

INSTITUTE OF SCIENCE, TECHNOLOGY & ADVANCED STUDIES (VISTAS)
(Deemed to be University Estd. u/s 3 of the UGC Act, 1956)
PALLAVARAM - CHENNAI
ACCREDITED BY NAAC WITH 'A' GRADE
Marching Beyond 30 Years Successfully

MBA (BUSINESS ANALYTICS)

Curriculum and Syllabus
Regulations 2023

(Based on Choice Based Credit System (CBCS))

Effective from the Academic year
2023 -2024

Department of MBA

School of Management Studies & Commerce

Vision and Mission of the Department

Vision

To be a Centre of Excellence in Management Studies and Commerce, imparting and developing Managerial leadership and entrepreneurial skills to students and provide managers for the global market.

Mission

1. To provide an accessible and inclusive learning environment for diverse group of students and other stakeholders to learn by synergizing education, research, innovation and outreach efforts.
2. To foster self-discipline, strong values, ethics and sense of duty among the students to make them good citizens, leaders, professionals and entrepreneurs.
3. To create the future business leaders through innovative and analytical ability, decision making capability and integration of technology in education.
4. To provide exposure to global business standards by design thinking, rational judgement and competencies necessary to manage global and multinational ventures.

Program Educational Objectives (PEOs)

- PEO1: To provide exceptional quality education that prepares the students to meet global standards and competitive environment.
- PEO2: To inculcate team spirit and develop leadership capabilities among students, empowering them to emerge as business leaders and contribute to organizational development.
- PEO3: To impart ethical and moral values so as to inculcate the significance of Environmental, Social and Governance practices among students to create better citizens and society.
- PEO4: To equip the students with technology proficiency, nurture entrepreneurial skills to think strategically by encouraging them to become professionals.
- PEO5: To motivate students to participate in community development initiatives and participate Industry research projects.

Program Outcomes (POs)

PO 1: Apply knowledge of management theories and practices to solve business problems.

PO 2: Foster Analytical and critical thinking abilities for data-based decision making.

PO 3: Ability to develop Value based Leadership ability.

PO 4: Ability to understand, analyze and communicate global, economic, legal, and ethical aspects of Business.

PO 5: Ability to lead themselves and others in the achievement of organizational goals, contributing effectively to a team environment.

PO 6: Create, select and apply appropriate modern tools & techniques for analyzing, interpreting and solving business complexities.

PO 7: Develop an aptitude for creativity, innovation and entrepreneurship.

PO 8: Adapt life-long learning and professional development to enrich knowledge and competencies.

Program Specific Outcomes (PSOs)

PSO 1: Apply analytics principles to integrated business activities to articulate and deliver customer-oriented quality outcomes within legal and ethical frameworks.

PSO 2: Develop operations to source and utilize appropriate analytics to support the implementation of business strategies and manage resources to improve business operations.

PSO 3: Utilize state-of-the-art analytics practices to implement strategic and operational concepts and techniques that underpin business for domestic and international markets.

List of Board of Studies (BOS) Members along with their designation/role

S.NO	NAME & ADDRESS	DESIGNATION
1.	**Dr. P. R. Ramakrishnan** Dean School of Management Studies & Commerce VISTAS	Chairperson
2.	**Dr. R. Magesh** Professor and Head Department of Management Studies Anna University, Chennai	External Expert
3.	**Dr. S. Prabhu** Member- Confederation of Indian Industry CII, Chennai	Industry Expert
4.	**Dr. J. Balasubramanian** Head, Business Analytics, Ashok Leyland, Chennai	Industry Expert
5.	**Ms. Anitharaj Johnes George** Senior Talent Acquisition Analyst SPI global, Pondicherry	Alumni
6.	**Dr. S. Preetha** School of Management Studies, VISTAS	Professor
7.	**Dr. S. Vasantha** School of Management Studies, VISTAS	Professor
8.	**Dr. G. Rajini** School of Management Studies, VISTAS	Professor
9.	**Dr. P. G. Thirumagal** School of Management Studies, VISTAS	Associate Professor
10.	**Dr. G. Madhumita** School of Management Studies, VISTAS	Associate Professor
11.	**Dr. S. Sudha** School of Management Studies, VISTAS	Professor

VELS INSTITUTE OF SCIENCE, TECHNOLOGY AND ADVANCED STUDIES (VISTAS), CHENNAI

CHOICE BASED CREDIT SYSTEM (CBCS)

MBA (BUSINESS ANALYTICS) – REGULATIONS 2023

(Applicable to all the candidates admitted from the academic year 2023-24 onwards)

1. DURATION OF THE PROGRAMME

1.1. Two years (Four semesters)

1.2. Each academic year shall be divided into two semesters. The odd semesters shall consist of the period from July to November of each year and the even semesters from January to May of each year.

1.3 There shall be not less than 90 working days for each semester.

2. ELIGIBILITY FOR ADMISSION

2.1. The details of Eligibility for Admission

Passed Bachelor Degree of minimum 3 years duration.

Obtained at least 50% marks (45% marks in case of candidates belonging to reserved category) in the qualifying examination.

3. MEDIUM OF INSTRUCTION

The medium of instruction for all PG programme is English.

4. CREDIT REQUIRMENTS AND ELIGIBILITY FOR AWARD OF DEGREE

A Candidate shall be eligible for the award of Degree only if he/she has undergone the prescribed course of study in VISTAS for a period of not less than TWO academic years and passed the examinations of all the prescribed courses of FOUR Semesters earning a minimum of 102 credits as per the distribution given in the course structure.

5. COURSE

Each course / subject is to be designed under lectures / tutorials / laboratory or field work / seminar / practical training / Assignments / Term paper or Report writing etc., to meet effective teaching and learning needs.

6. COURSE OF STUDY AND CREDITS

The Course Components and Credit Distribution shall consist of:

The total number of subjects of study shall be 33 out of which 22 shall be compulsory subjects, 7 will be Electives, Two MOOC, Internship in Second semester and Project Work in the Final Semester with a Viva-voce altogether.

Candidates shall take 10 subjects (6 Core Theory + 4 Practical) in the First semester, 10 subjects (7 Core Theory + 2 Practical) along with summer internship in the Second Semester, 10 subjects

(7 Elective Theory+ 3 Practical) in the Third Semester and 2 subjects (1 Core Theory + 1 Practical) and a Project Work in the Fourth Semester.

Internship: The students have to undergo an internship for thirty days in between first and second semester. The maximum marks for Internship will be 100. The Internship will be evaluated through Viva voce Exam by the guide and an External expert.

Project: The students will do a Project work for Four months in the Fourth Semester. The Maximum marks for Project Work will be 300. The project Work will be evaluated through Viva voce Exam by the guide and an External expert. The components of Project Work will be 100 marks for Dissertation and 200 marks for Viva voce.

To offer Elective Subjects to the students, a Minimum enrolment in the Elective Subjects shall be TEN.

For each course, credit is assigned based on the following:

Contact hour per week		CREDITS
1 Lecture hour	-	1 Credit
1 Tutorial hour	-	1 Credit
2 Practical hours	-	1 Credit

(Laboratory / Seminar / Project Work / etc.)

7. REQUIREMENTS FOR PROCEEDING TO SUBSEQUENT SEMESTER

7.1. **Eligibility:** Students shall be eligible to go to subsequent semester only if they earn sufficient attendance as prescribed therefor by the Board of Management from time to time.

7.2. **Attendance:** All Students must earn 75% and above of attendance for appearing for the University Examination. (Theory/Practical)

7.3. **Condonation of shortage of attendance:** If a Student fails to earn the minimum attendance (Percentage stipulated), the HODs shall condone the shortage of attendance on medical grounds up to a maximum limit of 10% (i.e. between 65% and above and less than 75%) after paying the prescribed fee towards the condonation of shortage of attendance. The students with attendance of less than 65 and more than 50% shall be condoned by VC on the recommendation of HODs on genuine grounds, will be permitted to appear for the regular examination on payment of the prescribed condonation fee.

7.4. **Detained students for want of attendance:** Students who have earned less than 50% of attendance shall be permitted to proceed to the next semester and to complete the Program of study. Such Students shall have to repeat the semester, which they have missed by rejoining after completion of final semester of the course, by paying the fee for the break of study as prescribed by the University from time to time.

7.5. **Transfer of Students and Credits:** The strength of the credits system is that it permits inter Institutional transfer of students. By providing mobility, it enables individual students to develop their

capabilities fully by permitting them to move from one Institution to another in accordance with their aptitude and abilities.

7.5.1. Transfer of Students is permitted from one Institution to another Institution for the same program with same nomenclature, provided, there is a vacancy in the respective program of Study in the Institution where the transfer is requested.

7.5.2. The marks obtained in the courses will be converted into appropriate grades as per the University norms.

7.5.3. The transfer students are not eligible for Ranking, Prizes and Medals.

7.5.4. Students who want to go to foreign Universities upto two semesters or Project Work with the prior approval of the Departmental / University Committee are allowed to transfer of their credits. Marks obtain in the courses will be converted into Grades as per the University norms and the students are eligible to get CGPA and Classification.

8. EXAMINATION AND EVALUATION

8.1. EXAMINATION:

i) There shall be examinations at the end of each semester, for odd semesters in the month of October / November, for even semesters in April / May. A candidate who does not pass the examination in any course(s) shall be permitted to appear in such failed courses in the subsequent examinations to be held in October / November or April / May.

ii) A candidate should get registered for the first semester examination. If registration is not possible owing to shortage of attendance beyond condonation limit / regulations prescribed OR belated joining OR on medical grounds, the candidates are permitted to move to the next semester. Such candidates shall re-do the missed semester after completion of the programme.

iii) The results of all the examinations will be published through University Website. In the case of passed out candidates, their arrear results, will be published through University Website.

8.2 **To Register for all subjects**: Students shall be permitted to proceed from the First Semester up to Final Semester irrespective of their failure in any of the Semester Examination, except for the shortage of attendance programs. For this purpose, Students shall register for all the arrear subjects of earlier semesters along with the current (subsequent) Semester Subjects.

8.3. Marks for Continuous Internal Assessment (CIA) Examinations and End Semester Examinations (ESE)

8.3.1 There shall be no passing minimum for Continuous Internal Assessment (CIA) Examinations.

8.3.2 For End Semester examination, passing minimum shall be 50% (Fifty Percentage) of the maximum marks prescribed for the Course/Practical/Project and Viva-Voce.

8.3.3 In the aggregate (CIA and ESE) the passing minimum shall be of 50%.

8.3.4. He / She shall be declared to have passed the whole examination, if he/she passes in all the courses wherever prescribed in the curriculum by earning 102 CREDITS.

9. Question Paper Pattern for End Semester Examination

Duration: 3 Hours Max. Marks: 100

Part A	: 8 out of 10 questions	(8 X 5 = 40)
Part B	: 4 out of 6 questions	(4 X 10 = 40)
Part C	:1 Case Study or Problem is Compulsory	(1 X 20= 20)

Total Marks for each subject 100 Marks

University Exam 60 Marks

Internal Assessment 40 Mark

10. SUPPLEMENTARY EXAMINATION: Supplementary Examinations are conducted for the students who appeared in the final semester examinations. Eligible criteria for appearing in the Supplementary Examinations are as follows:

10.1. Eligibility: A Student who is having a maximum of two arrear papers is eligible to appear for the Supplementary Examination.

10.2. Non-eligibility for those completed the program: Students who have completed their Program duration but having arrears are not eligible to appear for Supplementary Examinations.

11. RETOTALLING, REVALUATION AND PHOTOCOPY OF THE ANSWER SCRIPTS:

11.1. Re-totaling: All PG Students who appeared for their Semester Examinations are eligible for applying for re-totaling of their answer scripts.

11.2. Revaluation: All current batch Students who have appeared for their Semester Examinations are eligible for Revaluation of their answer scripts. Passed out candidates are not eligible for Revaluation.

11.3. Photocopy of the answer scripts: Students who have applied for revaluation can download their answer scripts from the University Website after fifteen days from the date of publication of the results.

12. The examination and evaluation for MOOCs will be as per the requirements of the regulatory bodies and will be specified at the beginning of the Semester and notified by the university NPTEL-SWAYAM Coordinator (SPOC).

13. CLASSIFICATION OF SUCCESSFUL STUDENTS

13.1. CORE SUBJECTS, PRACTICAL, ELECTIVES COURSES AND PROJECT: Successful Students passing the Examinations and securing the marks

a) CGPA 9.00 to 10.00 shall be declared to have passed the examination in **First class with Outstanding**.

b) CGPA 7.50 to 8.99 shall be declared to have passed the examination in **First class with distinction**.

c) CGPA 6.00 to 7.49 shall be declared to have passed the examination in **First Class**.

d) CGPA 5.00 to 5.99 in the aggregate shall be declared to have passed the examination in the **SECOND** Class.

14. MARKS AND GRADES: The following table shows the marks, grade points, letter grades and classification to indicate the performance of the student:

14.1. **Computation of Grade Point Average (GPA)** in a Semester, Cumulative Grade Point Average (CGPA) and Classification

GPA for a Semester: = ∑iCiGi ÷ ∑iCi That is, GPA is the sum of the multiplication of grade points by the credits of the courses divided by the sum of the credits of the courses in a semester.

Where, Ci= Credits earned for course i in any semester,

Gi = Grade Points obtained for course i in any semester

n = Semester in which such courses were credited.

CGPA for the entire programme: = ∑n∑iCniGni ÷∑n∑iCni That is, CGPA is the sum of the multiplication of grade points by the credits of the entire programme divided by the sum of the credits of the courses of the entire programme

Grade Conversion Table - PG			
90 - 100	10	O	Outstanding
85 - 89	9	A+	Excellent
80 - 84	8	A	Very Good
75 - 79	7.5	B+	Good
70 - 74	7	B	Above Average
60 - 69	6	C	Average
50 - 59	5	D	Minimum for pass
0 - 49	0	RA	Reappear
		AAA	Absent

Overall Performance - PG		
CGPA	**GRADE**	**CLASS**
5.00 - 5.99	D	Second Class
6.00 - 6.99	C	First Class
7.00 - 7.49	B	

7.50 – 7.99	B+	First Class with Distinction*
8.00 - 8.49	A	
8.50 – 8.99	A+	
9.00 - 10.00	O	First Class - Outstanding*

14.2. Letter Grade and Class CGPA

The students who have passed in the first appearance and within the prescribed semester of the PG Programme (Major and Elective courses only) are eligible.

15. RANKING

- Students who pass all the examinations prescribed for the Program in the FIRST APPEARANCE ITSELF ALONE are eligible for Ranking / Distinction.
- In the case of Students who pass all the examinations prescribed for the Program with a break in the First Appearance are only eligible for Classification.
- Students qualifying during the extended period shall not be eligible for RANKING.

16. MAXIMUM PERIOD FOR COMPLETION OF THE PROGRAMS TO QUALIFY FOR A DEGREE

16.1. A Student who for whatever reasons is not able to complete the programs within the normal period (N) or the Minimum duration prescribed for the programme, may be allowed two years period beyond the normal period to clear the backlog to be qualified for the degree. (Time Span = N + 2 years for the completion of programme)

16.2. In exceptional cases like major accidents and childbirth an extension of one year considered beyond maximum span of time (Time Span= N + 2 + 1 years for the completion of programme).

17. REVISION OF REGULATIONS, CURRICULUM AND SYLLABI

The University may from time-to-time revise, amend or change the Regulations, Curriculum, Syllabus and Scheme of examinations through the Academic Council with the approval of the Board of Management.

Overall credit distribution / Course Components with credits

S.No	Semester	Total number of Subjects	Core / Elective / Lab / Internship / Project Work	Credit Distribution		Total Credits	Total Credits for the Semester
				Credits	No. of Subjects		
1	I	10	6 Core	4	6	24	**28**
			4 Practical	1	4	4	
2	II	10	7 Core Theory	4	7	28	**36**
			2 Practical	1	2	2	
			1 Internship	6	1	6	
3	III	10	7 Elective Theory	3	7	21	**24**
			3 Practical	1	3	3	
4	IV	3	1 Core	3	1	3	**14**
			1 Practical	1	1	1	
			1 Project	10	1	10	
						Total	**102**

MBA (BUSINESS ANALYTICS) – REGULATIONS 2023

SEMESTER I

Code	Course	Hour / Week			C	Maximum Marks		
		L	T	P		CA	SEE	Total
23CMBN11	Managerial Concepts and Organizational Behaviour	4	0	0	4	40	60	100
23CMBN12	Business Statistics for Data Science	3	1	0	4	40	60	100
23CMBN13	Managerial Economics	4	0	0	4	40	60	100
23CMBN14	Accounting and Finance for Data Science	3	1	0	4	40	60	100
23CMBN15	Legal and Business Environment	4	0	0	4	40	60	100
23CMBN16	Soft Skills and Etiquette for Managers	4	0	0	4	40	60	100
23PMBN11	Database Management System & SQL	0	0	2	1	40	60	100
23PMBN12	Data Visualization using R and Python (IBM)	0	0	2	1	40	60	100
23PMBN13	Business Analytics with Spreadsheet	0	0	2	1	40	60	100
23PMBN14	PRACTICAL - MOOC I	0	0	2	1	40	60	100
		22	2	8	28			

SEMESTER II

Code	Course	Hour / Week			C	Maximum Marks		
		L	T	P		CA	SEE	Total
23CMBN21	Operations Management	4	0	0	4	40	60	100
23CMBN22	Human Resources Management	4	0	0	4	40	60	100
23CMBN23	Business Research Methods and SPSS	4	0	0	4	40	60	100
23CMBN24	Marketing Management	4	0	0	4	40	60	100
23CMBN25	Quantitative techniques for Analysts	3	1	0	4	40	60	100
23CMBN26	Business Intelligence and Data Mining	4	0	0	4	40	60	100
23CMBN27	Foundations of Big data, AIML and Data Science	4	0	0	4	40	60	100
23PMBN21	Data Visualization using BI tools	0	0	2	1	40	60	100
23PMBN22	Descriptive Analytics using IBM Cognos	0	0	2	1	40	60	100
23IMBN21	Internship	0	0	12	6	40	60	100
		27	1	16	36			

SEMESTER III

Code	Course	Hour / Week			C	Maximum Marks		
		L	T	P		CA	SEE	Total
23EMBN….	Elective I	3	0	0	3	40	60	100
23EMBN….	Elective II	3	0	0	3	40	60	100
23EMBN….	Elective III	3	0	0	3	40	60	100
23EMBN….	Elective IV	3	0	0	3	40	60	100
23EMBN….	Elective V	3	0	0	3	40	60	100
23EMBN….	Elective VI	3	0	0	3	40	60	100
23EMBN….	Elective VII	3	0	0	3	40	60	100
23PMBN31	Predictive Modeling using IBM SPSS Modeler (IBM)	0	0	2	1	40	60	100
23PMBN32	Fundamentals of Scala and Spark (IBM)	0	0	2	1	40	60	100
23PMBN33	PRACTICAL - MOOC II	0	0	2	1	40	60	100
		21	0	6	24			

SEMESTER IV

Code	Course	Hour / Week			C	Maximum Marks		
		L	T	P		CA	SEE	Total
23CMBN41	Universal Human Values	3	0	0	3	40	60	100
23RMBN41	Project	0	0	20	10	100	200	300
23PMBN41	Text Analytics (IBM)	0	0	2	1	40	60	100
		3	0	22	14			

TOTAL CREDITS: 102

LIST OF COURSES

CORE COURSES

Semester	Code	Course	Hour / Week			Credits
			Lecture	Tutorial	Practical	
I	23CMBN11	Managerial Concepts and Organizational Behaviour	4	0	0	4
I	23CMBN12	Business Statistics for data science	3	1	0	4
I	23CMBN13	Managerial Economics	4	0	0	4
I	23CMBN14	Accounting and Finance for Data Science	3	1	0	4
I	23CMBN15	Legal and Business Environment	4	0	0	4
I	23CMBN16	Soft Skills and Etiquette for Managers	4	0	0	4
II	23CMBN21	Operations Management	4	0	0	4
II	23CMBN22	Human Resources Management	4	0	0	4
II	23CMBN23	Business Research Methods and SPSS	4	0	0	4
II	23CMBN24	Marketing Management	4	0	0	4
II	23CMBN25	Quantitative techniques for Analysts	3	1	0	4
II	23CMBN26	Business Intelligence and Data Mining	4	0	0	4
II	23CMBN27	Foundations of Big data, AIML and Data Science	4	0	0	4
IV	23CMBN41	Universal Human Values	3	0	0	3

ELECTIVE COURSES

FUNCTIONAL AREAS	SUBJECT CODE	COURSES	Hour / Week			Credits
			Lecture	Tutorial	Practical	
Analytics	23EMBN01	Advanced Research Methods and Predictive Analysis	3	0	0	3
	23EMBN02	Business Optimization and Big Data Analytics	3	0	0	3
	23EMBN03	Data Science using R Programming	3	0	0	3
	23EMBN04	Supply Chain Analytics	3	0	0	3
	23EMBN05	HR Analytics	3	0	0	3
	23EMBN06	Marketing and Retail Analytics	3	0	0	3
	23EMBN07	Social and Web Analytics	3	0	0	3
	23EMBN08	Healthcare Analytics	3	0	0	3
	23EMBN09	Pricing Analytics for Revenue Management	3	0	0	3
	23EMBN10	Data Visualization for Managers	3	0	0	3
	23EMBN11	Stochastic Modeling	3	0	0	3
	23EMBN12	Simulation Modeling	3	0	0	3
	23EMBN13	Data Mining for Business decisions	3	0	0	3
	23EMBN14	Time Series Analysis	3	0	0	3
	23EMBN15	Financial and Risk Analytics	3	0	0	3
	23EMBN16	Operations Research Applications	3	0	0	3
	23EMBN17	Quality Toolkit for Managers	3	0	0	3
	23EMBN18	Economic Analysis and Decision Making	3	0	0	3
Management	23EMBN19	Business Forecasting	3	0	0	3
	23EMBN20	Business Strategy	3	0	0	3
	23EMBN21	E-Commerce and Digital Markets	3	0	0	3
	23EMBN22	E-Business	3	0	0	3
	23EMBN23	FinTech and Blockchain Applications in Finance	3	0	0	3
	23EMBN24	SAP FICO	3	0	0	3
	23EMBN25	SAP SD	3	0	0	3
	23EMBN26	SAP MM	3	0	0	3
	23EMBN27	SAP HCM	3	0	0	3
Management Information System	23EMBN28	Managing Software Projects	3	0	0	3
	23EMBN29	Digital Innovation and Transformation	3	0	0	3

	23EMBN30	Modeling Techniques and IT for Operations Management	3	0	0	3
	23EMBN31	Data Management and Data Security	3	0	0	3
	23EMBN32	Cloud Computing	3	0	0	3
	23EMBN33	IT Consulting	3	0	0	3
Entrepreneurship	23EMBN34	Environmental Studies	3	0	0	3
	23EMBN35	Indian Ethos and Business Ethics	3	0	0	3
	23EMBN36	Ethical and Legal Aspects of Analytics	3	0	0	3
	23EMBN37	E-Governance & Cyber Law	3	0	0	3

PRACTICAL COURSES

Semester	Code	Course	Hour / Week			Credits
			Lecture	Tutorial	Practical	
I	23PMBN11	Database Management System & SQL	0	0	2	1
I	23PMBN12	Data Visualization using R and Python (IBM)	0	0	2	1
I	23PMBN13	Business Analytics with Spreadsheet	0	0	2	1
I	23PMBN14	PRACTICAL - MOOC I	0	0	2	1
II	23PMBN21	Data Visualization using BI tools	0	0	2	1
II	23PMBN22	Descriptive Analytics using IBM Cognos	0	0	2	1
II	23IMBN21	Internship	0	0	12	6
III	23PMBN31	Predictive Modeling using IBM SPSS Modeler (IBM)	0	0	2	1
III	23PMBN32	Fundamentals of Scala and Spark (IBM)	0	0	2	1
III	23PMBN33	PRACTICAL - MOOC II	0	0	2	1
IV	23RMBN41	Project	0	0	20	10
IV	23PMBN41	Text Analytics (IBM)	0	0	2	1

SEMESTER I

23CMBN11 **MANAGERIAL CONCEPTS AND ORGANIZATIONAL BEHAVIOUR** **4 0 0 4**

COURSE OBJECTIVE:

- Develop a foundational understanding of management concepts and their application in organizational contexts.
- Analyze individual and group behavior within organizations to enhance employee performance and engagement.
- Explore effective leadership styles and strategies for achieving organizational goals and motivating teams.
- Examine the impact of organizational culture and change on employee behavior and organizational effectiveness.
- Develop essential control mechanism as a system for effective management and collaboration in diverse settings.

