiers (10 Hours)

Mining complex data types, other methodologies of data mining, data mining applications, data mining & society, data mining trends

Mining Unstructured Data: Text mining
What is unstructured data? Importance of text mining, characteristics of text mining, steps in text mining: Representation of text documents, preprocessing techniques, feature selection, constructing a vector space model, predicting and validating the text classifier

Practical Exercises:

The learners are required to:

1. solve a manufacturing problem based on a data mining model.
2. evaluate data warehousing and analytical processes in supply chain management .
3. apply text mining in observing trends on social media.

Essential/ Recommended readings

Text Books
- Han, J., Kamber, M., Pei, J. (2011), Data Mining: Concepts & Techniques, Morgan Kauffmann, Third Edition.
- Malhotra, R. (2016), Empirical Research in Software Engineering: Concepts, Analysis & Applications, CRC press.

Reference Books
- Bramer, M. (2007), Principles of Data Mining, Springer-Verlag.
- Hand D., Mannila H. and Smyth P. (2001), Principles of Data Mining, MIT Press.
- Dunham, D.H. (2006), Data Mining: Introductory and Advanced Topics, Pearson Education, First Edition.
- Pudi, V. &Radha Krishna, P. (2009), Data Mining: Concepts and Techniques, Oxford University Press.

Suggested Readings
- Larose, D.T. & Larose, C.D. (2016), Data Mining and Predictive Analytics, Wiley.
- Dean, J. (2014), Big Data, Data Mining and Machine Learning: Value Creation for Business Leaders and Practitioners, Wiley.

Master of Business Administration (Business Analytics)
MBA (BA)
Semester II

Marks: 50   **Duration-30 Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Life Skills and Communication MBABA208	2	2	0	0	**Pass in Graduation**	**NIL**

Learning Objectives: To build understanding and perspective about life beyond profession.

Learning Outcomes:

After completion of the course, learners will be able to:

- understand the meaning, grand narrative of life and the concept of leverage psychological capital.
- analyse the role of society and technology in life.
- explore nuances of communication and the role of life skills in various aspects.

Syllabus:
Unit I-Introduction (10 Hours)
Ontological perspective of life; Meaningfulness and mindfulness; Understanding personal and organizational outcomes of meaningfulness and mindfulness; Notion of time; Understanding psychological capital - Hope, efficacy, resilience and optimism; Developing strengths and living well; Happiness and pleasure dialogue.

Unit II- Society Technology Interface (10 hours)
Role of technology in shaping present day society; Role of Digital Literacy in professional life; Trends and opportunities in using digital technology in workplace; Social interaction and changing paradigm of physical, digital and biological world.

Unit III-Effective Communication and Life Skills (10 hours)
Principles of effective communication; Verbal, non- verbal and listening skills; Learning Team skills and Career skills; Creating persuasive communication and avoiding common mistakes in communication at personal,

interpersonal and organizational level; Understanding role of life skills for increasing employability and entrepreneurship, meaning and significance of good work; Case Studies of Successful Entrepreneurs

Practical Exercises

The learners are required to:

1. Group discussion on personal and organizational outcomes of meaningfulness and mindfulness

2. Participate in simulation exercises in the classroom on focus and self-control and critical thinking.

3. Participate in simulation exercise and role play on Learning Team, reverse mentoring and engaged leaning. Learners may be assigned to draft an HR policy to combat work life issues assuming themselves as an HR manager.

4. Brainstorming session on how to strengthen cognitive impairments through therapeutic interventions.

5. Practical hands on exercise/sessions on happiness and pleasure dialogue to find out positive outcome towards life.

6. Conduct survey on role of technology and its impact on society.

7. Various role plays relating to verbal and non-verbal communication can be planned.

8. Brainstorming exercises can be conducted and case studies of successful entrepreneurs to be presented.

Essential/ Recommended readings
Readings

- Cappelli, Peter (2012). Why Good People Can't Get Jobs: The Skills Gap and What Companies Can Do About It.Wharton Digital Press.
- Klaus,Schwab(2017). The Fourth Industrial Revolution.World Economic Forum.
- Lopez, Pedrotti & Synder (2015). Positive Psychology – the scientific and practical explorations of human strengths.Sage Publications.
- Louis, Narens (2001).Theories of Meaningfulness.Psychology Press. Taylor & Francis.
- Schein, Edgar H. (2013). Humble Inquiry – The Gentle Art of Asking Instead of Telling. Berrett Koehler Publishers.
- Steven, Monson (2017). Mapping Society and Technology.University of Minnesota Publications.
- Vygotsky, L. S. (1978). Mind in Society – The development of higher psychological processes. Harvard UnivPress.

Master of Business Administration (Business Analytics)

MBA (BA)
Semester III

Marks: 100   Duration-60 Hrs.

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Corporate Governance , Ethics And Sustainability **MBABACC301**	**4**	**4**	**0**	**0**	**Pass in Graduation**	**NIL**

Learning Objectives

The course aims to develop the understanding about the role of corporations in society and boards" role in keeping oversight on the functioning of the company, global developments in Governance and Corporate Citizenship. The course will also provide necessary knowledge and skills for building professional boards, stakeholder engagement and shareholder activism.

Learning outcomes

After completion of the course, learners will be able to:

- Create a framework for effective corporate governance by understanding the role and responsibility of different stakeholders in large corporates and how their interplay results in alternate governance structures in different countries.
- Appreciate the accountability of corporations towards its stakeholders and society and to create an integrated value framework for sustainability.
- Serve as an effective board member, build professional boards and as senior managers contribute in strengthening board performance.
- Know about rights and responsibilities of shareholders.
- Build and monitor systems that have strong internal controls to prevent corporate frauds.

SYLLABUS

Unit I- Concepts and Framework: (10 Hours)

Understanding Corporate governance, Shareholders, Stakeholders; Type of directors: Insider and outsider, executive and non-executive, Independent, Nominee; Ownership and Control; Theories and development of corporate governance; Models: Types and basis of adoption; Principles of corporate governance;

Unit II- Boards and Directors: (16 Hours)

Role of board; Board composition, independence, and committees; Board leadership: Splitting chairman and CEO, CEO succession, lead director; Board processes and meetings, Building professional Boards – Directors' selection, compensation and stock options, directors" training and competence, board diversity, board evaluation; Boards oversight of CEO.

Unit III- Stakeholders and Shareholder: (14 Hours)

Shareholders rights and responsibilities; Differential voting rights; Voting mechanism; Class action suit; Rights of minority shareholders; Activism – Exit or voice, shareholder proposals, institutional activism, stewardship code, foreign institutional investors, proxy advisory firms; Family controlled firms: Stages, convergence of ownership and control, Family governance, Family splits and succession planning, Insider Trading; Whistle Blowing;

Unit IV - Financial Oversight, Risk Management and Corporate Scams: (10 Hours)

Internal control; Reliability of financial statements; Audit and auditors: Selection, rotation and role; Audit committee: Composition and role; Risk management; Related party transactions. Corporate Scams across countries and their implications.

UNIT V-Ethics, Sustainability and Responsible Investment: (10 Hours)

Ethical theories and business decisions; Business ethics; Code of ethics, Sustainable development goals, role of company in Sustainable development, Sustainable reporting, Integrated reporting, Sustainability index, Sustainability impact matrix-ESG methodology, carbon estimate models. Climate Governance. Corporate social responsibility- Meaning and models; CSR and strategy, CSR in India.

Practical Exercises:
The learners are required to

1. Analyze the cases- Poly Peck International, UK, 1991, Maxwell Corporation, UK, 1991, Bank of Credit and Commerce International, UK, 1991-92, World.com, US, 2001, Vivendi, France, 2002, Kingfisher, India, 2012 to under governance concerns that led to the governance movement

2. Analyze Case - Enron, US, 2001 to examine the importance of effective board and independent directors. The ICICI~Videocon Ltd and Chandra Kochhar, India, 2018 to be evaluated to understand Conflict of interest/ Quid-pro-quo.

3. Tata Group and Cyrus Mistry, India, 2016 Case to be analysed to assess governance issues in family owned firms. Critically analyse DHFL fiasco. Analyse case Rajat Gupta, USA, 2010-12 to understand the concept of insider trading.

4. Analyze Nick Leeson and Barings Bank, UK, 1991-93, Punjab National Bank and Nirav Modi, India, 2018 to develop Internal Control systems. Scrutinize the case - Satyam Computers, India, 2008 to understand the need for financial oversight, role of audit committee and need for audit effectiveness.

5. Examine corporate governance report and responsibility reports of different companies, examine

components of CSR reports of different companies.

Essential/ Recommended readings

- Companies Act, (2013), Parliament of India.
- *Robert, A. G. Monks & Nell, Minow (2011). Corporate Governance.* John, Wiley & Sons.
- Satheesh, Kumar T.N. (2010). Oxford Governance.
- SEBI (2015), Chapter IV, Listing Obligations and Disclosure Requirements Regulations.
- Sharma, J.P. (2016). Corporate Governance, Business Ethics and CSR.
- Tricker, B. (2012). *Corporate Governance*. Oxford.

Additional Readings

- Financial Aspects of Corporate Governance Report, 1992, UK.
- OECD Principles of CG 2015, retrieved from http://www.oecd.org/daf/ca/Corporate-Governance- Principles-ENG.
- Sarbanes-Oxley Act of 2002, USA.
- SEBI, Prohibition of Insider Trading Regulations, 2015.

Master of Business Administration (Business Analytics)

MBA (BA)
Semester III

Marks: 50   Duration-30 Hrs.

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	**Tutorial**	**Practical/ Practice**		
Using Python for Analytics **MBABACC302**	2	1	0	1	**Pass in Graduation**	**NIL**

Learning Objectives

The course aims to impart knowledge about python programming language and its applications in the business world and to provide hands-on-training to use various tools and libraries of Python for advanced data analytics with real and simulated datasets to solve real and complex business analytics problems including predictive analytics, data mining and machine learning.

Learning outcomes

The Learning Outcomes of this course are as follows:
1. understand the main features of Python and its applications for Analytics,
2. learn & use tools and techniques of Python to explore, analyze and solve the real business world problems,
3. analyze and solve various real-life problems of Finance, HR and Marketing,
4. present business data through specialized visualization tools,
5. learn basics of data mining techniques using Python
6. learn basics of machine learning techniques using Python

Unit I: The Python Fundamental and Descriptive Statistics using Python (12 Hours)

Anaconda, IDEs-Jupyter, Pycharm; GIT- Configuration with IDEs, Creating and Managing Analytics Projects, Basic Data Structures, Programming Constructs, Libraries-Numpy, Pandas, Matplotlib, Data Wrangling, Managing Missing values, Outliers Detection, Various types of Joins, merge, Partitioning data into train and test set, Scaling of data, Descriptive Statistics: measures of central tendency, measures of dispersion.

Unit II: Graphical Representation of Data (4 Hours)

Selection of Graph, Basic Graphs- histogram, Bar Plot, boxplot, pie etc., Libraries- Matplotlib, seaborn, plotline; Advanced Graphs, Exploratory visualization and Explanatory visualization, Exporting Graphs.

Unit III: Predictive Statistical Modeling (14 Hours)

Hypothesis Testing, Correlation, Linear Regression, Logistic Regression, ANOVA, Exploratory Factor Analysis, Principal Component Analysis, Time Series Analysis- ARMA & ARIMA models, Forecasting.

Note: The main focus will be the demonstration and hands-on training exercise classes which will be held in the computer lab on the latest and relevant libraries of Python. Latest versions and libraries of the Python programming language will be used to provide hands-on training / demonstration in the class.

Practical Exercises:

The learners are required to:

1. analyse the data with the help of descriptive statistics.

2. evaluate the data by applying exploratory visualisation.
3. compute output of secondary/primary data with the help of predictive statistical modelling.

Essential/ Recommended readings

1. Pilgrim, M., & Willison, S. (2009). *Dive into python 3* (Vol. 2). New York, NY, USA: Apress.
2. Raschka, S. (2020). *Python machine learning*. Packt publishing ltd.
3. Mitchell, T. M., & Mitchell, T. M. (1997). *Machine learning* (Vol. 1, No. 9). New York: McGraw-hill.
4. Joshi, P., Hearty, J., Sjardin, B., Massaron, L., & Boschetti, A. (2016). *Python: Real world machine learning*. Packt Publishing Ltd.
5. Kumar, M. (2022). *Business Analytics using Python.* Excellence Brings Success
6. Liu, Y. H. (2020). *Python Machine Learning By Example: Build intelligent systems using Python, TensorFlow 2, PyTorch, and scikit-learn*. Packt Publishing Ltd.
7. Massaron, L., & Boschetti, A. (2016). *Regression analysis with Python*. Packt Publishing Ltd.

Master of Business Administration (Business Analytics)

MBA (BA)
Semester III

Marks: 100   **Duration-60 Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	**Tutorial**	**Practical/ Practice**		
Artificial Intelligence and Machine Learning **MBABACC303**	4	3	0	1	**Pass in Graduation**	**NIL**

Learning Objectives

To provide solutions to hard and unsolvable problems using a reasonable amount of time, by exploiting the knowledge of the problem domain. In view of the significance of knowledge in AI, in this course, a number of knowledge representation formalisms are introduced. Currently these two fields i.e. Artificial Intelligence and Machine Learning are in high demand, the course will help the learners to build the understanding of these fields.

Learning outcomes

After completion of the course, learners will be able to:

- Recognising if a particular problem can be viewed as a Machine Learning problem.
- Breaking down standard Machine Learning problems into more fundamental problems using tools from Calculus, Linear Algebra, Probability and Optimisation.
- Recognising relationships between equation solving, projection onto a subspace, and the supervised learning problem of linear least squares regression.
- Using, identifying failure modes, programming and debugging simple gradient descent methods for solving unconstrained optimisation problems.
- Demonstrating understanding of machine learning algorithms - model, objective or loss function, optimization algorithm and evaluation criteria.

SYLLABUS

Unit-I Introduction and Foundation (12 Hours)

What is AI - Examples of AI systems, Approaches to AI, Brief history of AI, Comparison Between Artificial intelligence, Machine Learning, and Deep Learning , Intelligent Agent. : stimulus response agents. components of intelligence.

Introduction to machine learning - Calculus, Linear Algebra - Least Squares Regression, Linear Algebra - Eigenvalues and eigenvectors, Linear Algebra - Symmetric matrices, Linear Algebra - Singular value decomposition, Principal Component Analysis in Image Processing, Unconstrained Optimisation , Convex sets, functions, and optimisation problems, Constrained Optimisation and Lagrange Multipliers. Logistic regression as an optimization problem, Examples of probabilistic models in machine learning problems, Exponential Family of distributions, Parameter estimation. Expectation Maximization.

Unit – II AI – Search (12 Hours)

Problem Solving using Search - Single agent search : Introduction to State Space Search, Statement of Search problems:, state space graphs , Searching explicit state spaces. Feature based state spaces. Problem types, examples (puzzle problem, n-queen, the road map) Two agent search : Adversarial search: Two agent games(alpha-beta pruning). MinMax Search.

Uninformed   and Informed Search –Uninformed Search: Formulating the state space, iterative deepening, bidirectional search. Informed Search Strategies : Using evaluation functions. A* & AO* , admissibility of A* , Iterative deepening A*, recursive best first search.

Unit-III AI - Knowledge Representation (8 Hours)

First Order Logic – First Order Logic : Motivation, Syntax, Interpretations, semantics of quantifiers, Entailment in FOL, Interpretation ,Inference in FOL : First Order resolution. Conversion to clausal form. Unification. Most general unifier. Resolution with variables Proving validity.

Rule based Systems and other formalism - Rule Based Systems : Forward chaining. Backward chaining. Conflict resolution. Semantic nets, Frames, Scripts.

Probabilistic Reasoning - Reasoning with uncertain information Review of Probability Theory, Introduction to Bayesian Theory, Baye's Networks, Probabilistic Inference, Basic idea of inferencing with Bayes networks. Other paradigms of uncertain reasoning. Dempster-Scheffer Theory

Unit IV – ML Methods (Supervised Learning) (14 Hours)

Introduction to Machine Learning Methods – Introduction to Machine Learning, Techniques of Machine Learning, Reinforcement Learning and algorithms, Deep Learning and its Algorithms, Ensemble Methods.

Classification – Understanding of Supervised Learning, Introduction to Classification, Classification Algorithms: Naïve Bayes, K-NN, Decision Trees, Logistic Regression, Support Vector Machines.

Regression – Introduction to Regression , Regression algorithm Linear Regression and Polynomial Regression, Support Vector Regression

Unit V – ML Methods (Unsupervised Learning) (14 Hours)

Feature   selection and Extraction - Introduction to Feature Selection and Extraction, Dimensionality Reduction, Principal Component Analysis, Linear Discriminant Analysis, Singular Value Decomposition.
Association Rules – Introduction to Pattern search and its algorithms :Apriori Algorithms. And its variants, FP Tree Growth, Pincer Search.
Clustering – Introduction to Clustering, Types of Clustering, Partition Based , Hierarchical Based,   Density   Based Clustering Techniques, Clustering algorithms : K means, Agglomerative and Divisive, DBSCAN, Introduction to Fuzzy Clustering.

Neural Networks and Deep Learning : Overview of Artificial Neural Networks, Multilayer Feedforward Neural networks with Sigmoid activation functions; Back propagation Algorithm; Representational abilities of feed forward networks, Feed forward networks for Classification and Regression, Deep Learning

Essential/ Recommended readings

Text Book

Peter Norvig, Stuart Russell (2022) Artificial Intelligence A Modern Approach

Hastie, T., Tibshirani, R., and Friedman, J. (2021), Introduction to Statistical Learning, Springer. (Free Access) (https://www.statlearning.com/)

Suggested Reading

- Aston Zhang, Zachary C. Lipton, Mu Li, and Alexander J. Smol (2021), Dive into Deep Learning, (Free Access) (https://d2l.ai/)
- David G. Stork, Peter E. Hart, and Richard O. Duda, Pattern Classification
- Christopher M. Bishop, Pattern Recognition and Machine Learning
- Trevor Hastie, Robert Tibshirani, and Jerome Friedman, The Elements of Statistical Learning: Data Mining, Inference, and Prediction

Master of Business Administration (Business Analytics)

**MBA (BA)
Semester III**

Marks: 100   **Duration-60 Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	**Tutorial**	**Practical/ Practice**		
HR Analytics MBABACC304	4	3	0	1	**Pass in Graduate**	

Learning Objectives

To develop data driven skills in students. The course will enable students to apply analytical tools in understanding employees' behavior.

Learning outcomes

After completion of the course, learners will be able to:
● understand role of analytics in human resource management.
● develop knowledge about HR metrics and types of analytics in HR.
● critically analyse the HR effectiveness and its impact on employee life cycle & experience.
● analyse data driven insights out of HR analytics.
● help in implementation of predictive modelling and dashboards in HR

SYLLABUS

Unit I- Introduction to HR Analytics (5 Hours): Evolution of HR analytics, challenges with HR Analytics, strategic focus on HR Analytics; Common pitfalls of HR Analytics; HR analytics process and skill-set needed in HR analytics team.

