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| M.B.A.  **Business Analytics** |
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| **SYLLABUS** |
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| **from the academic year**  **2023 - 2024** |
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| **TAMILNADU STATE COUNCIL FOR HIGHER EDUCATION, CHENNAI – 600 005** |

**MBA – BUSINESS ANALYTICS**

**(FULL TIME)**

**Choice Based Credit System**

# Program Educational Outcomes;

# PEO 1 – Employability: To develop students with industry specific knowledge & skills to meet the industry requirements and also join Public sector undertaking through competitive examinations.

# PEO 2 - Entrepreneur: To create effective business service owners, with a growth mindset by enhancing their critical thinking, problem solving and decision-making skills.

# PEO3 – Research and Development: To instill and grow a mindset that focusses efforts towards inculcating and encouraging the students in the field research and development.

# PEO 4 – Contribution to Business World: To produce ethical and innovative business professionals to enhance growth of the business world.

# PEO 5 – Contribution to the Society: To work and contribute towards holistic development of society by producing competent MBA professionals.

# Program Outcomes:

**PO1: Problem Solving Skill:** Application of tools & techniques relevant to management theories and practices in analyzing & solving business problems.

**PO2: Decision Making Skill:** Fostering analytical and critical thinking abilities for data-based decision making.

**PO3: Ethical Value:** Ability to develop value based leadership attributes.

**PO4: Communication Skill:** Ability to understand, analyze and effectively communicate global, economic, legal and ethical aspects of business.

**PO5: Individual and Team Leadership Skill:** Ability to be self-motivated in leading & driving a team towards achievement of organizational goals and contributing effectively to establish industrial harmony.

**PO6: Employability Skill:** Foster and enhance employability skills through relevant industry subject knowledge.

**PO7: Entrepreneurial Skill:** Equipped with skills and competencies to become a global entrepreneur.

**PO8: Contribution to Society:** Strive towards becoming a global influencer and motivating future generation towards building a legacy that contributes to overall growth of humankind.

# PEO – PO MAPPING

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | PO 1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 |
| PEO 1 | Y | Y | Y | Y | Y | Y | Y | Y |
| PEO 2 | Y | Y | Y | Y | Y |  | Y | Y |
| PEO3 | Y | Y | Y | Y | Y | Y |  | y |
| PEO 4 | Y | Y | Y | Y | Y | Y | Y | Y |
| PEO 5 | Y | Y | Y | Y | Y | Y | Y | Y |

# Y - Yes

# FIRST SEMESTER

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Subject Code** | **Subject Name** | **Category** | **L** | **T** | **P** | **O** | **Credits** | **Inst. Hours** | **Marks** | | |
| **CIA** | **External** | **Total** |
|  | Management Principles and Business Ethics | Core | 4 | - | - | - | 4 | 60 | 25 | 75 | 100 |
|  | Quantitative Techniques and Research Methods in Business | Core | 3 | 1 | - | - | 4 | 60 | 25 | 75 | 100 |
|  | Managing Organizational Behaviour | Core | 4 | - | - | - | 4 | 60 | 25 | 75 | 100 |
|  | Accounting for Managers | Core | 3 | 1 | - | - | 4 | 60 | 25 | 75 | 100 |
|  | Managerial Economics | Core | 4 | - | - | - | 4 | 60 | 25 | 75 | 100 |
|  | Legal Systems in Business | Core | 4 | - | - | - | 4 | 60 | 25 | 75 | 100 |
|  | Entrepreneurship Development | Extra Disciplinary | 3 | - | - | - | 3 | 45 | 25 | 75 | 100 |
|  | Soft Skills I – Executive Communication | Soft Skills | - | - | 2 | - | 2 | 30 | 25 | 75 | 100 |

# SECOND SEMESTER

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Subject Code** | **Subject Name** | **Category** | **L** | **T** | **P** | **O** | **Credits** | **Inst. Hours** | **Marks** | | |
| **CIA** | **External** | **Total** |
|  | Applied Operations Research | Core | 3 | 1 | - | - | 4 | 60 | 25 | 75 | 100 |
|  | Human Resource Management | Core | 4 | - | - | - | 4 | 60 | 25 | 75 | 100 |
|  | Marketing Management | Core | 4 | - | - | - | 4 | 60 | 25 | 75 | 100 |
|  | Operations Management | Core | 3 | 1 | - | - | 4 | 60 | 25 | 75 | 100 |
|  | Financial Management | Core | 3 | 1 | - | - | 4 | 60 | 25 | 75 | 100 |
|  | Strategic Management | Core | 4 | - | - | - | 4 | 60 | 25 | 75 | 100 |
|  | International Business | Extra Disciplinary | 3 | - | - | - | 3 | 45 | 25 | 75 | 100 |
|  | Soft Skills II – Business Etiquette | Soft Skills | - | - | 2 | - | 2 | 30 | 25 | 75 | 100 |
|  | Soft Skills III – Computing Skills | Soft Skills | - | - | 2 | - | 2 | 30 | 25 | 75 | 100 |