UNIT I INTRODUCTION TO MANAGEMENT CONCEPTS 12

Management process and Concepts –-Planning –Organizing-Staffing –Directing and Controlling –Levels of Management -Roles and Skills of Managers - Evolution of management theories- Planning –Types and steps of Plans - Strategic management and competitive advantage.

UNIT II ORGANIZING AND DIRECTING 12

Organizational Process and Characteristics: Dimensions of Organization structure and Design – Authority, Responsibility, and Accountability – Delegation – Centralization, Decentralization – Line and Staff Relationship-Power and Politics - Decision-making at Certainty, Uncertainty and Risk –Modern Management Control Mechanism/Techniques

UNIT III INDIVIDUAL BEHAVIOUR 12

Individual Processes in Organizations: Factors affecting Individual Behavior – Learning - Attitudes – Personality and values – Perception - Motivation and Organizational Performance-Code of Conduct - Contemporary theories of motivation-Emotional and Social Intelligence

UNIT IV GROUP DYNAMICS AND TEAM MANAGEMENT 12

Group formation and development- Team effectiveness and Collaboration –Power and influence in teams –Group Cohesiveness-High Performance team management - Leadership – Styles- Theories Comparative Managerial Styles And Approaches – Communication and Negotiation- Japanese Management Practices

UNIT V EMERGING ASPECTS OF ORGANIZATIONAL BEHAVIOUR 12

Organizational Culture and climate- Change Agent / Catalyst – Managing Innovation and Change - Organizational development Interventions -Organizational Citizenship Behavior-Ethical Behavior and CSR -Managing Diversity and Inclusion -Managing global and Virtual teams – Contemporary Issues – Gig Workers

TOTAL: 60 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 Understand the core concepts and functions of management and their practical application in real-world organizational settings.

CO – 2 : Evaluate individual behavior factors, such as personality, perception, and motivation, and the influence on employee performance and job satisfaction.

CO – 3 : Assess different leadership styles and apply appropriate strategies to lead and inspire tea towards organizational success.

CO – 4 : Analyze the impact of organizational culture and change on employee behavior, and devel strategies to manage and adapt to organizational change effectively.

CO – 5 : Demonstrate effective communication, teamwork, and conflict resolution skills necessary fo effective management and collaboration in diverse organizational context

TEXT BOOKS:

1. Stephen P. Robbins, Timothy A. Judge, Neharika Vohra "Organizational Behavior", Pearso Education, 18th Edition, 2022
2. **Harold Koontz, Heinz Weihrich, Mark V. Cannice, " Essentials Of Management", McGraw Hill, 11th Edition, 2020**
3. Prasad L M, "Principles and Practice of Management", Sultan Chand & Sons-New Delhi, 2019

REFERENCE BOOKS:

1. Gerald A Cole and Phil Kelly, "Management Theory and Practices'', Cengage Learning EMEA 9th Edition,2020.
2. JohnR. Schermerhorn : Paul Davidson; Peter Woods; Aharon Factor, Management'', Milton QLD : John Wiley and Sons Australia , Ltd,7th Edition,2020
3. Robbins.S.P. Fundamentals of Management, Pearson, 2003. Robbins.S. Organizational Behaviour, X edn., Prentice-Hall, India.

WEB SOURCES:

1. https://us.sagepub.com/en-us/nam/principles-and-practices-of-management-and-organizational-behaviour/book251882#:~:text=Principles%20and%20Practices%20of%20Management%20and%20Organizational%20Behaviour%20provides%20a,performance%20in%20the%20global%20ra.
2. https://courses.lumenlearning.com/wmopen-organizationalbehavior/chapter/management-theory-and-organizational-behavior/
3. https://online.nwmissouri.edu/articles/mba/why-managers-understand-organizational-behavior.aspx

23CMBN12 BUSINESS STATISTICS FOR DATA SCIENCE 3 1 0 4

COURSE OBJECTIVE:

- To impart knowledge of basic statistical tools & techniques with emphasis on their application in Business decision process and Management.
- To focus on more practical skills than theoretical.
- To do statistical analysis informs the judgment of the ultimate decision-maker—rather than replaces it—some key conceptual underpinnings of statistical analysis will be covered to insure the understandability of its proper usage.

UNIT I INTRODUCTION 12

Introduction to Statistics - Collection of Data - Measures of Central Tendency & Dispersion in Frequency Distribution

UNIT II PROBABILITY THEORY 12

Probability Theory – Addition, Multiplication & Baye's Theorem, Test for Normality.

UNIT III CORRELATION 12

Correlation-Karl Pearson's and Rank Correlation, Regression (linear)

UNIT IV HYPOTHESIS TESTING 12

Hypothesis Testing –Test for Single Mean& Two Mean– Chi-Square test, F test – ANOVA.

UNIT V TESTS 12

Index Nos-Unweighted and Weighted-Test of Consistency, Time Series Analysis-Measurement of Secular Trend-Seasonal Variations

TOTAL: 60 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Explain and evaluate various measures of central tendency and measures of dispersion.

CO – 2 : Estimate probabilities by applying probability theory

CO – 3 : Calculate correlation, regression and rank correlation

CO – 4 : Construct hypotheses and test them by applying statistical tools.

CO – 5 : Apply Time Series Analysis in Market Prediction Rates

TEXT BOOKS:

1. R.S.N. Pillai, V. Bagavathi," Statistics", S.Chand Limited, 7th Ed,2016
2. N.D. Vohra, "Business Statistics", Tata McGraw-Hill Education, 2nd Ed,2013
3. G. V. Shenoy, Uma K. Srivastava, S. C. Sharma," Business Statistics", New Age International,2nd Ed, 2005
4. Beri," Business Statistics" Tata McGraw Hill,2nd Ed,2017

REFERENCE BOOKS:

1. Keller. G,"Statistics for Management", Cengage Learning, 1st Ed, 2009.
2. J. K Sharma, "Business Statistics", Pearson, 2nd Ed, 2010.
3. Arora PN &others," Complete Statistical Methods", S. Chand, 3rd Ed, 2010

WEBSITES:

1. https://www.statisticshowto.com/business-statistics/
2. https://machinelearningmastery.com/statistical-hypothesis-tests/

WEB SOURCES:

1. https://d3bxy9euw4e147.cloudfront.net/oscms-prodcms/media/documents/ Introductory BusinessStatistics-OP.pdf
2. https://statisticsbyjim.com/basics/probability-distributions/

23CMBN13 MANAGERIAL ECONOMICS 4 0 0 4

COURSE OBJECTIVE:

- The study the concept of Managerial Economics by applying a series of basic economics principles.
- To gain knowledge on issues related to optimal pricing strategies, demand forecasting, and optimal financing, appropriate hiring decisions, and investment decisions, among others, can be successfully tackled with managerial economics tools.
- To analyse how to incorporate a global perspective to their managerial economics box of tools.

UNIT I INTRODUCTION 12

Introduction to Managerial Economics – Nature and scope of macroeconomics -Incremental principle – equimarginal principle – some decision rules – The risk and uncertainty theory – optimization techniques – Baumol's sales maximization – least-cost combination.

UNIT II DEMAND DECISIONS 12

Demand Decisions – Demand analysis – elasticity of demand – demand forecasting – types & methods of demand forecasting – trend projection method – least square method of demand forecasting limitations & uses

UNIT III OUTPUT DECISIONS 12

Input-Output Decisions - Production function – Cost and managerial decision making – Cobb-Douglas production functions – Law of variable proportion – short run cost output – long run cost output – economies and dimensions of scale of production.

UNIT IV PRICE-OUTPUT DECISIONS 12

Price-Output Decisions - Market Environment of Price Output Decisions by the Firm and the Industry – Pricing under perfect competition – digopoly pricing strategies and tactics – pricing – pricing in life-cycle of a product -Profit-Maximization & Competitive Markets-Price-Searchers, Cartels, Oligopoly-Advanced Pricing and Auctions.

UNIT V ECONOMIC THEORY 12

The Firm in Theory and Practice - Economic Theory of the Firm – The Behavioral Theory of the Firm - Managerial Theories of the Firm – Profit concepts & analysis – Game Theory and Asymmetric Information.

TOTAL: 60 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Define the basic elements of managerial economics aspects of the firm.

CO – 2 : Discuss the demand analysis decisions methods as to forecasting.

CO – 3 : Apply the managerial decision functions of the firm.

CO – 4 : Examine and elaborate the basic theories related to business practices.

CO – 5 : Appraise on the decision as to environment and given

TEXT BOOKS:

1. Dean Joel, Managerial Economics, PHI, New Delhi, 1976, First Edition
2. Douglas Evan J, Managerial Economics, Theory, Practice & Problems; PHF, New Delhi; 1983, First Edition

REFERENCE BOOKS:

1. K.K. Seo, Managerial Economics, Richard D. Irwin Inc. 1988
2. I.C. Dhingra, Essentials of Managerial Economics - Theory, Applications and Cases Sultan Chand, New Delhi, 2003

WEB SOURCES:

1. https://www.cheggindia.com/career-guidance/managerial-economics-principals-types-and-scope/
2. https://theinvestorsbook.com/managerial-economics.html
3. https://www.analyticssteps.com/blogs/what-managerial-economics-definition-types-nature-principles-scope

23CMBN14 ACCOUNTING AND FINANCE FOR DATA SCIENCE 3 1 0 4

COURSE OBJECTIVE:

- To think in a new and more creative way when analyzing or forecasting financial information, new tools common to financial statement analysis and how to use them in practical applications.
- To understand how managing finance can help solve business problems and increase the ability for better financial decisions.
- To familiarize with sources of finance and skills for better dividend and liquidity decisions

UNIT I INTRODUCTION TO ACCOUNTING AND RATIO ANALYSIS 12

Introduction to Management Accounting-Need and Importance — Accounting concepts & conventions – Accounting Standards - Overview of IFRS and GAAP. Mechanics of Accounting: Double entry system of accounting - Financial Statements - Profit & Loss account & Balance sheet. Financial statement Analysis- Comparative Analysis, Common size & Trend Analysis - Analysis of financial statement: Ratio analysis – Classification of ratios, Advantages & Disadvantages.

UNIT II ANALYSIS OF FINANCIAL STATEMENTS AND BUDGETING 12

Fund flow statements advantages and disadvantages- Cash Flow statement - Marginal costing – Cost Volume Profit analysis – Break Even analysis – BEP, P/V ratio, MS - Budgeting – Different types of budgeting – Cash budget – Flexible budget - Statutory disclosures in IFRS – Corporate reporting practices in India- Challenges in financial reporting

UNIT III FINANCIAL MANAGEMENT AND INVESTMENT DECISION 12

Introduction – Nature of Financial management –Objectives of financial management -Financial Decisions- Organization of Finance function – Agency Problem - Capital budgeting – meaning – Different methods – Payback, Net Present Value, Internal rate of return, Profitability index and average rate of return**.**

UNIT IV COST OF CAPITAL AND FINANCING DECISION 12

Sources of finance - Cost of Capital – Meaning and Significance – Components – Cost of Equity, Cost of Debt, Cost of Preferred capital, Cost of retained earnings and weighted average cost of capital - Financial, Operating and Combined Leverages – Meaning of Capital Structure - Determinants of capital structure.

UNIT V DIVIDNED DECISION AND LIQUIDITY DECISION 12

.

Dividend decision – Dividend policy - Dividend theories – Walter and Gordon model of dividend – Stability of dividend – Share split – Buyback of shares - Working capital – Concepts – Types – Determinants.

TOTAL: 60 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : State the importance of common accounting standards and financial statements through ratio analysis

CO – 2 : Estimate fund flow, cash flow and Budgeting

CO – 3 : Describe about the basic financial concepts and analyze of different capital budgeting decisions.

CO – 4 : Understand the various cost of capital and capital structure concepts

CO – 5 : Analyze the dividend and liquidity decisions of the companies

TEXTBOOKS:

1. R.S.N.Pillai & Bagavathi – Management Accounting, Chand & Co. Ltd., New Delhi, 6TH edition 2015.
2. T.S.Reddy & Y.Hari Prasad Reddy – Financial and Management Accounting, Margham publications, 12TH edition 2016.

REFERENCE BOOKS:

1. M.Y.Khan & P.K.Jain – Management Accounting, Tata McGraw Hill publishing company Ltd., 10th edition 2004.
2. I M PANDEY - Financial Management, Vikas Publishing, 11th Edition, 2018

WEB SOURCES:

1. https://corporatefinanceinstitute.com/resources/knowledge/finance/analysis-of-financial-statements/
2. https://www.aafmindia.co.in/financial-statement-analysis-tools-limitation-uses-process
3. https://www.accountingtools.com/articles/2017/5/14/financial-statement-analysis

23CMBN15 LEGAL AND BUSINESS ENVIRONMENT 4 0 0 4

COURSE OBJECTIVE:

- The objective of this course is to familiarize the students with various laws that will help them to refine their understanding of how law affects the different aspects of business.
- To describe the nature and classes of contracts.
- To identify the elements needed to create a contract.
- To analyze, interpret the various act related to business, property and business

UNIT I INTRODUCTION 12

Basic principles of the Indian Constitution – Fundamental rights: Freedom of trade and commerce - Government contract.

Indian Contract Act, 1872: Essentials of Contracts - Classification of Contract, Quasi contract, Performance of contract, Breach of contract and its Remedies, Discharge of contract.

UNIT II SPECIAL CONTRACTS 12

Sales of Goods Act, 1930 -Sales, Agreement to sales & Hire Purchase, Rights of Unpaid Seller, Caveat Emptor, Condition & Warranties - Laws of Agency -Creation of agency, Types of agents, Rights and Duties of Principal and Agent, Termination agency- Bailment, Pledge, Guarantee and Indemnity. Negotiable Instruments Act 1881 **-** Partnership Act 1930

UNIT III CONSUMER PROTECTION ACT 1986 & COMPETITION ACT 2002 12

Consumer protection Act 1986 -Competition Act 2002: Introduction, Definitions, Enquiry into Certain Agreements and Dominant Position of Enterprise and Combinations.

UNIT IV COMPANY ACT 2013 12

Characteristics and types of companies, Formation, MOA, AOA, Prospectus, Power, duties and liabilities of Directors, Appointment of Board of directors, Winding up of Companies.

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UNIT V IPR & IT ACT 2000 12

Protecting the property of Business-Copyright, Trademark, Secret, Geographical Indications-Cyber Crimes, IT Act 2000 and 2002, Cyber Laws, Introduction of IPR Intellectual Property Laws-Alternate Dispute resolutions.

TOTAL: 60 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Understand the fundamental legal principles in developing various contracts and commercial laws in the business world

CO – 2 : Identify the common forms of business associations and elements of Corporate Governance

CO – 3 : Develop insights regarding the laws related to industrial environment

CO – 4 : Ability to understand the fundamentals of corporate tax and GST

CO – 5 : Understand the role of consumer rights and cyber laws in the modern business environment.

TEXT BOOKS:

1. N. D. Kapoor, Elements of Mercantile Law, Sultan Chand and Company, India, 2017.
2. P. K. Goel, Business Law for Managers, Biztantatara Publishers, India, 2017.
3. Akhileshwar Pathak, Legal Aspects of Business, Tata McGraw Hill,, 6th Edition 2018.
4. Taxmann's Companies Act with Rules, Taxmann, (2022)
5. Companies Act ,2013, Commercial Law Publishers, (2021)

REFERENCE BOOKS:

1. Arrendondo, Iani; 36 hour course: business presentations; McGraw Hill
2. Hiltrop, Jean M. and Udall Sheila; The essence of negotiations; Prentice Hall
3. Kaul Asha; Business Communication; Prentice hall

WEB SOURCES:

1. https://www.airtract.com/article/the-legal-environment-of-business-%E2%80%93-a-complete-guide#:~:text=Legal%20environment%20of%20business%20is,the%20scope%20of%20the%20firm.
2. https://www.indiastudychannel.com/resources/.6169-What-Legal-Environment.aspx

23CMBN16 SOFT SKILLS AND ETIQUETTE FOR MANAGERS 4 0 0 4

COURSE OBJECTIVE:

- To enhance the soft skills that need to be in place for students to work collaboratively.
- To gain in depth understanding of the importance of etiquette in different social context.

UNIT I INTRODUCTION 12

Introduction to communication skills - Meaning-, Significance, Soft Skill for Managers-– First Impression-Work Place Requirements - Business Communication, Process- Forms Of Communication, Barriers Of Communication, Feedback, Verbal & Non Verbal Communication. Personality Development –Determinants of Personality- Attitude- Self Analysis. Critical Thinking, Problem Solving, Active listening. Creativity-Brainstorming- Mind Mapping - Thinking Out Of The Box- Improving Creative Abilities.

UNIT II LEADERSHIP AND INTERPERSONAL SKILLS 12

Corporate Skills, Emotional and Social Skills. -Understanding Others- – Self Awareness -SW analysis- Assertiveness - Forms of Assertion—Causes of Misunderstanding - Leadership Skills - Set Objectives And Taking Initiatives. Meaning and importance of self-awareness building self-este values and indicators of high and low self - esteem, activities to develop high self- esteem mana emotions, coping with stress, interpersonal skills.

UNIT III ETIQUETTE AND INTERVIEW 12

Etiquette- Meaning. types-Practicing Etiquette and Manners - Grooming – Attire – Professional Dres And Body Language, Understanding Cultural Difference- -Interview, Process and types of intervie Importance Of Interview, Art Of Conducting And Giving Interview - interview preparation techniq Stress Management.

UNIT IV GROUP DYNAMICS AND TECHNICAL WRITING 12

Group Dynamics working as a team. Conflicts and their resolution, Significance of Brainstorming in Business Decisions, E-Meeting - Technical Writing Skills- Business reports and Proposals, Format, visual aids and contents, Oral Business presentations.

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UNIT V SOFT SKILLS 12

Presentation Skills - Time Management-Goal Setting and Prioritization. Preparing a Personal Schedule - Short Term and Long-Term Goals - Implementing Goals - Task List Organization. Types of Managerial Speeches-Speech of Introduction, Occasional Speech, Theme Speech-Effective Public Speaking Skill. Presentation and Extempore- A Creative Writing, Poster Making, Case Study - Persuading And Negotiating -Networking- Maintaining Morale - Inspiring Others. Group discussion, Time Management

TOTAL: 60 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Recall the basics of soft-skills and communication and its process, elements and importance.

CO – 2 : Evaluate themselves to meet the industry need.

CO – 3 : Discuss the concept of Etiquette and significance of Interviews

CO – 4 : Identify different types of letters to make effective internal and external correspondence

CO – 5 : Classify various soft skills required for the managers.

TEXTBOOKS:

1. Sanjay Kumar &Pushpalata, Communication Skills, Oxford University Press, 2011.
2. The Etiquette Book: a Complete Guide Gide To Modern Manners- Jodi r.r.Smith, Ster publication , New York (2011)
3. Winning At Interviews (Second Edition)- Edgar Thorpe and Showick thorpe, Pearson, New D 2009
4. Alex k (2012) Soft Skills - Know Yourself And Worls, s.Chand & Company Ltd.New Delhi
5. Kaul& Asha, Effective Business Communication, PHI 2nd Edition, 2006.

REFERENCE BOOKS:

1. Lesikar R.V &Flately M V, Basic Communication Skills for empowering the internet generat Tata-McGraw Hill, 2009.
2. Sharma R C & Mohan K, Business Correspondence & Report Writing, TMH, 2009.
3. Meena.k And Ayothi (2013) a Book on Development Of Soft skills (Soft Skills: a Road Map Success), P R Publishers Distributions, Trichy

WEB SOURCES:

1. https://www.softskillsusa.com/what-is-meaning-of-business-communication-skills.php
2. https://www.atctraining.com/soft_skills_definition_of_communication.htm
3. https://www.jobwise.co.uk/the-importance-of-soft-skills-in-business/

23PMBN11 DATABASE MANAGEMENT SYSTEM & SQL (PRACTICAL) 0 0 2 1

LIST OF EXPERIMENTS

1. DDL and DML Commands.
2. Join Queries.
3. Views and Set operations.
4. Built in functions.
5. Nested Queries.
6. Triggers.
7. Aggregate Functions.
8. Roles and Privileges.
9. Cursors.
10. PL/SQL programs.
11. PL/SQL cursor programs.
12. Front end tools – Mini Project.

COURSE OUTCOMES:

CO – 1 : Understand the basic concepts and applications of Database management

CO – 2 : Understand the query evaluation techniques and query optimization

CO – 3 : Design and develop the database application systems skills

CO – 4 : Demonstrate an understanding of the relational data model.

CO – 5 : Formulate using SQL solutions to a broad range of query and data update. problems

23PMBN12 DATA VISUALIZATION USING R AND PYTHON (IBM) 0 0 2 1

LIST OF EXPERIMENTS

Introduction to Statistics

- Difference between inferential statistics and descriptive statistics
- Drawing Inferences from Data, Random Variables, Normal Probability Distribution
- Sampling, Sample Statistics and Sampling

DistributionsDescriptive Data analysis using R.

- Description of basic functions used to describe data in RData manipulation with R.
- Introduction to dplyr (filter, select, arrange, mutate, summarize), data.table, reshape2 package,tidyr package and Lubridate package

Data visualization with R

- Working with Base R Graphics (Scatter Plot, Bar Plot, and Histogram)

and ggplot2Data visualization in Watson Studio

- Adding data to data refinery and Visualization of Data on Watson Studio

Introduction to Python

- Python and Anaconda Installation, Introduction to Jupyter Notebook and Python

scripting basicsNumPy and Pandas

- NumPy overview – Creating and Accessing NumPy Arrays
- Introduction to Pandas, Pandas read and write csv.
- Descriptive statistics using Pandas.
- Pandas working with text data and datetime columns, Pandas Indexing and selecting data Pandas.

  – group by and Merge / Join

datasets Introduction to Data

Visualization Tools in Python

- Introduction to Matplotlib and read a CSV and Generate a line plot with

matplotlibVisualization Tools using matplotib

- Basic – Area Plots, Bar Charts, Histograms
- Specialized – Pie Charts, Box Plots, Scatter Plots and Bubble Plots
- Advanced – Waffle Charts and

  Word CloudsIntroduction to Seaborn

- Seaborn functionalities and usage with Hands-on Spatial Visualizations and Analysis in Python with Folium
- Introduction to Folium and Case Study (Analyze New York City Taxi Trip Ride Data Set toIdentify best locations for taxi
- stops)

COURSE OUTCOMES:

CO – 1 : Understand R basics and its installation, Descriptive and Inferential Statistics using R

CO – 2 : List out the available Packages of R and its usages with hands on

CO – 3 : Demonstrate data using various basic visualization skills with R Understand Jupyter notebook and Python

CO – 4 :. Use Numpy functions for scientific studies, Pandas for data manipulation skills and analysis

CO – 5 : Demonstrate data using Python with Folium

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23PMBN13 BUSINESS ANALYTICS WITH SPREADSHEET 0 0 2 1

COURSE OBJECTIVE:

- This course will cover all aspects of creating spreadsheet, performing calculations, formatting, some very widely used formulas.
- It will enable the students to create, build models and customize graphs, develop advanced solutions on the worksheet in the areas of marketing, finance, statistics, production and human resource and to assemble the proper Excel tools.

UNIT –I INTRODUCTION

Module: Introduction to Spreadsheet Modeling–Formulas/Formatting/Printing/Functions Cell references, Lookup tables, linking disparate workbooks, Dynamic linking, updating links, data validation, Goal seek, Pivot table, Sorting, Charting, and filtering and protecting spreadsheets.

UNIT – II SPREADSHEET MODELLING IN SALES AND MARKETING

New product decision making – Sales and marketing data analysis.

UNIT – III SPREADSHEET MODELLING IN FINANCE

Forecasting financial statements – Capital budgeting decisions, Bond valuation, Stock valuation, break even analysis, Budgeting, Ratio analysis, Sensitivity analysis, Simulation analysis, Portfolio construction and Working capital.

UNIT – IV SPREADSHEET MODELLING IN STATISTICS

Measures of central tendency, t test, ANOVA, Correlation, Regression and Timeseries analysis.