Unit II- Approaches to Data Analytics (15 Hours): Current approaches to measuring HR; Strategic HR metrics versus Bench marking; HR scorecards & workforce scorecards; Types of analytics in HR-descriptive, predictive and prescriptive; HR analytics framework.

Unit III- Dynamics of HR Metric (10 Hours): People analytics cycle, employee lifecycles and employee experiences, performance- and succession management; Agile framework; HR value chain; Metrics to measure HR effectiveness; Factors driving employee turnover, link between engagement and performance; Competitive edge and HR analytics.

Unit IV- Data Mining Techniques (15 Hours): Data analysis, data visualization techniques and effective utilization using tools; Common pitfalls associated with data visualization; Driving insights out of HR analytics.

Unit V- Decision Making Based on Analytics (15 Hours): Data driven culture in an organization;

Implementation of predictive modelling; Importance of predictability in fulfilling strategic objectives; Effective HR dashboards.

Practical Exercises:

1. Data analysis, data visualization techniques and effective utilization using tools.
2. Common pitfalls associated with data visualization.
3. Driving insights out of HR analytics.
4. Data driven culture in an organization;
5. Implementation of predictive modelling; Importance of predictability in fulfilling strategic objectives;
6. Effective HR dashboards.

Essential/ Recommended readings

Reading List (Unit wise)
- Edwards, M. & Kirsten Edwards, K. (2016). *Predictive HR Analytics: Mastering the HR Metric.* Kogan Page.
- Isson, J.P. Harriott & J.S. (2016). *People Analytics in the Era of Big Data: Changing the Way You Attract, Acquire, Develop, and Retain Talent.* John Wiley & Sons.
- James, E.R. (2017). *Business Analytics*. UK: Pearson Education Limited.
- Van, Wieren S. (2017). *Quantifiably Better: Delivering Human Resource (HR) Analytics from Start to Finish.* Technics Publications LLC

Note: Readings will be updated by the Department of Commerce and uploaded on Department's website.

Master of Business Administration (Business Analytics)

MBA (BA)
Semester III

Marks: 100   Duration-60 Hrs.

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	**Tutorial**	**Practical/ Practice**		
Marketing Analytics **MBABACC 305**	4	3	0	1	**Pass in Graduation**	**NIL**

Learning Objectives

The course will provide learners a strong foundation in marketing analytics in order to handle diversified marketing data, build advanced analytical models and deliver effective visualization product and comprehensive reports.

Learning outcomes

 After completion of the course, learners will be able to:

- ·   Comprehend the concept of marketing analytics and various analytical modelling.
- ·   Understand the marketing segmentation and various business strategy.
- ·   Understand the dynamics of product, service and price analytics.
- ·   Evaluate the promotion budget and allocation.
- ·   Understand the analytics in action.

SYLLABUS

Unit I: Concept and Marketing Insight (12 Hours)

Concept of marketing analytics, analytical modelling and metrics in marketing, Marketing Insight: sources of market data, market sizing, porter five forces analysis, STEEPLE model.

Unit II: Market Segmentation and Business Strategy (12 Hours)

Market segmentation: market segmentation, target market, marketing positioning. Business strategy: strategic scenarios and strategic decision models, business forecasting, predictive analytics in marketing, data mining, balanced scorecard, critical success factors.

Unit III: Product, Service and Price Analytics (12 Hours)
 Product and Service Analytics: Conjoint analysis, portfolio resource allocation, decision tree models, product and service metrics, attribute preference testing. Price analytics: pricing techniques and assessments, price metrics, profitable pricing, price discrimination.

Unit IV: Promotion and Distribution Analytics (12 Hours)

Promotion Analytics: Promotion budget estimation and allocation, promotion metrics for traditional and social media marketing. Distribution Analytics: Designing distribution channel, channel evaluation and selection, managing conflicts and control in channels.

Unit V: Sales Analytics and Analytics in Action (12 Hours)

Sales Analytics: Consumer sales process, e-commerce sales model, prescriptive marketing sales metrics, profitability metrics, support metrics. Analytics in Action: Rapid decision models, metrics in marketing campaigns, excel excellence, data driven presentations.

Practical Exercises:

The learners are required to

1. Identify a company and evaluate its STEEPLE model.
2. Prepare a comparative analysis of companies based on market segmentation, their target market and their marketing positioning
3. Discuss various types of price discrimination techniques adopted in different industries.
4. Discuss the impact of promotion and distribution Analytics.
5. Apply predictive and prescriptive analytics to solve marketing problems.

Essential/ Recommended readings

- Sorger, S. (2013), Marketing Analytics: Strategic Models and Metrics, Admiral Press.
- Winston, W.L. (2014), Marketing Analytics: Data-Driven Techniques with Microsoft Excel, Wiley, First Edition.
- Etzel, M. J., Walker, B. J., Stanton, W. J., & Pandit, A. (2010). Marketing (14th ed.). Mc Graw Hill.
- Grewal, D., & Levy, M. (2022). Marketing (8th ed.). McGraw-Hill Education.
- Kapoor, N. (2021) Principles of Marketing, Prentice Hall of India.
- Kotler, P., Keller, K L., & Chernev, A. (2022). Marketing Management (16th Edition).
- Pearson Education.
- Kotler, P., Armstrong, G. & Agnihotri, P. (2018). Principles of Marketing (17th
- Edition), Pearson Education. Indian edition.
- Sharma, K., & Swati Aggarwal. (2021). Principles of Marketing. Taxmann Publications.

Notes:

1. Latest edition of the readings may be used.

2. Relevant software will be used for pedagogical purpose. Evaluation of practical exercise using software will be part of internal assessment. Further, case studies related to above topics are required to be discussed.
3. Suggested readings will be updated by the Department of Commerce and uploaded on Department's website.

Master of Business Administration (Business Analytics)

MBA (BA)
Semester III

Marks: 100   Duration-60 Hrs.

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical / Practice		
Financial Analytics MBABACC306	4	3	0	1	**Pass in Graduation**	**NIL**

Learning Objectives

The objective of this course is to develop financial data analytical skills in students. The course will enable students to arrive at diversified and optimum financial decisions analytically.

Learning outcomes

After completion of the course, learners will be able to:

1. understand role of analytics in finance.
2. develop knowledge about business valuation and types of methods used in valuation.
3. apply predictive modelling techniques in analyzing financial data for decision making.
4. understand derivative pricing and role of real options in business decisions.
5. develop a sound investment strategy considering market and credit risk.

SYLLABUS

Unit-I - Introduction to Financial Analytics (5 hours): Definition, relevance and scope financial Analytics, recent trends in financial analytics, Concept of Primary Data and Secondary Data, Concept of Supervised and Unsupervised learning.

Unit-II - Business Valuation Analytics (15 hours): Financial and Cost Modelling using Spreadsheets, Company Business Model Analysis, Company Profitability Analysis, Product Profitability Analysis, Financial Statements and Projections - Discounted Cash Flow Analysis, Comparable Company Analysis, Precedent Transactions Analysis etc.

Unit-III - Predictive Analysis in Finance (10 hours): Simple linear regression: coefficient of determination, significance tests, residual analysis, confidence and prediction intervals. Multiple linear regression: coefficient of multiple coefficients of determination, interpretation of regression coefficients, categorical variables, heteroscedasticity, multi-collinearity, outliers, autoregression and transformation of variables, stock prices forecasting models using machine learning

Unit-IV - Derivative Pricing (15 hours): Issues regarding derivative markets, Brownian motion, Black-Sholes model, Monte-Carlo simulation. Use of real options for better financial decisions- Growth (or expansion) options, Abandonment options, Investment timing options and flexibility (input/output) options.

Unit-V - Portfolio Analytics (15 hours): Modelling Volatility and Risk: Characteristics of volatility. Modelling volatility using ARCH/GARCH models. Measuring and modelling risk. application of Value at Risk (VaR), building an optimum portfolio. develop a sound investment strategy considering market and credit risk. Credit Risk Modelling-Firm wide Risk, Business Risk, Non-Business Risk, building blocks of making a credit default model, Statistical Models in Credit Risk Measurement.

Practical Exercises:
1. Financial and Cost Modelling using Spreadsheets
2. Multiple linear regression
3. Use of real options for better financial decisions
4. Modelling Volatility and Risk.
5. Modelling volatility using ARCH/GARCH models.
6. Apply predictive and prescriptive analytics to solve financial problems.

Essential/ Recommended readings

- Liu, S., & Sathye, M (2021). Financial Statistics and Data Analytics, (Eds.)
- https://doi.org/10.3390/books978-3-03943-976-8
- James, E.R. (2017). Business Analytics. UK: Pearson Education Limited.
- Hull, J. C., & Basu, S. (2022). *Options futures and other derivatives*. 11th Edition Pearson Education India.
- Brigham, E. F., & Houston, J. F. (2021). *Fundamentals of financial management*. 16th Edition Cengage Learning.
- Gujarati, D., Porter, D., & Gunasekar, S., *Basic Econometrics* 5th Ed, McGraw Hill Education
- Brooks, C., *Introductory Econometrics for Finance* 3rd Ed, Cambridge University Press
- Wooldridge, J., *Introductory Econometrics – A Modern Approach* 5th Ed, South Western Publication

Note: Readings will be updated by the Department of Commerce and uploaded on Department's website.

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

Master of Business Administration (Business Analytics)

MBA (BA)
Semester III

Course MBABACC307: SUMMER INTERNSHIP PROJECT REPORT

Marks: 50   Duration-30 Hrs.

OPEN ELECTIVE COURSES

Master of Business Administration (Business Analytics)

MBA (BA)
Semester III

Marks: 100   **Duration-60 Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	**Tutorial**	**Practical/ Practice**		
Skills and Techniques of Accounting **COMOE03**	**4**	**3**	**0**	**1**	**Pass in Graduation**	**NIL**

Learning Objectives

To impart skills of maintaining and recording various kinds of business transactions and accounting information using computerized accounting software.

Learning Outcomes

After completion of the course, learners will be able to:

- Evaluate the application of relevant accounting standards and Ind AS in the preparation of financial statements.
- Analyze the manual and computerized accounting system environment.
- Generate financial statements using Tally.
- Generate Bank Reconciliation Statements using Tally.
- Analyze the concept and applications of payroll accounting in managerial decision making.

Unit I: Introduction to Accounting Standards (10 Hours)

Relevance of accounting standards and Ind AS in the preparation of financial statements with special emphasis on Inventories; Property, Plant and Equipment; Leases; Statement of Cash Flows.

Unit II: Computerized Accounting System (10 Hours)

Introduction to accounting; Concept of computerized accounting system, advantages and disadvantages of computerized accounting system.

Unit III: Accounting in Tally (20 Hours)

Introduction, company creation, vouchers creation, transactions recording, outstanding report of customers and suppliers.

Maintaining inventory details, creation of price list, godowns detail, warn on negative stock and cash balance, maintaining bill wise details.

Generating various financial statements and reports- balance sheet, profit and loss account, funds flow statement, cash flow statement, day book, account book, inventory books, trial balance, exception reports.

Basics of GST in Tally- purchase and sales of goods entry for GST purpose; Single and multiple tax rate entries; Service tax entry; Use of GST classification; Entries related to reverse charge mechanism; GST on packing charge and discount in sales purchase entry; Entry for cess based on value and quantity; Application of GST for selling single item at different prices; Entry for ineligible ITC.

Unit IV: Bank Reconciliation Statement (10 Hours)

Concept of bank reconciliation statement, need of bank reconciliation statement; Bank Reconciliation Statements using tally.

Unit V: Payroll Accounting (10 Hours)

Concept and uses of payroll accounting; Payroll accounting using tally.

Note: Case-based analysis and relevant software will be used for pedagogical purposes. Evaluation of practical exercise using software will be part of internal assessment.

Practical Exercise:

The learners are required to:

1. Download the financial statements of any publicly listed company. Evaluate the application of relevant accounting standards and Ind As in the preparation of these financial statements.

2. Compare and contrast the computerized accounting system of any 2 firms operating in different industries.

3. For any hypothetical firm, make appropriate entries and generate financial statements using Tally.

4. For any hypothetical firm, make appropriate entries and generate bank reconciliation statements using Tally.

5. Create a hypothetical payroll solutions system for any firm.

Suggested Readings:

- Goyal, V. K. & Goyal, R. (2013). *Financial Accounting*. PHI Learning Pvt. Ltd.
- Tally Education Private Limited: Computerized Accounting Using Tally.ERP9
- Schroeder, Richard G., Clark, Myrtle W. & Cathey, Jack M. (2005). *Financial Accounting Theory and Analysis, Text Readings and Cases*. John Wiley and Sons.
- Tally Education Private Limited: GST using Tally ERP 9

Note: Readings will be updated by the Department of Commerce and uploaded on Department's website.

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Master of Business Administration (Business Analytics)

MBA (BA)
Semester III

Marks: 100   **Duration-60 Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	**Tutorial**	**Practical/ Practice**		
Business Analysis Using Financial Statements **COMOE04**	**4**	**3**	**0**	**1**	**Pass in Graduation**	**NIL**

Learning Objectives

To enable students, through analysis of financial statements, to identify the imperfections in the financial statements and frame strategic action and to gain knowledge of the application of valuation principles and techniques in business environment.

Learning Outcomes

After completion of the course, learners will be able to:

- Analyze and interpret the quantitative information provided in the Financial Statements of a company.
- Evaluate the firm's performance and position by analyzing the cash flow statement and earnings quality.
- Compute and analyze accounting ratios of a company;
- Apply different business valuation models
- Apply valuation principles and techniques in the business environment to make valuation estimates.

Syllabus:

Unit I: The Framework for doing Business Analysis using Financial Statements (10 Hours)

The analysis of the statement of shareholders' equity- the analyst's checklist, reformulating the statement of owners' equity, comprehensive income reporting, financial analysis – ratio analysis and report writing.

Unit II: The Analysis of the Balance Sheet and Income Statement (10 Hours)

The analyst's checklist, reformulation of the balance sheet, reformulation of the income statement- tax allocation, issues in reformulating income statements, comparative analysis of the balance sheet and income statement (common size analysis, trend analysis), the analysis of cash flow statement and quality of earnings.

Unit III: The Analysis of Profitability (10 Hours)

Du Point analysis, cutting to the core of operations (the analysis of profitability); Analysis of changes in profitability and sustainable earnings.

Unit IV: Business Valuation Basics (15 Hours)

Principles and techniques of valuation – DCF, multiple methods, accounting based valuation, asset valuation; Earning valuation; Cash flow valuation; Other valuation basis, forms of intellectual property and methods of valuation, human resource accounting.

Unit V: Valuation of Assets and Liabilities (15 Hours)

Valuation of fixed assets, valuation of inventories, valuation of investments, valuation of share, valuation of goodwill, patents and copyrights, valuation of real estate, valuation of liabilities.

Note: Case-based analysis and relevant software will be used for pedagogical purposes. Evaluation of practical exercise using software will be part of internal assessment.

Practical Exercise:

The learners are required to:

1. Download annual reports of reputed companies from the websites and analyze the information contained in the financial statements.
2. Prepare cash flow statement from the information available in the financial statements.
3. Select any 5 companies. From their financial statements compute accounting ratios to examine operating efficiency, profitability, liquidity, and solvency of the company.
4. Estimate the value of any company by employing different valuation methods.
5. Select any company. Estimate the value of its tangible/intangible assets and liabilities from the information available in its financial statements.

Suggested Readings:

- Barker, Richard (2001). *Determining value: Valuation Models and Financial Statements*. Financial Times/Prentice Hall.
- Damodaran, Aswath (2008). *Damodaran on Valuation: Security Analysis for Investment and Corporate Finance*. Wiley.
- Fridson, Martin S. & Alvarez, Fernando (2011). *Financial Statement Analysis: A Practitioner's Guide*
- (Wiley Finance Book 597)
- Palepu (2015). *Healy Business Analysis using financial statements*. Cengage Learning.
- Penman, Stephen H. (2017). *Financial Statement Analysis and Security Valuation*. McGraw Higher Ed.
- Wahlen, J., Baginski, S. & Bradshaw, M. (2015). *Financial Reporting, Financial Statement Analysis, and Valuation: A Strategic Perspective*. Cengage Learning.
- White, Gerald I., Sondhi, Ashinpaul C. & Fried, Dov. (2003). *The Analysis and Use of Financial Statement.* Wiley.

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Master of Business Administration (Business Analytics)

MBA (BA)
Semester III

Marks: 100   **Duration: 60Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	**Tutorial**	**Practical/ Practice**		
Financial Markets and Institutions **COMOE08**	**4**	**4**	**0**	**0**	Pass in Graduation	NIL

Learning Objectives

The course aims to provide students a critical overview of the financial system to help them understand the role of financial institutions and financial markets in the global context with special emphasis on financial stability.

Learning Outcomes

After completion of the course, learners will be able to:

1. Examine the meaning, components and functions of a financial system.

2. Analyze the impact of different factors on interest rate; the shape and relevance of the yield curve.

3. Analyze the functioning of money and capital markets and the challenges associated with their regulation.

4. Examine the role and relevance of different types of non depository institutions like mutual funds, pension funds, insurance, venture capital, private equity, hedge funds and their regulation.

5. Assess the functioning of banks, analyze their balance sheets and off balance sheet activities and critically examine banking regulation.

Syllabus

Unit I : Introduction (8 Hours)

Overview of financial markets and financial instruments, role of financial institutions, depository and non-depository institutions, consolidation & competition among financial institutions, financial conglomerates.

Overview of the Indian financial system including financial sector reforms; Other contemporary issues in finance.

Unit II: Interest Rate (12 Hours)

Loanable funds theory; Economic forces affecting interest rates; Factors affecting yield differentials of debt instruments; Term structure of interest rates- pure expectations theory, liquidity premium theory, segmented markets theory & preferred habitat theory, yield curve. Monetary policy and its transmission.

Unit III: Financial Markets (12 Hours)

Money markets-organization, economic role, instruments & regulation; Capital markets- primary & secondary markets and their organization; Different types of market structures, short selling and its implications, buying on margin; Stock market indicators, their methods of computation and implications of the same; Security market regulation and stability.

Unit IV: Non Depository Institutions (13 Hours)

Mutual funds- types of mutual funds schemes, ETFs, expenses associated with mutual funds; An overview of Indian mutual funds industry; Hedge funds, venture capital funds, private equity funds;Fintech; Regulation.

Pension Funds- issues in saving for retirement & role of the financial system; Defined benefit & defined contribution pension plans, pension funds as financial intermediaries and their regulation; An overview of Indian pension fund industry including national pension system.

Insurance- Incentive problems in insurance-moral hazard & adverse selection, pure premium, premium smoothing etc. reinsurance, catastrophe insurance, captive insurance; Regulation; An overview of the Indian insurance industry.

Unit V: Banking (15 Hours)

An overview of the banking industry, balance sheet of a bank, sources & uses of funds of banks, fee based & off balance sheet activities; Securitization; Bank earnings & bank performance, investment banking; Bank failure & regulation; Reasons for banks being heavily regulated, bank run, deposit insurance, capital adequacy regulation, bank examination etc. A critique of the Basel norms, The problem of moral hazard & too big to fail institutions; RBI and its policy evolution.