# THIRD SEMESTER

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Subject Code** | **Subject Name** | **Category** | **L** | **T** | **P** | **O** | **Credits** | **Inst. Hours** | **Marks** | | |
| **CIA** | **External** | **Total** |
|  | Information Systems for Business | Core | 4 | - | - | - | 4 | 60 | 25 | 75 | 100 |
|  | \*\*Choose any one from the list | Elective | 3 | - | - | - | 3 | 45 | 25 | 75 | 100 |
|  | \*\*Choose any one from the list | Elective | 3 | - | - | - | 3 | 45 | 25 | 75 | 100 |
|  | \*\*Choose any one from the list | Elective | 3 | - | - | - | 3 | 45 | 25 | 75 | 100 |
|  | \*\*Choose any one from the list | Elective | 3 | - | - | - | 3 | 45 | 25 | 75 | 100 |
|  | \*\*Choose any one from the list | Elective | 3 | - | - | - | 3 | 45 | 25 | 75 | 100 |
|  | \*\*Choose any one from the list | Elective | 3 | - | - | - | 3 | 45 | 25 | 75 | 100 |
|  | Employability skills | Extra Disciplinary | 3 | - | - | - | 3 | 45 | 25 | 75 | 100 |
|  | Soft Skills IV – Leadership and Team Building Skills | Soft Skills | - | - | 2 | - | 2 | 30 | 25 | 75 | 100 |
|  | \*\*\*Summer Internship | Internship | - | - | - | 1 | 3 | - | 100 | - | 100 |

**\*\* Students should choose six elective Course from the specialization list in consultation with the Head of the Institution.**

**For the categorization of specialization students can either opt for either single or dual specialization.**

**In case of students opting for single specialization, they should compulsorily choose 6 elective papers from one area specialization from the list given below:**

**In case of students opting for dual specialization. They should choose 3 elective papers from respective area of specialization.**

**\*\*\* Internship will be carried out during the summer vacation after the first year. Viva Voce will be conducted by the college and marks shall be sent to the University and the same will be included in the Third Semester Marks Statement.**

# FOURTH SEMESTER

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Subject Code** | **Subject Name** | **Category** | **L** | **T** | **P** | **O** | **Credits** | **Inst. Hours** | **Marks** | | |
| **CIA** | **External** | **Total** |
|  | # Project Work & Viva- Voce | Core | - | - | - | Y | 12 | - | 75 | 225 | 300 |

**L-Lecture T-Tutorial P- Practical O-Project**

**# The Project Work will be evaluated jointly by TWO Examiners (i.e. one Internal and the other External) for a Maximum of 225 Marks (9 Credits).**

**# The Viva- Voce will be conducted with Two Examiners (i.e. one Internal and the other External) for a Maximum of 75 Marks (3 Credits).**

**Specialization Courses: Business Analytics**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Subject Code** | **Subject Name** | **Category** | **L** | **T** | **P** | **O** | **Credits** | **Inst. Hours** | **Marks** | | |
| **CIA** | **External** | **Total** |
| 1 | Fundamentals of Business Analytics | Elective | 3 | - | - | - | 3 | 3 | 25 | 75 | 100 |
| 2 | Data Analytics with R Programming | Elective | 3 | - | - | - | 3 | 3 | 25 | 75 | 100 |
| 3 | Business Analytics Using Python | Elective | 3 | - | - | - | 3 | 3 | 25 | 75 | 100 |
| 4 | Data Visualization | Elective | 3 | - | - | - | 3 | 3 | 25 | 75 | 100 |
| 5 | Data Analytics in Business Functional Areas | Elective | 3 | - | - | - | 3 | 3 | 25 | 75 | 100 |
| 6 | Data Science | Elective | 3 | - | - | - | 3 | 3 | 25 | 75 | 100 |
| 7 | Business Intelligence, Big Data, Cloud Computing | Elective | 3 | - | - | - | 3 | 3 | 25 | 75 | 100 |
| 8 | Block Chain Technology | Elective | 3 | - | - | - | 3 | 3 | 25 | 75 | 100 |
| 9 | Software Project Management | Elective | 3 | - | - | - | 3 | 3 | 25 | 75 | 100 |
| 10 | Design and Analysis of Algorithm | Elective | 3 | - | - | - | 3 | 3 | 25 | 75 | 100 |