UNIT – V SPREADSHEET MODELLING IN PRODUCTION AND HUMAN RESOURCE

ABC analysis, Economic order quantity, Production budget– Employee and payroll decision making. for European and American options, including Black-Scholes option formula and binomial trees.

TOTAL HRS = 30

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Understand the basic features of Excel spreadsheet functions.

CO – 2 : Analyze and provide optimal solutions for the financial problems

CO – 3 : Understand the pricing tools

CO – 4 : Use the advanced tools of Excel

CO – 5 : Record and build Excel Macros for implementing advanced functionalities

TEXTBOOKS:

1. Walkenbach ,John. Excel Bible. NewDelhi: Wiley India Pvt Ltd. 2nd edition, 2010
2. MacDonald, Mathew.. Excel: The Missing Manual. Sebastopol : O'reilly. 2ndedition, 2010

REFERENCES:

1. Ragsdale, Cliff.T, Spreadsheet Modelling and Decision Analysis. NewYork: Thomsonsouth –western publications. .6thedition, 2008
2. Monahan,GeorgeE. Management Decision Making: Spreadsheet, Modelling, Analysis.London: CambridgeUniversity.8thedition,200

23PMBN14 **PRACTICAL - MOOC I** **0 0 2 1**

The objective of this course is to take the best teaching learning resources to all to create a levelled platform. To make use of the Indian massive online to the aspiring youth of India

- The students will select a MOOC course from the Swayam platform.
- They will spend 2 hours per week undergoing this practical MOOC course under the guidance of a faculty.
- Every course will have a minimum of 8 to a maximum of 12 assignments depending on the duration of the course.
- Assignments will be submitted as per the requirements of the course.
- The marks scored in the assignments will be taken for internal assessment marks.
- The students will appear for a final practical exam conducted by VISTAS.

COURSE OUTCOMES:

CO – 1 : Understand the latest developments in the field of study

CO – 2 : Explain the students with latest information about the field of study

CO – 3 : Apply the skills in the business world

CO – 4 : List the various skills gained through this course

CO – 5 : Summarize the concepts for application

SEMESTER II

23CMBN21 OPERATIONS MANAGEMENT 4 0 0 4

COURSE OBJECTIVE:

- To provide foundational knowledge associated with the operations management.
- To describe the various techniques for implementation of operations management based on the forecasting, planning, quality and inventory

UNIT I INTRODUCTION 12

History and Definition – Production Vs. Operations – Manufacturing Vs. Service Operations – Functions – Production Systems – Types of Production Systems – Operations Strategy – Operations Management Vs. Operations Strategy

UNIT II LOCATION, LAYOUT AND FORECASTING 12

Plant Location – Factors influencing location – Plant Layout – Types of Layout – Forecasting – Forecasting technique: Qualitative and Quantitative – Delphi Method – Regression Analysis – Forecasting Error

UNIT III PLANNING 12

Capacity Planning – Aggregate Production Planning (APP) – Disaggregation: Master Production Scheduling (MPS) – Material Requirement Planning (MRP) – Production Planning and Control (PPC)

UNIT IV QUALITY 12

Evolution of Quality – Quality Definition and Contributions by W. Edwards Deming, Joseph M. Juran and Philip B. Crosby – Dimensions of Quality – Process Quality Vs. Product Quality – Seven Basic Quality Tools – Plan-Do-Check-Act (PDCA) Cycle

UNIT V INVENTORY MANAGEMENT 12

Inventory Management – Types of Inventory Models – Independent Demand Vs. Dependent Demand – Basic Economic Order Quantity (EOQ) Model – Analysis: ABC and VED – Push Vs. Pull system – Just-In-Time (JIT) Vs. Material Requirement Planning (MRP)

TOTAL: 60 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Explain the fundamental concepts of operations and production.

CO – 2 : Understand the types of production systems.

CO – 3 : Explain the fundamental concepts of layout and location.

CO – 4 : Predict the demand using the different forecasting techniques.

CO – 5 : Explain the fundamental concepts of various planning.

TEXT BOOKS:

1. Ajay Garg. Production and Operations Management, Tata McGraw-Hill Education, 2017.
2. Stevenson J. William, Operations Management, 9th Edition, TMH, 2007.

REFERENCE BOOKS:

1. Roger Schroeder, Susan Goldstein, M. Johnny Rungtusanatham. Operations Management, McGraw-Hill Education, 2010.
2. Lee J. krajewski and Larry P.Ritzman, 2007, Operations Management strategy and analysis, 9th Edition, Pearson Education / Prenctice Hall of India, 2007.

WEB SOURCES:

1. https://corporatefinanceinstitute.com/resources/knowledge/strategy/operations-management/
2. https://managementhelp.org/operationsmanagement/
3. https://hbr.org/topic/operations-management

23CMBN22 HUMAN RESOURCES MANAGEMENT 4 0 0 4

COURSE OBJECTIVE:

- To teach relevant, practical and applicable human resource management skills to equip the student with the foundation competencies for working as HR practitioners in business.
- To highlight the important challenges facing managers and employees in today's business climate.
- To introduce contemporary theory and practice in modern human resource management and the range of tools and methods available to address HR challenges and problems.

UNIT I HUMAN RESOURCE MANAGEMENT 12

Meaning, Scope & Objectives of HRM, Evolution of HRM, Difference between PM & HRM, HRM function's, HR Policy & procedures. Competitive challenges influencing HRM Qualities & qualification of HR Manager, Line & Staff Roles and Responsibilities of HR Manager/Departments, HR as a factor of Competitive Advantage

UNIT II HUMAN RESOURCE PROCESS 12

Human Resource Planning – Job Analysis and Design -Recruitment - Selection and placement process – Types of interviews, Placement, Orientation & Induction, Determining training needs analysis, Delivery Methodology, Evaluation, Capacity Building.

UNIT III MANAGING CAREERS 12

Career Planning & Development vs. Employee development. Career stages – Career Choices and Preferences, Mentoring and Coaching, Time Management. Employee Separations, Downsizing & Outplacement, HRIS, Fundamentals of Industrial Relations

UNIT IV PERFORMANCE MANAGEMENT 12

Purposes of Performance Management, Performance Appraisal Methods, limitations and problems, Punishment and Promotion, Job evaluation. Wage & Salary fixation, incentives, bonus, ESOPs. Insurance, Fringe Benefits, Basics of Labour laws

UNIT V CONTEMPORARY ISSUES IN HRM 12

Talent Management, Competency Mapping, Digital Organizations – Health & Safety issues, grievance handling, Work Life Balance, Employee mental wellbeing - HRD in India, International HRM

TOTAL: 60 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Discuss the History and evolution of HRM.

CO – 2 : Explain the importance of HRM in the organizations

CO – 3 : Assess the major HRM functions and processes of HRM planning

CO – 4 : Identify strategic HR planning and the HRM process to the organization's strategic.

CO – 5 : Explain how training helps to improve the employee performance.

TEXT BOOKS:

1. Aswathappa.K, Human Resource Management, Text and Cases, Tata McGraw Hill, New Delhi. 2014
2. Gupta. S.C, Advanced Human Resource Management, Strategic Perspective, ANE Books Pvt. Ltd, New Delhi.2009.

REFERENCE BOOKS:

1. Angela Baron and Michael Armstrong, Human Capital Management (Achieving Added Value through People), Kogan Page Limited, United States. 2007
2. Anuradha Sharma and Aradhana Khandekar Strategic Human Resource Management. Response Books, New Delhi. 2006
3. Beer et al, Managing Human Assets, The Free Press: Maxwell Mac Millan Inc, New York. 1984

WEB SOURCES:

1. https://open.lib.umn.edu/humanresourcemanagement/chapter/1-1-what-is-human-resources/
2. https://www.hrdconnect.com/2019/05/22/what-is-hr-management-in-an-organisation/
3. https://www.thebalancecareers.com/what-is-human-resource-management-1918143

23CMBN23 BUSINESS RESEARCH METHODS AND SPSS 4 0 0 4

COURSE OBJECTIVE:

- To develop a research orientation among the students and acquaint them with fundamentals of research methods.
- To have a knowledge about research and how research is conducted.
- To understand the data collection methods the sampling methods and the data analysis method.
- To create awareness about the importance of research in all fields.

UNIT I INTRODUCTION 12

Introduction to Research – Meaning of research-Research applications in social and business sciences – Characteristics of good research study — Types of Research – Research process– Defining the Research problem – Problem identification process – Research Questions – 'Literature Survey – Formulating the research hypothesis – Writing a research proposal

UNIT II RESEARCH DESIGN AND MEASUREMENT 12

Research design – Definition – types of research design – Descriptive Research Designs: Exploratory – Cross-sectional studies and Longitudinal studies; Experimental Designs – Data Collection – Types of data –Primary and Secondary data – Methods of primary data collection –Online Interviews and Focus Groups – Observation – Interview – Case study Questionnaire and Schedule – Construction of questionnaire – pilot study

UNIT III SAMPLING AND DATA COLLECTION 12

Sampling concepts- Sample vs Census – Non-Sampling Error-Sampling Techniques – Probability and Non–probability sampling methods- Determination of Sample size- Types of Measurement Scales; Attitude; Classification of Scales: Single item vs Multiple Item scale, Comparative vs non-Comparative scales, Measurement Error, Criteria for Good Measurement

UNIT IV DATA PROCESSING AND ANALYSIS THROUGH SPSS 12

Data Processing Operations– editing – Coding –Data entry – Classification and Tabulation of Data – Univariate and Bivariate Analysis of Data: Descriptive vs Inferential Analysis – Chi-square Analysis – Analysis of Variance – t test – Procedure for testing hypothesis

UNIT V REPORT DESIGN AND WRITING 12

Introduction - Research Report - Different types – Criteria of Good Research -Structure of the research report – Title, Table of Contents – Synopsis, bibliography - Introductory Section – Research Design – Result Section – Recommendation & Implementation Section- - Bibliography – Citation rules Research ethics – Research databases –research metrics – Publication ethics – Use of

plagiarism software – Turnitin – urkund and open-source software tools

TOTAL: 60 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Demonstrate how research to be conducted in a systematic way

CO – 2 : Develop hypothesis and understand procedure for experimenting hypothesis

CO – 3 : Construct a questionnaire, interpret the results with the help of various statistical tools

CO – 4 : Analysis the data using the SPSS software

CO – 5 : Discuss the Researchers Ethical code and plagiarism software tools

TEXT BOOKS:

1. Kothari, C.R., Research Methodology", Methods and Techniques, New Age International, 6th Edition, 2010.

REFERENCE BOOKS:

1. Panneerselvam, R., "Research Methodology", Prentice-Hall of India, New Delhi, 7Th Edition, 2004.
2. Donald R. Cooper, Pamela S. Schindler and J K Sharma, Business Research methods,11th Edition, Tata McGraw Hill, New Delhi, 20 .

WEB SOURCES:

1. https://nptel.ac.in/courses/121106007
2. https://nptel.ac.in/courses/110107080
3. https://www.sagepub.com/sites/default/files/upm-binaries/36330_Chapter2.pdf
4. https://www.youtube.com/watch?v=LKH1Kp7TQA4

23CMBN24 MARKETING MANAGEMENT 4 0 0 4

COURSE OBJECTIVE:

- To understand the basics of market, marketing, marketing environment and business environment and its domain knowledge.
- To understand the core concepts in marketing concepts, critical thinking, problem solving an analysis

UNIT I INTRODUCTION 12

Understanding the term Marketing-Importance of Marketing-Scope of Marketing-Core Concepts-Company Orientation toward marketplace- Pillars of Marketing and Customer Value-Marketing Environment-Micro and Macro Environment.

UNIT II CONSUMER MARKETS 12

Consumer Markets: Model of Consumer Behavior, The Howard Sheth Model of Buying Behaviour - The Nicosia Model - The Engel-Kollat-Blackwell Model, Factors affecting consumer behaviour. Stages in the adoption process. Service marketing – characteristics – Extended 7Ps in service marketing

UNIT III MARKET SEGMENTATION 12

Market Segmentation: Levels and Bases for Segmentation, Segmenting Consumer Markets, Business Markets, Market Targeting -Evaluating Market Segments -Product Positioning for competitive advantage, Positioning Strategies.

UNIT IV MARKETING PROGRAMME 12

Marketing Programme: Decisions Involved in Product, Branding, Packaging, Product Extension Strategies - Product Line and Product Mix Decisions, New Product Development, Product Life Cycle. Pricing Products, Strategies, Distribution -Channels, Channel Management Decisions, Promotion Mix - Advertising, Sales Promotion, Public Relations, Personal Selling, Promotion Decisions,

UNIT V MARKETING RESEARCH AND TRENDS IN MARKETING 12

Marketing Research and Control: Marketing Research – Meaning and Scope of Market Research - Market Research Process. Green marketing Concept - Green Marketing Product and it characteristics - Customer Relationship marketing and Digital Marketing and its types - Trends in Marketing

Case study: Marketing strategy Implementation; Market Segmentation / Targeting / Positioning.

Product Levels, Pricing

TOTAL: 60 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Relate the corporate function of marketing.

CO – 2 : Outline the macro and micro environment in the company's marketing function.

CO – 3 : Differentiate the consumer and institutional buyer behaviour.

CO – 4 : Compare and contrast goods and services.

CO – 5 : Define the target segments for the products

TEXT BOOKS:

1. Philip Kotler and Kevin Lane Keller, Marketing Management, PHI 14th Edition, 20 2. KS Chandrasekar, "Marketing management-Text and Cases", Tata McGraw-Hill-Vijaynicole, First edition, 2010.
2. Lamb, Hair and McDaniel, Marketing, 8th Edition, Thomson Learning, 2005, Rajan Saxena, Marketing management, TMH, 2006.

REFERENCE BOOKS:

1. Keith Blois, Marketing, Oxford University Press, 2005.
2. Ramaswamy V.S. Namakumari S, Marketing Management - The Indian Context, Macmillan India Ltd, 2006.

WEB SOURCES:

1. https://www.iedunote.com/marketing-management#:~:text=Marketing%20management%20is%20the%20process,satisfy%20individual%20and%20organizational%20goals.
2. https://www.economicsdiscussion.net/marketing-management/what-is-marketing-management/31788
3. https://www.indeed.com/hire/c/info/marketing-management

23CMBN25 QUANTITATIVE TECHNIQUES FOR ANALYSTS 3 1 0 4

COURSE OBJECTIVE:

- To acquaint the student with the applications of Statistics and Operations Research to business and industry
- To help them to grasp the significance of analytical techniques in decision making.
- To test on the application of Operations Research to business related problems.

UNIT I LINEAR PROGRAMMING 12

Operations Research – Linear programming (LP) – Formulation – Graphical Solutions – Simplex Method – Duality Concepts – Sensitivity Analysis – Using Excel solver to solve LP Problems

UNIT II TRANSPORTATION AND ASSIGNMENT 12

Transportation Model – Initial Solution: Northwest Corner Rule, Least Cost Method, Vogel's Approximation method

UNIT III NETWORK MODELS 12

Network Models – Shortest Path Problem: PERT & CPM – Maximum Flow Problem – Minimum Spanning Tree

UNIT IV GAME THEORY 12

Game Theory – Game – Zero-sum games and non-zero-sum games – Pure & Mixed Strategy – Maximin–Minimax Principle – Dominance Property – Replacement theory and problems

UNIT V QUEUING & SIMULATION 12

Queuing System – Four elements – Kendall's Notation – Queuing models – Birth and Death Model– Simulation– Type: Discrete and Continuous simulation – Simulation models - Assignment Problems

TOTAL: 60 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Construct linear programming models and explain the solution.

CO – 2 : Synthesize and evaluate transportation, assignment problems

CO – 3 : Synthesize and evaluate network models.

CO – 4 : Synthesize and assess game theory and replacement problems.

CO – 5 : Evaluate the Queuing System, Simulation and Assignment problems

TEXT BOOKS:

1. Tulsian, P. C., Vishal Pandey, Quantitative Techniques – Theory and Problems, Pearson Publications, 2006.
2. Sankar P. Iyer, Operations Research, Tata McGraw-Hill Education, 2008

REFERENCE BOOKS:

1. Hamdy A. Taha, Operations Research-An introduction, Pearson Education, 8th Edition / Prentice Hall of India, 2007.
2. A. Ravindren, Don T. Phillips and James J. Solberg, Operations Research Principles and Practice, John Wiley and Sons, 2nd edition, 2000.

WEBSITES:

1. https://www.britannica.com/science/linear-programming-mathematics
2. https://www.iitg.ac.in/skbose/qbook/qbook.html

WEB SOURCES:

1. https://www.slideshare.net/beautifulneha/transportation-problem-in-operational-research
2. https://www.slideshare.net/benghuid/game-theory-6705811

23CMBN26 BUSINESS INTELLIGENCE AND DATA MINING 4 0 0 4

COURSE OBJECTIVE:

- To introduce the Business Intelligence methods that support the decision process in businessoperations.
- To learn the data mining techniques and analyze data to improve business performance through Business Intelligence methods.

UNIT I INTRODUCTION 12

Business Intelligence – Introduction, Framework of Business Intelligence- Definition, History, Architecture of BI, benefits of BI, Intelligence creation and use of BI governance, Transaction processing versus analytic processing, BI implementation – Developing or acquiring BI, Justification and Cost-benefit analysis, Security and protection of privacy, Integration of systems and applications, BI tools and techniques, Major vendors.

UNIT II BUSINESS INTELLIGENCE & ANALYTICS STRATEGY 12

Business Analytics Vs. Business Intelligence – Business Intelligence & Analytics Strategy – Business Analytics (BA) Model – Business Analytics at the strategic level – Strategy and Business Analytics:Four Scenarios. Business performance management (BPM) – Overview, Definition, BPM Vs BI, Strategize, Plan, Monitor, Act and Adjust of BPM, Performance management, BPM methodologies, technologies and applications, Performance dashboards and scoreboards.

UNIT III DATA WAREHOUSING 12

Business Intelligence or Analytics at Data Warehouse Level – Descriptive Analytics: Data Warehouse – Extract, Transform and Load (ETL) processes – The types of data warehouse – Architecture and Processes in a Data Warehouse

UNIT IV DATA MINING 12

Introduction to Data Mining, Importance of Data Mining, Data Mining functionalities, Classification of Data mining systems, Data mining architecture, Major Issues in Data Mining, Data mining metrics, Applications of Data Mining, Social impacts of data, Data Mining from a Database Perspective

UNIT V DATA MINING PROCESS 12

Data mining process KDD, CRISP-DM, SEMMA and Domain-Specific, Classification and Prediction performance measures -RSME, MAD, MAP, MAPE, Confusion matrix, Receiver Operating Characteristic curve & AUC; Validation Techniques - hold-out, k-fold cross-validation, LOOCV, random subsampling, and bootstrapping.

TOTAL: 60 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Relate Business Intelligence with appropriate technologies.

CO – 2 : Discriminate Business Intelligence and Analytics Strategy.

CO – 3 : Appraise descriptive analytics and its components.

CO – 4 : Assess Data Mining Algorithm

CO – 5 : Assess and evaluate Development phases of Business Intelligence System

TEXT BOOKS:

1. Rajiv Sabherwal, Irma Becerra-Fernandez, Business Intelligence: Practices, Technologies,a Management, John Wiley & Sons, 2011
2. Carlo Vercellis, Business Intelligence: Data Mining and Optimization for Decision Makin John Wiley & Sons Ltd., 2009.

REFERENCE BOOKS:

1. Gert H.N. Laursen, Jesper Thorlund, Business Analytics for Managers: Taking Business Intelligence beyond reporting, Wiley and SAS Business Series, 2010.
2. Ramesh Sharda, Dursun Delen, Efraim Turban, Business Intelligence and Analytics – Systems for Decision Support, Pearson, 10th Edition, 2014.

WEBSITES:

1. https://www.datapine.com/articles/best-bi-tools-software-review-list
2. https://www.talend.com/resources/what-is-data-warehouse/

WEB SOURCES:

1. https://www.talend.com/resources/what-is-data-mining/
2. https://www.researchgate.net/figure/Figure21-Business-Intelligence- Architecture_fig1_319458909

23CMBN27 **FOUNDATIONS OF BIGDATA, AIML AND DATA SCIENCE** **4 0 0 4**

COURSE OBJECTIVE:

- Understanding the Role of Business Analyst and Data Science in business
- To understand the application of business analysis.
- Understanding the basic concept of Data Science Project Life Cycle.

UNIT I INTRODUCTION 12

Introduction: What is business analytics? Historical Overview of data analysis, Data Scientist vs. Data Engineer vs. Business Analyst, Career in Business Analytics, What is data science, Why Data Science, Applications for data science, Data Scientists Roles and Responsibility

UNIT II DATA MANAGEMENT 12

Data: Data Collection, Data Management, Big Data Management, Organization/sources of data, Importance of data quality, Dealing with missing or incomplete data, Data Visualization, Data Classification Data Science Project Life Cycle: Business Requirement, Data Acquisition, Data Preparation, Hypothesis and Modeling, Evaluation and Interpretation, Deployment, Operations, Optimization

UNIT III MACHINE LEARNING 12

Introduction to Machine Learning: History and Evolution, AI Evolution, Statistics Vs Data Mining Vs, Data Analytics Vs, Data Science, Supervised Learning, Unsupervised Learning, Reinforcement Learning, Frameworks for building Machine Learning Systems.

UNIT IV ARTIFICIAL INTELLIGENCE 12

AI for managers. Foundations and History of Artificial Intelligence, Applications of Artificial Intelligence. Usage of Intelligent Agents, Structure of Intelligent Agents. AI systems in Healthcare. AI systems in E-commerce. AI systems in Transportation

UNIT V APPLICATIONS OF BUSINESS ANALYSIS 12

Application of Business Analysis: Retail Analytics, Marketing Analytics, Financial Analytics, Healthcare Analytics, Supply Chain Analytics.

TOTAL: 60 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Understand the basics of business analysis and Data Science

CO – 2 : Understand data management and handling and Data Science Project Life Cycle

CO – 3 : Understand and Analyzing machine learning concept

CO – 4 : Understand the application of business analysis in different domain.

CO – 5 : Evaluate data mining tools and Artificial Intelligence

TEXT BOOKS:

1. Essentials of Business Analytics: An Introduction to the methodology and its application, Bhimasankaram Pochiraju, Sridhar Seshadri, Springer
2. Introduction to Data Science, Laura Igual Santi Seguí, Springer.

REFERENCE BOOKS:

1. An Introduction to Business Analytics, Ger Koole, Lulu.com, 2019.

WEBSITES:

1. https://www.coursera.org/professional-certificates/ibm-data-science
2. https://www.coursera.org/specializations/machine-learning-introduction

WEB SOURCES:

1. https://www.coursera.org/learn/foundations-of-data-science

23PMBN21 DATA VISUALIZATION USING BI TOOLS 0 0 2 1

COURSE OBJECTIVE:

- This course will cover all aspects of creating dashboards, performing calculations, formatting, some very widely used formulas.
- It will enable the students to create, build models and customize graphs, develop advanced solutions on the worksheet in the areas of marketing, finance, statistics, production and human resource and to assemble the proper BI tools.

Sample exercises

- Patient Risk Healthcare Dashboard
- Product Availability Dashboard
- Sales Forecast Analysis Dashboard
- Flight Price Analysis Dashboard
- Crime Analysis Dashboard
- Air Quality and Pollution Analysis Dashboard
- Stock Exchange Analysis Dashboard
- Credit Card Fraud Detection Dashboard
- Twitter Sentiment Analysis Dashboard
- Marketing Campaign Dashboard

COURSE OUTCOMES:

CO – 1 : Understand the dashboard application skills

CO – 2 : Create a simple, sorted and formatted report

CO – 3 : Create List Reports

CO – 4 : Create Crosstab Reports.

CO – 5 : Demonstrate skills related to graph the data using BI tools

23PMBN22 DESCRIPTIVE ANALYTICS USING IBM COGNOS 0 0 2 1

Introduction to the Reporting Application

- Examine Report Studio and its interface.
- Explore different report types.
- Create a simple, sorted, and formatted report.
- Explore how data items are added to queries

Create List Reports

- Format, group, and sort list reports
- Describe options for aggregating data.
- Create a multi-fact query and a report with repeated data

Focus Reports using Filters.