Practical Exercise –

The learners are required to –

1. Identify one Indian and one global financial conglomerate and examine their genesis and evolution.
2. Compare the yield curve of India, another developing country and a developed country. Analyze the reasons for similarities and differences.
3. Pick three leading stock market indices in the world, analyse their method of computation, reasons behind the differences and their implications.
4. Analyze the global reinsurance industry, its main players and recent trends.
5. Identify one global systemically important financial institution (G-SIFI), and one domestic systemically important financial institution (D- SIFI) and compare their functioning through their balance sheets and other information.

Suggested Readings:

- *Annual Report*. Insurance Regulatory and Development Authority.
- *Annual Report*. Pension Fund Regulatory and Development Authority.

- *Annual Report*. Securities and Exchange Board of India.
- Fabozzi, F., Modigliani, F. & Jones, F. (2013). *Foundations of Financial Markets and Institutions*. Pearson.
- Kidwell, D., Blackwell, D., Whidbee, D. & Sias, R. (2016). *Financial Institutions Markets and Money*. Wiley
- Kohn, M. (2004). *Financial Institutions and Markets.* Oxford University Press.
- Madura, J. (2014). *Financial Markets and Institutions*. Cengage.
- Mishkin, F.S. (2015). *The Economics of Money Banking and Financial Markets*. Pearson.
- Mohan, R. & Ray, P. (2017). *Indian Financial Sector: Structure, Trends and Turns*. IMF Working Papers.
- Patil, R.H. (2006). *Current State of the Indian Capital Market*. Economic and Political Weekly.
- *Report on Trend and Progress of Banking in India.* Reserve Bank of India Speeches, Reserve Bank of India.

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Master of Business Administration (Business Analytics)

MBA (BA)
Semester III

Marks: 100   **Duration-60 Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	**Tutorial**	**Practical/ Practice**		
Planning For Personal Finance **COMOE09**	4	3	0	1	Pass in Graduation	NIL

Learning Objectives

To enable critical thinking in students with respect to analysis and application of innovative solutions to varied financial problems.

Learning outcomes

After completion of the course, learners will be able to:

- Evaluate the premise of financial planning and identify financial goals.
- Critically evaluate the investment instruments suitable for different financial goals in different time spans.
- Analyze the investment process in the primary market.
- Evaluate different avenues for credit planning, retirement planning as well as estate planning.
- Evaluate different investment alternatives and create financial plans.

SYLLABUS:

Unit I: Financial Planning & Investment Environment (14 Hours)

Financial planning process and life cycle approach, ascertainment of financial goals; Application of investment alternatives in financial plans – including Mutual Funds, Index Funds, ETF, Real Estate Investment Trusts (Reits),Infrastructure Investment Trust (Invits), SIP/SWP/STP, Management of Direct Investments in all instruments

Unit II: Diversity in Financial Planning: **(16 Hours)**

Planning for life insurance and health insurance; Primary clauses in life and healthcare insurance agreement; Application of Compounding and Indexing; Critical Analysis of instruments based on CAGR of return,

Identification of Common Stocks with Uncommon Profits; Identification of Competitive Durable Advantage of Equity; Equity with Moat; Principles and variables of Value investing system, Balancing Debt and Equity.

Unit III: Investment in Primary Market: (8 Hours)

Concept of Initial Public Offer (IPO), FPO, Offer for sale, Private Placement; IPO Process; Evaluating IPO for investment or listing gains, Categories of IPO: Traditional and Contemporary. Debt instruments.

Unit IV: Credit & Retirement Planning: (10 Hours)

Assessment of credit; Consumer and housing finance; EMI : Calculations & Long term Impact, Rent or buy decisions of house property, Optimal use of education loan, Credit card management; Overdraft protection, Credit history, Retirement solutions, Analysis of retirement planning, pension plans including taxes and inflation, Reverse mortgage ; Estate planning- Objectives of will, creating a valid will; Power of attorney.

Unit V: Building Financial Plans: (12 Hours)

Critical analysis of investments; Insurance and Tax saving Instruments; Risk assessment of individual; Building financial plans using spreadsheets; Evaluation of financial plan.

Note: Relevant software will be used for pedagogical purposes. Evaluation of practical exercise (if any) using software will be part of internal assessment.

Practical Exercises:

The learners are required to-

1. Collect newspaper articles to observe the latest and trending investment alternatives preferred by the investors and identify the reasons thereof.
2. Visit a bank of their choice. Prepare a presentation on various investment alternatives and services provided by that bank and suitability of these alternatives with respect to financial goals.
3. Prepare a report on changes that took place in health and life insurance policies post COVID 19.
4. Discuss the functions of an investment banker in the IPO process in a group discussion.
5. Build financial plans for your family members post retirement. Identify different financial instruments that they should invest in for meeting their financial needs after retirement.
6. Based on your financial goals, prepare a hypothetical financial plan using various investment alternatives.

Suggested Readings:

- Buffet. Marry and Clark. David. (2011).*Warren Buffett and the Interpretation of Financial Statement.*
- Fisher. A. Philip. (2010). *Common Stocks and Uncommon Profits*. Wiley.
- Graham, Benjamin. (2017).*The Intelligent Investor*, 6th Edition.
- Keown, A J. (2017). *Personal Finance – Turning money into wealth*. Pearson Publication.

- Khurshed, Arif. (2016). „*Initial Public Offerings: The mechanics and performance of IPOs'*, Harriman House Publishing.

- Madura, Jeff. (2016).*Personal Finance*, 6th Edition. Pearson.
- Soota, Ashok and Gopalan, S.R. (2012). „*Entrepreneurship Simplified: From Idea to IPO'*. Penguin Random House India.
- Spier Guy. (2014).*The Education of Value Investor*.Palgrave.

Additional Resources:

www.marketsmojo.com
www.moneycontrol.com
www.valueresearch.com
www.yahoofinance.com

Note: Case studies on the above topics are required to be discussed.

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Master of Business Administration (Business Analytics)

MBA (BA)
Semester III

Marks: 100   **Duration-60 Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Investment Management COMOE10	4	3	0	1	Pass in Graduation	NIL

Learning Objectives

To equip the students with essential tools, techniques, models, and investment theory necessary to analyze securities and portfolios so as to make sound investment decisions and optimal portfolio choice.

Learning outcomes

After completion of the course, learners will be able to:

- Analyze the investment environment and assess risk-return trade off in case of financial investments
- Evaluate the risk and yields of bonds and perform bond valuation.
- Analyze equity stocks using different approaches and models.
- Construct, analyze, select, and evaluate portfolios along with a deep understanding of capital
- market theory and associated models.
- Analyze futures and options, use various options trading strategies and critically examine various
- innovations in the derivatives market.

SYLLABUS

Unit I: Introduction (8 Hours)

The investment environment, various investment alternatives and risk return trade off; Investment decision process; Risk aversion; Types of investors; Risk-return analysis and impact of taxes and inflation; Types and sources of returns and risks and their measurement; Diversification and hedging; Socially responsible investing, ethical investing and other contemporary issues in investment management.

Unit II: Bond Analysis (10 Hours)

Bond fundamentals; Types of bonds; Innovations in bond market; Valuation of bonds; Bond yields (yield to maturity, yield to call, realized annual yield); Bond price- yield relationship; Bond convexity; Risks in bonds.

Unit III: Equity Analysis (12 Hours)

Approaches to security valuation; Fundamental analysis- Economy, Industry, Company Analysis (EIC framework); Equity valuation models (DDM, P/E Ratio model and free cash flow valuation approach); Technical analysis – basic premise and Dow theory; Types of charts and chart patterns; Moving average analysis; Market indicators and stock specific indicators including Bollinger bands; Odd lot theory; Efficient Market Hypothesis (EMH); Forms of market efficiency and their implications.

Unit IV:Portfolio Analysis, Selection and Management (16 Hours)

The concept and significance of portfolio; Types of Portfolio; Calculation of portfolio return and risk; Risk aversion; Optimal Portfolio Selection and Construction: Markowitz portfolio selection model, Sharpe's single index model and optimal portfolio construction, Capital Market Theory (including Separation Theorem), Capital Asset Pricing Model (CAPM); Stock market anomalies (size effect, value effect, seasonality effect, prior return effect, overreaction effect); Active and passive portfolio management; Investment strategies- value investing, momentum and contrarian strategies.

Unit V: Financial Derivatives (14 Hours)

Futures- features, types and payoffs; Pricing of financial futures (cost of carry model); Options- features, types, styles, payoffs and valuation (Black- Scholes option pricing model).Options trading strategies- bull spread, bear spread, straddle and butterfly spread; Exotic options and other innovations in derivatives market including swaps.

Note: Relevant software will be used for pedagogical purposes. Evaluation of practical exercise (if any) using software will be part of internal assessment.

Practical Exercises:

The learners are required to:
1. Extract historical data on daily/monthly/annual prices for stocks in an index from a financial database. Evaluate them in terms of risk and return using an appropriate software.
2. Participate in a group discussion on 'Verifying the existence of Bond price – yield relationship in today's times with real life examples'.
3. Estimate the Yield-to-Maturity, Duration, and Convexity of a corporate bond using relevant software.
4. Apply moving average analysis on the stock price of any company. Evaluate whether to buy, sell or hold the stock for one month using spreadsheets. Further, learners are also required to assess their decision after one month of decision making.
5. a) Draft a case study to devise an investment strategy for yourself in the short term, based on your risk aversion level.
   b) Prepare a presentation to demonstrate real-life examples of stock market anomalies.
6. Select any 5 companies of your choice. Using appropriate models, forecast their future cash flows, growth rate and cost of capital. Estimate the intrinsic value of stocks of these companies using relevant software.

7. Select any 5 stocks of your choice. Extract past data on their prices and volumes from a financial database. Make investment decisions using appropriate technical analysis tools and techniques. Use any technical analysis software for this purpose.

8. Construct portfolios based on any firm attribute using past data on NSE 500 stocks. Assess the profitability of this investment strategy. Evaluate if the returns on this strategy are explained by standard risk models such as CAPM and F-F Model. Use relevant software for your estimations.

9. Build and analyze option strategies for Index and Stock options using any option building analytical tool.

Suggested Readings:

- Bodie, et al. (2020). *Investments.* McGraw Hill.
- Chandra, P. (2021). *Investment Analysis and Portfolio Management*. Tata McGraw Hill.
- Elton, E. & Gruber (2014). *Modern Portfolio Theory and Investment Analysis*. John Wiley and Sons.
- Fischer, Donald E. & Ronald J. Jordan (2018). *Security Analysis and Portfolio Management*. PHI Learning.
- Hull, J.C. & Basu (2016). *Options*, *Futures and Other Derivatives*. Pearson.
- Mayo, Herbert B. (2006). *Investments*. Thomson South Western.
- Reilly, Frank K. & Brown, Keith C. (2012). *Investment Analysis and Portfolio Management*. Cengage Learning.
- Sharpe, William F. & Alexander, Gordon J. (2002). *Investments*. PHI Learning.
- Tripathi, V. (2019). *Security Analysis and Portfolio Management.* Taxmann.

 Additional Resources:

Videos of Eugene Fama on the Topic "The History of the Efficient Market Hypothesis" (from American Finance Association"s website www.afajof.org)

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Master of Business Administration (Business Analytics)

MBA (BA)

Semester III

Marks: 100   **Duration-60 Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Project Management (PM)-I COMOE11	4	3	1	0	**Pass in Graduation**	**NIL**

Learning Objective

The objective of the course is that students will be able to approach project management in the right perspective and understand all the essential concepts from both a theoretical and applied point of view.

Learning outcomes

After completion of the course, learners will be able to:

- Identify the elements of the PM life cycle, including plan, control, and organize and allocate resources.
- Analyze PM processes, Comprehend and become familiar with the use of basic tools and techniques to plan, organize, and manage a project
- Develop PM plan and managing project changes
- Establish appropriate project governance structure and how to deal with issues linked to PM.
- Discuss the various management issues in project governance

Syllabus

Unit I: Understanding Project Management (10 Hours)

Defining Project and Project Management: The project manager's role; Internal and external environment; Project structures; Project and product life cycles and PM processes

Unit II: Plan and manage project compliance (12 Hours)

Confirm project compliance requirements (e.g., security, health and safety, regulatory compliance) , Classify compliance categories , Determine potential threats to compliance

Analyze the consequences of noncompliance, Determine necessary approach and action to address compliance needs (e.g., risk, legal) The Project Management Office Rationale, Mission, goals and strategy, Financial analysis (Projections)

Evaluate project benefits and value

Investigate that benefits identified, Evaluate delivery options to demonstrate value and appraise stakeholders of value gain progress, Evaluate and address external business environment changes for impact on scope Survey changes to external business environment (e.g., regulations, technology, geopolitical, market), Assess and prioritize impact on project scope/backlog based on changes in external business environment

Unit III: Project Plan and Manage Project Change (13 Hours)

Preparation of PM Plan, Charter, Project justification, specifications nd constraints, limits, technical requirements, statement of work & Priority matrix, Work-Breakdown Structure, Graphical Vs outline format, work packages, log frame structure, learning of Log-framework structure on Open software.

Managing Project change in terms of scope, Executing change management strategy, Develop and determine change response to move forward.

Unit IV: Cost Estimation, Stakeholder engagement and Determining milestones (13 Hours)

Top-down and Bottom-up approach, parametric estimation, budget & contingencies, Stakeholder Engagement, identify stakeholders, manage stakeholders expectations, communication tools required.

Estimate project tasks (milestones, dependencies, story points), prepare schedule based on methodology, determine quality of products/ deliverables, identify quality gaps and mitigate them.

Unit V: Establish project governance structure (12 Hours)

Determine appropriate governance for a project (e.g., replicate organizational governance) Define escalation paths and thresholds. Manage project issues. Recognize when a risk becomes an issue. Attack the issue with the optimal action to achieve project success. Collaborate with relevant stakeholders on the approach to resolve the issues. Plan and manage project/phase closure or transitions. Determine criteria to successfully close the project or phase. Validate readiness for transition (e.g., to operations team or next phase). Conclude activities to close out project or phase (e.g., final lessons learned, retrospective, procurement, financials, and resources)

Practical Exercises

The learners are required to:

1. Identify the stages of the project lifecycle and the different tools and techniques used in each stage
2. Develop and evaluate project plans on the basis of timing, cost and risk
3. Explore the project management process and how this is applied in the workplace.
4. Explain the criteria to successfully close the project or phase
5. Highlight the appropriate governance for a project through a case study

Suggested Readings

- Berkun, S. (2005). *The art of project management* (pp. I-XII). O'reilly.
- Larson, E., & Gray, C. (2014). *Project Management: The Managerial Process 6e.* McGraw Hill.
- Pinto, J. K. (2013). *Project management: achieving competitive advantage* (No. s 57). Boston, MA: Pearson.
- Horine, G. (2013). *Project management: Absolute beginner's guide.* Pearson Education.
- Wysocki, R. K. (2011). *Effective project management: traditional, agile, extreme.* John Wiley & Sons.

Master of Business Administration (Business Analytics)

MBA (BA)
Semester III

Marks: 100   **Duration-60 Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	**Tutorial**	**Practical/ Practice**		
International Financial Management **COMOE12**	4	3	1	0	**Graduation in any field**	**NIL**

Course Objective:

To equip students with an understanding of the international financial system, its evolution and growing importance as well as challenges thrown up by increasing globalization of finance.

Learning Outcomes:

After completion of the course, learners will be able to:

- understand the relevance and implications of global imbalances.
- evaluate the factors affecting exchange rates and the inter linkages among them.
- analyse the evolution of the international monetary system both in terms of historical construct and its implications for the contemporary system.
- discuss the evolution and spread of international financial markets and the implications of globalized finance.
- evaluate the causes and consequences of financial crises in both developing and developed countries, the similarities and differences between the crises and implications of different ways of handling the crisis.

Syllabus:

Unit I-Introduction: (12 Hours)
Globalization and the multinational enterprise (MNE); Environment of International Financial Management; Complexities and issues in financial decision making of MNEs; Decisions in a global setting; Foreign Exchange Market- Spot and Forward market; Participants in foreign exchange market; Arbitrage, hedging and speculation; Covered interest rate arbitrage; Contemporary issues in international financial management.

Unit II-Cross-Border Investment Decision: (12 Hours)
Types of and issues in cross border investment decision; Green field investment vs. cross border M&As; Estimation of cash flows from cross border investment projects; Valuation techniques including adjusted present value method; Risks in cross border investment decision-currency risk, political risk, country risk, inflation risk etc; Techniques for incorporating risks in cross border investment decision.

Unit III-Working Capital Management in MNEs: (12 Hours)
International Cash management, International Inventory management and International receivables management;

International capital structure and cost of capital; Determinants of capital structure of MNEs; Dividend decision and policies of MNEs; International transfer pricing.

Unit IV-Managing currency Risk and Interest Rate Risk: (12 Hours)
Types of risk exposure - Transaction exposure, Economic exposure and Translation exposure; Measurement of risk exposure; Management of currency risk using currency forwards and futures, currency options and currency swaps; Assessment of interest rate risk; Management of interest rate risk using Interest rate futures, interest rate swaps and other financial swaps.

Unit V-International Diversification and Portfolio Investment: (12 Hours)
Global markets for equities; Risk factors in international investing; International diversification-risk and return aspects; International CAPM assuming no differences in consumption and no barriers to investment as well as assuming such differences; Identification of optimum portfolio; International Capital Market.

Practical Exercises:

The learners are required to:

1. trace the evolution of international financial markets by collecting historical data.
2. test the presence of efficient market hypothesis in the exchange market.
3. evaluate the exchange rate India with US dollar and British pound with the help of fixed exchange rate.
4. create a portfolio of four international bonds and four international stock and compute the portfolio return and risk.
5. make a comparative analysis of the Basel Norms issued till date for baking regulation and operations.

Essential/ Recommended readings

Readings

- Eun, C. & Resnick, B. (2017). *International Financial Management.* McGraw Hill/Irwin Series in Finance Insurance and Real Estate.
- Krugman, P., Obstfeld, M., Melitz, M. (2017). *International Economics-Theory and Policy*. Pearson.

- Madura, J. (2017). *International Financial Management.* Cengage.
- Mishkin, F.S. (2015). *The Economics of Money Banking and Financial Markets.* Pearson.

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Master of Business Administration (Business Analytics)

MBA (BA)
Semester III

Marks: 100   **Duration-60 Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (If any)
		Lecture	Tutorial	Practical/ Practice		
Start UP-1 **COMOE13**	**4**	**3**	**0**	**1**	**Pass in Graduation**	**NIL**

Learning Objectives
To understand new venture creation opportunities, its resources, and requirements for Enterprise Start-up.

Learning outcomes
After completion of the course, learners will be able to:

- develop a start-up Enterprise with Big Idea Generation.
- evaluate the requisite start-up capital requirements within the prevailing entrepreneurial eco-system.
- undertake feasibility Analysis of available funding sources.
- strategize growth of business at every stage of venture operation and scaling up.
- manage financial stability and carry plan on expansion possibilities

SYLLABUS

Unit I: Start-up opportunities: (10 Hours)

The New Industrial Revolution – The Big Idea- Generate Ideas with Brainstorming- Business Start-up - Ideation- Pitching your business and yourself;
Venture Choices - The Rise of the startup Economy - The Six Forces of Change- The Start-up Equation – The Entrepreneurial Ecosystem – Entrepreneurship in India. Government Initiatives: Ease of Doing Business (EOD), Atmanirbhar Bharat and Make in India (In the Context of Startup facilitation).