**# Choose any 6 electives from the above list in consultation with the HOD or Head.**

**SYLLABUS**

**SEMESTER I**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Subject Code** | **Subject Name** | **Category** | **L** | **T** | **P** | **O** | **Credits** | | **Inst. Hours** | **Marks** | | | |
| **CIA** | | **External** | **Total** |
|  | **Management Principles and Business Ethics** | Core | 4 | - | - | - | 4 | | 60 | 25 | | 75 | 100 |
| **Course Objectives** | | | | | | | | | | | | | |
| C1 | To familiarize the students to the basic concepts of management in order to aid in understanding how an organization functions. | | | | | | | | | | | | |
| C2 | To provide insights on Planning & Decision Making | | | | | | | | | | | | |
| C3 | To throw light on Organizing, Managing Change and Innovation | | | | | | | | | | | | |
| C4 | To elucidate on Leadership, Communication and Controlling. | | | | | | | | | | | | |
| C5 | To create awareness and importance of Business Ethics and Social Responsibility. | | | | | | | | | | | | |
| **SYLLABUS** | | | | | | | | | | | | | |
| **UNIT** | **Details** | | | | | | | **No. of Hours** | | | **Course Objectives** | | |
| I | **Introduction:** Nature of Management – Concepts and Foundations of Management- Managerial Functions- Management Skills- The Evolution of Management Thought – Tasks of a Professional Manager –Organizational Culture - Environment– Systems Approach to Management – Levels in Management – Disaster Management | | | | | | | 12 | | | C1 | | |
| II | **Planning & Decision Making:** Steps in Planning Process – Scope and Limitations – Short Term and Long Term Planning – Flexibility in Planning – Characteristics of a Sound Plan – Management By Objectives (MBO). Strategic Management ProcessDecision Making Process and Techniques. Business Models | | | | | | | 12 | | | C2 | | |
| III | **Nature of Organizing:** Organization Structure and Design - Authority Relationships – Delegation of Authority and Decentralization – Interdepartmental Coordinator – emerging Trends in corporate Structure, Strategy and Culture – Impact of Technology on Organizational design – Mechanistic vs. Adoptive Structures – Formal and Informal Organization. Span of control – Pros and Cons of Narrow and Wide Spans of Control – Optimum Span - Managing Change and Innovation. | | | | | | | 12 | | | C3 | | |
| IV | **Leadership and Control:** Leadership: Approaches to Leadership and Communication.  Control: Concept of Control – Application of the Process of Control at Different Levels of Management (top, middle and first line). Performance Standards – Measurements of Performance – Remedial Action - An Integrated Control system in an Organization – Management by Exception (MBE) – | | | | | | | 12 | | | C4 | | |
| V | **Business Ethics:** Importance of Business Ethics – Ethical Issues and Dilemmas in Business - Ethical Decision Making and Ethical Leadership – Ethics Audit - Business Ethics and - CSR Models. | | | | | | | 12 | | | C5 | | |
|  | **Total** | | | | | | | **60** | | |  | | |
| **Course Outcomes** | | | | | | | | | | | | | |
| **Course Outcomes** | On completion of this course, students will; | | | | | | | **Program Outcomes** | | | | | |
| **CO1** | Possess the knowledge on the basic concepts of management and understand how an organization functions. | | | | | | | PO4, PO6, PO8 | | | | | |
| **CO2** | Possess knowledge on planning & decision making. | | | | | | | PO1, PO2 | | | | | |
| **CO3** | Have insights on organizing, managing change and Innovation | | | | | | | PO5, PO6, PO7 | | | | | |
| **CO4** | Learn leadership, communication and controlling skills. | | | | | | | PO4, PO5 | | | | | |
| **CO5** | Have better understanding on business ethics and social responsibility. | | | | | | | PO3, PO8 | | | | | |
| **Reading List** | | | | | | | | | | | | | |
| 1. | https://deb.ugc.ac. In | | | | | | | | | | | | |
| 2. | http://wwww.managementconcepts. Com | | | | | | | | | | | | |
| 3. | International journal of Management Concepts and Philosophy | | | | | | | | | | | | |
| 4. | Journal of Management, Sage Publications | | | | | | | | | | | | |
| **References Books** | | | | | | | | | | | | | |
| 1. | Mukherjee, K., Principles of Management, 2nd Edition, Tata McGraw Hill Education Pvt. Ltd., 2009 | | | | | | | | | | | | |
| 2. | S. K. Mandal., Management Principles and practice, 3rd Edition, Jaico Publishing House, Jan.2011. | | | | | | | | | | | | |
| 3. | Griffin, R. W., Management, 11th Edition, South-Western College Publication, January 2018. | | | | | | | | | | | | |
| 4. | Koontz, H. and Weihrich, H., Essentials of Management: An International Perspective, 11th Edition, Tata McGraw Hill Education Private Ltd., July 2020 | | | | | | | | | | | | |
| 5. | Certo, S C. and Certo, T, Modern Management, 13th Edition, Prentice Hall, January 2014. | | | | | | | | | | | | |
| 6. | Robbins, S and Coulter, M, 11th Edition, Management, Prentice Hall, 11th edition, January 2012 | | | | | | | | | | | | |
| 7. | Shaikh Ubaid, Disaster Management, Technical publications, 1st edition, 2020 | | | | | | | | | | | | |