- Create filters to narrow the focus of reports and Examine detail and summary filters.
- Determine when to apply filters on aggregate data

Create Crosstab Reports

- Format and sort crosstab reports
- Convert a list to a crosstab.
- Create crosstabs using unrelated data items.
- Create complex crosstabs using drag and drop functionality

Present Data Graphically

- Create charts containing peer and nested items.
- Present data using different chart type options and Add context to charts.
- Create and reuse custom chart palettes.
- Present key data in a single dashboard report

COURSE OUTCOMES:

CO – 1 : Understand the reporting application skills

CO – 2 : Create a simple, sorted and formatted report

CO – 3 : Create List Reports and interpret

CO – 4 : Create Crosstab Reports and interpret.

CO – 5 : Demonstrate skills related to graph the data using Cognos BI

23IMBN21 **INTERNSHIP** **0 0 12 6**

COURSE OBJECTIVE:

The internship module aims to provide the student with:

- A practice-oriented and 'hands-on' working experience in the real world or industry, and to enhance the student's learning experience.
- An opportunity to develop a right work attitude, self-confidence, interpersonal skills and ability to work as a team in a real organizational setting.
- An opportunity to further develop and enhance operational, customer service and other life-long knowledge and skills in a real-world work environment.
- Pre-employment training opportunities and an opportunity for the company or organization to assess the performance of the student and to offer the student an employment opportunity after his/her graduation if it deems fit.

COURSE OUTCOMES:

At the end of the course, a student will be able to

CO – 1: Understanding the application of knowledge and skill sets acquired from the course and workplace in the assigned job function/s.

CO – 2: Applying real life challenges in the workplace by analyzing work environment and conditions and selecting appropriate skill sets acquired from the course.

CO – 3: Create critical thinking and problem-solving skills by analyzing underlying issue/s to challenges.

CO – 4: Understanding the ability to harness resources by analyzing challenges and considering opportunities.

CO – 5: Understanding appreciation and respect for diverse groups of professionals by engaging harmoniously with different company stakeholders.

SEMESTER III

ELECTIVE COURSES – ANALYTICS

23EMBN01 **ADVANCED RESEARCH METHODS AND PREDICTIVE ANALYSIS** **3 0 0 3**

COURSE OBJECTIVE:

- To engage in a range of learning activities, with an emphasis on problem-based learning focusing on the application of data analysis techniques for addressing the research questions at the heart of their own research projects.
- To describe the data analysis using the advanced statistical techniques.

UNIT I CONCEPTUAL FOUNDATIONS OF RESEARCH 9

Meaning of research and scope of research methodology, Identification of problem area, Formulation of research questions, Typology of Research Designs. Overview of quantitative research, Logic of Inquiry, Construction of theories, Conceptual framework in quantitative research. Introduction to Academic Writing, Structure of Academic Writing.

UNIT II SAMPLING DESIGN AND TOOLS 9

Sampling: Process and Types sampling; probability and non probability sampling, Validity: Internal and external validity, Threats to Validity: Threats to internal validity and external validity, balancing internal and external validity. Reliability: Factors influencing reliability.

UNIT III MULTIVARIATE DESIGNS AND ANALYSIS 9

Introduction to Multivariate methods and analysis, Discriminant Analysis Multiple, logistic and hierarchical regression Factor analysis, structural equation modelling (SEM), Meta analysis, Mediational Analysis, Canonical Analysis. Advantages of multivariate strategies

UNIT IV PREDICTIVE ANALYSIS – I 9

Simple linear regression: Coefficient of determination, Significance tests, Residual analysis, Confidence and Prediction intervals Multiple linear regression: Coefficient of multiple coefficient of determination, Interpretation of regression coefficients, Categorical variables, heteroscedasticity, Multi-collinearity, outliers, Auto regression and Transformation of variables

UNIT V PREDICTIVE ANALYSIS – II 9

Logistic and Multinomial Regression: Logistic function, Estimation of probability using logistic regression, Deviance, Wald Test, Hosmer Lemshow Test Forecasting: Moving average, Exponential smoothing, Trend, Cyclical and seasonality components, ARIMA (autoregressive integratedmoving average). Application of predictive analytics in retail, direct marketing, health care, financial services, insurance, supply chain, etc.

TOTAL: 45 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Understand appropriate and relevant fundamental of research.

CO – 2 : Demonstrate a capacity to employ a variety of research design.

CO – 3 : Understand the Types of sampling

CO – 4 : Determine the sample size.

CO – 5 : Demonstrate the multivariate methods.

TEXT BOOKS:

1. Donald R. Cooper, Pamela S. Schindler and J K Sharma, Business Research methods, 11th Edition, Tata McGraw Hill, New Delhi, 2012.
2. Alan Bryman and Emma Bell, Business Research methods, 3rd Edition, Oxford University Press, New Delhi, 2011.

REFERENCE BOOKS:

1. Uma Sekaran and Roger Bougie, Research methods for Business, 5th Edition, Wiley India, New Delhi, 2012.
2. William G Zikmund, Barry J Babin, Jon C.Carr, AtanuAdhikari,Mitch Griffin, Business Research methods, A South Asian Perspective, 8th Edition, Cengage Learning, New Delhi, 2012.

WEBSITES:

1. https://www.upgrad.com/blog/normalization-in-data-mining/
2. https://www.kaggle.com/rtatman/data-cleaning-challenge-scale-and-normalize-data.

WEB SOURCES:

1. https://www.tutorialandexample.com/data-cleaning-in-data-mining/
2. https://www.geeksforgeeks.org/data-normalization-in-data-mining/

23EMBN02 **BUSINESS OPTIMIZATION AND BIG DATA ANALYTICS** **3 0 0 3**

COURSE OBJECTIVE:

- To provide foundational knowledge associated with the domain of business optimization and analytics
- To familiarize the students with all concepts including optimization techniques, simulation and big data analytics

UNIT I BUSINESS OPTIMISATION 9

Introduction – Optimization – Classification of optimization problems – General optimization algorithm – Optimization for Analytics – Business applications

UNIT II OPTIMISATION TECHNIQUES 9

Introduction – Operations Research Techniques for Analytics – Mathematical Model – Linear programming – Transportation Problems – Sensitivity Analysis: What-If Analysis – Software

UNIT III SIMULATION MODELLING 9

Introduction to simulation – Type: Discrete and Continuous simulation – Simulation models – Steps in Simulation study – Simulation for Analytics – Software

UNIT IV BIG DATA ANALYTICS – I 9

Introduction – Big Data Definition – Dimension of Big Data – Big Data Characteristics: Data Structure – Techniques of Big Data – Big Data Analytics – Applications of Big Data Analytics

UNIT V BIG DATA ANALYTICS – II 9

Types of Analytics: Descriptive – Prescriptive – Predictive – Tools — Software for Analytics – Application of Excel, R, SPSS and SAS in Analytics – Hadoop

TOTAL: 45 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Explain the different optimization problems.

CO – 2 : Understand the Optimization for Analytics.

CO – 3 : Evaluate the initial solution for Transportation Model.

CO – 4 : Explain the solution for Operations Research Techniques for Analytics.

CO – 5 : Explain the Simulation models.

TEXTBOOKS:

1. Taha Hamdy. Operation Research -An Introduction, Prentice-Hall, 9th edition, 2012.
2. Gordon, G., Systems Simulation, Prentice Hall, 2002.
3. EMC Education Services, Data Science and Big Data Analytics: Discovering, Analyzing, Visualizing and Presenting Data, John Wiley & Sons, 2015.

REFERENCE BOOKS:

1. G.V.Shenoy,U.K.Srivastava,S.C.Sharma, Operations Research for Management, New Age International,Revised 2nd Ed, 2005.
2. Banks, J., Carson, J. S. and Nelson, B. L. , Discrete Event System Simulation, 4th edition, Pearson Education Asia, 2006.
3. James R. Evans., Business Analytics – Methods, Models and Decisions, Pearson Publications, 1st Edition, 2012.
4. Frank J. Ohlhorst, Big Data Analytics: Turning Big Data into Big Money, John Wiley & Sons, 2012

WEBSITES:

1. https://www.ibm.com/in-en/products/planning-analytics.
2. https://ieeexplore.ieee.org/document/7733400.

WEB SOURCES:

1. https://annals-csis.org/Volume_8/pliks/542.pdf.
2. https://usamagazine.net/the-sweeping-wave-of-big-data-analytics-in-the-aid-of-business-optimization/

23EMBN03 DATA SCIENCE USING R PROGRAMMING 3 0 0 3

COURSE OBJECTIVE:

- To give an introduction to the software R and how to write elementary programs
- To demonstrate how statistical models are implemented and applied.
- To import, manage and structure data files.
- To write simple program scripts for data analysis produce illustrative data plots and carry out statistical tests.

UNIT I INTRODUCTION TO THE R LANGUAGE 9

SAS versus R - R, S, and S-plus - Obtaining and managing R - Objects - types of objects, classes, creating and accessing objects - Arithmetic and matrix operations - Introduction to functions

UNIT II WORKING WITH R 9

Reading and writing data - R libraries - Functions and R programming - the if statement - looping: for, repeat, while - writing functions -function arguments and options

UNIT III GRAPHICS 9

Basic plotting - Manipulating the plotting window - Advanced plotting using lattice library - Saving plots

UNIT IV STANDARD STATISTICAL MODELS IN R 9

Model formulae and model options - Output and extraction from fitted models - Models considered: Linear regression: lm() , Logistic regression: glm() , Linear mixed models: lme()

UNIT V ADVANCED R 9

Data management (importing, subsetting, merging, new variables, missing data etc.) Plotting – Loops and functions – Migration SAS to R – Plotting and Graphics in R – Writing R functions, optimizing R code– Bioconductor, analysis of gene expression and genomics data. More on linear models – Multivariate analysis, Cluster analysis, dimension reduction methods (PCA).

TOTAL: 45 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Recognise and make appropriate use of different types of data structures.

CO – 2 : Use R to create sophisticated figures and graphs.

CO – 3 : Identify and implement appropriate control structures.

CO – 4 : Design and write functions in R and implement simple iterative algorithms.

CO – 5 : Apply structured thinking to unstructured problems.

TEXT BOOKS:

1. Peter Dalgaard. Introductory Statistics with R (Paperback) 1st Edition Springer-Verlag New York, Inc. ISBN 0-387-95475-9
2. W. N. Venables and B. D. Ripley. 2002. Modern Applied Statistics with S. 4th Edition. Springer. ISBN 0-387-95457-0

REFERENCE BOOKS:

1. Andreas Krause, Melvin Olson. 2005. The Basics of S-PLUS. 4th edition. Springer-Verlag, New York. ISBN 0-387-26109-5
2. Jose Pinheiro, Douglas Bates. 2000. Mixed-effects models in S and S-PLUS Springer-Verlag, Berlin. ISBN 0-387-98957-9
3. An Introduction to R. Online manual at the R website at http://cran.r-project.org/manuals.html

WEBSITES:

1. https://www.udemy.com/course/r-programming-h/
2. https://www.coursera.org/specializations/data-science-foundations-r

WEB SOURCES:

1. https://www.mastersindatascience.org/data-scientist-skills/r/
2. https://www.analyticsvidhya.com/blog/2016/02/complete-tutorial-learn-data-science-scratch/

23EMBN04 SUPPLY CHAIN ANALYTICS 3 0 0 3

COURSE OBJECTIVE:

- To provide foundational knowledge associated with the supply chain analytics.
- To describe the various tools and techniques for implementation of analytics based on the supply chain drivers such as location, logistics and inventory.
- To provide the applications of analytics in supply chain

UNIT I INTRODUCTION 9

Introduction – Supply Chain – Supply Chain Operations Reference (SCOR) Model – Decisions and Performance Measures in Supply Chain – Overview on Supply Chain, Analytics and Supply Chain Analytics – KPIs for Supply Chain Analytics

UNIT II DESCRIPTIVE ANALYTICS 9

Introduction – Descriptive Analytics in Supply Chain – Business Intelligence in Supply Chain – Descriptive Analytics Techniques: Dashboard, Reporting, Data Visualization

UNIT III PREDICTIVE ANALYTICS 9

Introduction – Predictive Analytics in Supply Chain: Demand, Pricing and Risk – Predictive Analytics Techniques: Regression, Time Series Analysis, Simulation

UNIT IV PRESCRIPTIVE ANALYTICS – I 9

Introduction – Prescriptive Analytics in Supply Chain – Optimization – Classification of optimization problems – Optimization for Analytics – Operations Research Techniques for Analytics

UNIT V PRESCRIPTIVE ANALYTICS – II 9

Supply Planning: Aggregate Production Planning (APP) and Pricing – Plant/Warehousing Decisions: Location Models – Logistics Decisions: Network Models – Inventory Models – Sourcing Decisions: Analytic Hierarchy Process

TOTAL: 45 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Understand the SCOR Model for Analytics.

CO – 2 : Identify the different type of analytics in supply chain.

CO – 3 : Illustrate the predictive models for analytics.

CO – 4 : Describe the different prescriptive models in supply chain

CO – 5 : Design the analytics using Simulation for supply chain.

TEXT BOOKS:

1. James R. Evans., Business Analytics – Methods, Models and Decisions, Pearson Publications, 1st Edition, 2012.
2. G.V.Shenoy,U.K.Srivastava,S.C.Sharma, Operations Research for Management, New Age International,Revised 2nd Ed, 2005.

REFERENCE BOOKS:

1. Gerad Feigin, Supply Chain planning and analytics – The right product in the right place at the right time, Business Expert Press, 2011
2. Peter Bolstorff, Robert G. Rosenbaum, Supply Chain Excellence: A Handbook for Dramatic Improvement Using the SCOR Model, AMACOM Div American Mgmt Assn, 2007
3. Robert Penn Burrows, Lora Cecere, Gregory P. Hackett, The Market-Driven Supply Chain: A Revolutionary Model for Sales and Operations Planning in the New On-Demand Economy, AMACOM Div American Mgmt Assn, 2011

WEB SOURCE:

1. https://scg-lm.s3.amazonaws.com/pdfs/opentext-wp-dummies-guide-to-sca-100318.pdf
2. https://www.perlego.com/book/2011683/supply-chain-analytics-using-data-to-optimise-supply-chain-processes-pdf
3. https://www.routledge.com/Supply-Chain-Analytics-Using-Data-to-Optimise-Supply-Chain-Processes/Robertson/p/book/9780367540067
4. https://www.researchgate.net/publication/340169982_Big_Data_Analytics_and_Its_Applications_in_Supply_Chain_Management

23EMBN05 HR ANALYTICS 3 0 0 3

COURSE OBJECTIVE:

- To understand the concepts, tools and techniques of HR Analytics that could be applied to make human applied as resource management evidence based.
- To understand HR reports & to understand the decisions technologies.
- Recognize the fundamental strategic priorities of the business and learn how to provide enhanced decision support leveraging analytics.
- Develop a structured approach to apply judgment, and generate insight from data for enhanced decision making.

UNIT I INTRODUCTION TO HR ANALYTICS 9

HR analytics in Perspective: Basics of HR Analytics: Concept and Evolution of HR Analytics-Defining HR Analytics. Use of workforc to improve decision making. Analytics and Prediction. Introduction to HR Metrics and predictive analytics. Importance of HR Analytics. Data Analytics techniques using software packages. Future of Human Resource Analytics.HR Metrics and HR Analytics; Intuition versus analytical thinking.

UNIT II HR METRICS 9

Creating business understanding for HR initiatives: Workforce segmentation and search for critical job roles; Statistical driver analysis – association and causation; Linking HR measures to business results; choosing the right measures for scorecards; Identifying and using key HR Metrics.

UNIT III HR COSTS 9

Forecasting budget numbers for HR costs: Workforce planning including internal mobility and career pathing; training and development requirement forecasting and measuring the value and results of improvement initiatives; optimizing selection and promotion decisions

UNIT IV PREDICTIVE MODELLING 9

Predictive modelling in HR: Employee retention and turnover; workforce productivity and performance; scenario planning.

UNIT V HR DATA 9

Communicating with data and visuals: Data requirements; identifying data needs and gathering data; HR data quality, validity and consistency; Using historical data; Data exploration; Data visualization; Association between variables; Insights from reports; Root cause analysis of HR issues

TOTAL: 45 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Analyse appropriate internal and external human resource metrics.

CO – 2 : Recommend regarding the appropriate HRIS to meet organization's human resource.

CO – 3 : Employ appropriate software to record, maintain and retrieve.

CO – 4 : Apply quantitative and qualitative analysis to understand trends and indicators.

CO – 5 : Manage information technology to enhance the efficiency and effectiveness.

TEXT BOOKS:

1. Jac Fitz-Enz , The New HR Analytics: Predicting the Economic Value of Your Company's Human Capital Investments, Amazon.
2. Gene Pease, Boyce Byerly and Jac Fitz-enz, Human Capital Analytics: How to Harness the Potential of Your Organization's Greatest Asset, John Wiley & Sons

REFERENCE BOOKS:

1. The New HR Analytics: Predicting the Economic Value of Your Companys Human Capital Investments: Predicting the Economic Value of Your Company's Human Capital Investments Hardcover – Import, 1 Jun 2010, Jacfitz-Enz

WEBSITES:

1. https://www.coursera.org/learn/human-resources-analytics.
2. https://www.aihr.com/blog/what-is-hr-analytics/

WEB SOURCES:

1. https://www.toolbox.com/hr/hr-analytics/articles/what-is-hr-analytics/#_001.
2. https://www.valamis.com/hub/hr-analytics.

23EMBN06 MARKETING AND RETAIL ANALYTICS 3 0 0 3

COURSE OBJECTIVE:

- To create an understanding of the use of analytics in Marketing and Retail Management.
- To use the predictive analysis in decision making.

UNIT I INTRODUCTION TO MARKETING ANALTYICS 9

Introduction to Marketing Analytics - Meaning, characteristics, advantages and disadvantages of marketing analytics, Marketing Engineering - Types of Models - Market Data Sources (Primary and Secondary). Market Sizing: Stakeholders, Applications & Approaches (Top-down and Bottom-up), PESTLE Market Analysis, Porter Five Force Analysis

UNIT II CUSTOMER ANALYTICS 9

Customer Analytics: Customer Lifetime Value: Concept, Basic Customer Value, Measuring Customer Lifetime value, Estimating Chance that customer is still active, Using Customer Value to value a business Market Segmentation: The segmentation-targeting-positioning (STP) framework, Segmentation, The concept of market segmentation, managing the segmentation process, Deriving market segments and describing the segments using Cluster analysis, Market Basket Analysis

UNIT III INTRODUCTION – MARKETING DECISIONS AS INTERVENTIONS 9

Introduction: Marketing decisions as intervention Types of data relevant to marketing. Purpose-built data and data exhaust. Ways to use data, from generating ideas to automating decisions. Modeling interventions on your customers and potential customers. Gaps between data and marketing decisions. Metrics

UNIT IV RETAIL ANALYTICS – I 9

Customer Analytics Overview; Quantifying Customer Value. Using Stata for Basic Customer Analysis. Predicting Response with RFM Analysis, Statistics Review, Predicting Response with Logistic Regression, Predicting Response with Neural Networks. Predicting Response with Decision Trees.

UNIT V RETAIL ANALYTICS – II 9

The digital evolution of retail marketing, Digital natives, Constant connectivity social interaction, Predictive modelling, Keeping track, Data availability, Efficiency optimization.

TOTAL: 45 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : To understand the marketplace and the changing consumer needs and marketing engineering.

CO – 2 : To identify various methods followed build CRM practices and customer analytics.

CO – 3 : To recognize the various interventions in marketing.

CO – 4 : To analyze the data with RFM analysis.

CO – 5 : To understand digitalization in retail.

TEXT BOOKS:

1. Kotler, P., Keller, K. L. ,Koshy, A., Jha, M. Marketing Management: A South Asian Perspective. New Delhi: Pearson Education , 14th edn,.2013
2. Brea Cesar (2014), "Marketing and Sales Analytics: Proven Techniques and Powerful Applications from Industry Leaders", FT Press, ISBN-0133761711
3. Chapman Christopher N, Feit Elea McDonnell (2015), "R for Marketing Research and Analytics", Springer, ISBN-3319144367

REFERENCE BOOKS:

1. Emmett Cox (2012), "Retail Analytics: The Secret Weapon", Wiley, ISBN- 978-1-118-09984-1
2. Grigsby Mike (2015), "Marketing Analytics: A Practical Guide to Real Marketing Science", Kogan Page Publishers, ISBN- 0749474181
3. Rackley Jerry (2015), "Marketing Analytics Roadmap: Methods, Metrics, and Tools", Apress, ISBN- 1484202597

WEBSITES:

1. https://www.greatlearning.in/academy/learn-for-free/courses/marketing-retail-analytics-advanced.
2. https://www.sas.com/en_in/training/offers/free-training.html.

WEB SOURCES:

1. https://monkeylearn.com/data-mining-tools/
2. https://www.geeksforgeeks.org/data-transformation-in-data-mining/

23EMBN07 SOCIAL AND WEB ANALYTICS 3 0 0 3

COURSE OBJECTIVE:

- To understand how big data principles implemented in social media & Web.
- To understand the data processing for social media &Web analytics
- To describe the different metrics for social media & Web analytics
- To understand the application for social media & Web analytics

UNIT I SOCIAL MEDIA 9

Introduction, History of social media- Basics of social media and Business Models- Basics of Web Search Engines and Digital Advertising. Web & social media (websites, web apps, mobile apps & social media) .

UNIT II WEB ANALYTICS 9

Web analytics- Web analytics 2.0 framework (clickstream, multiple outcomes analysis, experimentation and testing, voice of customer, competitive intelligence, Insights) - Experimental methods in web data analytics - Air France Internet Marketing Case Study - Econometric modeling of search engine ads

UNIT III DATA STRUCTURE 9

Data (Structured data, unstructured data, metadata, Big Data and Linked Data) -Lab testing and experiment design (selecting participants, within-subjects or between subjects' study, counterbalancing, independent and dependent variable; A/B testing, multivariate testing, controlled. experiments)

UNIT IV WEB METRICS 9

Web metrics and web analytics - PULSE metrics (Page views, Uptime, Latency, Seven-day active users) on business and technical issues; -HEART metrics (Happiness, Engagement, Adoption, Retention, and Task success) on user behaviour issues; -On-site web analytics, off-site web analytics, the goal-signal-metric process

UNIT V SOCIAL MEDIA ANALYTICS 9

Social media analytics - Social media analytics (what and why) - social media KPIs (reach and engagement) - Performing social media analytics (business goal, KPIs, data gathering, analysis, measure and feedback) 6. Data analysis language and tools Cases and examples - User experience measurement cases - Web analytics cases 8. Group work and hands on practice - Usability study planning and testing; and data analysis using software tools (Google Analytics, Google Sites, R and Deducer)

TOTAL: 45 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Recognize on the fundamental concepts of social media.

CO – 2 : Recognize on the fundamental concepts of Web.

CO – 3 : Understand the implementation framework of web analytics.

CO – 4 : Explain the experimental methods in web data analytics.

CO – 5 : Recognize the types of data for social media & Web analytics.

TEXT BOOKS:

1. Avinash Kaushik, Web Analytics 2.0: The Art of Online Accountability and Science ofCustomer Centricity, John Wiley & Sons; Pap/Cdr edition (27 Oct 2009)
2. Tom Tullis, Bill Albert, Measuring the User Experience: Collecting, Analyzing, and Presenting Usability Metrics, Morgan Kaufmann; 1 edition (28 April 2008) .

REFERENCE BOOKS:

1. Jim Sterne, Social Media Metrics: How to Measure and Optimize Your Marketing Investment, John Wiley & Sons (16 April 2010)
2. Brian Clifton, Advanced Web Metrics with Google Analytics, John Wiley & Sons; 3rd Edition edition (30 Mar 2012)

WEBSITES:

1. https://www.ibm.com/topics/social-media-analytics.
2. https://www.searchenginejournal.com/10-great-social-web-analytics-tools/90629.

WEB SOURCES:

1. https://monkeylearn.com/data-mining-tools/
2. https://www.geeksforgeeks.org/data-transformation-in-data-mining/

23EMBN08 HEALTHCARE ANALYTICS 3 0 0 3

COURSE OBJECTIVE:

- To explore the various forms of electronic health care information
- To learn the techniques adopted to analyze health care data.
- To understand the predictive models for clinical data

UNIT I INTRODUCTION 9

Introduction: Introduction to Healthcare Data Analytics- Electronic Health Records– Components of EHR- Coding Systems- Benefits of EHR- Barrier to Adopting HER Challenges- Phenotyping Algorithms.

UNIT II BIOMEDICAL IMAGE ANALYSIS 9

Analysis: Biomedical Image Analysis- Mining of Sensor Data in Healthcare- Biomedical Signal Analysis- Genomic Data Analysis for Personalized Medicine.