Unit II: Startup Operations: (10 Hours)

Launching a startup: Pre-requisites to start. Factors to be considered before launching a startup; Identifying Startup capital Sources; estimating Startup cash requirements; Developing a financial model; Constructing a Process Map; - Positioning the venture in the value chain; Analyzing the Risk-benefits tradeoff, Drawing a startup life cycle.

Unit III: Management of Starting up Finances: (12 Hours)
Feasibility Analysis of various sources - The cost and process of raising capital – Unique funding issues of a high-tech ventures - Funding with Equity – Financing with Debt- Funding startups with bootstrapping-crowd funding- strategic alliances with sources such as Angel capital. Venture capital and seed capital providers; Financial ecosystem in the country: various MSME dedicated schemes, (discussion on types of start-ups in the last two decades)

Unit IV: Start-up Survival and Growth: (14 Hours)

Stages of growth in a new venture- Growing with the market - Growing within the industry- Venture life patterns with sustainable strategies at various stages of life-growth cycle- Reasons for new venture failures- Scaling Ventures – preparing for change - Leadership succession. Institutional support mechanisms- private and public for growth and survival of the venture.

Unit V: Planning for Harvest and Exit: (14 Hours)
Managing Failure for sustenance; Recouping strategies: Bankruptcy, Exit Strategies- Selling the business - Cashing out but staying in-being acquired- Going Public (IPO) – Liquidation. (Discussion on the real-life examples of failed start-ups and their poor valuation- case study of Paytm, Ola, Meesho etc.)

Practical Exercise:

The learners are required to:

1) to understand how to create a financial model for a startup business
2) to leverage financial modeling to make better business decisions and create a business plan for a business idea
3) Working on a real business case, we will be implementing the theory to develop the go to market strategy, using collaborative online templates in real time.
4) To evaluate the managerial problems of new enterprises: production, financing and labour and marketing problems
5) Analyse the economic costs and benefits of startups
6) Evaluate the process of becoming a start-up with current trends and Regulatory environment

Essential/ Recommended readings

Suggested Readings:

· Kathleen R Allen, Launching New Ventures, An Entrepreneurial Approach, Cengage Learning, 2016.
· Anjan Rai Chaudhuri, Managing New Ventures Concepts and Cases, Prentice Hall International, 2010.
· S. R. Bhowmik& M. Bhowmik, Entrepreneurship, New Age International, 2007.

·   Steven Fisher, Ja-nae' Duane, The Startup Equation -A Visual Guidebook for Building Your Startup, Indian Edition, Mc Graw Hill Education India Pvt. Ltd, 2016.
·   Donald F Kuratko, Jeffrey S. Hornsby, New Venture Management: The Entrepreneur's Road Map, 2e, Routledge, 2017.
·   Vijay Sathe, Corporate Entrepreneurship, 1e, Cambridge, 2009

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Master of Business Administration (Business Analytics)

MBA (BA)

Semester III

Marks: 100   **Duration-60 Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Enterprise Risk Management **COMOE14**	**4**	**4**	**0**	**0**	**Pass in Graduation**	**NIL**

Learning Objectives

The course aims to familiarize the learner with comprehensive and all-inclusive risk management framework that can stop corporates disasters, save reputation, provide competitive advantages and yield intangibles benefits.

Learning outcomes

After completion of the course, learners will be able to:

- Analyze various types of risks that exist across the entire enterprise;
- Evaluate the key stages in the risk management process
- Discuss the impact of risks on operations and mission/goals
- Outline the key characteristics of the COSO ERM framework
- Evaluate and develop responses of various mitigation plans;
- Analyze the approaches for monitoring & scanning of emerging risks, and importance of insurance.

SYLLABUS

Unit I: Introduction to risk & ERM (8 Hours)

Different approaches to define risk; Impact of risk; Components of enterprise risk management; Principles and aims of risk management; Benefits of ERM; Current issues and emerging best practices in enterprise risk management, case study of business failure

Unit II: Implementing ERM (16 Hours)

General risk management standards; Alternative risk management approaches; Stages in the risk management process; Characteristics of the COSO ERM framework; ERM implementation best practices; Challenges of ERM;

Unit III: Risk assessment (12 Hours)

Introduction and importance of risk identification; Techniques of Risk assessment & comparison of different techniques; Classification of risk; life cycle of risk; tools for identifying and managing risk;

Unit IV: Risk analysis and evaluation (16 Hours)

Introduction to risk analysis; Risk likelihood and its impact; Risk tolerance Vs. Strategic goals; Loss control; Alternative approaches to define the upside of risk application of these approaches for strategies, projects and operations

Unit V: Mitigation of risk (8 Hours)

Introduction to risk treatment and risk response; The 4Ts of response mechanism; Risk control techniques (PCDD); Control of crucial operational & financial risks; Monitoring and reviewing the risk management process; Importance of insurance for the transfer of risk; Business continuity planning.

Practical Exercises:

The learners are required to:

1. Prepare a comparative risk profile for different types of industries.
2. Prepare a COSO cube diagram for any company of your choice.
3. Creating a heat map of risks and identifying unacceptable risks for any company of your choice.
4. Demonstrate various types of responses that are suitable for different types of risk for any two Industries of your choice and make a comparison.
5. Development of a risk assessment tool for a start-up.

Essential/ Recommended readings

References

· Jean-Paul Louisot &Christopher H. Ketcham (2014) *ERM - Enterprise Risk Management: Issues and Cases*, Wiley

· David L Olson, Desheng Dash Wu (2020), *Enterprise Risk Management,* World Scientific; Second Edition

· Lam J, *Enterprise Risk Management, - From Incentives to Controls*, Wiley & Sons Inc; Second Edition

· Douglas W. Hubbard, *The Failure of <u>Risk Management</u>*, Wiley; Second edition

· Paul Hopkin (2018), Fundamentals *of Risk Management*, Kogan Page

· George E Rejda (2019)*, Principles of Risk Management and Insurance*, Pearson; 14th edition

Master in Business Analytics
MBA(BA)
Semester-III

Marks: 100   **Duration-60 Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
World Law Prospects **COMOE15**	4	3	0	1	**Pass in Graduation**	**NIL**

Learning Objectives

The course aims to familiarize the learner with the philosophy and practice of international law and emerging world legal systems, including the arc toward systems approaching constitutional World Parliament and global self-government through principles of world federal republic. The course looks at the historical foundations of law, and distinguishes between international law and world law.

Learning outcomes
After completion of this course the learner will be able to:

- explain the basic philosophies of government, including particularly principles of self-government.
- apply theories and concepts of the course to analyze and write about contemporary legal principles within international law and world law.
- describe the distinctions between international law and world law and illustrate the progression toward constitutionally limited democratic world parliament.
- evaluate the prospects for worldwide self-governing systems and give constructive commentaries on shared writings.
- develop a case study (term paper) suitable for presentation to a world federal organisation, to a non- governmental organisation or to an international organisation.

Syllabus

Unit-I: Introduction, Philosophy of Law and International Law: Preamble and articles 1 through 4 of A Constitution for the Federation of Earth, available in The Earth Constitution, Editor G. Martin, in World Revolution through World Law, Editor G. Martin.

Introduction, and chapters 17, 18, and 29 of Leviathan by Thomas Hobbes. Excerpts to Anatomy of Peace by Emery Reves. Critical reactions to our global neighbourhood.

Unit-II: The United Nations System , The Rome Statute Family of International Law and World Law :

The United Nations Charter, White paper, The World Court Order, Distinctions between International law and world law. Submit discussion questions.

Unit-III: Distinctions Between International Law and World Law, The World Constituent Assemblies and the World Constitutions and Integrative Systems under the Earth Constitution: Sustainability, Prosperity, Family Planning, Human Rights, Peace and Disarmament:

Understanding A Constitution for the World" (1947), Protocols (1902) attributed to Sergei Nilus, among others, and Procedure for the World Constituent Assembly.

Articles 11 through 16 of the Earth Constitution.

Unit-IV: World Legislation and World Parliament, World Election Laws, Referendum and Initiative and Overview of Form and Style for World Legislative Drafting and Legislative Amendment

Articles 5 through 10, 17 and 19 of the Earth Constitution. Review Earth Constitution Article Sections 8.3. and 17.1. Design and Action for a New World. World Legislative Acts numbers 47. World Diplomatic Integration Act; 53.

Unit-V: Transfer, Reconstitution and Integration of the United Nations System, World Federal Organizational Relations and Prospects for Democratic World Federal Republic

Transition Process; 59, Truth and Reconciliation Act; 64. United Nations Merger; and 65. Global Sustainability Directorate. Assigned excerpts from Annotated Bibliography for a Graduate School of World Problems, E. Almand (on-line). A World Parliament by Jo Leinen and Andreas Bummel. Discussions on international organizations, non-governmental organisations, the relation, if any, between Earth Federation and international organizations.

Practical Exercises:

The learners are required to:

1. submit written proposal for Case Study Presentation, One page, double spaced. Start reading the United Nations Charter, Preamble through Chapter Nine.
2. present the case study related The United Nations Charter.
3. Make at least one paragraph constructive commentary on each posted case study presentation draft, up to twenty (or class size limit) commentaries.
4. Make at least one paragraph constructive commentary on each posted case study presentation not already commented upon.
5. review of selected chapters (Intro & Conclusion) of A World Parliament by Jo Leinen and Andreas Bummel.

Essential/ Recommended readings

Readings:

- Essay "Perpetual Peace" of Immanuel Kant

- Readings from Thomas Hobbes, John Locke, Emery Reves.

- United Nations Charter

- Read Harris in Harris, Errol E. & Yunker, James A., (Eds.). (1999) Toward Genuine Global Governance: Critical Reactions to Our Global Neighborhood. Westport, CT: Praeger.

- "A Bill of Particulars (on United Nations)", H. Philip Isely.

- The Earth Constitution, Editor G. Martin

- World Revolution through World Law, Editor G. Martin

- Toward Genuine Global Governance: Critical Reactions to Our Global Neighborhood. Westport, CT: Praeger. Harris, Errol

- E. & Yunker, James A., (Eds.). (1999)

- The Rome Statute of the International Criminal Court, A. Koroma, D. Thiam, J. Crawford et al.

- World Legislative Act #20 Criminal Case Bench Legislative Memorandum Summary

- Emerging World Law, Editors E. Almand & G. Martin

- A World Parliament: Governance and Democracy in the 21st Century, Jo Leinen & Andreas Bummel.

- Annotated Bibliography for a Graduate School of World Problems, E. Almand (on-line)

- Reviews of various websites

- "A Constitution for the World", by the Chicago Committee to Draft a World Constitution. 1947.

- (This is for critical discussion.)

- The Protocols. Attributed to Sergei Nilus, among others. 1902. (This is for critical discussion.)

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Master of Business Administration (Business Analytics)

MBA (BA)
Semester IV

Marks: 100   **Duration-60 Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (If any)
		Lecture	**Tutorial**	**Practical/ Practice**		
Entrepreneurship and New Venture Planning **MBABACC401**	4	3	0	1	**Graduation Pass**	**Nil**

Learning Objectives

This course aims to provide necessary inputs for entrepreneurial effort and planning to start a new venture and to enable them to investigate, understand and internalize the process of setting up a business.

Learning outcomes

After completion of the course, learners will be able to:

- be familiarised with the fundamentals of entrepreneurship and its role in economic development and to motivate them towards entrepreneurial activities.

- understand the concept of entrepreneurial leadership and stimulate them to think and innovative as entrepreneurs.

- be able to write effective business plans for establishing and managing any business venture.

- know how to raise the funding for the business from different sources for a startup venture.

- form a business entity in the light of the legal and regulatory framework in India.

SYLLABUS

Unit I: Introduction: (12 Hours)
Concept of Entrepreneurship; Role of entrepreneurship in economic development; Understanding the entrepreneurial history of India: Pre-Independence and post-Independence Period; Factors impacting emergence of entrepreneurship; Managerial vs. entrepreneurial approach; Types of entrepreneurs;

Characteristic of successful entrepreneurs; Entrepreneurship process; Women entrepreneurs; Social entrepreneurship; Entrepreneurial challenges.

Unit II: Entrepreneurship Development and Leadership: (12 Hours)
Types of startups; Entrepreneurial class theories; Entrepreneurial training; EDP programmes; Characteristics of entrepreneurial leadership, Components of entrepreneurial leadership; International entrepreneurship- Opportunities and challenges; Entrepreneurial challenges; Source of innovative ideas; Entrepreneurship and creativity; Techniques for generating ideas, Impediments to creativity.

Unit III: New Venture Planning: (12 Hours)
Methods to initiate ventures; Acquisition- Advantages of acquiring an ongoing venture and examination of key issues; Franchising- how a franchise works, franchising law, evaluating of franchising opportunities; Developing a marketing plan- customer analysis, sales analysis and competition analysis, steps in marketing research; Marketing mix; Business plan-benefits of drivers, perspectives in business plan preparation, elements of a business plan; Feasibility analysis of a business Plan; Business plan failures.

Unit IV: Financing Venture: (12 Hours)
Financing stages; Sources of finance; Venture capital; Criteria for evaluating new venture proposals; Evaluating venture capital- process; Sources of financing for Indian entrepreneurs (including angel funds, Seed capital fund).

Unit V: Special Issues for Entrepreneurs: (12 Hours)
Legal issues – Forming business entity, considerations and criteria, requirements for formation of a Private/Public Limited Company, intellectual property protection- patents, trademarks and copyrights – importance for start-ups, legal acts governing business in India; Opportunities and challenges; Intrapreneurship.

Essential/ Recommended readings

Suggested Readings:
· Arya, K. (2016). *Entrepreneurship: Creating and Leading an Entrepreneurial Organization.* Pearson. *Unit(s) - I, II, III, IV and V*
· Hisrich, R. D., Shepherd, D. A. & Peters, M. P. (2016). *Entrepreneurship.* McGraw Hill Education. *Unit(s) - I, II and III*

Additional Readings
· Galindo, C. R. (2018). The Entrepreneur's Guide to Winning: 7 Arts You Need To Master To Win The Game Of Business. CreateSpace Independent Publishing.
· Ramachandran, K. (2014). Entrepreneurship Development: Indian cases on Change Agents. Tata McGraw Hill.
· Robinson, P. J. (2017). A Guide for Writing Your Business Plan. Independently published.

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Master of Business Administration (Business Analytics)

MBA (BA)
Semester IV

Marks: 100   **Duration-60 Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (If any)
		Lecture	**Tutorial**	**Practical/ Practice**		
Strategic Management **MBABACC402**	4	4	0	0	**Pass in Graduation**	**NIL**

Course Objective:

To develop the knowledge about the strategy making process that is informed, integrative and responsive to rapid changes in the organization environment and also about tasks implemented in a global market.

Learning Outcomes*:*

After completion of the course, learners will be able to:
- understand the role of Strategic Management.
- describe various levels at which Strategy exists namely Corporate, Business and Functional level.
- develope strategic management models.
- analyse how organizations make decisions in response to rapid changes that occur due to environmental changes.
- apply how firms make entry into global markets and implement and evaluate strategy at an international level.

Syllabus:

Unit I: Introduction (12 Hours)

Role and concept of strategy; Strategic management process; Approaches to strategic decision making; Components of business policy; Strategic role of board of directors & top management. Strategic intent

Unit II: Environmental Analysis (12 Hours)

Analysis of broad environment: Environmental profile; Constructing scenarios; Environmental scanning techniques- ETOP, PEST and SWOT (TOWS) Matrix; Michael Porter's Diamond framework; Analysis of operating environment - Michael Porters model of industry analysis; Strategic group analysis; Analysis of internal environment– Resource audit; Resource Based View

(RBV); Core and distinctive competencies; Sustainable competitive advantage and transient competitive advantage.

Unit III: Strategic Choices (12 Hours)

Strategic options at corporate level: Growth, stability and retrenchment strategies; Corporate restructuring; Strategic options at business level- Michael porters' competitive strategies and cooperative strategies. Evaluation of strategic alternatives – Product portfolio models (BCG matrix, GE Matrix, etc.)

Unit IV: Situation Specific Strategies (12 Hours)

Strategies for situation like competing in emerging industries, maturing and declining industries, fragmented industries, hyper –competitive industries and turbulent industries; Strategies for industry leaders, runner -up firms and weak businesses.

Unit V: Strategic Issues and Alternatives in Globally Competitive Markets (12 Hours)

Why & how firms internationalize; International entry options; Outsourcing strategies; Strategy implementation and control: Interdependence of formulation and implementation of strategy; Issues in strategy implementation- Planning and allocating resources; Organization structure and design; Budgets and support system commitment; culture and leadership. Strategy evaluation and control.

Essential/ Recommended readings

Suggested Reading:

- **Davidson, W. H. (2013).** *Global Strategic Management.* **John Wiley, New York.**
- Frynas, J. G. & K., Mellahi (2014). *Global Strategic Management*. Oxford University Press.
- Ghemawat*, P. (2017). Strategy and the Business landscape.* Pearson Publishers
- Hill, Charles W. L. & Jones, R. G. (2012). *Strategic Management: An Integrated Approach.* Cengage Learning, India.
- Hitt, Michael A., Ireland, R. D., Hoskisson, Robert,E. & S., Manikutty (2016). *Strategic Management: A South- Asian Perspective.* Cengage Learning, India
- Thompson, Arthur A. & A., J. Strickland (2012). *Strategic Management.* McGraw Hill, New York.
- Wheelen, Thomas L., Hunger, J. David, Hoffman, Alan N. & Charles, E. Bamford (2017). *Strategic Management and Business Policy: Globalization, Innovation and Sustainability*. Prentice Hall, New Jersey.

Additional Readings:
- Harnel & Prahlad. *Strategic Intent.* Harvard Business Review. May June 1989,63-76
- Porter, Michael E. *How Competitive Forces Shape Strategy*. Harvard Business Review. Nov-Dec 1996,61-78
- Porter, Michael E. *What is Strategy.* Harvard Business Review. May June,1989,63-76

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Master of Business Administration (Business Analytics)

MBA (BA)
Semester IV

Marks: 100   **Duration-60 Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Supply Chain Analytics **MBABACC 403**	4	3	0	1	**Pass in Graduation**	**NIL**

Learning Objectives

To develop analytical skills for supply-chain in order to address real-world problems. The focus will be to familiarize and educate students to strategically manage the issues related to design and management of logistic and operations networks. The benefit of integration of marketing and corporate strategy into logistics and operations is also evaluated.

Learning outcomes

After completion of the course, learners will be able to:
- Learn the basic framework of supply chain management.
- Evaluate Demand Forecasting.
- Test and analyse the Stationary Time series.
- Examine Forecasting Models.
- Develop coordination in a supply chain.