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|  | **PO 1** | **PO 2** | **PO 3** | **PO 4** | **PO 5** | **PO 6** | **PO 7** | **PO 8** |
| **CO 1** |  |  |  | 2 |  | 2 |  | 2 |
| **CO 2** | 2 | 3 |  |  |  |  |  |  |
| **CO 3** |  |  |  |  | 2 | 2 | 2 |  |
| **CO 4** |  |  |  | 3 | 3 |  |  |  |
| **CO 5** |  |  | 3 |  |  |  |  | 3 |

**3-Strong 2-Medium 1-Low**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Subject Code** | **Subject Name** | **Category** | **L** | **T** | **P** | **O** | **Credits** | | **Inst. Hours** | **Marks** | | | |
| **CIA** | | **External** | **Total** |
|  | **Quantitative Techniques and Research Methods in Business** | Core | 3 | 1 | - | - | 4 | | 60 | 25 | | 75 | 100 |
| **Course Objectives** | | | | | | | | | | | | | |
| C1 | To provide the students with an introduction to probability theory and discuss how probability calculations may facilitate their decision making. | | | | | | | | | | | | |
| C2 | To construct a coherent research proposal that includes an abstract, literature review, research questions, ethical considerations and methodology. | | | | | | | | | | | | |
| C3 | To understand the basic statistical tools for analysis & interpretation of qualitative and quantitative data. | | | | | | | | | | | | |
| C4 | To recognize the principles and characteristics of the multivariate data analysis techniques. | | | | | | | | | | | | |
| C5 | To become familiar with the process of drafting a report that poses a significant problem | | | | | | | | | | | | |
| **SYLLABUS** | | | | | | | | | | | | | |
| **UNIT** | **Details** | | | | | | | **No. of Hours** | | | **Course Objectives** | | |
| I | **Introduction:** Probability - Rules of probability- Probability distribution; Binomial, Poisson and Normal Distributions, their applications in Business and Industrial Problem- Baye’s Theorem and its applications - Decision Making under risk and uncertainty; Maximax, Maximin, Regret Hurwitz and Laplace Criteria in Business and Decision Making - Decision tree. | | | | | | | 17 | | | C1 | | |
| II | **Research Methods:** Research - Definition - Research Process - Research Design – Definition- Types Of Research Design - Role of Theory in Research - Variables in Research – Objectives - Hypothesis -Types of Data; Preliminary Vs Secondary- Methods of Primary Data Collection; Survey, Observation, Experiments - Construction Of Questionnaire - Questionnaire Schedule- Validity and Reliability of Instruments - Types of Scales; Nominal, Ordinal, Interval - Types of Attitude Measurement Scales – Sampling Techniques; Probability And Non probability Techniques- Optimal Sample Size determination. | | | | | | | 10 | | | C2 | | |
| III | **Data Preparation and Analysis:** Data Preparation - Editing –Coding- Data Entry- Data Analysis- Testing Of Hypothesis Univariate and Bivariate Analysis -Parametric And Nonparametric Tests and Interpretation of Test Results- Chi-Square Test- Correlation; Karl Pearson’s Vs Correlation Coefficient and Spearman's Rank Correlation- Regression Analysis - One Way and Two Way Analysis of Variance. | | | | | | | 15 | | | C3 | | |
| IV | **Multivariate Statistical Analysis:** Exploratory and Confirmatory Factor Analysis -Discriminant Analysis- Cluster Analysis -Conjoint Analysis -Multiple Regression- Multidimensional Scaling- Their Application In Marketing Problems -Application of Statistical Software For Data Analysis- SEM Analysis | | | | | | | 09 | | | C4 | | |