UNIT III NLP AND DATA MINING 9

Analytics: Natural Language Processing and Data Mining for Clinical Text- Mining the Biomedical - Social Media Analytics for Healthcare.

UNIT IV ADVANCED DATA ANALYTICS IN HEALTH CARE 9

Advanced Data Analytics: Advanced Data Analytics for Healthcare– Review of Clinical Prediction Models- Temporal Data Mining for Healthcare Data- Visual Analytics for Healthcare- Predictive Models for Integrating Clinical and Genomic Data- Information Retrieval for Healthcare- Privacy-Preserving Data Publishing Methods in Healthcare.

UNIT V APPLICATIONS 9

Applications: Applications and Practical Systems for Healthcare– Data Analytics for Pervasive Health- Fraud Detection in Healthcare- Data Analytics for Pharmaceutical Discoveries- Clinical Decision Support Systems- Computer-Assisted Medical Image Analysis Systems- Mobile Imaging and Analytics for Biomedical Data.

TOTAL: 45 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Gain knowledge on the concepts of EHR.

CO – 2 : Understand the implementation of analytics for health care.

CO – 3 : Understand the types of data analytics in health care.

CO – 4 : Understand the predictive models for healthcare.

CO – 5 : Gain knowledge on the applications of data analytics.

TEXTBOOKS:

1. Chandan K. Reddy and Charu C Aggarwal, "Healthcare data analytics", Taylor & Francis, 2015
2. Hui Yang and Eva K. Lee, "Healthcare Analytics: From Data to Knowledge to Healthcare Improvement, Wiley, 2016

REFERENCE BOOKS:

1. "Healthcare Analytics Made Simple", Vikas Kumar, Packt
2. "Competing on Healthcare Analytics: The Foundational Approach to Population Health Analytics", J. Bennett
3. "Machine Learning for Healthcare Analytics Projects", Eduonix Learning Solutions

WEBSITES:

1. https://www.ibm.com/in-en/watson-health/learn/healthcare-analytics.
2. https://looker.com/definitions/healthcare-analytics.

WEB SOURCES:

1. https://www.sisense.com/glossary/healthcare-analytics-basics.
2. https://healthitanalytics.com/news/10-high-value-use-cases-for-predictive-analytics-in-healthcare.

23EMBN09 PRICING ANALYTICS FOR REVENUE MANAGEMENT 3 0 0 3

COURSE OBJECTIVE:

- To provides an introduction about both the theory and the practice of revenue management and pricing.
- To discuss both these practice and theory elements.

UNIT I INTRODUCTION 9

Introduction: Examples and simulations - The Revenue Management Process - Classification and introduction to the models, course plan The Theories of Pricing: Brief review of microeconomic and marketing theories on consumer behavior and pricing - Product design, bundling and demand segmentation - Dynamic pricing policies

UNIT II PRICING POLICIES 9

Pricing Policies in Action: Markdown policies and liquidations - Pricing with supply constraints - Customized pricing and e-commerce An Operational Model of Revenue Management: Stochastic Inventory Management and the Newsvendor Model - Single resource Revenue Management, expected marginal value to control sales – Overbooking

UNIT III NETWORK REVENUE MANAGEMENT 9

Network Revenue Management: Network revenue management, control mechanisms - Linear Programming approach to Revenue Management - Applying network Revenue Management to different industries. Implementing a Revenue Management System: Solving Revenue Management Problems - Computational methods in Revenue Management - Performance Measurement

UNIT IV DEMAND FORECASTING AND DATA ANALYSIS 9

Demand Forecasting and Data Analysis: Data, sources, systems, automation - Time-series forecasting and perfect demand segmentation models - Estimation techniques - Unconstraining for unobservable no-purchases--concept and the EM technique Competitive Factors: Imperfect segmentation model: Discrete choice models - Customer management and strategic purchasing behavior - RM Process management (organizational issues)

UNIT V INDUSTRY APPLICATIONS 9

Industry Applications: Various case studies related to capacity management in airlines, hotels, car rentals, cruises. Industry implementations and practices New Directions in Revenue Management: Business Analytics - Applications in new industries: Event sales, casinos, Display advertising - Bundling and Revenue Management

TOTAL: 45 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Apply strategic and tactic roles of pricing in relevant business contexts

CO – 2 : Discuss models for real-world pricing decision making processes

CO – 3 : Provide business insights using data and analytics

CO – 4 : Demonstrate how to implement pricing solutions

CO – 5 : Employ how to measure financial performance of pricing

TEXT BOOKS:

1. Robert L. Phillips., "Pricing and Revenue Optimization", Publisher: Stanford University Press, 2005.
2. David Hirshleifer, Amihai Glazer Jack Hirshleifer., Price Theory and Applications: Decisions, Markets, & Information; Cambridge University Press, 7th Ed, 2016

REFERENCE BOOKS:

1. K. TalluriandG. Van Ryzin., "The Theory and Practice of Revenue Management" , Kluwer Academic Publishers, 2004

WEBSITES:

1. https://www2.deloitte.com/us/en/pages/consulting/articles/pricing-analytics-revenue-management.html
2. https://www.amazon.in/Management-Analytics-International-Operations-Research-ebook/dp/B07WFWWHQM

WEB SOURCES:

1. https://www.evalueserve.com/solutions/pricing-revenue-management.
2. https://www.springerprofessional.de/en/revenue-management-and-pricing-analytics/17072372

23EMBN10 DATA VISUALIZATION FOR MANAGERS 3 0 0 3

COURSE OBJECTIVE:

- To Design data visualizations that incorporate best practices to explain findings clearly and honestly.
- To Develop communications strategically with audiences in mind
- To Present data verbally with increased comfort and clarity.

UNIT I INTRODUCTION 9

Introduction to data visualizations – The importance of context Exploratory vs. explanatory – analysis – Illustrate: Who, What & How – Storyboarding.

UNIT II BASIC PRINCIPLES OF VISUALIZATION 9

Visually encoding data – Choosing graphic Forms – A Grain of Salt – Organizing the Display – Exploring Data with Simple Charts – Visualizing Distributions – Seeing Relationships – Mapping Data.

UNIT III ELIMINATING THE CLUTTER 9

Clutter – Gestalt principles of visual perception – Lack of visual order – Non-strategic use of contrast – Decluttering: Step-by-step.

UNIT IV COGNITION 9

The EYE and the Visual brain – Visualizing for the mind – Images in the Head – Creating Information Graphics – Interactive Graphics.

UNIT V VISUAL ANALYTCS, STORY TELLING & BIG DATA 9

Story telling principles: Gricean Maxims – Barbara Minto's pyramid principle – Seven steps of storytelling – Scenario for combining data, model and stories – Five golden rules for statistical story tellers.

TOTAL: 45 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Design effective data visualizations in order to provide new insights into a research.

CO – 2 : Understand how Cultures of Practice influence the way data.

CO – 3 : Handle data and data visualizations to understand of ethical considerations.

CO – 4 : Properly document and organize data and visualizations.

CO – 5 : Construct effective data visuals to solve workplace problems.

TEXT BOOKS:

1. Kieran Healy, Data Visualization: A Practical Introduction, PUP, New Jersey, 2019, First Edition.
2. Alberto Cairo. The Truthful Art: Data, Charts, and Maps for Communication. New Riders, 1 edition
3. Cole NussbaumerKnaflic, Story Telling with Data: A Data visualization Guide for Business Professionals, Wiley, New Jersey;2015, First Edition

REFERENCE BOOKS:

3. Scott Berinato, Good Charts: the HBR Guide to Making Smarter, more persuasive Data Visualization, HBR. 2016
4. Edward R. Tufte. The Visual Display of Quantitative Information. Graphics Press, 2 ed.

WEBSITES:

1. https://www.tableau.com/learn/articles/data-visualization.
2. https://online.hbs.edu/blog/post/data-visualization-tools.

WEB SOURCES:

1. https://www.stat.nus.edu.sg/data-analytics-and-visualization-for-managers.
2. https://www.managementconcepts.com/course/id/4606.

23EMBN11 STOCHASTIC MODELING 3 0 0 3

COURSE OBJECTIVE:

- To learn the basic concepts for modeling the stochastic process. To study the various aspects of stochastic systems modeling and conducting experiments with those models.
- To understand the appropriate and relevant, fundamental and applied mathematical knowledge, methodologies and modern computational tools.
- To understand the study of systems evolve randomly over time and to understand the behavior of these systems, especially in long run.

UNIT I PROBABILITY THEORY 9

Introduction – Probability space – Independence and dependence – Conditional Probability and Bayes formula – Random variables – Expectation, variance and covariance.

UNIT II DISCRETE-TIME MARKOV CHAIN 9

Classification of states: transient and recurrent – Chapman-Kolmogorov equations – Transient and Steady-state distributions – Time reversibility.

UNIT III POISSON PROCESS 9

Poisson process: definition and properties – The M/G/1 busy period – Nonhomogeneous Poisson process – The Mt/G/∞ queue – Compound Poisson process.

UNIT IV CONTINUOUS-TIME MARKOV CHAIN 9

Kolmogorov differential equations – Birth-and-death processes – Steady-state probability – Computation of transient distributions.

UNIT V RENEWAL THEORY 9

Renewal functions and renewal equations – Limit theorems – Renewal reward processes – Regenerative process.

TOTAL: 45 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Understand the basic probability axioms and rules.

CO – 2 : Derive the probability density function of transformation of random variables.

CO – 3 : Understand the secrete time Markov chains.

CO – 4 : Understand how to calculate probabilities of absorption.

CO – 5 : Demonstrate the specific applications to Poisson processes.

TEXT BOOKS:

1. Mark A. Pinsky and Samuel Karlin An Introduction to Stochastic Modeling, Fourth Edition 4th Edition, Academic Press,2010.

REFERENCE BOOKS:

1. Samuel Karlin and Howard M. Taylor, An Introduction to Stochastic Modeling, Third Edition 3rd Edition, Academic Press, 1998.
2. Paul Gerhard Hoel, Sidney C. Port, Charles J. Stone, Introduction to Stochastic Processes, Waveland Pr Inc,1986.

WEBSITES:

1. https://corporatefinanceinstitute.com/resources/knowledge/other/stochastic-modeling.
2. https://www.investopedia.com/terms/s/stochastic-modeling.asp.

WEB SOURCES:

1. https://www.statisticshowto.com/stochastic-model.
2. https://www4.stat.ncsu.edu/~gross/BIO560%20webpage/slides/Jan102013.pdf

23EMBN12 SIMULATION MODELING 3 0 0 3

COURSE OBJECTIVE:

- To study and develop the concepts, techniques, tools for modeling and simulation models.
- To study the various aspects of discrete and stochastic systems modeling and conducting the experiments with the simulation models.
- To understand the concept in modeling and simulation

UNIT I INTRODUCTION 9

Introduction to simulation – Discrete and Continuous simulation – Simulation models – Types of Models – Steps in Simulation study.

UNIT II RANDOM NUMBERS 9

Properties of Random Numbers – Generation of Random number – Testing for Random numbers – Techniques for generating Random Numbers – Random Variate Generation.

UNIT III ANALYSIS: INPUT AND OUPUT MODELING 9

Input modeling – Data collection – Identifying the distribution with data – Parameter estimation – Goodness of fit tests – Output analysis for a Single model.

UNIT IV ANALYSIS: VERIFICATION AND VALIDATION 9

Model Building – Verification of Simulation Models – Validation of Simulation Models.

UNIT V LANGUAGES AND APPLICATIONS 9

Simulation Languages and Simulators – Simulation of Queuing system – Simulation of Inventory system –Simulation of Manufacturing.

TOTAL: 45 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Define basic concepts in modeling and simulation.

CO – 2 : Understand the basic probability axioms.

CO – 3 : Generate and test random number variates and apply them to develop simulation models.

CO – 4 : Classify models and understand the methodology of model building.

CO – 5 : Understand the different methods of random number generation.

TEXT BOOKS:

1. Banks, J., Carson, J. S. and Nelson, B. L. , Discrete Event System Simulation, 4th edition, Pearson Education Asia, 2006.

REFERENCE BOOKS:

1. Averill, M. L. and David, W. K., Simulation Modeling and Analysis, 3rd Edition,McGraw Hill, 2000.
2. David W. K., Sadowski, R. P. and Sasowski, D. A., Simulation with ARENA, McGraw Hill, 2002.
3. Gordon, G., Systems Simulation, Prentice Hall, 2002.

WEBSITES:

1. http://home.ubalt.edu/ntsbarsh/simulation/sim.htm.
2. https://www.tutorialspoint.com/modelling_and_simulation/index.htm.

WEB SOURCES:

1. https://www.anylogic.com/use-of-simulation.
2. https://www.sciencedirect.com/topics/social-sciences/simulation-models.

23EMBN13 DATA MINING FOR BUSINESS DECISIONS 3 0 0 3

COURSE OBJECTIVE:

- The objective of this subject is to develop a basic understanding of Data Mining and Warehousing concepts.
- To understand the basic steps in these processes and to understand the need and the benefits of these concepts in the information-based business operations.

UNIT I INTRODUCTION TO DATA MINING 9

Kind of data, DM Functionalities, Classification of DM Systems, Issues in DM. What is Data warehousing (DW)? Multidimensional data model: Data cubes, Stars, snowflakes, and factconstellations Defining schemas, concept hierarchies, CLAP

UNIT II DATA WAREHOUSE ARCHITECTURE 9

Architecture of data warehousing, Steps for design and construction, Three-tier Data, Warehouse architecture, Types of OLAP servers: ROLAP versus MOLAP versus H CLAP

UNIT III IMPLEMENTATION 9

Data Warehouse Implementation: Efficient computation of Data cubes Indexing CLAP Data and efficient processing of CLAP queries Back-end tools and utilities

UNIT IV DATA PROCESSING 9

Data Preprocessing Why to preprocess data? Data cleaning: Missing Values, Noisy Data, Data Integration and transformation Data Reduction: Data cube aggregation, Dimensionality reduction. Data Compression, Numerosity Reduction Discretization and Concept Hierarchy Generation

UNIT V DATA WAREHOUSING AND DATA MINING 9

Data Mining Primitives, Languages and System Architectures: Task relevant data. Kind of Knowledge to be mined, DM Query languages: Syntax, Designing GUI. Architectures of DM Systems concept of Cluster Analysis. Application and trends in Data mining Data Mining for Financial data analysis, Data Mining for retail industry, Data mining for telecommunication industry

TOTAL: 45 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Realize Data Mining (DM) principles and techniques.

CO – 2 : Acquaint DM techniques through proactive analysis and predictive modelling.

CO – 3 : Analyse large sets of data to gain useful business understanding.

CO – 4 : Aware to produce a quantitative analysis report/memo to make decisions.

CO – 5 : Describe and demonstrating basic data mining algorithms, methods, and tools

TEXTBOOKS:

1. David J. Hand, HeikkiMannila, and Padhraic Smyth, Principles of Data Mining, Massachusetts Institute of Technology, 2001

REFERENCE BOOKS:

1. J. Han, M. Kamber, Morgan, Data Mining Concepts and Techniques, Kaufmann Publishers, 2001.
2. M. Kantardzic, Data mining: Concepts, Models, Methods and Algorithms, John Wiley & Sons Inc., 2003.
3. Margaret H Dunham, Data Mining: Introductory and Advanced Topics, Pearson India, 2008
4. H. Witten, E. Frank,Data mining: Practical machine learning tools and techniques, 2nd ed., Morgan Kaufmann Publishers, 2005.
5. R. J. Roiger, M. W. Geatz, Data mining: A tutorial-based primer. Pearson Education, 2003.

WEBSITES:

1. https://www.aits.utexas.edu/~anorman/BUS.FOR/course.mat/Alex.
2. https://www.talend.com/resources/business-intelligence-data-mining.

WEB SOURCES:

1. https://www.matillion.com/resources/blog/5-real-life-applications-of-data-mining-and-business-intelligence.
2. https://www.investopedia.com/terms/d/datamining.asp.

23EMBN14 TIME SERIES ANALYSIS 3 0 0 3

COURSE OBJECTIVE:

- To provide students with an overview and in-depth knowledge of quantitative techniques used for forecasting and their application.
- To understand the techniques that range from simple ones like moving averages and smoothing techniques to more sophisticated ones like regression models, ARIMA (and related) models, VAR and VECM models, Causality testing and ARCH and GARCH models.
  to test volatility.

UNIT I INTRODUCTION TO TIME SERIES ANALYSIS 9

Introduction - Utility of the Time Series, Components of Time Series - Examples of time series - Stationary models and autocorrelation function - Estimation and elimination of trend and seasonal components - Testing for Unit Roots and Cointegration.

UNIT II STATIONARY PROCESS AND ARMA 9

Basic properties and linear processes - Introduction to ARMA models, properties of sample mean and autocorrelation function - Forecasting stationary time series - ARMA (p, q) processes, ACF and PACF - Forecasting of ARMA processes - Spectral Analysis - Spectral densities - Time-invariant linear filters - The spectral density of an ARMA process

UNIT III VECTOR AUTO REGRESSION MODEL(VAR) 9

Estimation and Identification, - Variance decomposition and Impulse response functions, - Causality

applying Granger Causality Tests and VAR model, -Forecasting using a VAR model - Application of VAR - VECM (Vector Error Correction Model).

UNIT IV MULTIVARIATE TIME SERIES 9

Second-order properties of multivariate time series - Estimation of the mean and covariance - Multivariate ARMA processes - Best linear predictors of second-order random vectors - Modeling and forecasting

UNIT V LINEAR TIME SERIES 9

Moving Average Models, Autoregressive Models, Mixed Autoregressive and Moving Average Models, Homogeneous Non-Stationary Processes: ARIMA Models, Box-Jenkins Methodology, Specification of ARIMA Models, SARIMA, and ARMAX Models

TOTAL: 45 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Utilize the time series method to predict the future.

CO – 2 : Record the cyclical variations of the market and its trend.

CO – 3 : Assess the degree of regression among the variables.

CO – 4 : Record and predict the seasonal variations of a product and its derivatives.

CO – 5 : Estimate the linear time series.

TEXTBOOKS:

1. Wayne A. Woodward, Henry L. Gray, Alan C Elliott, Applied Time Series Analyses, October 26, 2011 by CRC Press.
2. K.Krishnamoorthy, Handbook of Statistical Distributions with Applications, Second Edition, November 6, 2015.

REFERENCE BOOKS:

1. Jonathan D. Cryer,Kung-SikChan,Time Series Analysis: With Applications in R (Springer Texts in Statistics), second edition, November 17, 2010.
2. Sally Lesik, Applied Statistical Inference with MINITAB®, December 21, 2009

WEBSITES:

1. https://www.tl.nist.gov/div898/handbook/pmc/section4/pmc4.htm.
2. https://www.aptech.com/blog/introduction-to-the-fundamentals-of-time-series-data-and-analysis.

WEB SOURCES:

1. https://towardsdatascience.com/the-complete-guide-to-time-series-analysis-and-forecasting-70d476bfe775.
2. https://www.excelr.com/blog/data-science/forecasting/18-time-series-analysis-tactics-that-will-help-you-win-in-2020.

23EMBN15 FINANCIAL AND RISK ANALYTICS 3 0 0 3

COURSE OBJECTIVE:

- To provide a strong foundation in financial analytics in order to handle complex financial data, build advanced analytical models and deliver effective visualization product and comprehensive reports.

UNIT I FINANCIAL ANALYTICS 9

Introduction to Financial Data and Financial Analytics: Definition, relevance and scope financial Analytics – importance of financial analytics – types – fundamental and technical analysis – components of financial analytics - recent trends in financial analytics

UNIT II FINANCIAL TIME SERIES 9

Financial Time Series and Their Characteristics: Asset Returns, Distributional Properties of Returns, Review of Statistical Distributions and properties of financial time series

UNIT III PORTFOLIO ANALYTICS 9

Asset Portfolio Models: Basics of portfolio construction, Markowitz Theorem, Capital Asset Pricing Model, Diversification and Portfolio Optimization

UNIT IV VOLATILITY AND RISK 9

Modeling Volatility and Risk: Characteristics of volatility. Modeling volatility using ARCH/GARCH models. Measuring and modeling risk. Application of Value at Risk (VaR) - High-Frequency Data Analysis: Nonsynchronous Trading, Bid–Ask Spread of trading Prices, Empirical Characteristics of Trading Data, Models for Price Changes, Duration Models

UNIT V RISK ANALYTICS 9

Modeling Credit Risk: Corporate Liabilities as contingent claims, Endogenous default boundaries and optional Capital Structure, Intensity Modeling, Rating based term-structure models, Credit risk and interest-rate Swaps, Modeling dependent defaults - Derivative Pricing: Issues regarding derivative markets. Brownian motion, Black Sholes model. Modeling derivative prices

TOTAL: 45 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Analyze and model financial data.

CO – 2 : Construct and optimize asset portfolios

CO – 3 : Evaluate and model Risk on various financial assets.

CO – 4 : Use the most powerful and sophisticated routines for analytical finance

CO – 5 : Design the model for credit risk.

TEXTBOOKS:

1. Argimiro Arratia (2014), "Computational Finance an Introductory Course with R", Atlantis Press, ISBN 978-94-6239-069-0.

2. Bernhard Pfaff (2013), "Financial risk modelling and portfolio optimization with R", Wiley, ISBN 978-0-470-97870-2.

REFERENCE BOOKS:

1. Ngai Hang Chan (2010)."Time Series Applications to Finance with R and S-Plus®", Second Edition, Wiley, ISBN 978-0-470-58362-3.

2. Ren´e Carmona (2014),"Statistical Analysis of Financial Data in R", Second Edition. Springer, ISBN 978-1-4614-8787-6

WEB SOURCE:

1. https://www.mygreatlearning.com/academy/learn-for-free/courses/financial-risk-analyticshttps://www.kopykitab.com/Operations-Research-Theory-And-Applications-6e-by-J-K- Sharma
2. https://www.coursera.org/learn/applying-data-analytics-business-in-finance#syllabus

ELECTIVE COURSES – MANAGEMENT

23EMBN16 OPERATIONS RESEARCH APPLICATIONS 3 0 0 3

COURSE OBJECTIVE:

- To acquaint the student with the applications of Operations Research to business and industry
- To help them to grasp the significance of analytical techniques in decision making.
- To test on the application of Operations Research to business related problems.

UNIT I DYNAMIC PROGRAMMING 9

Dynamic programming – Type – Forward and Backward Recursion – Application: Shortest-Route Problem, Knapsack Model, Work-Force size problem

UNIT II SCHEDULING SYSTEMS 9

Flow shop: Johnson 's Method – Two Machines, Three Machines, More than three Machines Graphical Method – Only Two Jobs – Job shop

UNIT III PROJECT SCHEDULING 9

PERT & CPM – Project scheduling by PERT/CPM – Cost considerations in PERT/CPM

UNIT IV QUEUING & SIMULATION 9

Queuing System – Four elements – Kendall's Notation – Queuing models – Birth and Death Model – Simulation – Type: Discrete and Continuous simulation – Simulation models

UNIT V ADVANCED 9

Branch and bound method – Vehicle Routing Problems – Quadratic Programming – Staff transfer problem – Two-stage supply chain distribution problem

TOTAL: 45 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Analyze the applications of Dynamic programming.

CO – 2 : Evaluate Job shop in Two Machines.

CO – 3 : Analyze the applications of Project scheduling by PERT and CPM.

CO – 4 : Evaluate the Queuing System and Simulation models.

CO – 5 : Design the Branch and bound method and Vehicle Routing Problems.

TEXT BOOKS:

1. Hamdy A. Taha, Operation Research, Pearson Prentice Hall, 2003.

2. Singh & Kumar, Operation Research, UDH Publisher, 2013.

REFERENCE BOOKS:

3. S.R. Yadav, A.K. Malik, Operations Research, Oxford University Press; First edition, 2014.
4. G.V.Shenoy,U.K.Srivastava, S.C.Sharma, Operations Research for Management, New Age International,Revised 2nd Ed, 2005.

WEB SOURCE:

1. https://www.springer.com/gp/book/9783540401384
2. https://www.kopykitab.com/Operations-Research-Theory-And-Applications-6e-by-J-K-Sharma
3. https://sites.google.com/site/dg6y5fju6y5h/p-d-f-operations-research-applications-and-algorithms-ebook-epub-kindle-by-wayne-l-winsto
4. https://www.researchgate.net/publication/317606351_Operations_research_httpbookbooncomenoperations-research-ebook

23EMBN17 QUALITY TOOLKIT FOR MANAGERS 3 0 0 3

COURSE OBJECTIVE:

- To explain the Quality concept, principles, and its various tools.
- To explain the statistical process control for the implementation of quality management.