SYLLABUS

Unit I: Introduction

Forecasting for Supply Chain Planning and Management: Introduction to forecasting, same case studies, time series data, Some simple forecasting methods. The forecaster's toolbox: Time series graphics, seasonal or cyclic? Autocorrelation, forecast residuals, white noise, evaluating forecast accuracy. Introduction to Multiple Regression and Stepwise Selection of Predictive Variables, Model Overfitting, the Parsimony Principle and Model Cross-Validation, Selection of Variates in Linear Regression:

Forward, Backward and Best Subset Selection, Model Shrinkage Methods and Selection of Variates in Linear Regression: The Lasso, Using Cross-Validation for Model Selection in The Lasso.

Unit II: Demand Forecasting

Introduction to Demand Forecasting Simple Exponential Smoothing Model FPP, Holt's Model and Holt-Winters Model FPP, State-Space Approach to Exponential Smoothing.

Unit III: ARIMA Models

Introduction to ARIMA Models Differencing and Rescaling Time Series, Backshift Notation and Non-seasonal ARIMA Models FPP, Seasonal ARIMA Models.

Unit IV: Forecasting Models
Hierarchical Forecasting Models Top-Down, Bottom-Up, and Middle-Out Approaches to Forecasting, Modelling Interventions: Model Selection and Calibration, Modelling Interventions: Forecasting.

Unit V: Managing Cross-Functional Drivers in Supply Chain

Sourcing decisions in a supply chain, pricing and revenue management in a supply chain, information technology in a supply chain, coordination in a supply chain.

Practical Exercises:

The learners are required to:

1. Examine the stationarity of the time series using appropriate software.
2. Demand Forecasting using appropriate software.
3. Examine ARIMA Models using appropriate software.
4. Analyse Forecasting Models using appropriate software.
5. Examine coordination in a supply chain using appropriate software

Essential/ Recommended readings

Suggested Reading:

- Hyndman, R. J., & Athanasopoulos, G. (2014). Forecasting: principles and practice, Online Open Access Textbooks.

- James, G., Witten, D., Hastie, T., &Tibshirani, R. (2013). An introduction to statistical learning: with application in R, Springer, New York.

- Makridakis, S., Wheelwright, S. C., & Hyndman, R. J. (1997). Forecasting methods and applications. John Wiley & Sons. Third Edition.

- Nahmias, S. (2008). Production and operations analysis, McGraw-Hill/Irwin, Sixth Edition.

Reference Books

- Simchi-Levi, D., Kaminsky, P., &Simchi-Levi, E. (2004). Managing the supply chain: the definitive guide for the business professional. McGraw-Hill.

- Chopra, S., &Meindl, P. (2012). Supply Chain Management Strategy, Planning and Operation, Prentice Hall, Fifth Edition.

- Mathirajan, M., Rajendran, C., Sadagopan, S., Ravindran, A. &Balasubramanian, P. (2015), Analytics in Operations/Supply Chain Management, I.K. International Publishing.

- Watson, M., Lewis, S., Cacioppi, P. &JayaRaman, J. (2012), Supply Chain Network Design, Pearson FT Press, First Edition.

Suggested Reading

- Nagurney, A., Yu, M., Masoumi, A.H. &Nagurney, L.S. (2013)), Networks Against Time: Supply Chain Analytics for Perishable Products, Springer.

- Jacobs, F.R. (), Supply Chain Analytics: A Multipart Case in Sourcing, Logistics, Warehouse Location, and Inventory Planning, Lawerence Hill & Company.

 Note: Latest edition of the readings may be used.

Note: Relevant software will be used for pedagogical purpose. Evaluation of practical exercise using software will be part of internal assessment. Further, case studies related to above topics are required to be discussed.

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Master of Business Administration (Business Analytics)

MBA (BA)
Semester IV

Marks: 100   **Duration-60 Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Healthcare Analytics	**4**	**3**		**1**	**Pass in Graduation**	**NIL**

Learning Objectives

In an environment where complexity is growing, decision makers in healthcare systems need to use data to make pertinent and accurate decisions. Their practices and policies should be supported and strengthened by data. Tools of analytics provide the capability to identify patterns in data and to implement this knowledge in developing strategies and improving performance. The objectives of this course are to enable the participants to develop an understanding of basic principles of data analysis and familiarize them with key tools and techniques that would enable them to take data driven decisions in a hospital/healthcare delivery setting.

Learning outcomes

After completion of the course, learners will be able to:
1. Identify sources of data, suggest methods for collecting, sharing and analyzing data.
2. Understanding the issues involved in data quality and their management.
3. Discuss the difference between descriptive, predictive and prescriptive analytics.
4. Able to use basic data presentation and visualization tools and manipulate simple data- sets.
5. Discuss the basics of big-data, machine learning and artificial intelligence.
6. Able to identify decision problems amenable for analytics-based solutions. Understand how data analytics can provide potential solutions to improve quality and lower cost • Able to lead team comprising of data scientists

Syllabus
Unit I: Health Care Data (10 Hours): Data as an asset for health care organization; Data, information, knowledge and wisdom hierarchy; Types and sources of healthcare data; Data governance, methods for effective use of data analytics; Ethics, data ownership and privacy

Unit II: Working with Data (15 Hours): Common data analytics terms, Steps of data analytics; Enterprise data architecture as seen in health care organizations; Common data types; Selection, aggregation, querying and transformation of data; Descriptive and visual analytics; Common patterns or distributions in data.

Unit III: Healthcare analytics tools-1 (10 Hours): Predictive analytics tools, classification, regression; Introduction to text mining, contextual analysis, social media analytics; Text mining, social media analytics.

Unit IV: Healthcare analytics tools-2 (10 Hours): Basics of image Analysis; analysis of multimedia Data, big data Analysis.

Unit V: Decision analysis (15 Hours): Decision tree; Simulation in Decision Analysis; Select prescriptive analytics applications in health care operations management (scheduling, resource allocation, project management, waiting line management etc).

Practical Exercises:

The learners are required to:

1. perform querying and transformation of data.
2. conduct descriptive and visual analytics.
3. obtain the results from Social media analytics; Text mining.
4. apply simulation in Decision Analysis.

Essential/ Recommended readings

Text Books:

1. Anderson, D., Sweeney, D., Williams, T., Martin, R.K. (2012). An introduction to management science: quantitative approaches to decision making (13th edition). Cengag Learning, India.
2. Davenport, T. H., Harris, J. G., & Morison, R. (2010). Analytics at work: Smarter decisions, better results. Harvard Business Press.
3. Madsen, L. B. (2015). Data-driven healthcare: how analytics and BI are transforming the industry. Wiley India Private Limited.
4. Meier, Kenneth J., Jeffrey L. Brudney, and John Bohte. (2015) Applied Statistics for Public and Non-profit Administration, 9th Edition, Cengage.
5. McLaughlin, Daniel B. and Hays Julie M. (2008) Healthcare Operations Management. Health Administration Press.
6. McNeill, D., & Davenport, T. H. (2013). Analytics in Healthcare and the Life Sciences: Strategies, Implementation Methods, and Best Practices. Pearson Education.
7. Reddy, C. K., & Aggarwal, C. C. (Editors.). (2015). Healthcare data analytics (Vol. 36). CRC Press.
8. Strome, T. L., & Liefer, A. (2013). Healthcare analytics for quality and performance improvement. Hoboken, NJ, USA: Wiley.
9. Veney, James E., John F. Kros, and David A. Rosenthal. (2009) Statistics for Health Care Professionals: Working with Excel, 2nd Edition, Jossey-bass.

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Master of Business Administration (Business Analytics)

MBA (BA)
Semester IV

Marks: 50   Duration: 30 Hrs.

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Social Media Analytics MBABACC405	2	1	0	1	Pass in Graduation	NIL

Learning Objectives

The aim of the course is to make learners understand about the increasing world connectivity using social network analysis. This course will also help the learners in examining the creation of various networks be it technological, economic or social and how they affect our behavior and attitudes.

Learning outcomes
After completion of the course, learners will be able to:
- Understand the concept of social networks
- Learn models to interpret the structure of Web graph and its spread of information.
- Perform social network analysis to understand and identify social media network properties, its actors and sub-groups.
- Identify the groups within the social networks
- Understand the concept of similarity and equivalence in social roles and positions.

Syllabus

Unit I: Introduction (10 Hours)
Introduction: What's different about social network data? Nodes, Relations, Scales of measurement, statistics and social network data. Introduction to formal methods, efficiency, using computers, seeing patterns. Using graphs to represent social relations: Introduction, graphs and sociograms, kinds of graphs. Working with NetDraw to visualize graphs: Introduction, node attributes, relation properties, location, highlighting parts of the network.

Unit II: Web Analytics & Social Connection Analysis (10 Hours)

World of web analytics, optimal strategy for choosing web analytics soul mate, Clickstream analysis: metrics and practical solutions. Making connections: Link analysis. Random graphs and network evolution. Social contexts: Affiliation and identity. Connection: Search, collapse, robustness Social movements and diffusion of innovation.

Ego Networks, Centrality and Power

Ego Networks: Introduction, Ego network data, ego network density, structural holes, brokerage. Centrality, centralization, and power: Introduction, Degree centrality, closeness centrality, betweenness centrality. Embedding: Introduction, Density, Reciprocity, Transitivity, Clustering, Group-external and group-internal ties, Krackhardt's graph theoretical dimensions of hierarchy.

Unit III: Cliques and Subgroups, Positions and Roles

Cliques and groups: Introduction, Bottom-up approaches, top-down approaches. Homophily and social segregation.

Measures of Similarity and Structural, Automorphic and Regular Equivalence

Equivalence: Positions and Social Roles. Introduction, Measuring similarity/dissimilarity, visualizing similarity and distance, describing structural equivalence sets. Automorphic Equivalence: Definition, uses of concept, finding equivalence sets. Regular equivalence: Definition, uses of concept, finding equivalence sets.

Practical Exercises:

The learners are required to
1. Apply qualitative and quantitative methods for analyzing web traffic.
2. Recognize the groups in any social media platform.
3. Identify the similarities/dissimilarities amongst social structures of social media groups

Essential/ Recommended readings
Text Books
- Hanneman, R. and Riddle, M. (2005), Introduction to Social Network Methods, Riverside.
- Kaushik A. (2009), Web Analytics 2.0: The Art of Online Accountability, Wiley Publishing.

Reference Books

- Easley, D. & Kleinberg, J. (2010). Networks, Crowds, and Markets: Reasoning About a Highly Connected World, Cambridge University Press.
- Monge, P. R. & Contractor, N. S. (2003). Theories of communication networks, Oxford University Press, New York.
- Duncan J.W. (2003), Six Degrees: The Science of a Connected Age. New York: W.W. Norton and Company.
- Sponder, M. (2014), Social Media Analytics: Effective Tools for Building, Interpreting, and Using Metrics. McGraw Hill.

Suggested Reading

- Clifton, B. (2012), Advanced Web Metrics with Google Analytics, John Wiley & Sons, Third edition.
- Ganis, M. &Kohirkar, A. (2015), Social Media Analytics: Techniques and Insights for Extracting Business value out of Social media, IBM Press, First Edition.

Notes:

1. Latest edition of the readings may be used.
2. Relevant software will be used for pedagogical purpose. Evaluation of practical exercise using software will be part of internal assessment. Further, case studies related to above topics are required to be discussed.
3. Suggested readings will be updated by the Department of Commerce and uploaded on Department's website.

Master of Business Administration (Business Analytics)

MBA (BA)
Semester IV

Marks: 100   **Duration: 60 Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Cyber Threats and Security MBABACC406	4	3	0	1	Pass in Graduation	NIL

Learning Objectives:

To enable the student to comprehend different business scenarios operative on digital platform with the legitimacy of managerial process and actions.

Learning Outcomes:

After completion of the course, learners will be able to:

- To be equipped with a vision to formulate legitimate business process, product and policies on digital platforms.
- To work in the vertical of maintenance and compliance in E-business.
- To be able to be an entrepreneur to start and manage business on virtual platforms.
- To possess acumen to avoid traps of cyber threats in varied business and process thereof while operating in regular banking, e-commerce, retail, consultancies or other business intermediary.
- To equip with judicial pronouncement of banks, e-commerce business platforms, manufacturing companies, social media platforms and other similar platforms, intermediaries or APPs, BPO's and KPO's.

Syllabus

Unit I: **Cyber Space, E-Business and Social Media (10 Hours)**

Significance, limitations and framework of e-business; Models of e-business based on relationship of transacting parties; Virtual payment platforms- application of cyber laws in different digital payments including pre-paid instruments; Precautions in using electronic payments, zero liability and limited liability protections by RBI, Bitcoin and Block Chain crimes. Social Media & Cyber Menace.

Unit II: **Legislative Framework (10 Hours)**

Under Section 2 of the Information Technology Act and its application in creating business products and policies- e-contract, e-forms, encryption, data security, access, computer, computer network, computer resource, computer system, data, digital signature, electronic record, information, intermediary, originator, public key, secure system, as defined in the Information Technology Act, 2000; Privacy of data; Access to user data.

Unit III: **Authentication of Electronic Records (12 Hours)**

Business scenario and cases; Legal recognition of electronic records and digital signatures- cases and judicial

pronouncements; Use of electronic records and digital signatures in government and its agencies; Retention of electronic records- synthesis for business data; Acknowledgement and dispatch of electronic records- cases of management submissions and contracts.

Unit IV: Penalties and Adjudications (14 Hours)

Cases and judicial pronouncement of banks, e-commerce business platforms, manufacturing companies, social media platforms, intermediaries or apps, BPO's and KPO's, human resource consultancies; Offences: analysis of business process leading to offences in business organizations including banks, digital marketing platforms, digital information platforms, blogging websites, matrimonial or jobs portals.

Unit V: Judicial Pronouncements and Synthesis for Business Decisions (14 Hours)

- Umashankar Sivasubramanian v ICICI Bank (2462/2010),
- 'Diebold System Pvt Ltd. v The Commissioner of Commercial Taxes, (2006), 144STC,
- 'State v Mohd. Afzal and others (2003),
- 'Syed Asifuddin and Ors.vThe State of Andhra Pradesh &Anr. 2006 (1) ALD Cri 96,
- 'SMC Pneumatics (India) Pvt.Ltd v JogeshKwatra", No. 1279, 2001,
- 'R v Graham Waddon., Southwark [Crown Court, 30/6/1999,
- 'National Association of Software and Service Companies (NAASCOM) v Ajay Sood. (2005)

F.S.R. 38
- Hammontree Vs State, 283 Ga App736, 642 SE 2d 412(2007)
- US vs Tank, 200F.3 d 627, 53 Fed R Evid Serv 830
- Laughner vs State, 769 N E 2d 1147 (Int Ct.App 2002)
- Groff vs America Online, Inc, 1998 WL 307001
- P R T Agancy vs Union of India, AII23, 2006 (1)

Essential/ Recommended readings

Suggested Reading:

- Chaffey, Dave (2011). *E-business and E-commerce Management.* Pearson Education.
- Efraim Turban, Jae Lee, King, David & H.M., Chung (2002). *Electronic Commerce-A managerial Perspective.* Pearson
- Rattan, Jyoti (2017). *Cyber Laws & Information Technology*. Bharat Law House Pvt Ltd.
- Sharma, J. P. & Kanojia, S. (2018). *E Business and Cyber Laws.* Bharat Law House.

Additional Readings

- Brian, Craig (2012). *Cyber Law: The Law of the Internet and Information Technology.* Pearson Education
- Dietel, H. M. (2001). *E-business and E-commerce for managers.* Pearson Education

- Joseph, P.T. (2015). *E-Commerce-An Indian Perspective*. PHI

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Master of Business Administration (Business Analytics)
MBA (BA)
Semester IV

Marks: 50   **Duration: 30 Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	re-requisiteof the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Indian ethos and leadership	2	2	0	0	Pass in Graduation	NIL

Learning Objective:
To build an understanding and perspective of Indian Ethos and leadership. It helps appreciating Indian way of leading different organizations.

Learning Outcomes:
- After completion of the course, learners will be able to:
- Understand the relevance of Indian Ethos, Ethical Codes and management lessons from scriptures.
- Analyse the Approaches to leadership through Indian Tradition and develop different approaches of leadership and contemporary Indian leadership practices.

Syllabus

Unit I-Indian Ethos and Perspectives on Ethics (10 Hours)
History & relevance of Indian tradition of understanding physical and metaphysical world; Appreciating scripturesand their role in shaping cognition and social interactions; Role of Indian Ethos in Managerial Practices; Gender Ethics; Ethos and ethics; Relevance of Values in Management, Morality, ethics and values; Indian values, ethical dilemmas in different business areas of finance, marketing, Management Lessons from Vedas, Mahabharata; Ethics v/s Ethos.

Unit II-Ethos–Leadership Interface (10 Hours)

Perspectives on leadership through ancient values and Indian traditions; leadership -in relevance to time, space, narratives and eternity; Moral principles for leadership based on Indian ethos; Social Values and Political Environment, Target (goal) vis-à-vis process orientation; Leadership through storytelling.

Unit III- Great Indian Thought on Leadership (10 hours)

Leadership lessons from sacred Indian texts as well as non-text sources; Gandhian thoughts on leadership; Vivekananda's thinking on leadership; Studies of S.K. Chakraborty & C.K. Prahlad on Indian leadership; Personal character of a leader; Understanding relevance of leadership in contemporary times, role of Indian leadership model and its relevance in bringing world order; Contemporary Leadership Challenges; Cases on Indian leadership practices.

Practical Exercise

Learners are required to:

1. Visit to some traditional/historical places to grab the knowledge of Indian scriptures and philosophy
2. Brain storming sessions on different ethical dilemmas for effective management lessons
3. Group discussion on Role of Indian Ethos in fostering the ethical environment
4. Industrial visits/interview with position holders to understand the relevance of leadership
5. Evalute the leadership skills of selected famous leaders in the real world
6. Stimulate lessons from various kinds of leadership in ethical perspective
7. Analyse case studies on Indian leadership practices.
8. Participate in simulation exercise in classroom Ethical codes of various organisations.

Readings

- Balasubramanian, S. (2007). *The Art of Business Leadership: Indian Experiences.* Response Books. Sage.
- Cappelli, Peter, Harbir, Singh, Jitendra, V. Singh & Michael, Useem (2010). Leadership Lessons fromIndia *Harvard Business Review* (March), 1-9.
- Chakraborty, S. K. (1995). *Ethics in Management-Vedantic Approach*, New Delhi, Oxford India Ltd.
- Chatterjee, D. (2012). *Timeless Leadership – 18 Leadership Sutras*. Wiley.
- Chaturvedi, B. (2006). *The Mahabharata: An Inquiry in the Human Condition*, Orient Longman.
- Das, G. (2009). *The Difficulty of Being Good, On the Subtle Art of Dharma*, Penguin Books, India.
- Kautilya's Arthasastra (2016), *King, Governance, and Law in Ancient India*, Oxford University Press.
- Krishna, G. R. (1999). *Indian Ethos for Modern Management*, UBS Publishers Distributors Ltd.*I*
- Kumarasamy, A. (2006). *Gandhi on Personal Leadership*, Jaico Publishing House.
- Nair, K. (1997). *A Higher Standard of Leadership: Lessons from the Life of Gandhi*, Berrett-KoehlerPublishers, San Francico

ELECTIVE COURSES

Master of Business Administration (Business Analytics)

MBA (BA)
Semester IV

Marks: 100   **Duration: 60 Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	**Tutorial**	**Practical/ Practice**		
Project Management Professional-2 **MBABAEC01**	4	3	0	1	**Graduation in any field**	**Project Management Professional-1** **COMOE11**

Learning Objective

This course aims to help learners to know how to manage a team and its performance at the workplace. This course also highlights the various strategies to deal with different conflicts among the team members.