| V | **Report Writing and Ethics in Business Research:** Research Reports- Different Types -Report Writing Format- Content of Report- Need For Executive Summary- Chapterization -Framing the Title of the Report- Different Styles Of Referencing -Academic Vs Business Research Reports - Ethics In Research. | | | | | | | 09 | | | C5 | | |
|  | **Total** | | | | | | | 60 | | |  | | |
| **Course Outcomes** | | | | | | | | | | | | | |
| **Course Outcomes** | On completion of this course, students will; | | | | | | | **Program Outcomes** | | | | | |
| **CO1** | Be able to develop problem-solving techniques needed to accurately calculate probabilities. | | | | | | | PO1, PO2, PO6, PO7 | | | | | |
| **CO2** | Be able to devise research methods, techniques and strategies in the appropriate manner for managerial decision making and conduct research for the industry. | | | | | | | PO4, PO6 | | | | | |
| **CO3** | Be able to apply and interpret the different types of quantitative and qualitative methods of data analysis. | | | | | | | PO4, PO6 | | | | | |
| **CO4** | Be able to use multivariate techniques appropriately, undertake multivariate hypothesis tests, and draw appropriate conclusions. | | | | | | | PO4, PO6 | | | | | |
| **CO5** | Be able to present orally their research or a summary of another’s research in an organized, coherent, and compelling fashion. | | | | | | | PO4, PO6 | | | | | |
| **Reading List** | | | | | | | | | | | | | |
| 1. | <https://www.dartmouth.edu/~chance/teaching_aids/books_articles/probability_book/amsbook.mac.pdf> | | | | | | | | | | | | |
| 2. | <https://study.com/academy/topic/probability.html> | | | | | | | | | | | | |
| 3. | <https://onlinecourses.nptel.ac.in/noc18_ma07/preview> | | | | | | | | | | | | |
| 4. | <https://hbr.org/1964/07/decision-trees-for-decision-making> | | | | | | | | | | | | |
| **References Books** | | | | | | | | | | | | | |
| 1. | Kumar, R., Research Methodology: A Step-by-Step guide for Beginners, Sage, South Asia, 4th Edition, 2014. | | | | | | | | | | | | |
| 2. | Srivastava, T.N. and Rego, S., Statistics for Management, 2nd Edition, Tata McGraw Hill, 3rd Edition, 2016. | | | | | | | | | | | | |
| 3. | Cooper, D.R., Schindler, P. And Business Research Methods, Tata- McGrew Hill,12th Edition, 2012. | | | | | | | | | | | | |
| 4. | Cooper, D.R., Schindler, P. and Sharma, J.K., Business Research Methods,11th Edition, Tata-McGraw Hill, 12 th Edition, 2018. | | | | | | | | | | | | |
| 5. | Johnson, R.A., and Wichern, D.W., Applied Multivariate Statistical Analysis, PHI Learning Pvt. Ltd., 6 th Edition, 2012. | | | | | | | | | | | | |
| 6. | Anderson, Sweeny, Williams, Camm and Cochran, Statistics for business and Economics, Cengage Learning, New Delhi, 13th Edition, 2017 | | | | | | | | | | | | |

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|  | **PO 1** | **PO 2** | **PO 3** | **PO 4** | **PO 5** | **PO 6** | **PO 7** | **PO 8** |
| **CO 1** | 3 | 3 |  |  |  | 3 | 3 |  |
| **CO 2** |  |  |  | 3 |  | 3 |  |  |
| **CO 3** |  |  |  | 2 |  | 2 |  |  |
| **CO 4** |  |  |  | 2 |  | 2 |  |  |
| **CO 5** |  |  |  | 2 |  | 3 |  |  |