UNIT I INTRODUCTION 9

Evolution of Quality – Quality Definition and Contributions by Deming, Juran, Crosby, Feiganbaum, Ishikawa and Taguchi – Dimensions of quality – Cost of Quality – ISO 9000

UNIT II STATISTICAL PROCESS CONTROL 9

Introduction – Pareto Analysis – Cause and Effect Diagram – Checklist or Checksheet – Process Flow Chart – Histogram – Scatter Diagram – Chance and Assignable Causes – Control Charts for Variables – Process Capability Analysis such as C_p and C_{pk} – Control Charts for Attributes.

UNIT III MANAGEMENT TOOLS 9

Introduction – Affinity Diagram [KJ method] – Interrelationship Diagram – Tree Diagram Prioritization Matrix – Matrix Diagram – Process Decision Program Chart – Activity Network Diagram

UNIT IV TOOLS AND TECHNIQUES 9

Plan-Do-Check-Act (PDCA) Cycle – Quality Circles – Benchmarking – Quality Function Deployment (QFD) – Failure Mode and Effect Analysis (FMEA) – Taguchi Method

UNIT V SIX SIGMA 9

Evolution – TQM vs. Six Sigma – What is Six Sigma – Six Sigma methodologies Such as DMAIC, DFSS – Six Sigma Belts.

TOTAL: 45 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Define the quality based on the quality gurus.

CO – 2 : Analyze the implementation of quality management.

CO – 3 : Calculate the Process Capability.

CO – 4 : Record knowledge on the various techniques of quality management.

CO – 5 : Assemble the implementation of SPC tools using Six Sigma methodologies.

TEXT BOOKS:

1. Besterfiled, et al., Total Quality Management, Pearson Education Asia, 3rd Edition, 2006.
2. Suganthi, L. and Samuel, A., Total Quality Management, Prentice Hall (India) Pvt. Ltd., 2006.

REFERENCE BOOKS:

1. Evans, J.R. and Lindsay, W. M., The Management and Control of Quality, 6th Edition, South-Western (Thomson Learning), 2005.
2. Oakland, J.S., TQM – Text with Cases, Butterworth – Heinemann Ltd., Oxford, 3rd Edition, 2006.

WEB SOURCE:

1. https://easyengineering.net/total-quality-management-books-collections/
2. https://www.researchgate.net/publication/344826139_A_TEXTBOOK_ON_TOTAL_QUALITY_MANAGEMENT
3. https://book.akij.net/eBooks/2018/January/5a6db3abccd78/Total%20Quality%20Management%20and%20Operational%20Excellence.pdf
4. https://link.springer.com/content/pdf/bfm%3A978-1-4615-5281-9%2F1.pdf

23EMBN18 ECONOMIC ANALYSIS AND DECISION MAKING 3 0 0 3

COURSE OBJECTIVE:

- To familiarize managerial economics concepts and applications

UNIT I INTRODUCTION 9

Introduction to Managerial Economics; The roles of the firm and the House hold, Decision Making in the Household, Consumer Choice, Theory of Demand; its Determination, Estimation and Forecasting

UNIT II MARKET STRUCTURES 9

Decision Making in the Firm , Production, Cost, Supply : its Determination and Derivation, Equilibrium in Different Market Structures

UNIT III COMPETITIVE MARKETS AND THEORY 9

Competitive markets- Equilibrium in the short run and long-run, Monopoly equilibrium and pricing practices of firms with market power, Oligopoly: Strategic interactions and its game theoretic analysis

UNIT IV MARKET ANALYSIS AND EXTERNALITIES 9

Analysis of the Markets for Factor Inputs, The Economics of Information, The problem of Adverse Selection z Moral Hazard problem, Market Failure z Externalities, Public Goods

UNIT V TRADE AND DEVELOPMENT 9

Finance for Development, Trade and Development, State and the Market, Privatisation and Regulation, Institutions and Growth

TOTAL: 45 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Outline the basic elements of managerial economics aspects of firm and SSI

CO – 2 : Describe the role of manager, so as to manage or organize FOP

CO – 3 : Forecast demand for a product

CO – 4 : Name what to produce, where to, when to, how to, for whom to

CO – 5 : Frame policy for production to minimize the cost and maximum the profit

TEXT BOOKS:

1. Gupta G.S., Yogesh, Maheswari, Managerial Economics, Phi Learning, Newdelhi, 2005
2. Moyer &Harris Managerial Economics, Tata Mcgraw-Hill, New Delhi

REFERENCE BOOKS:

1. Anagerial Economics, Cengage Learning, Newdelhi, 2005
2. Geetika, Ghosh&Choudhury, Managerial Economics, Tata Mcgrawhill, Newdelhi, 2011

WEBSITES:

1. http://www.pearsoned.ca/highered/divisions/virtual_tours/jones-a/jones_finac_ce_ch02.pdf
2. http://www.himpub.com/documents/Chapter923.pdf.

WEB SOURCES:

1. https://www.jstor.org/stable/1816907?seq=1
2. https://www.sjsu.edu/faculty/watkins/econ205a.htm.

23EMBN19 BUSINESS FORECASTING 3 0 0 3

COURSE OBJECTIVE:

- To understand the various concepts of the forecasting in the application of business
- To understand the various techniques of the forecasting
- To explain about the techniques employed in the operations planning

UNIT I FORECASTING 9

Introduction – Objectives – Features of good forecasting – Nature and uses of forecasts – Forecasting and Decision Making – Types of Forecasts – The Art and Science of Forecasting – Process of Forecasting – Application of forecasting in Business

UNIT II DATA 9

Introduction – Data Patterns: horizontal, trend, seasonal, and cyclical – Data for Forecasting: Data Warehouse and Cleaning – Data Transformations: Data Pattern and Appropriate Transformations – Patterns in Time Series Data

UNIT III TECHNIQUE – I 9

Forecasting Techniques: Qualitative and Quantitative – Technique Selection – Delphi Method – Regression Analysis – Simple Regression: Linear Model – Assumptions of the Regression Model – Least Square Method – Multiple Regression – Curvilinear Regression – Logistic regression.

UNIT IV TECHNIQUE – II 9

Smoothing Techniques: naive, averaging and smoothing – Averaging Models: Simple Average and Moving Average – Exponential Smoothing Models; Time series analysis – Trend Analysis – Linear Trend and Nonlinear Trend – Forecasting techniques using software

UNIT V FORECAST ERROR 9

Introduction – Accuracy – Measure – Cumulative sum of Forecast Errors (CFE) – Mean Absolute Deviation (MAD) – Mean Absolute Percent Error (MAPE) – Mean Squared Error (MSE) – RMSE, Thieul U statistic - Cost of Prediction Errors – Control of Forecasts: Control Charts

TOTAL: 45 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : To explain about the techniques employed in the operations planning

CO – 2 : Identify the types of Forecasts.

CO – 3 : Understand the different types of Data Patterns.

CO – 4 : Understand about Data Pattern and Appropriate Transformations

CO – 5 : Identify the difference between qualitative and quantitative forecasting method.

TEXT BOOKS:

1. A. Reza Hoshmand, Business Forecasting – A Practical Approach, Second Edition, Routledge, Taylor & Francis, New York, 2010
2. Jae K Shim, Strategic Business Forecasting,Global Professional Publishing, 2009.

REFERENCE BOOKS:

1. Douglas C. Montgomery, Cheryl L. Jennings, Murat Kulahci, Introduction to Time Series Analysis and Forecasting, John Wiley & Sons, 2015
2. Michael Gilliland, Len Tashman, Udo Sglavo, Business Forecasting: Practical Problems and Solutions, John Wiley & Sons, 2016

WEBSITES:

1. https://www.projectmanager.com/blog/business-forecasting.
2. https://www.yourarticlelibrary.com/management/forecasting/business-forecasting/99685

WEB SOURCES:

1. https://www.investopedia.com/articles/financial-theory/11/basics-business-forcasting.asp
2. https://www.businessmanagementideas.com/business-forecasting/business-forecasting-meaning-steps-and-sources/3934.
3. https://www3.nd.edu/~busiforc/syllabus%20Spring%202005.htm
4. https://docs.oracle.com/cd/E16582_01/doc.91/e15111/und_forecast_levels_methods.htm#EOAFM00166

23EMBN20 BUSINESS STRATEGY 3 0 0 3

COURSE OBJECTIVE:

- To label the various perspectives and concepts in the field of Strategic Management.
- To achieve conceptual clarity about business strategy.
- To develop skills for applying these concepts and the solution of business problems.

UNIT I INTRODUCTION TO STRATEGIC MANAGEMENT 9

The Importance of Strategic Management - Schools of thought in Strategic Management - Strategy Content, Process and Roles -The Fit Concept and the Configurational Perspective in Strategic Management - Dimensions and Levels of Strategy

UNIT II COMPETITIVE STRATEGY 9

Five Forces that Shape Strategy - Generic Strategies - Generic Strategies and the Value Chain- Mission and business definition - Environmental Scanning- Analyzing industry and competition - internal appraisal - concepts, techniques and cases.

UNIT III CORPORATE STRATEGY 9

The Motive for Diversification - Related and Unrelated Diversification - Business Portfolio Analysis Strategy formulation- Types of strategies - Integration, intensive, diversification, and defensive strategies - strategic analysis -comparative cost analysis, operating and financial analysis.

UNIT IV STRATEGY IMPLEMENTATION 9

Structure, Systems and People - The 7S Framework Strategy Choice-criteria and process - Routes for executing strategy. Strategy implementation - Role of organizational structure, Culture and Leadership, Strategy and Social Responsibility.

UNIT V RECENT ADVANCES 9

Core Competence as the Root of Competitive Advantage - Business Processes and Capabilities-based Approach to Strategy. Strategy review, evaluation and control- Auditing - Using computers to evaluate strategies; strategy for entrepreneurial ventures and small business. Strategy for non-profit organizations.

TOTAL: 45 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Analyze the main structural features of an industry.

CO – 2 : Recognize the different stages of industry evolution.

CO – 3 : Appraise the resources and capabilities of the firm to competitive advantage.

CO – 4 : Demonstrate understanding of the concept of competitive advantage.

CO – 5 : Distinguish the two primary types of competitive advantage: cost and differentiation

TEXT BOOKS:

1. Henry and Quinn, J.B. The Strategy Process, Prentice-Hall, Harlow, 1988..
2. Ghemawat, Pankaj (Spring 2002). "Competition and Business Strategy in Historical Perspective".
3. Hill, Charles W.L., Gareth R. Jones, Strategic Management Theory: An Integrated Approach, Cengage Learning, 10th edition 2012

REFERENCE BOOKS:

1. Lamb, Robert, Boyden Competitive strategic management, Englewood Cliffs, NJ: Prentice-Hall, 1984
2. Drucker, Peter The Practice of Management, Harper and Row, New York, 1954.

WEBSITES:

1. https://www.imd.org/tbl/leadership-reflections/business-strategy.
2. https://consulterce.com/business-strategy.

WEB SOURCES:

1. https://www.feedough.com/business-strategy-definition-levels-examples.
2. https://www.forbes.com/sites/forbescoachescouncil/2018/02/12/want-a-successful-business-build-an-effective-strategy/?sh=385adfc969bf.

23EMBN21 E-COMMERCE AND DIGITAL MARKETS 3 0 0 3

COURSE OBJECTIVE:

- To understand e-commerce, types of e-commerce, retail e-commerce-commerce industry framework, electronic payment systems, electronic fund transfer, web branding strategies, mobile commerce strategies for business over web, web hosting.
- To train in regulatory aspects and implications of e-commerce in the region, as well as its technological, political, security and economic components.

UNIT I INTRODUCTION 9

Traditional commerce and E commerce – Internet and WWW – role of WWW – value chains – strategic business and Industry value chains – role of E commerce.

UNIT II INFRASTRUCTURE FOR E COMMERCE 9

Packet switched networks – TCP/IP protocol script – Internet utility programmes – SGML, HTML and XML – web client and servers – Web client/server architecture – intranet and extranets.

UNIT III WEB BASED TOOLS FOR E COMMERCE 9

Web server – performance evaluation - web server software feature sets – web server -software and tools – web protocol – search engines – intelligent agents –EC software – web hosting – cost analysis.

UNIT IV SECURITY 9

Computer security classification – copy right and Intellectual property – electronic -commerce threats – protecting client computers – electronic payment systems – electronic cash – strategies for marketing – sales and promotion – cryptography – authentication.

UNIT V INTELLIGENT AGENTS 9

Definition and capabilities – limitation of agents – security – web-based marketing – search engines and Directory registration – online advertisements – Portables and info mechanics – website design issues.

TOTAL: 45 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Demonstrate an understanding of the foundations and importance of E-commerce

CO – 2 : Demonstrate an understanding of retailing in E-commerce.

CO – 3 : By sing and determining the effectiveness of market research.

CO – 4 : Analyze the impact of E-commerce on business models and strategy.

CO – 5 : Describe Internet trading relationships including Business to Consumer.

TEXT BOOKS:

1. Gary P Schneider “Electronic commerce”, Thomson learning & James T Peny Cambridge USA, 5th edition 2001.
2. Manlyn Greenstein and Miklos “Electronic commerce” McGraw-Hill, 7th edition 2002.

REFERENCE BOOKS:

1. EfraimTurvanJ.Lee, David Kug and Chung, “Electronic commerce” Pearson Education Asia, 7th edition, 2001.
2. Brenda Kienew E commerce Business Prentice Hall, 5th edition, 2001

WEBSITES:

1. https://www.geekschip.com/blog/importance-of-digital-marketing-for-ecommerce-business.
2. https://www.wordstream.com/blog/ws/2019/09/05/ecommerce-digital-marketing.

WEB SOURCES:

1. https://blog.hubspot.com/marketing/ecommerce-marketing.
2. https://digitalmarketinginstitute.com/blog/14-digital-marketing-strategies-for-e-commerc

23EMBN22 E-BUSINESS 3 0 0 3

COURSE OBJECTIVE:

- To recognize the impact of Information and Communication technologies, especially of the Internet in business operations in the role of Management with the context of e-Business and e-Commerce.

UNIT I INTRODUCTION TO E-BUSINESS 9

Overview of E-Business; Fundamentals, E-Business framework; E-Business application; Major requirements in E-Business; Emerging trends and technologies in E-Business; From E-Commerce to E-Business.

UNIT II TECHNOLOGY INFRASTRUCTURE 9

Internet and World Wide Web, internet protocols - FTP, intranet and extranet, information publishing technology- basics of web server hardware and software.

UNIT III BUSINESS APPLICATIONS 9

Consumer oriented e-business – e-tailing and models - Marketing on web – advertising, e-mail marketing, affiliated programs - e-CRM; online services, Business oriented e-business, e-governance, EDI on the internet.

UNIT IV E-BUSINESS PAYMENTS AND SECURITY 9

E-payments - Characteristics of payment of systems, protocols, e-cash, e-cheque and Micro payment systems- internet security – cryptography – security protocols – network security.

UNIT V LEGAL AND PRIVACY ISSUES 9

Legal, Ethics and privacy issues – Protection needs and methodology – consumer protection, cyber laws, contracts and warranties, Taxation and encryption policies.

TOTAL: 45 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Recognize the impact of Information and Communication technologies

CO – 2 : Distinguish the role of Management in the context of e-Business and e-Commerce

CO – 3 : Employ tools and services of the internet in the development of a virtual e-commerce.

CO – 4 : Describe the various characteristics of electronic payment systems.

CO – 5 : Discuss various legal and ethical issues specific to E-Business.

TEXT BOOKS:

1. Harvey M.Deitel, Paul J.Deitel, Kate Steinbuhler, e-business and e-commerce for managers, Pearson, 2011
2. ParagKulkarni, SunitaJahirabadkao, PradeepChande, e business, Oxford University Press, 2012.
3. Hentry Chan &el , E-Commerce – fundamentals and Applications, Wiley India Pvt Ltd, 2007.

REFERENCE BOOKS:

1. Gary P. Schneider, Electronic commerce, Thomson course technology, Fourth annual edition, 2007
2. Bharat Bhasker, Electronic Commerce – Frame work technologies and Applications, 3rd Edition. Tata McGrawHill Publications, 2009
3. KamleshK.Bajaj and Debjani Nag, Ecommerce- the cutting edge of Business, Tata McGrawHill Publications, 7th reprint, 2009

WEB SOURCES:

1. **https://irp-cdn.multiscreensite.com/1c74f035/files/uploaded/introduction-to-e-commerce.pdf**
2. https://examupdates.in/e-commerce-book/
3. https://ebooks.lpude.in/computer_application/msc_it/term_3/DCAP306_DCAP511_E-COMMERCE_AND_E-BUSINESS.pdf
4. http://kolegjifama.eu/materialet/Biblioteka%20Elektronike/Introduction%20to%20e-Business%20Management%20and%20Strategy.pdf
5. http://www.vssut.ac.in/lecture_notes/lecture1428551057.pdf

23EMBN23 **FINTECH AND BLOCKCHAIN APPLICATIONS IN FINANCE** **3 0 0 3**

COURSE OBJECTIVE:

- To provide a broad introduction to the field of FinTech and Blockchain and its application in the field of financial sector.
- To get a thorough knowledge on topics related block chain and crypto currencies, decentralized applications, innovative wealth management markets for smart contracts, applications of blockchain technologies in various finance areas, alternative and P2P lending and crowd funding.

UNIT I INTRODUCTION 9

FinTech, Future prospects and potential issues with FinTech- Global FinTech Investments-Digital banking-Impact of digital technology on banking sector- Changes in customer buying behaviour-New age payments and remittances-Social media based remittances-Digital mortgages-Global Financial Instruments, Asset Management and Capital Markets.

UNIT II POS – P2P 9

New Generation Commerce-Point of sale evolution (POS)- m-POS business model-m-Wallets-Smart credit cards-T-commerce- Crowd funding and Crowd investing-P2P lending-Robo advising-FinTech and Global Economy-New operating models for banks-Banking as service and Open APIs-Neo banks-Challenger banks.

UNIT III BIG DATA – IOT – FINANCIAL SERVICES 9

Big data in the financial services Industry-Internet of Things (IOT) - IOT in Financial services-Innovative wealth management-Personal Finance Management-InsurTech-P2P insurance Block chained insurance-Risk associated with crypto market-Cost associated with crypto market investment-Crypto currency wallets.

UNIT IV BLOCKCHAIN 9

Blockchain-Components of Blockchain -Public and private keys-Crypto Currencies-Distributed ledgers- Impact of Blockchain in Financial Services—Applications of Blockchain in Financial Services-Clearing and Settlement- Trade Finance-Compliances-Know Your Customer-Anti Money Laundering

UNIT V CYBER CRIME – CYBER SECURITY 9

Distributed ledger for identification-Identification for Unbanked-Unique identification system in India-Using biometrics as Identification Cybercrime-Cyber security categories and players-RegTech.

TOTAL: 45 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Apply the concepts of FinTech and critically evaluate its role in financial services

CO – 2 : Apply the concept of new generation commerce and new operating models for banks

CO – 3 : Use the concepts of FinTech in wealth management, personal finance management, crowd funding and crowd investing.

CO – 4 ; Apply the concept of cryptocurrencies, risk associated with crypto market and cost involved

CO – 5 : Critically evaluate the role of FinTech in financial services and understand recent developments such Distributed ledger for identification, Identification for Unbanked-Unique identification system in India, Cybercrime, Cyber security categories.

TEXT BOOKS:

1. Blockchain Application in Finance, Peter Borovykh, Blockchain Driven, 2nd Edition, 2018
2. FinTech in a Flash, Financial Technology Made Easy, Agustin Rubini, Banking Innovations 2nd edition 2017.

REFERENCE BOOKS:

1. Inclusive FinTech: Blockchain, Cryptocurrency and ICO, David Lee Chuen and Linda Low, World Scientific Publishing, 2018

WEB SOURCES:

1. https://www.coursera.org/specializations/wharton-fintechhttps://examupdates.in/e-commerce-book/
2. https://www.coursera.org/specializations/blockchain

ELECTIVE COURSES – MANAGEMENT INFORMATION SYSTEM

23EMBN24 SAP FICO 3 0 0 3

COURSE OBJECTIVE:

- To improve the financial processes in your company thereby increasing value-addition with Latest software tools for managing financial activities in the organizations.
- To track and monitor data of different cost and profit centers situated across the globe from one single platform about methods and techniques for smooth financial accounting and controlling functions.
- To apply the Module that provides integrated functionality for the management and reporting of cost and revenue information used for internal business decision making and integrated, on-line, real-time functionality for processing, recording and maintaining the financial accounting transactions of the business for external reporting purposes.

UNIT I FICO 9

Introduction to ERP and SAP -Concept of FICO-Creation of Enterprise Structure-Chart of Accounts in SAP-General Account-Posting to GL-Creating Financial Statement-Journal Entry posting-Opening and closing posting periods. Define Field status variant-Document type and Number Ranges.

UNIT II CUSTOMER 9

Introduction to Accounts Receivable-Customer Master Data-Change Customer Master Data-Change Customer Documents-Create Customer account group-Post sales invoice-Sales returns-Post Incoming Payment- Incoming Payment- Residual Method: Incoming & Outgoing Partial Payments Posting in SAP- Partial Method: Incoming & Outgoing Partial Payments Posting in SAP.

UNIT III ACCOUNTS PAYABLE 9

Introduction to Accounts Payable- Create a Vendor Account Group- Create Vendor Master Data in SAP- post a Purchase Invoice- Purchases Returns – Credit Memo- Automatic Payment Run-Important Reports in SAP FI- Foreign Currency Revaluation- Important Tables in FI Module-Dunning. Integration of other modules

UNIT IV COST CENTER 9

Create Cost Center- internal Order- Settlement Of Internal Orders To Cost Centers- SAP Profit Center-Create, Group, Posting & Planning- Profit Center Standard Hierarchy- Assignment of Cost Centers To Profit Center- Important Tables in CO Module- Comparison Between Cost Center, Profit Center and Internal Order

UNIT V TAX AND ASSET ACCOUNTING 9

Concept of Integration of other modules-Advantages. Usage of SAP FI CO. Concept of Tax accounting and Asset accounting. Concept of cost center and profit center accounting.

TOTAL: 45 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Learn SAP – FI CO enterprise structure

CO – 2 : Understand the Financial Accounting and Global settings

CO – 3 : Know the General ledger accounting

CO – 4 : Understand asset accounting, cash journal, and closing of operations

CO – 5 : Manage a better business process towards better finance accounting.

TEXT BOOKS:

1. Andrew Okungbowa, SAP ERP FICO: Configuration and Use Management, Apress, 2011
2. Narayanan, SAP FI Financial Accounting, 2009

REFERENCE BOOKS:

1. BhushanJairamdasMamtani, SAP FICO - Black Book, dreamtech press, 2011.
2. Lakshmanan, Hariharan Subrahmanyan., Amazon Link: https://www.amazon.com/Practical-ABAP-Technical-Functional-Perspective/dp/0692429492

WEBSITES:

1. https://www.guru99.com/sap-fico-training-tutorials.html#:~:text=SAP%20FICO%20is%20the%20Finance,widely%20implemented%20modules20in20SAP.
2. https://training.sap.com/content/sap-fico-training-overview.

WEB SOURCES:

1. https://www.tutorialspoint.com/sap_fico/index.htm.
2. https://www.udemy.com/course/sap-fico-training-course.

23EMBN25 **SAP SD** **3 0 0 3**

COURSE OBJECTIVE:

- To maintain the key master data in Sales and Distribution, and name and define the required business structures.
- To work with the various documents in Sales and Distribution Describe the points of contact from Sales and Distribution to the materials management, production (for example, make-to-order) and financial accounting areas.
- To perform analyses for Sales and Distribution processes
- To integrate sales in the Sales and Distribution process chain Configure Customizing so that it represents your specific sales requirements.
- To describe the position of distribution within the supply chain.