Learning outcomes

After completion of the course, learners will be able to:

1. Analyze various sources of conflicts and identify appropriate conflict resolution solutions.

2. Appraise performance of team members.

3. Determine impediments for the team and identify ways to manage them.

4. Engage in virtual teams.

5. Enhance team performance through the application of emotional intelligence

Syllabus

Unit I: **Managing conflicts (8 Hours)**

Interpret the source and stage of the conflict, Analyze the context for the conflict

Evaluate/recommend/reconcile the appropriate conflict resolution solution

Lead a team

Set a clear vision and mission, Support diversity and inclusion (e.g., behavior types, thought process), Determine an appropriate leadership style (e.g., directive, collaborative),

Inspire,motivate, and influence team members/stakeholders (e.g., team contract, social

contract, reward system), Analyze team members and stakeholders' influence

Unit II: Support team performance (12 Hours)

Appraise team member performance against key performance indicators, Support and recognize team

member growth and development, Determine appropriate feedback approach , Organize around team strengths Support team task accountability, Evaluate demonstration of task accountability

Determine required competencies and elements of training, Determine training options based on training needs, Allocate resources for training, Measure training outcomes, Continuously assess and refresh team skills to meet project needs, Maintain team and knowledge transfer

Unit III: Address and remove impediments, obstacles, and blockers for the team (18 Hours)

Determine critical impediments, obstacles, and blockers for the team, Prioritize critical impediments, obstacles, and blockers for the team, Use network to implement solutions to remove impediments, obstacles, and blockers for the team

Negotiate project agreements

Analyze the bounds of the negotiations for agreement, Assess priorities and determine ultimate objective(s), Verify objective(s) of the project agreement is met, Participate in agreement negotiations, Determine a negotiation strategy

Build shared understanding

Break down situation to identify the root cause of a misunderstanding, Survey all necessary parties to reach consensus, Support outcome of parties' agreement, Investigate potential misunderstanding

Unit IV: Engage and support virtual teams (14 Hours)

Examine virtual team member needs (e.g., environment, geography, culture, global, etc.), Investigate alternatives (e.g., communication tools, colocation) for virtual team member engagement, Implement options for virtual team member engagement, continually evaluate effectiveness of virtual team member engagement

Communicate organizational principles with team and external stakeholders, Establish an environment that fosters adherence to the ground rules, Manage and rectify ground rule violations

Unit V: Promote team performance through the application of emotional intelligence (8 Hours)

Assess behavior through the use of personality indicators, Analyze personality indicators and adjust to the emotional needs of key project stakeholders

Leading in an intercultural environment

 Gender issues in leadership, Emotional intelligence Team communication and socialization

Managing changes due to project impact

Best practices in project leadership—techniques to win over team members

Practical Exercises

The learners are required to:

1. Prepare the appropriate conflict resolution solutions for different situations.
2. Assess various key performance indicators for performance appraisal.
3. Analyze different impediments faced by any team and identify ways to manage them.
4. Participate in virtual team exercises.
5. Evaluate the role of emotional intelligence in enhancing team performance.

Suggested Readings:

- Berkun, S. (2005). *The art of project management* (pp. I-XII). O'reilly.
- Ellis, C. D. (2019). *The Project Book: The Complete Guide to Consistently Delivering Great Projects*. John Wiley & Sons.
- Larson, E., & Gray, C. (2014). *Project Management: The Managerial Process 6e*. McGraw Hill.
- Pinto, J. K. (2013). *Project management: achieving competitive advantage* (No. s 57). Boston, MA: Pearson.
- Horine, G. (2013). *Project management: Absolute beginner's guide*. Pearson Education.
- Wysocki, R. K. (2011). *Effective project management: traditional, agile, extreme*. John Wiley & Sons.

Note: This course to be taught through Role play and lots of Cases and case studies to effectively learn project management.

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Master of Business Administration (Business Analytics)

MBA (BA)
Semester IV

Marks: 100   Duration: 60 Hrs.

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Start Up – 2 **MBABAEC02**	4	3	0	1	**Graduation Pass**	**Start UP-1** **COMOE13**

Learning Objectives

The goal of this program is to take the students from the MVP (Minimum Viable Product) stage to the Business Model stage, i.e., the students will acquire the skills required to transform their MVP into a business model. In this course, they will start building their teams by finding co-founders and perhaps even hiring. They will transform their business idea into the Business Model Canvas and will use it to further refine their MVP. They will also set up a digital presence and learn to use promotional channels and distribution channels to engage and serve their customers. Additionally, they will get started with various legal and operational aspects as well as initial funding concepts such as bootstrapping. The knowledge acquired through the earlier semester on the experimentation undertaken on developing new business ideas in a simulated environment can be extended to practice at the end of this course.

Learning outcomes

After completion of the course, learners will be able to:
- Form a team and recognise the importance of teamwork
- Prepare a business model/plan
- Analyze the importance and diversity of business models
- Analyze the concept of product/market fit
- Assess the customer validation process

Syllabus:

Unit I: Team (6 Hours)

Finding your team, art of team formation, teamwork planning, chief mentor/ founder & Co founders, team formation, and delegation of work, Establishing linkage with possible future external collaborator(s).

Unit II: Preparation of Business model/Plan (10 Hours)

Meaning and significance of a business plan, components of a business plan, and feasibility study, Iterating the MVP, Digital Presence for Ventures, Detailing the value proposition, Guidelines for writing BP: pre- requisites from the perspective of investor.

Unit III: Business Model (10 Hours)

The importance and diversity of business model, how business model emerge, potential fatal flaws of business models, components of an effective business model, core strategy, strategic resources, Competency of partnership and their network, Detailing potential product/service-customer interface.

Unit IV: Product/ Market Fit (16 Hours)

Understanding basics of unit economics, cost and profitability, Break-even analysis, Refining the product/service, Establishing the success and operational matrix, Starting Operations. Addressing basic start-up problems. (Case analysis presentation of renowned Indian and International startups through group assignment as part of class room presentation).

Unit V: Customer Validation (18 Hours)

Evaluate the efficiency with which customers can be captured and kept, Early insights on cost of customer acquisition, Other Stakeholder Validation, Customer Development and Experience. Detailing differentiation of proposed product/service with the existing competitors. (Various case studies on various level of funding as an indicator of startup validation/sustainability)

Practical Exercise:
The learners are required to:
1. Participate in a team and frame a plan for a potential start up.
2. Prepare a detailed business plan for the potential start up discussed in the previous exercise.
3. Evaluate the core strategy of their business plan.
4. Perform a break-even analysis for their proposed business plan.
5. Assess the customer validation process of the proposed business plan.

Suggested Readings:

· Singer, S. & Senor, D. (2009). *Start-up Nation: The Story of Israel's Economic Miracle*. Italy: Grand Central Publishing.
· Vaidyanathan, N. (2016). *Start Up, Stand Up*. India: Jaico Publishing House.
· Casnocha, B. & Hoffman, R. (2012). *The Start-up of You: Adapt to the Future, Invest in Yourself, and Transform Your Career*. United Kingdom: Random House.
· Love, H. (2016). *The Start-Up J Curve: The Six Steps to Entrepreneurial Success.* United States: Greenleaf Book Group Press.
· Kalra, U. & Shubhankar, S. (2021). *Startup Compass: How Iconic Entrepreneurs Got It Right.* India: HarperCollins.
· Nielsen, N. H. (2017). *The Startup Funding Book*. Denmark: NHN Ventures Aps.
· Casnocha, B. & Hoffman, R. (2012). *The Start-up of You: Adapt to the Future, Invest in Yourself, and Transform Your Career.* United Kingdom: Random House.
· Hvidkjaer, K. (2022). *How to F*ck Up Your Startup: The Science Behind Why 90% of*

Companies Fail--and How You Can Avoid It. United Kingdom: BenBella Books.
·   Winners Never Cheat: Even In Difficult Times. (2009). India: Pearson Education.

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Master of Business Administration (Business Analytics)

MBA (BA)

Marks: 100   **Duration-60 Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	**Tutorial**	**Practical/Practice**		
Internet of Thing **MBABAEC03**	4	3	0	1	Pass in Graduation	NIL

Learning Objectives

This course provides an overview of the working of Internet of things and aims to make the students understand the IoT market perspective, its architecture and knowledge and data management of IoT in use of technology.

Learning Outcomes

After completion of the course, learners will be able to:

- Describe the fundamentals of data communication, network and internet of things (IOT).
- Develop the knowledge of IOT architecture and models
- Recognise the process of IOT device management and evaluate design constraints.
- Demonstrate the various IOT market perspectives in the global scenario.
- Demonstrate the concept of automation and its application

Syllabus:

Unit I: Fundamentals of Computer Network and Internet of Things (IoT) (10 Hours)

Introduction, Fundamentals of Computer Network, M2M and IoT; Networking Devices and gateways, Local and wide area networking, Data management, Business processes in IoT, Everything as a Service(XaaS), M2M and IoT Analytics, Knowledge Management. Global Context and Cases

Unit II: IoT Architecture (12 Hours)

State of the IoT Architecture – Introduction-Reference Model and architecture, IoT reference Model.

Unit III: IoT Reference Architecture and Design Constraints (13 Hours)

Functional View, Information View, Deployment and Operational View, Other Relevant architectural views. Real-World Design Constraints- Introduction, Technical Design constraints-hardware is popular again, Data representation and visualization, Interaction and remote control.

Unit IV: Market perspective and Architectural Overview (15 Hours)

M2M to IoT – A Market Perspective– Introduction, Some Definitions, M2M Value Chains, IoT Value Chains, An emerging industrial structure for IoT, The international driven global value chain and global information monopolies. M2M to IoT-An Architectural Overview– Building an architecture, Main design principles and needed capabilities, An IoT architecture outline, standards considerations.

Unit V: Industrial Automation and Commercial Building Automation (10 Hours)

Industrial Automation- Service-oriented architecture-based device integration, SOCRADES: realizing the enterprise integrated Web of Things, IMC-AESOP: from the Web of Things to the Cloud of Things, Commercial Building Automation- Introduction, Case study: phase one-commercial building automation today, Case study: phase two- commercial building automation in the future.

Practical Exercise:
The learners are required to:
1. Participate in a team and discuss various networking devices and gateways.
2. Prepare a detailed reference model in context to IoT Architecture
3. Evaluate the different views of IoT reference Architecture .
4. Design IoT value chain with the help of any particular industry.
5. Analyze a case study on the concept of automation and its application.

Suggested Readings:

· DaCosta, F. (2013). *Rethinking the Internet of Things: A Scalable Approach to Connecting Everything*. Apress Publications.

·GreenGard, S. (2015). *The Internet of Things: Essential Knowledge*. MIT Press.

·Holler, J., Tsiatsis, V., Mulligan, C., Avesand, S., Karnouskos, S. & Boyle, D. (2014). F*rom Machine-to-Machine to the Internet of Things: Introduction to a New Age of Intelligence*. Academic Press.

·Madisetti, V. & Bahga, A. (2014). *Internet of Things (A Hands-on-Approach).* VPT.

·Mcewen, A. & Cassimally, H. (2015). Designing the Internet of Things. Wiley.

·Pfister, C. (2011). *Getting Started with the Internet of Things, Employees Training and Development.* O'Reilly Publication.

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Master of Business Administration (Business Analytics)

MBA (BA)
Semester IV

Marks: 100   **Duration-60 Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	**Tutorial**	**Practical/ Practice**		
Compensation Management **MBABAEC04**	**4**	**3**	**0**	**1**	**Graduation**	**No**

Learning Objective

The course is designed to promote understanding of issues related to compensation management in the corporate sector and public services and to impart skill in designing compensation management system, policies and strategies, apart from promoting understanding of legal issues in the administration of compensation, welfare and social security.

Learning Outcomes

After completion of the course, learners will be able to:

- Acquaint themselves with the basic legal framework envisaged under the statutes for compensation and welfare of employees in different modes.
- Recognise the principles involved and the premise of the grant of bonus, wages, and minimum wages to workers.
- Work in the maintenance and compliance vertical of the compensation structuring department.
- Handle organizational scenarios having large-scale variations of minimum wages- both within the country and internationally.
- Recognise the employment benefits for women envisaged under the compensation laws of India.

Syllabus:

Unit I: Compensation Management (10 Hours)

Compensation management process, forms of pay, financial and non-financial compensation; Compensation strategies, assessing job values & relativities; Pay structures; Designing pay levels, mix and pay structures, construction of optimal pay structure; Paying for performance, skills and competence; National differences in compensation, International pay systems- comparing costs and systems; Expatriate pay; Concept and rationale of employee welfare.

Unit II: The Payment of Bonus Act, 1965 (15 Hours)

Objects, scope and application; Definitions; Calculation of amount payable as bonus; Eligibility and disqualifications for bonus; Minimum & maximum bonus; Set on & Set off of allocable surplus; Application of Act in the establishment in the public sector; Bonus linked with production or productivity, The Payment of Bonus (Amendment) Act, 2015.

Unit III: The Payment of Wages Act, 1936 (15 Hours)

Objects; Application; Responsibility for payment of wages; Fixation of wage periods; Time-limits; Deduction from

wages; Remedies available to the worker; Powers of authorities, penalty for offences; Payment of Wages (Amendment) Act, 2017

Unit IV: The Minimum Wages Act, 1948 (10 Hours)

Objects; Application; Minimum fair and living wages; Determination of minimum wage; Taxation of minimum wage; Advisory board; Remedy to the worker for non-payment of minimum wages.

Unit V: The Maternity Benefit Act, 1961 (10 Hours)

Definitions, Object, Applicability, employment of, or work by, women prohibited during certain periods, right to payment of maternity benefits, notice of claim of maternity benefit and payment thereof, leaves, dismissal in absence during pregnancy, forfeiture of maternity benefits. The Maternity Benefits (Amendment) Act, 2017; Impact of the Maternity Benefit (Amendment) Act, 2017 on employability.

Case laws in respect of recent trends and administration of the Acts are required to be done in all units.

Practical Exercises:

The learners are required to:

1. Analyze the compensation system of an organization and identify opportunities for improvement of those systems
2. Visit different companies and identify the variation of the minimum wages.
3. Summarize some similarities and differences between financial and non-financial benefits for the employees.
4. Discuss the compensation and benefits practices that contribute to attracting and retaining high-quality employees. Learners may be assigned to evaluate the compensation and benefits practices.
5. Analyze, integrate and apply the knowledge to solve compensation-related problems in the organization.
6. Design performance pay and indirect pay plans necessary to attract, retain and motivate the workforce.
7. Apply various tools for decision-making in complex, compensation-related environments, as well as design, develop, and implement compensation strategies that achieve value-added results, thereby enabling organizations to more effectively and efficiently achieve their goals.
8. Analyze and interpret case studies on maternity benefits in various organizations.

Essential/ Recommended readings

Suggested Readings:

Armstrong, M. & Murlis, H. *(*1988). *Reward Management: A Handbook of Salary administration.* London: Kegan Paul

Belchor, David W. (1988). *Compensation Administration.* Prentice Hall, Englewood Cliffs. NT

Malik, P.L. (2017). *Handbook of Labourer and Industrial Law*. Eastern Book Company.

Milkovich, G., Newman, J. & Ratnam, C.S.V. (2009). *Compensation.* Tata Mc Graw Hill, Special Indian Edition

Sharma, J.P. (2018). *An Easy Approach To Company And Compensation Laws.* New Delhi: Ane Books Pvt Ltd.

Additional Resources:

Government of India Report of the National Commission on Labour Ministry of Labour and Employment, New Delhi. (Latest)

Henderson, R.I. (2006). *Compensation Management in a Knowledge Based World.* New Delhi: Pearson Education

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Master of Business Administration (Business Analytics)

MBA (BA)
Semester IV

Course MBABAEC05: LEARNING AND DEVELOPMENT

Marks: 100   **Duration-60 Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	**Tutorial**	**Practical/ Practice**		
Learning and development **MBABAEC05**	**4**	**3**	**0**	**1**	**Graduation**	**No**

Learning Objective:

To explore the learner to the concept and practice of learning and development in the modern organizational setting through the pedagogy of case discussions, practical, experiential learning, and recent experiences.

Learning Outcomes:

After completion of the course, learners will be able to:

- Link learning and development to the company's strategy effectively and assess the training needs of the people working in the organization.
- Apply various methods of learning and development in real-life situations.
- Design, develop, and conduct learning and development programmes.
- Evaluate the effectiveness of training and development programmes as well as learning outcomes.
- Recognise the emerging trends in the field of learning and development.

Syllabus:

Unit I: Introduction (10 Hours)

Fundamentals of learning and development; Difference between training & development and learning & development; Linking learning and development to company's strategy; Learning theories, strategies and constructivist approach to learning, learning in a digital world; Training Needs Assessment (TNA)- meaning and purpose of TNA, TNA at different levels, approaches for TNA, output of TNA, methods used in TNA.

Unit II: Learning and Development Methodologies (15 Hours)

Overview- logic and process of learning; Principles of learning; Individual differences in learning; Learning curve; Learning management system; Criteria for method selection; Skills of an effective trainer; Development techniques for enhancing decision–making and interpersonal skills, case-study, in-basket exercise, special projects, action learning, syndicate work, games, action maze, role play, experiential learning discovery learning, brainstorming, position rotation, team building, and sensitivity training; new learning methodologies using modern technologies.

Unit III: Designing Learning and Development Programmes (15 Hours)

Organization of learning and development programmes, design, kinds, choice of learning and development methods, preparation of trainers; Developing training materials; E-learning environment; technologies convergence and multimedia environment; Flexible learning modules; Self- development; Training process outsourcing.

Unit IV: Evaluation of Learning and Development (10 Hours)

Reasons for evaluation; Evaluation planning and data collection; Different evaluation frameworks; Value of learning research-RAM Model; the implication of learning evaluation, Problems of measurement and evaluation; Methods of evaluating the effectiveness of L & D efforts; Issues resulting from the external environment and internal needs of the company.

Unit V: Emerging Trends in Learning and Development (10 Hours)

Gamification, team building and six sigma training; Electronic enabled learning systems- its up scalability and follow up activities.
Learning and development initiatives of some selected companies from private and public sectors and MNCs; Upskilling & Reskilling; Adaptive Learning; Social Learning; Microlearning, Knowledge - sharing Ecosystem.

Case Studies: Some cases of the real business world supplement learning from the course.

Practical Exercises:

The learners are required to:

1. Analyze and interpret the learning and development strategies of various Indian organizations.

2. Participate in simulation exercises in the classroom to conduct learning and development techniques for enhancing decisions.

3. Develop a case study on different kinds of Learning and Development strategies by various companies in real-life scenarios. Learners may be assigned to compare different kinds of Learning and Development strategies by various companies.