**3-Strong 2-Medium 1-Low**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Subject Code** | **Subject Name** | **Category** | **L** | **T** | **P** | **O** | **Credits** | | **Inst. Hours** | **Marks** | | | |
| **CIA** | | **External** | **Total** |
|  | **Managing Organizational Behaviour** | Core | 4 | - | - | - | 4 | | 60 | 25 | | 75 | 100 |
| **Course Objectives** | | | | | | | | | | | | | |
| C1 | To familiarize the students to the basic concepts of managing Organizational Behaviour in order to aid in understanding how an men behave in an organization. | | | | | | | | | | | | |
| C2 | To provide insights on Individual Differences, perception, learning, Attitudes values and motivation | | | | | | | | | | | | |
| C3 | To throw light on Group Dynamics and Interpersonal Communication | | | | | | | | | | | | |
| C4 | To elucidate on Leadership, Politics, Conflicts and Negotiation. | | | | | | | | | | | | |
| C5 | To create awareness and importance of work stress and Emotional Intelligence and its influence on employees in an organization. | | | | | | | | | | | | |
| **SYLLABUS** | | | | | | | | | | | | | |
| **UNIT** | **Details** | | | | | | | **No. of Hours** | | | **Course Objectives** | | |
| I | **Introduction to Organizational Behaviour:** Historical background of OB - Concept Relevance of OB – Contributing disciplines - to the field of OB, challenges and opportunities for OB, foundations of Individual Behaviour. Theory – social theory- Organizational Citizenship Behaviour | | | | | | | 12 | | | C1 | | |
| II | **Individual Difference -** Personality – concept and determinants of personality – theories of personality – type of theories – trait theory – psycho analytic theory - social learning theory – Erikson’s stages of Personality Development Chris Argyris Immaturity to Maturity Continuum. Personality – Job fit.  **Perception:** Meaning Process – Factors influencing perception – Attribution theory  **Learning:** Classical, Operant and Social Cognitive Approaches – Managerial implications**.**  **Attitudes and Values**:– Components, Attitude – Behaviour relationship, formation, values.  **Motivation**: Early Theories of Motivation – Hierarchy of needs theory, Theory X and Theory Y, Two factor theory, McClelland’s theory of needs and Contemporary theories of motivation – Self – Determination theory, Job Engagement, Goal Setting theory, Self– efficacy theory, Re – inforcement theory, Equity theory, Expectancy theory. | | | | | | | 12 | | | C2 | | |
| III | **Group Dynamics –** Foundations of Group Behaviour – Group and Team - Stages of Group Development–Factors affecting Group and Team Performance - Group Decision making  **Interpersonal Communication –** Communication Process – Barriers to Communication– Guidelines for Effective Communication | | | | | | | 12 | | | C3 | | |
| IV | **Leadership –** Trait, Behavioural and Contingency theories, Leaders vs Managers Power and  **Politics:** Sources of Power – Political Behaviour in Organizations – Managing Politics.  **Conflict and Negotiation:** Sources and Types of Conflict –Negotiation Strategies– Negotiation Process. | | | | | | | 12 | | | C4 | | |
| V | **Work Stress:** Stressors in the Workplace – Individual Differences on Experiencing Stress - Managing Workplace Stress. Organizational Culture and Climate: Concept and Importance – Creating and Sustaining Culture.  **Emotional Intelligence,** Work Life Integration Practices.  Knowledge based enterprise- systems and Processes; Networked and virtual organizations. | | | | | | | 12 | | | C5 | | |
|  | **Total** | | | | | | | **60** | | |  | | |
| **Course Outcomes** | | | | | | | | | | | | | |
| **Course Outcomes** | On completion of this course, students will; | | | | | | | **Program Outcomes** | | | | | |
| **CO1** | Possess the knowledge on the basic concepts of managing Organizational Behaviour in order to aid in understanding how an men behave in an organization | | | | | | | PO4 | | | | | |
| **CO2** | Possess knowledge on Individual Differences, perception, learning, Attitudes values and motivation | | | | | | | PO3, PO6 | | | | | |
| **CO3** | Have insights on Group Dynamics and Interpersonal Communication | | | | | | | PO2, PO4, PO5 | | | | | |
| **CO4** | Learn Leadership, Politics, Conflicts and Negotiation. | | | | | | | PO5 | | | | | |
| **CO5** | Have better understanding on work stress and Emotional Intelligence and its influence on employees in an organization. | | | | | | | PO6, PO8 | | | | | |
| **Reading List** | | | | | | | | | | | | | |
| 1. | [www.himpub.com](http://www.himpub.com) | | | | | | | | | | | | |
| 2. | <https://iedunote.com.organisational-behaviour> | | | | | | | | | | | | |
| 3. | [www.yourarticlelibrary.com/organisation/](http://www.yourarticlelibrary.com/organisation/) | | | | | | | | | | | | |
| 4. | Journal of Organizational Behaviour – wiley Online Library | | | | | | | | | | | | |
| **References Books** | | | | | | | | | | | | | |
| 1. | Prasad .L.M., Organisational Behaviour ,Sultan Chand and Sons, 2019 | | | | | | | | | | | | |
| 2. | C.B.Guptha, A Textbook Of Organisational Behaviours ,S.Chand & Company,2019 | | | | | | | | | | | | |
| 3. | K. Aswattappa, Organisational Behaviour, Himalaya Publishing House, 12th Edition, 2016. | | | | | | | | | | | | |
| 4. | Luthans, F. Organizational Behaviour, 12th Edition, Tata McGraw Hill Education, 2017. | | | | | | | | | | | | |
| 5. | McShane, S.L., Von Glinow, M.A., and Sharma, R.R., Organizational Behaviour, 5th Edition, Tata McGraw-Hill Education Pvt. Ltd., 2011. | | | | | | | | | | | | |
| 6. | Stephen P. Robins, Timothy A. Judge and Neharika Vohra, Essentials of Organisational Behaviour, 18th Edition, Pearson Education, 2019. | | | | | | | | | | | | |