UNIT I SD MODULE **9**

Overview of SD Module, Organizational Structure, Sales Organization Setup, Creating Sales Organization, Creating Distribution Channel, Creating Division

UNIT II SALES ORGANIZATION **9**

Assigning of Organizational Units, Assigning Sales Organization with Company code, Assigning Distribution Channel to Sales Organization, Assigning Division to Sales Organization

UNIT III MASTER DATA **9**

Creating Master Data, Introduction to Master data, Preparing the system for Master Data Creation - Creating Common Distribution Channel - Creating Common Division, Customer Master Data – Introduction, Creating Customer Master

UNIT IV SALES ORDER CREATION **9**

Sales Order Creation, Definition and Prerequisites, Preparing the system Combining Organization Units, Assigning Sales Document to Sales Area, Sales Order Creation.

UNIT V HEADER DETAILS **9**

Viewing Header Details, Viewing Item Details, Viewing Schedule Lines

TOTAL: 45 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Learn about the main business processes in sales processing

CO – 2 : Execute the most important functions in the pre sales phase to in coming payment.

CO – 3 : Creation of org structures in Sales area and its corresponding units

CO – 4 : Gain an extensive overview of the sales and distribution areas.

CO – 5 : Obtain a more detailed insight into sales and distribution functions.

TEXT BOOKS:

1. Krishna Rungta, SAP SD for beginners, 2018
2. Glynn Williams, Implementing SAP ERP Sales & Distribution, McGraw Hill Education, 2005

REFERENCE BOOKS:

1. Ashok Faujdar, BinniKumariChoudhary, SAP Sales and Distribution Certification Guide, McGraw Hill Education, 2009
2. K. A. Samad, SAP SD for Beginners Vol.1, Shroff; First edition, 2005

WEBSITES:

1. https://searchsap.techtarget.com/definition/SAP-Sales-and-Distribution-SAP-SD#:~:text=SAP%20Sales%20and%20Distribution%20(SAP%20SD)%20is%20a%20core%20functional,of%20their%20goods%20and%20services.
2. https://www.guru99.com/sap-sd-introduction.html.

WEB SOURCES:

1. https://www.tutorialspoint.com/sap_sd/index.htm
2. https://www.simplilearn.com/sap-sales-and-distribution-sap-sd-configuration-and-sap-sd-user-rar114-article

23EMBN26 **SAP MM** **3 0 0 3**

COURSE OBJECTIVE:

- To learn everything working with SAP Purchasing and Material Master, which is an integral part of Warehouse Management.
- To gain a complete understanding of SAP MM and also has acquired the ability to apply these skills and knowledge in a practical manner on inventory, production planning, and warehouse management.

UNIT I MM MODULE **9**

SAP Overview in MM module, Basics of Procurement Process, Master Data, Create, Change and Copy Material master data, Introduction to purchasing and purchase requisition, Create and Change, Create a purchase requisition, Convert Purchase requisition to purchase order.

UNIT II PURCHASE ORDER **9**

Create a RFQ- Create quotations- compare price for different Quotations- compare price for different Quotations-select or reject a Quotation-Create a Source List- Create and change Purchase Order.

UNIT III INVOICE VERIFICATION **9**

Post Goods receipt- perform Invoice Verification- Service Purchase Order- Release procedures for purchasing documents- Overview of Pricing Procedure- Define condition types.

UNIT IV INVENTORY MANAGEMENT **9**

Overview of Inventory Management- create Goods Receipt- Cancel Goods Receipt- Reservation of Inventory- Transfer Posting of Goods- Overview of Physical Inventory- Special stock and Special procurement

UNIT V MM ORGANIZATIONAL LEVELS **9**

Classification and related areas in MM, Classification, Document Release (Approval) Procedure, Batch Management ASAP, ASAP Overview, Implementation Roadmap Cross-Functional Customizing, Global Settings, MM Organizational Levels: Business Scenario, Master Data in Materials Management, Purchasing, Pricing, Inventory Management

TOTAL: 45 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Understand about ERP Packages, Functions and Objectives of materials management

CO – 2 : Understand how to create, release and send the request for quotation (RFQ).

CO – 3 : Understand the Plant, Storage Location, Purchase Organization, Purchasing group.

CO – 4 : Creation of Master Data and Source determination and list.

CO – 5 : Know about document types for purchasing documents.

TEXT BOOKS:

1. MukeshShukla, SAP Materials Management, McGraw Hill Education, 2012, 2nd Edition.

REFERENCE BOOKS:

1. Rajesh Vyas, Sap Mm: Complete Reference to Implementation / Customization, Createspace, 2010
2. Martin Murray, SAP MM: Functionality and Technical Configuration, SAP Press; 2nd Revised edition edition, 2008

WEBSITES:

1. https://searchsap.techtarget.com/definition/SAP-Materials-Management-MM#:~:text=SAP%20MM%20(Materials%20Management)%20is,inventory%20and%20warehouse%20management%20capabilities.&text=One%20of%20the%20critical%20modules,in%20a%20manufacturer's%20supply%20chain
2. https://www.guru99.com/overview-of-sap-mm-module.html

WEB SOURCES:

1. https://www.tutorialspoint.com/sap_mm/index.htm
2. https://www.udemy.com/course/sap-mm-training/

23EMBN27 **SAP HCM** **3 0 0 3**

COURSE OBJECTIVE:

- To understand the business processes of SAP HCM
- To understand and maintain employee data for an enterprise
- To implement info types for supporting transaction processing in SAP
- To implement authorizations and key elements of configuring authentications in HCM module
- To support and manage SAP HCM implementation procedure

UNIT I SAP HR OVERVIEW **9**

SAP HR –Introduction- Organization Management, Organizational Object Types, Number Ranges, Number Ranges SAP HR –Maintaining Relationships, Object Types and Essential Relationships, Relationship Maintenance. SAP HR –Time Constraints- Maintaining Personnel Actions- SAP HR – Maintaining Infotypes- Components of Infotypes- Maintaining Info Subtypes.

UNIT II PERSONNEL ADMINISTRATION **9**

SAP HR –Personnel Administration- Organization Structure- Enterprise Structure- Personnel Structure- Hiring an Employee. SAP HR –HR Master Data- HR Master Data Structure- Processing HR Master Data- Selecting HR Master Data. SAP HR –Infotypes- Creating an Infotype- Display an Infotype- Delete an Infotype. SAP HR –Personnel Actions- Building Enterprise Structure- Editing Company Code Data- Assigning a Company Code- Creating Personnel Areas- Assigning Personnel Area to Company Code. SAP HR –Changing Infotypes- Integration with Time & Payroll.

UNIT III TIME MANAGEMENT **9**

SAP HR –Time Management- Advantages of Time Management- Time Recording and Evaluation- Transaction Codes for Time Recording- SAP HR –Work schedules- Daily Work Schedules- Work Schedule Rules. SAP HR –Public Holiday Calendar. SAP HR –Attendance Absences- Shift Management in HR- Shift Planning Component- Change Shift Plans- Overtime and Breaks Schedules.

UNIT IV BENEFITS **9**

SAP HR –Benefits- Enrollment Overview- Types of Enrollment- Benefit Area- Benefit Category- Benefit Plan type- Benefit Plans.

UNIT V PAYROLL **9**

SAP HR –Payroll- Payroll Control Record- Options in Payroll Control Record- SAP HR –Basic Pay Infotypes- Pay Scale Reclassification- Pay Scale Reclassification- SAP HR –Primary & Secondary Wage types- Primary Wage Type- Dialogue Wage Type- Secondary Wage or Technical Wage Type. SAP HR –Payroll Process- Payroll Areas to Run Payroll. SAP HR –Gross Pay- Payroll Cycle & Time Management Data- Payroll Integration- SAP HR –Payroll Cycle- Payroll Areas to Run Payroll- Remuneration Statement. SAP HR –Universal Work List- Data Migration in SAP HR

TOTAL: 45 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Learn SAP HR sub-modules and its benefits and three tier.

CO – 2 : Understand system navigation and implementation road map.

CO – 3 : Understand Organizational management and structure, relationships and infotyes

CO – 4 : Create HR master date, Personnel structure assignment and HR infotypes.

CO – 5 : Understand the different types of HR info type groups.

TEXT BOOKS:

1. Ganesh Karthik S, SAP HCM - A Complete Tutorial, Packt Publishing Limited, 2014

REFERENCE BOOKS:

1. Agarwal P.K, Sap Hr India Payroll: Technical Reference and Learning Guide, Prentice Hall India Learning Private Limited (2009)
2. KARTHIK S, Sap Hcm- A Complete Tutorial : Deploy And Implement The Diverse Functionalities Of Sap, Packt Enterprise, 2014

WEBSITES:

1. https://www.sap.com/india/products/human-resources-hcm.html.
2. https://www.guru99.com/sap-hr-introduction.html.

WEB SOURCES:

1. https://www.tutorialspoint.com/sap_hr/sap_hr_introduction.htm.
2. https://www.simplilearn.com/sap-human-capital-management-hcm-rar107-article.

23EMBN28 MANAGING SOFTWARE PROJECTS 3 0 0 3

COURSE OBJECTIVE:

- To discuss the various aspects of project management.
- To understand the tasks in software project management.
- To describe the project titles in the course.
- To describe the requirements of a project plan.

UNIT I INTRODUCTION 9

Introduction to Software Project Management - Software Projects Vs.Other Projects —Contract Management and Technical Project Management — Activities under technical project management — Plans. Methods and Methodology — Stakeholders — Business Case

UNIT II SOFTWARE PROJECT PLANNING 9

Project Planning, Evaluation and Program Management - Steps in Project Planning and Project Evaluation - Strategic Assessment - Technical Assessment - Cost Benefit Analysis -Cash Flow Forecasting - Process Models - Prototyping - Dynamic Systems Development — Extreme Programming — Managing Iterative Processes

UNIT III ANALYSIS 9

Software Effort Estimation — Estimation Techniques — Expert Judgment - Analogy — Function Point Analysis — Object Points — Procedural Codes - COCOMO Model Activity Planning - Project Schedules — Sequencing and Scheduling - Network Planning — Using PERT and CPM for activity planning — Forward Pass — Backward Pass - Activity-on-arrow networks Managing

UNIT IV QUALITY CONTROL IN SOFTWARE PROJECTS 9

Contracts — Types of contracts — Stages in contract placement - Contract Management and Acceptance Software Quality Management — Defining Software Quality — Requisite ISO Standards - Product Vs. Process Quality — Enhancing Software Quality — Quality Planning

UNIT V RISK MANAGEMENT 9

Risk Management in Software Projects - Nature and Types of risk — Managing risks — Risk Analysis. Planning and Control — Strategies for risk reduction — PERT as a tool of Risk Management Resource Monitoring and Control-Creating Control Framework - Reporting for Control Visualizing Progress — Cost Monitoring — Change Control Using Project Management Software Introduction to either of Microsoft Project 2010, Prince2 and Primavera and learning to use any one of these products

TOTAL: 45 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Acquire knowledge of the issues and challenges faced in the Software project.

CO – 2 : Demonstrate the basic concepts and issues of software project management.

CO – 3 : Plan effectively the software projects.

CO – 4 : Plan and manage projects at each stage of the software development life cycle.

CO – 5 : Create project plans that address real-world management challenges.

TEXT BOOKS:

1. Pankaj Jalote, Software Project Management in Practice, Pearson Publications, 2002
2. Hughes, Cotterel, Rajib Mall, Software Project Management, 5U1 Edition, Tata McGraw Hill, 2010
3. Ali Behforooz and Frederick J. Hudson, Software Engineering Fundamentals, Oxford publications, 1996

REFERENCE BOOKS:

1. Roger Pressman. S., Software Engineering, A Practitioner's Approach, Tata McGraw Hill, New Delhi. 2005
2. Pfleeger, 'Software Engineering', Prentice Hall, III Edition, 2009
3. Carlo Ghezzi, Mehdi Jazayari, Dino Mandrioli, 'Fundamentals of Software Engineering, Prentice Hall of India, 2003

WEBSITES:

1. https://www.northeastern.edu/graduate/blog/tips-for-software-project-management.
2. https://www.wrike.com/project-management-guide/faq/what-is-software-project-management.

WEB SOURCES:

1. https://www.tutorialspoint.com/software_engineering/software_project_management.htm.
2. https://www.javatpoint.com/software-project-management

23EMBN29 DIGITAL INNOVATION AND TRANSFORMATION 3 0 0 3

COURSE OBJECTIVE:

- To identify how Digital Transformation impacts corporate strategies.
- To classify different forms of Digital Disruption
- To choose appropriate concepts and theories for developing business models
- To gauge the role information technology and the World Wide Web play in transforming business models and recognize its social and ethical implications

UNIT I DIGITAL TECHNOLOGY 9

Digital Technology Trends Transforming: Doing Business in Digital Times - Data Governance and IT Architecture Support Long-Term Performance - Data Management, Big Data Analytics & Records Management - Networks for Efficient Operations and Sustainability – Cyber Security and Risk Management

UNIT II SOCIAL TECHNOLOGY 9

Winning, Engaging, and Retaining Consumers with Technology: Attracting Buyers with Search, Semantic, and Recommendation Technology - Social Networking, Engagement and Social Metrics - Retail, E-commerce and Mobile Commerce Technology

UNIT III PERFORMANCE 9

Optimizing Performance with Enterprise Systems and Analytics: Effective and Efficient Business Functions - Strategic Technology and Enterprise Systems - Data Visualization and Geographic Information Systems

UNIT IV DIGITAL TRANSFORMATION 9

Digital Transformation: ICT and its influence on Strategy, Digital Transformation, Analyzing your business model, Re-engineering your business model

UNIT V BUSINESS MODELS 9

Digital Business Models – Mass Mobile Customization - Leveraging Crowd-sourced data and its privacy implications.

TOTAL: 45 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Understand the Digital Technology Trends.

CO – 2 : Explain the Data Governance and IT Architecture.

CO – 3 : Identify the appropriate technology.

CO – 4 : Explain the Mobile Commerce Technology.

CO – 5 : Understand the Data Visualization and Geographic Information Systems.

TEXT BOOKS:

1. Turban, E., Volonino, L. and Wood, G. (2015). Information Technology for Management: Digital Strategies for Insight, Action, and Sustainable Performance (10th edn.) Hoboken, NJ: Wiley & Sons
2. Oliver Gassmann, Karolin Frankenberger, and Michaela Csik: The Business Model Navigator. Pearson, 2014
3. Anandhi Bharadwaj, Omar A. El S, Paul A. Pavlou, and N. Venkatraman: Digital Business Strategy: Towards a next Generation of Insights, MIS Quarterly 37(2), June 2013.

REFERENCE BOOKS:

1. Clayton M. Christensen, Thomas Bartman, Derek van Bever: The Hard Truth About Business Model Innovation. MIT Sloan, Fall 2016.
2. Leandro DalleMule and Thomas H. Davenport: What's your data strategy. HBR, May-June 2017.
3. Thierry Mennesson: The Coming Consumer Data Wars. MIT Sloan, August 2017.
4. Timothy Morey, Theodore "Theo" Forbath, and Allison Schoop: Customer Data/ Designing for Transparency and Trust. HBR, May 2015

WEBSITES:

1. https://digital.hbs.edu/platform-digit.
2. https://www.jbs.cam.ac.uk/executive-education/open-programmes/innovation/digital-innovation-transformation.

WEB SOURCES:

1. https://enterprisersproject.com/what-is-digital-transformation.
2. https://www.bts.com/innovation-digital-transformation.

23EMBN30 **MODELING TECHNIQUES AND IT FOR OPERATIONS MANAGEMENT** **3 0 0 3**

COURSE OBJECTIVE:

- To sketch business requirements and technical requirements, regarding software systems that implement many functions required by modern organizations.
- To controll process executions, business processes can be performed faster, more reliably and more economically.
- To understand Process technology can also be used to model processes that are executed within software systems.

UNIT I INTRODUCTION TO BUSINESS MODELING 9

Modeling – meaning and process, Certainty and uncertainty in models, importance of understanding data before modeling, modeling with spreadsheet in simple decision situations. LINEAR PROGRAMMING: Application of LPP in operations management, Formulation of LPP, simplex method, duality, Sensitivity Analysis. Trans-shipment problems- Concept of Goal programming, Goal programming model formulation (Numerical Expected)

UNIT II DECISION TREES 9

Concept, Application of Decision Trees in operations management, (Numerical Expected) SEQUENCING PROBLEMS: Concept, Application, n jobs – 2 machines, jobs - 3 machines, n jobs – m machines. Comparison of priority sequencing rules. (Numerical Expected)

UNIT III DYNAMIC PROGRAMMING: 9

Conceptual Introduction to Dynamic programming, SIMULATION: Concept, Applications in Operations management

UNIT IV DESIGN OF EXPERIMENTS: 9

Concept and Introduction, IT IN OPERATIONS: Importance of IT in operations, IT as a competitive edge, Role of IT in – Design, Production Planning, Layout and Logistical operations.

UNIT V SOFTWARES IN OPERATIONS 9

Introduction, characteristics and key (5) features of software's for Project Scheduling, Logistics / Supply chain management and Quality management. INTRODUCTION TO ERP SYSTEMS: Review of DBMS and Transaction processing concepts - Business Processes and integration across functions. Salient features of ERP systems offered by leading vendors, prerequisites and process of implementation

TOTAL: 45 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Develop and choose business models that support a company's strategic objectives

CO – 2 : Differentiate the interdependence between financial and operational metrics.

CO – 3 : Employ a decision tree can also be used to help build automated predictive models.

CO – 4 : Analyze the decision tree can also be created by building association rules.

CO – 5 : Acquire an idea about the computational procedure of Dynamic Programming

TEXT BOOKS:

1. Quantitative Techniques in Management- N.D. Vohra – Tata- Mcgraw-Hill Publications, Jul-2006
2. Quantitative Techniques for Managerial Decisions – J.K.Sharma – Macmillan India Ltd. 2010

REFERENCE BOOKS:

1. Managerial Decisions Modeling with Spreadsheets – Bal Krishnan, Render, Stair, Jr. - Pearson Education,
2. Operations Management for Competitive Advantage – Chase, Aquilano, Jacobs, Agarwal– Tata McGraw-Hill Publications.
3. Production and Operations Management – Chary - Tata McGraw- Hill Publications

WEBSITES:

1. https://link.springer.com/chapter/10.1007/978-3-642-73318-5_9.
2. https://www.getsmarter.com/blog/career-advice/10-business-process-modelling-techniques.

WEB SOURCES:

1. https://www.pomsmeetings.org/ConfProceedings/001/Papers/PSC-04.4.pdf.
2. https://tallyfy.com/business-process-modeling-techniques.

23EMBN31 DATA MANAGEMENT AND DATA SECURITY 3 0 0 3

COURSE OBJECTIVE:

- To provide foundational knowledge of data management and governance.
- To provide the knowledge based on the security investigation.
- To describe the risk analysis for security.

UNIT I INTRODUCTION 9

Introduction to Data Warehousing Data Warehouse Architecture; SQL Server DBMS and SQL - Data Vault Modelling – Physical Data Warehouse Design – Dimensional Modeling – Master Data Management

Meta data management – Data Governance – Data quality

UNIT II DATA SECURITY INVESTIGATION 9

History, what is Information Security? Critical Characteristics of Information, NSTISSC Security Model, Components of an Information System, Securing the Components, Balancing Security and Access, The SDLC, The Security SDLC Need for Security, Business Needs, Threats, Attacks, Legal, Ethical and Professional Issues

UNIT III SECURITY ANALYSIS 9

Risk Management: Identifying and Assessing Risk, Assessing and Controlling Risk

UNIT IV LOGICAL DESIGN 9

Blueprint for Security, Information Security Policy, Standards and Practices, ISO17799/BS 7799, NIST Models, VISA International Security Model, Design of Security Architecture, Planning for Continuity

UNIT V PHYSICAL DESIGN 9

Security Technology, IDS, Scanning and Analysis Tools, Cryptography, Access Control Devices, Physical Security, Security and Personnel

TOTAL: 45 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Understand about Data management and Data Governance.

CO – 2 : Provide the knowledge based on the security investigation.

CO – 3 : Understand the business needs for security investigation.

CO – 4 : Identify the Issues such as Legal, Ethical and Professional

CO – 5 : Identify the risk for security.

TEXTBOOKS:

1. Michael E Whitman and Herbert J Mattord, “Principles of Information Security”, Vikas Publishing House, New Delhi, 2003
3. Building a Scalable Data Warehouse with DataVault2.0; ISBN- 13:9780128025109; Authors:DanLinstedt,MichaelOlschimke

REFERENCE BOOKS:

1. Micki Krause, Harold F. Tipton, “ Handbook of Information Security Management”, Vol 1-3 CRC Press LLC, 2004.
2. Stuart McClure, Joel Scrambray, George Kurtz, “Hacking Exposed”, Tata McGraw- Hill, 2003
3. Matt Bishop, “ Computer Security Art and Science”, Pearson/PHI, 2002

WEBSITES:

1. https://www.ibm.com/topics/data-security.
2. https://www.forcepoint.com/cyber-edu/data-security.

WEB SOURCES:

1. https://www.varonis.com/blog/data-security.
2. https://www.looker.com/definitions/data-security.

23EMBN32 CLOUD COMPUTING 3 0 0 3

COURSE OBJECTIVE:

- To provide foundational knowledge associated with the Cloud Computing.
- To provide the knowledge based on the development of Cloud Service.
- To describe the applications of Cloud Computing.
- To describe the applications of Collaborating using Cloud Service.
- To describe the applications of Collaborating using online.

UNIT I UNDERSTANDING CLOUD COMPUTING 9

Cloud Computing – History of Cloud Computing – Cloud Architecture – Cloud Storage – Why Cloud Computing Matters – Advantages of Cloud Computing – Disadvantages of Cloud Computing – Companies in the Cloud Today – Cloud Services

UNIT II DEVELOPING CLOUD SERVICES 9

Web-Based Application – Pros and Cons of Cloud Service Development – Types of Cloud Service Development – Software as a Service – Platform as a Service – Web Services – On-Demand Computing – Discovering Cloud Services Development Services and Tools – Amazon Ec2 – Google App Engine – IBM Clouds

UNIT III CLOUD COMPUTING FOR EVERYONE 9

Centralizing Email Communications – Collaborating on Schedules – Collaborating on To-Do Lists – Collaborating Contact Lists – Cloud Computing for the Community – Collaborating on Group Projects and Events – Cloud Computing for the Corporation

UNIT IV USING CLOUD SERVICES 9

Collaborating on Calendars, Schedules and Task Management – Exploring Online Scheduling Applications – Exploring Online Planning and Task Management – Collaborating on Event Management – Collaborating on Contact Management – Collaborating on Project Management – Collaborating on Word Processing - Collaborating on Databases – Storing and Sharing Files

UNIT V OTHER WAYS TO COLLABORATE ONLINE 9

Collaborating via Web-Based Communication Tools – Evaluating Web Mail Services – Evaluating Web Conference Tools – Collaborating via Social Networks and Groupware – Collaborating via Blogs and Wikis

TOTAL: 45 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Recognize on the fundamental concepts of Cloud Computing.

CO – 2 : Understand the Cloud Architecture and Storage.

CO – 3 : Recognize on the fundamental concepts of Cloud Services.

CO – 4 : Identify the development of Cloud Service.

CO – 5 : Identify the applications of Cloud Computing.

TEXT BOOKS:

1. Michael Miller, Cloud Computing: Web-Based Applications That Change the Way You Work and Collaborate Online,Que Publishing, August 2008.

REFERENCE BOOKS:

1. Haley Beard, Cloud Computing Best Practices for Managing and Measuring Processes for On-demand Computing, Applications and Data Centers in the Cloud with SLAs, Emereo Pty Limited, July 2008.

WEBSITES:

1. https://www.ibm.com/in-en/cloud/databases?p1=Search&p4=43700052658066598&p5=e&gclid=Cj0KCQjw5PGFBhC2ARIsAIFIMNdOgYmZXB2Nzy9nYDEqiQX27EIOsx8_dEkdKV1MmkOKPN3CFycgvHUaAjasEALw_wcB&gclsrc=aw.ds.
2. https://azure.microsoft.com/en-in/overview/what-is-cloud-computing.

WEB SOURCES:

1. https://www.tutorialspoint.com/cloud_computing/cloud_computing_overview.htm.
2. https://aws.amazon.com/what-is-cloud-computing.

23EMBN33 IT CONSULTING 3 0 0 3

COURSE OBJECTIVE:

- To initially overview the consulting profession with a subsequent emphasis on organization consulting issues.
- To enable the students on developing proficiencies in a range of skills required to practice consulting.
- To provide you with an overview the 'world' of general management IT consulting and to help you develop a basic understanding of that world and the skills and knowledge to be successful in it.