4. Interview HR managers and develop a learning module on practical applications of Learning and Development concepts.

5. Visit a company and identify the different evaluation frameworks adopted in various functional areas.

6. Compare new Learning and development initiatives of some selected companies from private, and public sectors and MNCs.

Essential/ Recommended readings

Suggested Readings:

Dirksen , Julie (2011). *Design For How People Learn (Voices That Matter).* New Riders.

Emerson, Trish & Stewart, Mary (2011). *The Learning and Development Book: Change the way you think about L&D.* ASTD Press.

Noe, Raymond (2006). *Employee Training & Development.* McGraw-Hill Education**.**

Phillips, Jack & Stone, Ron (2002). *How to Measure Training Results: A Practical Guide to Tracking the Six Key Indicators.* McGraw-Hill Education.

Wick, Calhoun W. & Pollock, Roy V.H. (2015). *The Six Disciplines of Breakthrough Learning: How to Turn Training and Development into Business Results.* Pfeiffer.

Additional Resources:

Beitler, Michael (2005). *Strategic Organizational Learning.*

Blanchard, P., Nick, James W. Thacker & V. Anand Ram. *Effective Training: Systems, Strategies, and Practices*. Dorling Kindersley (India) Pvt. Ltd.

Garner, James. *Training Interventions in Job Skill Development*. Addison-Wesley.

Jack J. Phillips. *Hand book of Training Evaluation and Measurement Methods*. Routledge.

Kapp, Karl M. (2011). *The Gamification of Learning and Instruction: Game-based Methods and Strategies for Training and Education.*

Kirkpatrick, Donald L. & Kirkpatrick, James D. (2005) *Transferring Learning to Behavior: Using the Four Levels to Improve Performance*

Prior, John. *Handbook of Training and Development*. Bombay: Jaico Publishing House. Rolf, P. & Udai Pareek.

Training for Development. Sage Publications Pvt. Ltd.

Warren, M.W. *Training for Results*. Massachusetts, Addison-Wesley.

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Master of Business Administration (Business Analytics)

MBA (BA)
Semester IV

Marks: 100   Duration-60 Hrs.

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Digital Marketing Analytics **MBABAEC06**	**4**	**2**	**0**	**2**	**Pass in Graduation**	**NIL**

Learning Objectives

This course provides the knowledge base for understanding and practicing of the data analytics in Marketing. The primary objective is to help students in familiarizing and learning essential contrivances for steering business transactions through the various resources of information technology along with concept related contemporary case studies. The course provides thorough knowledge on various functions of data analytics in Marketing.

Learning outcomes
After completion of the course, learners will be able to:

- Recognise the concept of digital analytics and its role in marketing.
- Improve the visibility of a website on search engines and increase traffic with help of SEO and dive deep into different facets of SEO like on-page optimization and off-page optimization, keyword research, and SEO performance measurement.
- Analyze the process of Social Media Optimisation.
- Identify different kinds of marketing.
- Improve Return on Investment for any digital marketing program

Syllabus

Unit I: Introduction to Marketing & Digital Marketing Perspective (10 Hours)
Role of Marketing, Consumers and Consumption Segmentation, Targeting and Positioning, Designing Products and Services, Pricing and Channels, Using Communication to Engage Customers.
Introduction to Digital Marketing Basics Digital vs. Traditional Marketing, Why Care About Digital Marketing? Revisiting Marketing Mix: Digital Perspective with Case Study , Opportunities in Digital Marketing in India.
Personas in Digital Marketing Developing, Using and Refining Personas , The Personas and User Journeys, Consumer Journey Mapping Frameworks, Digital Marketing Mix and Digital Models, Case-based Discussions

Unit II: Search Engine Optimization (SEO) (13 Hours)

What is SEO and how do Search Engines Work?, Understanding On-page and Of-page SEO In Details, Keyword research techniques, Technical SEO, Mobile SEO, and Schema Markups, Link building – Blogger Outreach and Other Techniques, Social SEO, Local SEO, and International SEO, SEO Audits, SEO Tools – SEMrush, Ahrefs, etc., How to Rank #1 on Google? , Google AdWords , Set Up, Manage and Optimise a Google Ad Campaign , Google Analytics , Pay Per Click: An online internet model

Unit III: Social Media Optimization (SMO) (12 Hours)
Social Media Optimization, its Benefits, Different Platforms
Affiliate Tracking on a Website, How to Handle Affiliates?, Handling Fraudulent Transactions, Tips and Tricks

Unit IV: Kinds of Marketing (10 Hours)
Content Marketing, Email Marketing , Video Marketing, Paid Marketing , Affiliate Marketing, Influencer Marketing, Mobile Marketing

Unit V: Digital Marketing Analytics & ROI Measurement (15 Hours)
Descriptive, Predictive and Prescriptive Analytics , Market Basket Analysis , Sentiment Analysis, Understanding Google Analytics and Visitors' Traffic Matrices, Understanding Visitor Behaviour using Multiple Metrics, Slicing and Dicing Data, Understanding Growth Patterns, How to Build a Marketing Strategy by Seeing Traffic Patterns?, Channel Performance, Setting Goals, and Creating Reports and Dashboards, Measuring ROI as an Integrated Approach and Strategy Creation

Practical Exercise:
The learners are required to:
1. Discuss case studies on digital analytics and its role in marketing.
2. Participate in role play exercises to evaluate and choose appropriate web analytics tools and techniques.
3. Examine the important tools to collect data using today's most important online techniques: performing bulk downloads, tapping APIs, and scraping web pages.
4. Understand approaches to visualizing data effectively.
5. Evaluate different kinds of marketing.
6. Utilise Predictive and Prescriptive Analytics techniques to supplement decision making and policy formulation.
7. Recognize Key Performance Indicators tied to any digital marketing program

Suggested Readings:

1. Sponder, M. & Khan, G. F. (2017). *Digital Analytics for Marketing*. United Kingdom: Taylor & Francis.
2. Hemann, C. & Burbary, K. (2013). *Digital Marketing Analytics: Making Sense of Consumer Data in a Digital World.* United Kingdom: Pearson Education.
3. Hartman, K. (2020). *Digital Marketing Analytics: In Theory and In Practice* (Black & White Print Version). (n.p.): Independently Published.
4. Hemann, C. & Burbary, K. (2018). *Digital Marketing Analytics: Making Sense of Consumer Data in a Digital World*. United Kingdom: Pearson Education, Incorporated.
5. Kotler, P., Kartajaya, H & Setiawan,I. (2017). *Marketing 4.0: Moving from Traditional to Digital*. Wiley.
6. Winston, W.L. (2016). *Marketing Analytics: Data-Driven Techniques with Microsoft Excel*. Wiley.
7. Ian, Dodson I. (2016). *The Art of Digital Marketing: The Definitive Guide to Creating Strategic, Targeted, and Measurable Online Campaigns*. Wiley.

Note: Readings will be updated by the Department of Commerce and uploaded on Department's website.
Note: Relevant software will be used for pedagogical purpose. Evaluation of practical exercise using software will be part of internal assessment. Further, case studies related to above topics are required to be discussed.

Master of Business Administration (Business Analytics)

MBA (BA)
Semester IV

Marks: 100   **Duration-60 Hrs.**

Course title & Code	Cred its	Credit distribution of the course			Eligibi lity criteri a	Pre- requi site of the cours e (if any)
		Lect ure	Tutor ial	Practi cal/ Practi ce		
Financial Modelin g using Excel **MBABAEC07**	4	0	0	4	**Pass in Gradu ation**	**NIL**

Learning Objectives

To provide hands-on learning on financial modelling using spreadsheets for Business Analysis and financial decisions.

Learning outcomes

After completion of the course, learners will be able to:

- Evaluate the basics of financial modelling using spreadsheets.
- Build financial models for business analysis, CVP analysis, forecasting and to make projected financial statements
- Analyze models for making capital budgeting decisions and evaluate capital structure for the business.
- Apply modelling tools and techniques for pricing bonds, securities, portfolios and options.
- Examine different automation techniques for financial models.

Syllabus

Unit I: Modeling Overview and Core Concepts (10 Hours)

Financial modeling and application, tools for modeling, skills for financial modeling, steps of modeling, Structure and Challenges, Spreadsheet environment and its application, designing the spreadsheet model, using formulae in

modeling, Financial Modeling standards

Unit II: Modeling for Business Analysis (12 Hours)

Building a financial statement model, trend analysis, common-size analysis, working capital schedule, amortization schedule, Construction of pyramid of ratios Is something missing here, Financial analysis of company, Developing a financial model for Cost-Volume-Profit Analysis – Break-Even-Point, and Risk Analysis in Cost-Volume-Profit Analysis Integration and linking of financial statements; Lag and lead indicators; Forecasting techniques; Forecasting turnover, expenses, current and non-current assets, liabilities; Adjusting for seasonality, projected financial statements

Unit III: Modeling for Capital Budgeting Decisions (13 Hours)

Applying modeling tools and functions for basic functions of time value of money-FV & PV; Annuity; Loan Amortization; Connecting Loan structure with Taxation, projected discounted cash flows, DCF valuation, Pay Back Period, NPV and IRR; Necessary Projections, Data Tables, Sensitivity Analysis and Scenario Analysis, Expected NPV and associated Variance – Complete Model for capital budgeting decisions, Modeling Financial Leverage, capital structure and weighted average cost of capital

Unit IV: Financial Modeling for Securities (13 Hours)

Modeling Price and Yield for different types of bonds; modeling dynamics of bonds, interest rate risk modeling and prediction of prices – duration and convexity, developing models to determine and analyze security risk and return; Portfolio Risk and Return; and Efficient Frontier, Developing financial models for pricing Binomial Options and Black–Scholes model.

Unit V: Automation of Models (12 Hours)

Building a dynamic Dashboard for assisting the management to make necessary financial decision, Introduction to VBA and Macros, Building user-defined Functions, Macros for Automation, Automation of the Financial Models

Evaluation will be done through a practical exam.

Practical Exercises:

The learners are required to:

1. Find out the different tools and features of a spreadsheet

2. Extract historical data from financial statements of companies to forecast company earnings. Compare the performance of any two companies of your choice in an industry using ratios.

3. Select any 5 companies of your choice. Using appropriate models, forecast their future cash flows, growth rate and cost of capital. Estimate the intrinsic value of stocks of these companies by building a financial model.

4. Extract historical data for 5 companies and compare their capital structure. Also, estimate their

value if more debt is incorporated as part of their capital structure.

5. Construct portfolios based on any firm attribute using past data. Assess the profitability of this investment strategy. Evaluate if the returns on this strategy are explained by standard risk models such as CAPM and F-F Model. Use excel for your estimations.

6. Construct macro using VBA for any new financial function not existing in the Excel like Pay back period, Cumulative Cash Flows etc.

Suggested Readings:

- Beninga, Simon (2014). *Financial Modeling*. MIT press.
- Day, Alastair L. (2012). *Mastering Financial Modeling*. Pearson Education.
- Moschella, John (2017). *Financial Modeling for Equity Research: A Step-by-Step Guide to Earnings Modeling*. Guternberg Research publishing.
- Proctor, K. Scott (2004). *Building Financial Models with Microsoft Excel*. John Wiley and Sons.
- Sengupta, Chandan (2004). *Financial Modeling using Excel and VBA.* John Wiley & Sons.
- Tija, John S. (2009). *Building Financial Models.* McGraw Hill.

Note: Latest edition of the readings may be used.

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Master of Business Administration (Business Analytics)

MBA (BA)
Semester IV

Marks: 100   **Duration-60 Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Knowledge Management **MBABAEC08**	**4**	**3**	**0**	**1**	**Pass in Graduation**	**NIL**

Learning Objective:

To prepare the students to participate in the organizational knowledge management efforts and how the three aspects, strategy, technology, and HRM need to be aligned together to facilitate management of knowledge.

Learning Outcomes:

After completion of the course, learners will be able to:

-
- Explain the evolution of knowledge management and its relevance in a competitive environment.
- Describe the entire process of KM & knowledge creation.
- Develop knowledge leadership capabilities.
- Apply knowledge management systems and tools.
- Analyze knowledge as a strategic resource using enabling technologies and evaluate knowledge strategies.

Syllabus:

Unit I: Introduction (10 Hours)

Definition, need and objectives of knowledge management; Organizational benefits of KM; The drivers of knowledge management; Challenges of KM implementation; Knowledge hierarchy; Structural and process perspective of knowledge; Context and relevance of KM in competitive environment and knowledge economy.

Unit II: KM Process & Knowledge Creation (12 Hours)

Knowledge identification; Knowledge capture; Knowledge acquisition; Knowledge creation; Knowledge codification; Knowledge linking and building; Knowledge transfer & dissemination; Knowledge storage; Knowledge sharing; Knowledge application; Nonaka's model of knowledge creation-SECI model, Ba model.

Unit III: Knowledge Management Soft Support System (13 Hours)

Developing knowledge leadership capabilities; Recruiting and selecting knowledge leaders; Strategic knowledge leaders; Developing a knowledge culture; Knowledge culture enablers; Developing and

maintaining knowledge motivators, and other managerial and social infrastructure; Knowledge community.

Unit IV: KM Systems and Tools (13 Hours)

Knowledge management systems; Knowledge system design and architecture; Knowledge maps, implementation and challenges of KM system; ICT and groupware technology; Knowledge technology; Data warehouse and data mining; Search engines; Expert systems; Knowledge portal; Intelligent agents.

Unit V: Knowledge Strategies (12 Hours)

Knowledge as strategic resource; Knowledge strategies and its evaluation; Benchmarking; Knowledge audit; Introduction of enabling technologies of KM- big data, cloud computing, AI, etc.; Sustainable knowledge management; Top management challenges and emerging perspective ahead.

Practical Exercises:

The learners are required to:
1. Discuss the evolution of knowledge management and its relevance in the present competitive environment.
2. Analyze the entire process of KM & knowledge creation.
3. Assess the qualities of knowledge leaders in different organizations.
4. Apply knowledge management systems and tools.
5. Evaluate knowledge of different organizations.

Learning experiences from real life case studies.

Suggested Readings:

- Awad, Elias M. & Ghaziri, Hassan M. (2004). *Knowledge Management.* Pearson Education Inc., Prentice Hall.
- Davenport, T. H. & Prusak, L. (1998). *Working knowledge: How organizations manage what they know.* Harvard Business Press.
- Debowski, S. (2006). *Knowledge Management*. John Wiley & Sons Australia Ltd.
- Hislop, D. (2013). *Knowledge Management in Organizations: A Critical Introduction*. Oxford University Press.
- Liebowitz, J., & Beckman, T. J. (1998). *Knowledge organizations: What every manager should know.*
- CRC Press.
- Nonaka, I., & Takeuchi, H. (1995). *The knowledge-creating company: How Japanese companies create the dynamics of innovation.* Oxford University Press.
- Newell, S., Robertson, M., Scarbrough, H. & Swan, J. (2009). *Managing knowledge work and innovation.* Palgrave Macmillan.
- Tiwana, A. (2003). *Knowledge Management Toolkit, The: Orchestrating IT, Strategy, and Knowledge Platforms*. Prentice Hall.

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Master of Business Administration (Business Analytics)

MBA (BA)
Semester IV

Marks: 100   **Duration-60 Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	**Tutorial**	**Practical / Practice**		
Human Resource Information System **MBABAEC09**	4	3	0	1	**Pass in Graduate**	**NIL**

Learning Objectives

The objective of the course is to acquaint the students about the concept of information systems, internet, World Wide Web, HRIS and their application in Human Resource Development.

Learning outcomes

After completion of the course, learners will be able to:

- Describe the role of information technology and information systems in business and with respect to different management levels.
- Recognise the relevance of information in decision making. Identify and evaluate hardware and software requirements for information systems.
- Develop an understanding of the System Development Life Cycle in detail and analyze the MIS applications in different industries.
- Discuss how Human Resources Information Systems (HRIS) are bought/developed and implemented for various levels in an organization.
- Explore the use of some common Information Systems development tools

Syllabus

Unit I: Introduction (12 Hours)

Introduction to Management Information Systems, history of MIS, impact of MIS, role and importance of MIS in organization; Role of MIS at management levels; MIS growth and development; Artificial intelligence, Decision Support System (DSS), Executive Information System (EIS); Applications of MIS.

Unit II: Information Concepts and Information Technology (12 Hours)

Data and information; Relevance of information to decision making; Source, quality and types of information; Relevance of information in MIS; Assessing information needs of the organization; Use of information for competitive advantage; Trends in Information Technology- hardware and software, data-communication concepts; Decision making with communication technology; Multimedia approach to information processing; Decision of appropriate information technology for proper MIS.

Unit III: System Development and Applications of MIS (13 Hours)

Systems definition-types of systems:

open, closed, deterministic, probabilistic, etc; Relevance of choice of system in MIS; Integration of organization systems and information systems; System Development Life Cycle (SDLC); Alternative system building approaches, prototyping, rapid development tools, case tools, object-oriented systems; MIS applications in HRD & O.D. in manufacturing, R&D, public transport, hospitals, hotels and service industries.

Unit IV: HRIS Development (13 Hours)

HRIS life cycle/HR responsibility in each phase of HRIS development; Pre implementation stage of HRIS; HRIS planning; HRIS expectation, productivity through HRIS; HRIS cost-benefit value analysis; Getting management support for HRIS; Limitations of computerization of HRIS.

Unit V: Emerging Trends in HRIS (10 Hours)

Implementation of HRIS- tools in HRIS development, cases

and exercises; Human Resources Information Systems in large and small organizations- cases & exercises, packaged Human Resources Information Systems/ business process, re-engineering, enterprise resource planning systems, emerging trends in HRIS, networking, internet, intranet, technology implications, etc.

Practical Exercises:

The learners are required to:
1. Analyze the role of information technology and information systems in various organizations with respect to different management levels.
2. Identify and evaluate hardware and software requirements for information systems.
3. Evaluate the role of MIS applications in different industries.
4. Perform HRIS cost-benefit value analysis.
5. Compare Human Resources Information Systems in large and small organizations.
6. Explore and evaluate some common Information Systems development tools.

Suggested Readings:

Badgi (2012). *Practical Guide to Human Resource Information Systems*. New Delhi: PHI Learning Pvt. Ltd.

Brien, James A. O. (2011). *Management Information System*. New Delhi: Tata McGraw Hill

Gordon, B. Davis. & Olson, Margreth H. (2001). *Management Information System*. New Delhi: McGraw Hill.

Jawadekar, W. S. (2015). *Management Information System*. New Delhi: Tata McGraw Hill

Kavanagh, M. J., Thite, M. & Johnson, R. D. (2011). *Human Resource Information Systems: Basics, Applications, and Future Directions*. South Asia: SAGE Publications.

Richard D. (2011). *Human Resource Information Systems: Basics, Applications, and Future Directions.* South Asia: SAGE Publications.

Laudon. (2017). *Management Information System*. India: Pearson.

Murdick, R. G., Ross, Joel. E. & Clugett, J. R. (2010). *Information System for Modern Management*. New Delhi: Prentice Hall of India.