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|  | **PO 1** | **PO 2** | **PO 3** | **PO 4** | **PO 5** | **PO 6** | **PO 7** | **PO 8** |
| **CO 1** |  |  |  | 2 |  |  |  |  |
| **CO 2** |  |  | 3 |  |  | 3 |  |  |
| **CO 3** |  | 3 |  | 3 | 3 |  |  |  |
| **CO 4** |  |  |  |  | 3 |  |  |  |
| **CO 5** |  |  |  |  |  | 3 |  | 2 |

**3-Strong 2-Medium 1-Low**

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| **Subject Code** | **Subject Name** | **Category** | **L** | **T** | **P** | **O** | **Credits** | | **Inst. Hours** | **Marks** | | | |
| **CIA** | | **External** | **Total** |
|  | **Accounting For Managers** | Core | 3 | 1 | - | - | 4 | | 60 | 25 | | 75 | 100 |
| **Course Objectives** | | | | | | | | | | | | | |
| C1 | To acquaint the students with the fundamentals of principles of financial, cost and management accounting | | | | | | | | | | | | |
| C2 | To enable the students to prepare, analyses and interpret financial statements | | | | | | | | | | | | |
| C3 | To acquaint the students with the tools and techniques of financial analysis | | | | | | | | | | | | |
| C4 | To enable the students to take decisions using management accounting tools. | | | | | | | | | | | | |
| C5 | To enable the students to prepare the reports with the accounting tools and facilitate managerial decision making. | | | | | | | | | | | | |
|  | **SYLLABUS** | | | | | | | | | | | | |
| **UNIT** | **Details** | | | | | | | **No. of Hours** | | | **Course Objectives** | | |
| I | Financial Accounting – Meaning - Objectives - functions. Branches of Accounting: Financial, Cost and Management Accounting - Accounting Concepts and conventions. Journal – Ledger – Trial Balance – Preparation of Final Accounts: Trading, Profit and Loss Account and Balance Sheet (problems); International Accounting Standards - IFRS | | | | | | | 12 | | | C1 | | |
| II | Financial Statement Analysis - Objectives - Techniques of Financial Statement Analysis: Common Size and Comparative Financial Statements, Trend analysis, Ratio Analysis.  Fund Flow Statement - Statement of Changes in Working Capital - Preparation of Fund Flow Statement - Cash Flow Statement Analysis- Distinction between Fund Flow and Cash Flow Statement – problem. | | | | | | | 12 | | | C2 | | |
| III | Marginal Costing - Definition - distinction between marginal costing and absorption costing - Break even point Analysis - Contribution, p/v Ratio, margin of safety - Decision making under marginal costing system-key factor analysis, make or buy decisions, export decision, sales mix decision- Problems. | | | | | | | 12 | | | C3 | | |
| IV | Budget, Budgeting, and Budgeting Control - Types of Budgets - Preparation of Flexible and fixed Budgets, master budget and Cash Budget - Problems - Zero Base Budgeting. | | | | | | | 12 | | | C4 | | |
| V | Cost Accounting : meaning – Objectives - Elements of Cost – Cost Sheet(Problems) – classification of cost – Cost Unit and Cost Centre – Methods of Costing – Techniques of Costing. Standard costing and variance analysis Reporting to Management – Uses of Accounting information in Managerial decision-making. Reporting-Accounting Standards and Accounting Disclosure practices in India; Exposure to Practical Knowledge of using Accounting software- Open Source. | | | | | | | 12 | | | C5 | | |
|  | **Total** | | | | | | | **60** | | |  | | |
| **Course Outcomes** | | | | | | | | | | | | | |