UNIT I THE PRODUCT AND THE PROCESS 9

An overview of system engineering - analysis concepts and principles - analysis modeling - design concepts and principles - design methods - design for real time systems.

UNIT II SOFTWARE LIFE CYCLE MODELS 9

Software requirement - software design - configuration management.

UNIT III SOFTWARE METRICS 9

Software process and project metrics - technical metrics for software. Project planning and management: Project management concepts - project scheduling and tracking - software project planning.

UNIT IV RISK MANAGEMENT, QUALITY ASSURANCE 9

Quality verification and valuation - testing.

UNIT V OBJECT ORIENTED CONCEPTS 9

Formal Methods - Software reengineering and software tools.

TOTAL: 45 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Develop a basic understanding of the need and demand for IT

CO – 2 : Explore some of the ethical and legal issues associated with IT consulting.

CO – 3 : Develop an understanding of how consultants explore the projects.

CO – 4 : Develop knowledge of the economics of management consulting.

CO – 5 : Develop knowledge of how to develop work plans, identify scope issues.

TEXT BOOKS:

1. Roger S.Pressman: Software Engineering – A Practitioner's Approach – Tata Mc Graw Hill – IV edition.
2. Kieron Conway, Software Project Management: From concept to deployment, Wiley Dreamtech Press

REFERENCE BOOKS:

1. Sommerville, Ian: Software Engineering, Addison Wesley
2. S.A.Kelkar, Software Project Management, PHI
3. Carlo Ghezzi, Mehdi Jazayeri, Dino Mandrioli – Fundamentals of Software Engineering – PHI

WEBSITES:

1. https://www.accenture.com/nl-en/service-products-technology-consulting.
2. https://www.scnsoft.com/services/it-consulting.

WEB SOURCES:

1. https://www.techopedia.com/definition/628/information-technology-consultant-it-consultant.
2. https://www.vault.com/industries-professions/industries/information-technology-consulting.

ELECTIVE COURSES – ENTREPRENEURSHIP

23EMBN34 ENVIRONMENTAL STUDIES 3 0 0 3

COURSE OBJECTIVE:

- To enable the students, acquire knowledge of Environmental studies and their use, structure and function of an ecosystem, threats, biodiversity, solid waste management, population explosion, disaster management, value management.

UNIT I MULTIDISCIPLINARY NATURE 9

Definition, scope and importance, Need for public awareness. Natural Resources: Renewable and non-renewable resources: Natural resources and associated problems. Role of an individual in conservation of natural resources, equitable use of resources for sustainable lifestyles.

UNIT II ECOSYSTEMS 9

Concept of an ecosystem, Structure and function of an ecosystem, Producers, consumers and decomposers, Energy flow in the ecosystem, Ecological succession, Food chains, food webs and ecological pyramids

UNIT III BIODIVERSITY AND ITS CONSERVATION 9

Introduction – Definition: genetic, species and ecosystem diversity, Biogeographically classification of India, Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values, Biodiversity at global, National and local levels. Hot-sports of biodiversity. Threats biodiversity: habitat loss, poaching of wildlife, man-wildlife conflicts. Endangered and endemic species of India. Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity

UNIT IV ENVIRONMENTAL POLLUTION 9

Definition, Cause, effects and control measures of several pollutions, Solid waste Management: Causes, effects and control measures of urban and industrial wastes. Role of an individual in prevention of pollution. Pollution case studies. Disaster management: floods, earthquake, cyclone and landslides

UNIT V HUMAN POPULATION AND THE ENVIRONMENT 9

Population growth, variation among nations. Population explosion – Family Welfare Programme. Environment and human health, Human Rights. Value Education. HIV/AIDS. Women and Child Welfare. Role of Information Technology in Environment and human health. Case Studies

TOTAL: 45 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Analyze the renewable and non-renewable sources.

CO – 2 : Evaluate strategies, technologies, and methods for sustainable of environmental systems.

CO – 3 : Demonstrate an awareness, knowledge, and appreciation of ecological processes.

CO – 4 : Determine a general explaining of the disaster management.

CO – 5 : Analyze the role of Information Technology in Environment.

TEXT BOOKS:

1. Mahua Basu and Xavier Savarimuthu SJ, Fundamentals of Environmental Studies, 8 Nov 2017
2. Gowri Suresh, Tata McGraw- A Textbook of Environmental Studies-Hill Education,2012

REFERENCE BOOKS:

1. Joni Adamson , William A. Gleason , David N. Pellow, Keywords for Environmental Studies Paperback – February 26, 2016.
2. Gowri Suresh, Environmental Studies and Ethics-K. International, 2010.
3. Chary, Environmental Studies, Macmillan, 2008.

WEB SOURCES:

1. **https://www.ugc.ac.in/oldpdf/modelcurriculum/env.pdf**
2. https://www.hzu.edu.in/bed/E%20V%20S.pdf
3. https://www.smartzworld.com/notes/environmental-studies-pdf-notes-es-pdf-notes/
4. https://btechgeeks.com/environmental-studies-notes/

23EMBN35 INDIAN ETHOS AND BUSINESS ETHICS 3 0 0 3

COURSE OBJECTIVE:

- To create a mindset of value system among the students.
- To understand the concept of transformation from existing state to higher state.
- To understand the enterprise skills such as experience intuition and wisdom.
- To identify the strategies to tackle the problem when it comes to directing human resources

UNIT I INTRODUCTION 9

Business Ethics: Introduction, Business Ethics and Management, Business Ethics and Moral Obligations; Corporate Social Responsibility; Corporate Governance; Report of the Kumar Mangalam Birla Committee on Corporate Governance; Role of Media in Ensuring Corporate Governance; Environmental Concerns and Corporations.

UNIT II ETHOS & VALUES IN MODERN MANAGEMENT 9

Ethical Issues related with Advertisement and Marketing; Secular versus Spiritual Values in Management, Work Ethics, Stress at Workplace

UNIT III PROCESS OF ETHICAL DECISION-MAKING 9

Approaches: Consequentialist theories, Deontological theories, and Virtue ethics approach ñ Process of ethical decision-making in business ñ Individual differences and ethical judgement - Cognitive barriers to a good ethical judgement and Whistle Blowing.

UNIT IV ETHICS MANAGEMENT 9

Role of organizational culture in ethics ñ Structure of ethics management: Ethics Committee, Ethics Officers, and the CEO ñ Communicating ethics: Communication Principles, Channels, Training programmes, and evaluation ñ Ethical Audit ñ Corporate Governance and ethical responsibility ñ Transparency International and other ethical bodies

UNIT V HOLISTIC MANAGEMENT SYSTEM 9

A Holistic Management System; Management in Indian Perspective; Basic principles of Indian Ethos for Management Mental entity, enriching sentiment, perception, mind and will power by life balancing techniques, Social entity, building quality communication with others by the techniques of professional and working development and social integrity.

TOTAL: 45 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Analyze the ‘Qualitative sincerity’ which is considered as the guiding motto.

CO – 2 : Understand the individual development as the most relevant work-philosophy.

CO – 3 : Compare and contrast power and influence of leadership.

CO – 4 : Demonstrate the dynamics of organizational change.

CO – 5 : Identify the major issues in business ethics and corporate social responsibility.

TEXT BOOKS:

1. S.A. Sherlekar, Ethics in Management, Himalaya Publishing House, 2009.
2. William B. Werther and David B. Chandler, Strategic corporate social responsibility, Sage Publications Inc., 2011
3. Robert A.G. Monks and Nell Minnow, Corporate governance, John Wiley and Sons, 2011

REFERENCE BOOKS:

1. W.H. Shaw, Business Ethics, Cen gage Learning, 2007.
2. Beeslory, Michel and Evens, Corporate Social Responsibility, Taylor and Francis, 1978.
3. Philip Kotler and Nancy Lee, Corporate social responsibility: doing the most good for company and your cause, Wiley, 2005.
4. Subhabrata Bobby Banerjee, Corporate social responsibility: the good, the bad and the ugly, Edward Elgar Publishing, 2007.

WEB SOURCES:

1. **https://fdocuments.in/document/indian-ethos-and-business-ethics.html**
2. https://www.scribd.com/document/272451856/Indian-Ethos-and-Business-Ethics
3. https://gurukpo.com/Content/MBA/Business_Ethics_and_Ethos.pdf
4. https://ddceutkal.ac.in/Syllabus/BECG-MBA.pdf

23EMBN36 ETHICAL AND LEGAL ASPECTS OF ANALYTICS 3 0 0 3

COURSE OBJECTIVE:

- To create the knowledge of Legal perspective and its practices to improvise the business.
- To describe the nature and classes of contracts.
- To identify the elements needed to create a contract.
- To read, interpret contracts, and cases.
- To identify personal property and bailment.

UNIT I LAW OF CONTRACTS 9

Definition of Contract and Agreement – Classification of Contracts, Essential elements of a valid Contract – Offer -Acceptance -Consideration –Capacity to Contract -Free consent – Legality of Object -Performance of Contract -Remedies for breach of Contract - Quasi Contracts.

UNIT II SALE OF GOODS ACT 9

Distinction between Sale and agreement to sell -Conditions and Warranties. Negotiable Instruments Act – Definition and Characteristics of a Negotiable Instrument – Definitions, Essential elements and distinctions between Promissory Note, Bill of Exchange, and Cheques - Types of crossing.

UNIT III COMPANIES ACT 9

Definition of company – Characteristics -Classification of Companies-Formation of Company - Memorandum and Articles of Association – Prospectus - Share holders meetings -Board meetings - Law relating to meetings and proceedings-Qualifications, Appointment, Powers, and legal position of Directors -Board -M.D and Chairman - Their powers.

UNIT IV INTRODUCTION 9

Why human beings are ethical, why they are not? Moral development in humans, theories, concepts . Definitions, theories of ethics and ethics projects. A Decision Making Model: Ethics as Making decisions and choices. Decision – making frameworks

UNIT V CONFLICTS AND ETHICAL DILEMMAS 9

Moral & ethical dilemmas. Ethics and Business: A sense of business ethics. Ethics and International Business: Ethics Issues beyond borders

TOTAL: 45 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Create the knowledge of ethics legal perspective and its practices.

CO – 2 : Understand basics elements of contracts, classifications of contract.

CO – 3 : Figure out the differentiate Sale and agreement to sell -conditions and warranties

CO – 4 : Comprehend of companies act which will helpful for the budding mangers

CO – 5 : Know about the different type of negotiable instrument in practice

TEXT BOOKS:

1. N.D. Kapoor, 1999, 'Elements of Mercantile Law' , Sultan Chand & Co.
2. AkhileshwarPathak, 2007, Legal Aspects of Business, 3rd Edition, Tata McGraw Hill.
3. V.K. Agarwal, 1988, 'Consumer Protection in India ', Deep and Deep Publications.
4. K.R. Bulchandani, 2006, Business Law for Management, Himalaya Publishing House

REFERENCE BOOKS:

1. Dr. Avtar Singh, 1999, 'Companies Act', Eastern Book Company.
2. PPS Gogna, 2006, A Text Book of Company Law, S. Chand.
3. V. Ramakrishna Raju, 2005, Business Laws and Economic Legislations, Himalaya Publishing House.
4. S.N. Maheswari and S. K. Maheswari, 2006, Business Laws, Himalaya Publishing House.

WEBSITES:

1. https://datascience.foundation/datatalk/ethics-in-business-analytics.
2. https://digital.fundacionceibal.edu.uy/jspui/bitstream/123456789/282/1/Legal-Risk-and-Ethical-Aspects-of-Analytics-in-Higher-Education-Vol1-No6.pdf.

WEB SOURCES:

1. https://www.law.com/2018/03/22/the-ethics-of-legal-analytics/?slreturn=20210507030635.
2. http://www.informationpolicycentre.com/uploads/5/7/1/0/57104281/data_protection_law_and_the_ethical_use_of_analytics_paul_schwartzwhite_paper_2010_.pdf

23EMBN37 E-GOVERNANCE & CYBER LAW 3 0 0 3

COURSE OBJECTIVE:

- To introduce the cyber world and cyber law in general
- To explain about the various facets of cyber crimes
- To enhance the understanding of problems arising out of online transactions and provoke them to find solutions
- To clarify the Intellectual Property issues in the cyber space and the growth and development of the law in this regard.
- To educate about the regulation of cyber space at national and international level.

UNIT I INTRODUCTION 9

Introduction, Computers and its Impact in Society, Overview of Computer and Web Technology, Need for Cyber Law, Cyber Jurisprudence at International and Indian Level

UNIT II E-GOVERNANCE 9

Introduction to e-governance, techniques, e-governance in India, Challenges faced, Indian theory of Public administration

UNIT III CYBER LAW 9

Cyber Law - International Perspectives, UN & International Telecommunication Union (ITU) Initiatives, Council of Europe - Budapest Convention on Cybercrime, Asia-Pacific Economic Cooperation (APEC), Organization for Economic Co-operation and Development (OECD), World Bank, Commonwealth of Nations

UNIT IV CYBER CRIME 9

Cyber Crimes & Legal Framework, Cyber Crimes against Individuals, Institution and State, Hacking, Digital Forgery, Cyber Stalking/Harassment, Cyber Pornography, Identity Theft & Fraud, Cyber terrorism, Cyber Defamation, Different offences under IT Act, 2000

UNIT V DISPUTE AND INTERNATIONAL ISSUES 9

Dispute Resolution in Cyberspace - Concept of Jurisdiction - Indian Context of Jurisdiction and IT Act, 2000. - International Law and Jurisdictional Issues in Cyberspace. - Dispute Resolutions

TOTAL: 45 HOURS

COURSE OUTCOMES:

At the end of the course, the students will be able to:

CO – 1 : Facilitate understand & critical understanding about Cybercrimes.

CO – 2 : Explore of the legal and policy developments in various countries for cyber space

CO – 3 : Provide in-depth knowledge of Information Technology Act, 2000

CO – 4 : Describe e-Governance, Electronic Contracts, e-Banking & Secure electronic records

CO – 5 : Share knowledge of the regulation of cyber space at national and international level

TEXT BOOKS:

1. S. R. Bhansali, Information Technology Act, 2000, University Book House Pvt. Ltd., Jaipur (2009)
2. Vasu Deva, Cyber Crimes and Law Enforcement, Commonwealth Publishers, New Delhi, (2010).

REFERENCE BOOKS:

1. SudhirNaib, The Information Technology Act, 2005: A Handbook, OUP, New York, (2011)
2. Verma S, K, Mittal Raman, Legal Dimensions of Cyber Space, Indian Law Institute, New Delhi, (2014)

WEBSITES:

1. http://www.jiwaji.edu/pdf/ecourse/law/Electronic%20governance.pdf.
2. https://www.karnikaseth.com/electronic-governance-under-information-technology-act2000.html.

WEB SOURCES:

1. https://www.vedantu.com/commerce/cyber-laws-electronic-record-and-e-governance.
2. https://www.researchgate.net/publication/332538922_ROLE_OF_CYBER_LAW_IN_ELECTRONIC_GOVERNANCE_OF_INDIA.

23PMBN31 PREDICTIVE MODELING USING IBM SPSS MODELER (IBM) 0 0 2 1

- Prepare Data for Modeling
- Data Reduction: Principal Components
- Decision Trees / Rule Induction
- Neural Networks Support
- Vector Machines
- Linear Regression
- Cox Regression for Survival
- Data Time Series Analysis
- Logistic Regression
- Discriminant Analysis
- Bayesian Networks
- Finding the Best Model for Categorical Targets
- Finding the Best Model for Continuous Targets
- Getting the most from Models
- Introduction to Data Preparation

COURSE OUTCOMES:

CO – 1 : Understand the different types of Predictive Models

CO – 2 : Use Regression for prediction skills

CO – 3 : Use Time Series Analysis for prediction

CO – 4 : Create a Bayes Network Model.

CO – 5 : Demonstrate data using Decision Trees

23PMBN32 FUNDAMENTALS OF SCALA AND SPARK (IBM) 0 0 2 1

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Introduction to Scala

- Explain the use and advantages of Scala Programming
- Explain types of variables in Scala, Functions, Flow Control Statements.
- Implement programs to experience hands on.

Introduction to Spark

- Understand the need and use of Spark.
- Explain the Spark Unified Stack.
- Explain the Spark Runtime Architecture

Spark Fundamentals

- Explain Resilient Distributed Datasets (RDD).
- Understand the Transformations and Actions on RDDs.
- Understand and explain the need and use of Spark Libraries.
- Implement programs to experience hands on.

COURSE OUTCOMES:

CO – 1 : Introduction and use of Scala and Spark

CO – 2 : Understand and Explain the Spark Unified Stack

CO – 3 : Understand the Spark Runtime Architecture

CO – 4 : Understanding Resilient Distributed Datasets (RDD).

CO – 5 : Implement Transformations and Actions on RDDs

23PMBN33 PRACTICAL MOOC II 0 0 2 1

The objective of this course is to take the best teaching learning resources to all to create a levelled platform. To make use of the Indian massive online to the aspiring youth of India

- The students will select a MOOC course from the Swayam platform.
- They will spend 2 hours per week undergoing this practical MOOC course under the guidance of a faculty.
- Every course will have a minimum of 8 to a maximum of 12 assignments depending on the duration of the course.
- Assignments will be submitted as per the requirements of the course.
- The marks scored in the assignments will be taken for internal assessment marks.
- The students will appear for a final practical exam conducted by VISTAS.

COURSE OUTCOMES:

CO – 1 : Understand the latest developments in the field of study

CO – 2 : Explain the students with latest information about the field of study

CO – 3 : Apply the skills in the business world

CO – 4 : List the various skills gained through this course

CO – 5 : Summarize the concepts for application

SEMESTER IV

23CMBN41 UNIVERSAL HUMAN VALUES 3 0 0 3

COURSE OBJECTIVES:

- To help students distinguish between values and skills, and understand the need, basic guidelines, content and process of value education.
- To help students initiate a process of dialog within themselves to know what they 'really want to be' in their life and profession
- To help students understand the meaning of happiness and prosperity for a human being.
- To facilitate the students to understand harmony at all the levels of human living, and live accordingly.
- To facilitate the students in applying the understanding of harmony in existence in their profession and lead an ethical life

UNIT I

Understanding the need, basic guidelines, content and process for Value Education, Self-Exploration–what is it? - its content and process; 'Natural Acceptance' and Experiential Validation- as the mechanism for self-exploration, Continuous Happiness and Prosperity- A look at basic Human Aspirations, Right understanding, Relationship and Physical Facilities- the basic requirements for fulfilment of aspirations of every human being with their correct priority, Understanding Happiness and Prosperity correctly- A critical appraisal of the current scenario, Method to fulfil the above human aspirations: understanding and living in harmony at various levels.

UNIT II

Understanding human being as a co-existence of the sentient 'I' and the material 'Body', Understanding the needs of Self ('I') and 'Body' - Sukh and Suvidha, Understanding the Body as an instrument of 'I' (I being the doer, seer and enjoyer), Understanding the characteristics and activities of 'I' and harmony in 'I', Understanding the harmony of I with the Body: Sanyam and Swasthya; correct appraisal of Physical needs, meaning of Prosperity in detail, Programs to ensure Sanyam and Swasthya.

UNIT III

Understanding harmony in the Family- the basic unit of human interaction, Understanding values in human-human relationship; meaning of Nyaya and program for its fulfilment to ensure Ubhay-tripti; Trust (Vishwas) and Respect (Samman) as the foundational values of relationship,

Understanding the meaning of Vishwas; Difference between intention and competence, Understanding the meaning of Samman, Difference between respect and differentiation; the other salient values in relationship, Understanding the harmony in the society (society being an extension of family): Samadhan, Samridhi, Abhay, Sah-astitva as comprehensive Human Goals, Visualizing a universal harmonious order in society Undivided Society (AkhandSamaj), Universal Order (SarvabhaumVyawastha) - from family to world family!.

UNIT IV

Understanding the harmony in the Nature, Interconnectedness and mutual fulfilment among the four orders of nature- recyclability and self-regulation in nature, Understanding Existence as Co-existence (Sah-astitva) of mutually interacting units in all-pervasive space, Holistic perception of harmony at all levels of existence.

UNIT V

Implications of the above Holistic Understanding of Harmony on Professional Ethics Natural acceptance of human values, Definitiveness of Ethical Human Conduct, Basis for Humanistic Education, Humanistic Constitution and Humanistic Universal Order. Competence in Professional Ethics:

TOTAL HRS = 45

COURSE OUTCOME:

CO – 1: Understand the significance of value inputs in a classroom, distinguish between values and skills, understand the need, basic guidelines, content and process of value education, explore the meaning of happiness and prosperity and do a correct appraisal of the current scenario in the society

CO – 2: Differentiate between the Self and the Body, understand the meaning of Harmony in the Self the Coexistence of Self and Body.

CO – 3: Evaluate the value of harmonious relationship based on trust, respect and other naturally acceptable feelings in human-human relationships and explore their role in ensuring a harmonious society

CO – 4: Reflect the harmony in nature and existence, and work out their mutually fulfilling participation in nature.

CO – 5: Distinguish between ethical and unethical practices, and start working out the strategy to actualize a harmonious environment wherever they work.

TEXT BOOKS:

1. R R Gaur, R Sangal, G P Bagaria, 2009, A Foundation Course in Human Values and Professional Ethics.
2. Ivan Illich, 1974, Energy & Equity, The Trinity Press, Worcester, and Harper Collins, USA.
3. E.F. Schumacher, 1973, Small is Beautiful: a study of economics as if people mattered, Blond & Briggs, Britain.

REFERENCE BOOKS:

1. Sussan George, 1976, How the Other Half Dies, Penguin Press. Reprinted 1986, 1991.
2. Donella H. Meadows, Dennis L. Meadows, Jorgen Randers, William W. Behrens III, 1972, Limits to Growth-Club of Rome's report, Universe Books.
3. A Nagraj, 1998, Jeevan Vidya Ek Parichay, Divya Path Sansthan, Amarkantak.
4. P L Dhar, RR Gaur, 1990, Science and Humanism, Common wealth Publishers.
5. A N Tripathy, 2003, Human Values, New Age International Publishers.
6. Subhas Palekar, 2000, How to practice Natural Farming, Pracheen (Vaidik) KrishiTantra Shodh, Amravati.
7. E G Seebauer & Robert L. Berry, 2000, Fundamentals of Ethics for Scientists & Engineers, Oxford University Press.
8. M Govindrajran, S Natrajan & V.S. Senthil Kumar, Engineering Ethics (including Human Values), Eastern Economy Edition, Prentice Hall of India Ltd.
9. B P Banerjee, 2005, Foundations of Ethics and Management, Excel Books.
10. B L Bajpai, 2004, Indian Ethos and Modern Management, New Royal Book Co., Lucknow. Reprinted 2008.

WEB SOURCES:

1. https://lecturenotes.in/notes/27764-note-for-human-values-and-professional-ethics-2-hvpe-2-by-indrajeet-verma

WEBSITES:

1. https://nptel.ac.in/courses/109/104/109104068/

23RMBN41 PROJECT 0 0 20 10

PROJECT OBJECTIVES

- Its aim is to demonstrate the skills and knowledge that students have acquired in their studies.
- The Aim of the final year project is to develop student's knowledge for solving societal problem.
- It enables students to develop problem solving, analysis, synthesis and evaluation skills.

PROJECT OUTCOMES:

At the end of the project, the students will be able to:

CO – 1 : Create and develop deep understanding of the interaction.

CO – 2 : Analyze and solve problems on an executive level and demonstrating critical.

CO – 3 : Design the general (core) management skills in the chosen area of specialization.

CO – 4 : Design strategies to solve business problems and pursue opportunities.

CO – 5 : Interpret a variety of ways to engage in experiential learning.

23PMBN41 **TEXT ANALYTICS (IBM)** **0 0 2 1**

- Introduction to text mining
- An overview of text mining
- Reading text data
- Linguistic analysis and text mining
- Creating a text mining concept model
- Reviewing types and concepts in the Interactive Workbench
- Editing linguistic resources
- Fine-tuning resources
- Performing Text Link Analysis
- Clustering concepts
- Categorization techniques
- Creating categories
- Managing linguistic resources
- Using text mining models
- The process of text mining

COURSE OUTCOMES:

CO – 1 : Understand text mining concepts & skills related SPSS nodes

CO – 2 : Use File list node in Text mining

CO – 3 : Use text mining Concept and Category model nuggets

CO – 4 : Explore Text link Analysis skills.

CO – 5 : Analyse Clusters