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Master of Business Administration (Business Analytics)

MBA (BA)
Semester IV

Marks: 100   **Duration-60 Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Advanced Machine Learning **MBABAEC10**	4	3	0	1	**Pass in Graduation**	**NIL**

Learning Objectives

The course aims to familiarize the learners with machine learning methods for various problems where human expertise is not present, or where humans are unable to identify the reason behind their expertise, or where problem size is too huge for humans to comprehend solutions or where solutions are context specific. The course will introduce topics which include Bayesian statistics, Markov modeling, graphical model structure learning, deep learning and Gaussian processes.

Learning outcomes

After completion of the course, learners will be able to:

1. Describe the role of machine learning in solving complex and large scale problems.
2. Analyze Bayesian Statistics and decision theory.
3. Analyze Markov and Hidden Markov Models.
4. Analyze Additive models, Tree based methods and Boosting methods.
5. Evaluate graphical methods.
6. Recognize the concept of Deep learning and analyze the Gaussian Process.

Syllabus

Unit I: Unsupervised Learning (8 Hours)

Introduction, Association rules, Cluster analysis, Self-organizing maps, Principal components, curves and surfaces, non-negative matrix factorization, independent component analysis, multidimensional scaling, nonlinear dimension reduction, the google Pagerank algorithm.

Unit II: Bayesian Statistics (12 Hours)

Introduction, Summarizing posterior distributions, Bayesian model selection, Priors, Hierarchical Bayes, Empirical Bayes, Bayesian decision theory.

Unit III: Markov and Hidden Markov Models (8 Hours)

Introduction, Markov models, Hidden Markov models, Inference in HMMs, Learning from HMMs, Generalizations of HMMs.

Unit IV: Additive Models, Trees and Boosting (12 Hours)

Generalized Additive Models, Tree based methods, PRIM: Bump hunting, MARS, Hierarchical mixture of experts, missing data, computational considerations. Boosting methods, boosting fits an additive model, forward stagewise additive modeling, exponential loss and adaboost, why exponential loss, loss functions and robustness, off the shelf procedures for data mining, boosting trees, right sized trees, regularization, interpretation.

Unit V: Graphical Model Structure Learning (20 Hours)

Introduction, Learning tree structures, learning DAG structures, Learning DAG structures with latent variables, learning casual DAG's, learning undirected Gaussian graphical methods, learning undirected discrete graphical methods.

Deep learning and Gaussian Process

Deep learning: Introduction, Deep generative models, Deep neural networks, applications of deep networks. Gaussian Processes: Introduction, GPs for regression, GPs meet GLMs, Connection with other methods, GP latent variable model.

Practical Exercises:

The learners are required to: learn to analyse using appropriate softwares:

1. Analyze the role of machine learning in solving complex and large scale problems.

2. Analyze Bayesian Statistics and decision theory.

3. Analyze Markov and Hidden Markov models using appropriate software.

4. Analyze Additive models, Tree based methods and Boosting methods using appropriate software.

5. Evaluate graphical methods.

6. Evaluate applications of deep networks.

Essential/ Recommended readings
Suggested Readings:

· Aston Zhang, Zachary C. Lipton, Mu Li, and Alexander J. Smol (2021). *Dive into Deep Learning* (Free Access) (https://d2l.ai/)

·Barber, D. (2012). *Bayesian Reasoning and Machine Learning*. Cambridge University Press.

· Bishop, C.M. (2007). *Pattern Recognition and Machine Learning*. Springer.

· Cover, T.M. & Thomas, J.A. (2006). *Elements of Information Theory*. Wiley

· Hastie, T., Tibshirani, R., and Friedman, J. (2011). *The Elements of Statistical Learning*.Springer.

· Hastie, T., Tibshirani, R., and Friedman, J. (2021). *Introduction to Statistical Learning*. Springer. (Free Access) (https://www.statlearning.com/)

· Hearty, J (2016). *Advanced Machine Learning with Python*. Packt publishing.

· MacKay J.C.D. (2005). I*nformation Theory, Inference and Learning Algorithms*. Cambridge University Press.

· Murphy, K.P. (2022). *Probabilistic Machine Learning: An introduction*. MIT press. (Free Access) (https://mitpress.mit.edu/9780262046824/probabilistic-machine-learning/) (https://probml.github.io/pml-book/)

· Nocedal J. & Wright, S.J. (1999). *Numerical Optimization* Springer.

· Rasmussen, C.E. & Williams, C.K.I. (2005). *Gaussian processes for Machine Learning*, MIT Press.

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Master of Business Administration (Business Analytics)

MBA (BA)
Semester IV

Marks: 100   **Duration-60 Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	**Tutorial**	**Practical/ Practice**		
Time Series Analytics **MBABAEC 11**	4	3	0	1	Pass in Graduation	NIL

Learning Objectives

To make students model, analyse and forecast the behaviour of time series data. To make them analyse various issues involved in Time series Econometrics. The course is designed to equip them with advanced analytical tools and techniques which can enhance their logical ability for forecasting in business.

Learning outcomes

After completion of the course, learners will be able to:

- Discuss the basics of Time Series Data.
- Evaluate Stationary Time Series Models.
- Test and analyze the Stationary Time series.
- Model volatility using Time series.
- Examine cointegration and error correction among time series data.
- Analyze, Model and Forecast using time series data.

SYLLABUS

Unit I: Difference Equations (10 Hours)

Time series models, Difference equations and their solutions, solution by iteration, an alternative solution methodology, the cobweb model, solving homogeneous difference equations, particular solutions for deterministic processes, the method of undetermined coefficients, lag operators.

Unit II: Stationary Time Series Models (12 Hours)

Stochastic difference equation models, ARMA models, stationary restrictions for ARMA(p,q) model, autocorrelation function, partial autocorrelation function, sample autocorrelations of stationary series, box-jerkins model selection, properties of forecasts, model of interest rate spread, seasonality, parameter instability and structural change.

Unit III: Models with Trend (12 Hours)

Deterministic and Stochastic trends, removing the trend, unit roots and regression residuals, Monte- Carlo method, Dickey-Fuller tests: examples and extensions, structural change, power and the deterministic regressors, test with more power, panel unit root tests, trends and univariate decompositions.

Unit IV: Modelling Volatility (13 Hours)

 Economic time series: the stylized facts, ARCH processes, ARCH and GARCH estimates of inflation, examples of GARCH models, A GARCH model of risk, ARCH-M model, additional properties of GARCH processes, maximum likelihood estimation of GARCH models, other models of conditional variance, Multivariate GARCH.

Unit V: Multi-equation Time Series Models (13 Hours)

Intervention Analysis, Transfer function analysis, estimating a transfer function, limits to a structural multivariate estimation, VAR analysis, estimation and identification, Impulse response function, testing hypothesis, Example of Simple VAR, structural VARs, examples, Granger Causality Test, Variance decomposition. Co-integration and Error Correction Models.

Practical Exercises:

The learners are required to:

1. Analyze time series data.
2. Examine the stationarity of the time series using appropriate software.
3. Model volatility of time series using appropriate software.
4. Examine cointegration among time series using appropriate software.
5. Analyze and examine error correction between time series using appropriate software.
6. Examine causality between time series using appropriate software.
7. Analyze, Model and Forecast using time series data.

Essential/ Recommended readings

Suggested Readings:

- Anderson (2011). *The Statistical Analysis of Time Series*. Wiley.
- Brockwell, P.J. & Davis, R.A. (2016). *Introduction to Time Series and Forecasting*. Springer, Third Edition.
- Chatfield, C. (2003). *The Analysis of Time Series: An Introduction*. Chapman & Hall, Sixth Edition.

- Enders W. (2014). *Applied Econometric Time Series*. John Wiley & Sons, Inc., Fourth Edition.
- Hamilton, J.D. (2012). *Time Series Analysis*. Princeton University Press.
- Mills, T.C. & Markellos, R.N. (2008). *The Econometric Modelling of Financial Time Series*. Cambridge University Press, Third Edition.
- Shumway, R.H. & Stoffer, D.S. (2013). *Time Series Analysis and Its Applications: With R Examples*. Springer.
- Tsay, R.S. (2014). *Analysis of Financial Time Series*. Wiley, Third Edition

Note: Latest edition of the readings may be used.

Note: Relevant software will be used for pedagogical purpose. Evaluation of practical exercise using software will be part of internal assessment. Further, case studies related to above topics are required to be discussed.

Note: Suggested readings will be updated by the Department of Commerce and uploaded on Department's website.

Master of Business Administration (Business Analytics)

MBA (BA)
Semester IV

Marks: 100   **Duration-60 Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	**Tutorial**	**Practical / Practice**		
Predictive Analytics MBABAEC12	4	2	0	2	**Pass in Graduate**	**NIL**

Learning Objectives

The objective of the course is to make one understand the correct framework of predictive modeling process which involves data preparation, model development, hypothesis testing and model evaluation. The course also focuses on various concerns in model prediction such as overfitting, model tuning and class imbalance.

Learning outcomes

After completion of the course, learners will be able to:

1. Gain skills in understanding predictive models.
2. Analyze metric data and get an overview of statistical tests
3. Gain skills in building predictive models.
4. Recognise the process of hypothesis testing and model evaluation.
5. Use Linear and Logistic Regression for Model Estimation.
6. Apply predictive models to solve business problems.

SYLLABUS

Unit I: Introduction (5 Hours)

Classification & prediction, Key ingredients of predictive models, Goals of a regression analysis. Regression models, Data in a regression analysis.

Unit II: Data Preparation & Statistical Tests (10 Hours)

Analyzing the metric data: Measures of central tendency, measures of dispersion, data distribution, histogram analysis, outlier analysis, correlation analysis. Attribute Reduction Methods: Univariate Analysis, Correlation-based Feature Selection, Attribute Extraction: Principal Component Analysis. Overview of statistical tests: Categories, one-tail and two-tail, Type I and Type II errors, interpreting significance results.

Unit III: Model Development (10 Hours)

Model Development: Data partition, Attribute reduction, model construction, model validation, hypothesis testing, results interpretation, cross-validation.

Unit IV: Hypothesis Testing & Model Evaluation (10 Hours)

Steps in Hypothesis Testing, Statistical testing, model-comparison tests. Performance measures for categorical and continuous dependent variables, ROC analysis.

Unit V: Linear and Logistic Regression Model Estimation (25 Hours)

Simple Linear Regression, Multiple Regression, Logistic Regression Overfitting, Model Tuning & Class Imbalance.

Applying Predictive analytics

Applying Predictive analytics across various industries (Banking, Healthcare, Human resources (HR), Marketing and sales, Supply chain) for different business problems and making informed decisions within real-world situations.

Practical Exercises:

The learners are required to:

1. Interpret key ingredients of predictive models.
2. Apply statistical tests and interpret the significance of their results.
3. Build predictive models
4. Apply Statistical testing techniques and model-comparison tests
5. Use Linear and Logistic Regression Models on real life situations.
6. Apply predictive analytics to solve business problems.

Essential/ Recommended readings
Suggested Readings:

● Chatterjee, S. & Hadi, A. (2012). *Regression Analysis by Example*, John Wiley, Fifth Edition.

● Frees, E. E, Derrig, E. W. & Meyers, G. (2014). *Predictive Modeling Techniques in Actuarial Science, Vol. I: Predictive Modeling Techniques*. Cambridge University Press.

● Kuhn, M. and Johnson, K. (2013). *Applied Predictive Modelling*, Springer Verlag.

● Larose, D.T. & Larose, C.D. (2016). *Data Mining and Predictive Analytics*. Wiley.

● Malhotra, R. (2016). Empirical Research in Software Engineering: Concepts, Analysis & Applications, CRC press.

● Mayor, E. (2015). *Learning Predictive Analytics with R*, Packt Publishing.

- Sarma, K.S. (2013). *Predictive Modeling with SAS Enterprise Miner: Practical Solutions for Business Applications,* SAS Institute, Second Edition.

- Strickland, J. (2014). *Predictive Modeling and Analytics*, Lulu.com.

- Weisberg, S. (2014). *Applied Linear Regression,* Wiley, Fourth Edition.

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Master of Business Administration (Business Analytics)

MBA (BA)
Semester IV

Marks: 100   **Duration: 60 Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	**Tutorial**	**Practical/ Practice**		
Enterprise Performance Management **MBABAEC13**	**4**	**3**	**0**	**1**	**Pass in Graduation**	**NIL**

Learning Objectives:
This course aims to discuss the major aspects of technological change and the kind of human resource management strategies and steps which may equip the organization and its human resources to adequately cope with such changes. It also examines the importance of an effective performance management system in helping organizations define and achieve short and long term goals.

Learning Outcomes: After completion of the course, learners will be able to:
1. Discuss the role of HR management in effective business administration.
2. Recognise the role of changing technology and leadership skills in the management of an enterprise.
3. Evaluate and analyze the need for performance management and provide solutions that align with strategic goals as well as maximizing productivity.
4. Develop knowledge of the concept of auditing and its applicability as a performance management tool.
5. Analyze HR scorecard, stochastic models and future trends in Business Analytics.

Syllabus:

Unit I: Manpower Management (10 Hours)

HR Management in the 21st Century; Environmental Context of Human Resource Management; The Emerging Profile of Human Resources; Special Features of New Technology; Concept and Process of Technological Innovation; Organizational and Human Resource Implications of Technological Change.

Unit II: Globalization, Technology and Human Resource Issues (12 Hours)
Technology and Culture, Technology Management, Changing Technology and New Leadership Skills, Economic Theory of Choice and Employee Benefits.

Unit III: Performance Management (13 Hours)

Concepts and issues, definition, performance, principles, role of performance management in the organization; Management Control and Operational Control; Framework and key factors to successful performance system.

Unit IV: Evaluating HR function (12 Hours)
Overview of evaluation - scope - strategic impact - level of analysis - Criteria - Level of Constituents - ethical dimensions. Approaches to evaluation, - audit approach, - analytical approach, - quantitative and qualitative measures - outcome and process criteria, Balanced Scorecard perspective, Benchmarking, Accounting for HRM.

Unit V: HR Scorecard and Stochastic Models (13 Hours)
Creating an HR Scorecard, Measuring HR alignment -2 dimensions of alignment - assessing internal and external alignment - Systems alignment Map. 7-step Model for implementing HR's strategic role. New issues in Manpower Training and Career Development; Introduction to stochastic models, Markov models, Poisson process with applications, Markov decision process in sequential decision-making, future trends in Business Analytics.

Practical Exercises:
The learners are required to:

1. Analyze and interpret case studies related to HR Management.
2. Discuss the role of changing technology and leadership skills in the management of an enterprise.

3. Participate in simulation exercises in the classroom on Leadership Skills and thereby identify their needs in performance management.

4. Participate in simulation exercises and role play on performance management. Learners may be assigned to draft solutions that align with strategic goals as well as maximize productivity.

5. Interview HR managers and develop in-depth knowledge on practical applications of evaluation of HR functions.

6. Visit a company and identify the manpower training and career development methods adopted in various functional areas.
7. Create an HR Scorecard in a select organization and present the report of the same.

Essential/ Recommended readings

Suggested Readings:

- Aguinis, H. (2008). *Performance management* (2nd edition). USA: John Wiley.
- Agunis, H. (2013). *Performance Management* (3rd edition). Pearson Education.
- Ashdown, L. (2014). *Performance Management*. Kogan Page
- Michael, Armstrong (1999). *Performance Management*. Kogan Page.
- Robert Bacal. (2012). *Performance Management* (2nd edition). McGrawHill.
- Kohli, A.S. & Deb, T. (2013). *Performance Management*. New Delhi: Oxford University Press.
- Zeytinoglu, I. U. (2009). *Effects flexibility in workplace on workers: Work environment and the unions*. Geneva: International Labour Office.

Note: Readings will be updated by the Department of Commerce and uploaded on Department's website.

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

Master of Business Administration (Business Analytics)

MBA (BA)
Semester IV

Marks: 100   **Duration-60 Hrs.**

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Robotic Process Automation in Business **MBABAEC14**	**4**	**3**	**0**	**1**	**Pass in Graduation**	**NIL**

Learning Objectives

The objective of the course is to acquaint the students with the concept of information systems, internet, World Wide Web, HRIS and their application in Human Resource Development.

Learning outcomes

After completion of the course, learners will be able to:

- Explain the concept and relevance of robotic process automation
- Discuss the working process of robotic process automation
- Evaluate application areas of robotic process automation for business
- Create different robotic process automation models of business
- Develop a business model using robotic process automation

Syllabus:

Unit I: Introduction (10 Hours)

Overview of robotic process automation. Robotic process automation: Concept and Introduction, features, merits, demerits, role and importance of Robotic Process Automation.

Unit II: Application area of robotic process automation with examples (12 Hours)
Automation: Meaning and types. differentiate between process automation and robotic process automation, Software automation and its importance.

Unit III: Various robotic process automation models of business (13 Hours)
SWOT analysis for robotic process automation, Application areas of robotic process automation. Opportunities and challenges of adoption and application of robotic process automation in business, study of various models of robotic process automation in business.

Unit IV: Study of various existing models of robotic process & Hands on hands practice on the existing robotic process models automation (13 Hours)

Practice on specific models of robotic process automation i.e. attendance tracking, performance tracking, performance evaluation etc. business models using robotic process automation.

Unit V: Development of business models using robotic process automation (12 Hours)
Development of models in various areas of finance and accounting, sales and marketing, HR, Production and operations and service sector.

Practical Exercises:

The learners are required to:
1. Discuss the relevance of robotic process automation in present times.
2. Analyze the working process of robotic process automation.
3. Identify and evaluate different application areas of robotic process automation in any industry.
4. Create and assess different robotic process automation models of business.
5. Develop and evaluate a business model using robotic process automation.

Essential/ Recommended readings

- "Robotics" by R C Gonzalez and C S G Lee

- "Robotics for Engineers" by Y Koren

- "Introduction to Robotics" by J J Craig

- "Robotics: Everything You Need to Know About Robotics from Beginner to Expert" by Peter Mckinnon

- "Robotics: A Reference Guide to the New Technology" by Joseph A Angelo Jr

- "Introduction To Robotics : Analysis, Control, Applications" by Saeed B Niku

- "Programming Robots with ROS" by Brian Gerkey and William D Smart

- "Arduino Robotics" by Harald Molle

- "Robotics: Science and Systems" by Wolfram Burgard Dieter Fox

- "Applied Robotics: An Introduction" by Edwin Wise

- "The Coming Robot Revolution: Expectations and Fears About Emerging Intelligent, Humanlike Machines" by Yoseph Bar-Cohen and David Hanson

- "Visual Control of Wheeled Mobile Robots (Springer Tracts in Advanced Robotics)" by Héctor M Becerra and Carlos Sagüés

- "Rescue Robotics: DDT Project on Robots and Systems for Urban Search and Rescue" by Satoshi Tadokoro

- "Modeling and Simulation of Logistics Flows 1: Theory and Fundamentals (Systems and Industrial Engineering – Robotics)" by Jean–Michel Réveillac

Note: Readings will be updated by the Department of Commerce and uploaded on Department's website.

Note: Use cases to supplement learning from the course.

Note: Relevant software will be used for pedagogical purpose. Evaluation of practical exercise (if any) using software will be part of internal assessment.