| **Course Outcomes** | On completion of this course, students will; | | | | | | | **Program Outcomes** | | | | | |
| **CO1** | Be able to understand the fundamentals of principles of financial, cost and management accounting | | | | | | | PO6 | | | | | |
| **CO2** | Be able to prepare, analyze and interpret financial statements | | | | | | | PO1, PO2, PO4, PO6, PO7 | | | | | |
| **CO3** | Be able to use the tools and techniques of financial analysis. | | | | | | | PO1, PO2, PO3, PO6, PO7 | | | | | |
| **CO4** | Be able to take decisions using management accounting tools. | | | | | | | PO1, PO2, PO6, PO7 | | | | | |
| **CO5** | Be able to prepare the reports with the accounting tools and facilitate and take managerial decisions. | | | | | | | PO2, PO3, PO4, PO6, PO7, PO8 | | | | | |
| **Reading List** | | | | | | | | | | | | | |
| 1. | [http://files.rajeshindukuristudyplace.webnode.com/200000014-9621c971b8/ accounting%20 for%20 managers.pdf](http://files.rajeshindukuristudyplace.webnode.com/200000014-9621c971b8/%20accounting%20%20for%20%20managers.pdf) | | | | | | | | | | | | |
| 2. | <http://shodhganga.inflibnet.ac.in/bitstream/10603/70588/9/09_chapter%201.pdf> | | | | | | | | | | | | |
| 3. | <http://educ.jmu.edu/~drakepp/principles/module6/capbudtech.pdf> | | | | | | | | | | | | |
| 4. | [https://www.researchgate.net/publication/313477460\_concept\_of\_working\_capital\_management](https://www.researchgate.net/publication/313477460_CONCEPT_OF_WORKING_CAPITAL_MANAGEMENT) | | | | | | | | | | | | |
| **References Books** | | | | | | | | | | | | | |
| 1. | Gupta, A., Financial Accounting for Management: An Analytical Perspective, 5th Edition, Pearson, 2016. | | | | | | | | | | | | |
| 2. | Khan, M.Y. and Jain, P.K., Management Accounting: Text, Problems and Cases, 8thEdition, Tata McGraw Hill Education Pvt. Ltd., 2021. | | | | | | | | | | | | |
| 3. | Nalayiram Subramanian, Contemporary Financial Accounting and reporting for Management – a holistic perspective- Edn. 1, 2014 published by S. N. Corporate Management Consultants Private Limited | | | | | | | | | | | | |
| 4. | Horngren, C.T.,Sundem, G.L., Stratton, W.O., Burgstahler, D. and Schatzberg, J., 16th Edition, Pearson, 2013 | | | | | | | | | | | | |
| 5. | Noreen, E., Brewer, P. and Garrison, R., Managerial Accounting for Managers, 13th Edition, Tata McGraw-Hill Education Pvt. Ltd., 2009. | | | | | | | | | | | | |
| 6. | Rustagi,R. P., Management Accounting, 2nd Edition, Taxmann Allied Services Pvt. Ltd, 2011 | | | | | | | | | | | | |

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|  | **PO 1** | **PO 2** | **PO 3** | **PO 4** | **PO 5** | **PO 6** | **PO 7** | **PO 8** |
| **CO 1** |  |  |  |  |  | 2 |  | 2 |
| **CO 2** | 3 | 3 |  | 3 |  | 3 | 2 |  |
| **CO 3** | 3 | 3 | 3 |  |  | 3 | 2 |  |
| **CO 4** | 3 | 3 |  |  |  | 3 | 3 |  |
| **CO 5** |  | 3 | 3 | 3 |  | 3 | 2 | 2 |

**3-Strong 2-Medium 1-Low**

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| **Subject Code** | **Subject Name** | **Category** | **L** | **T** | **P** | **O** | **Credits** | | **Inst. Hours** | **Marks** | | | |
| **CIA** | | **External** | **Total** |
|  | **Managerial Economics** | Core | 4 | - | - | - | 4 | | 60 | 25 | | 75 | 100 |
| **Course Objectives** | | | | | | | | | | | | | |
| C1 | To familiarize the students about managerial economics and to know the fundamental concepts affecting business decisions. | | | | | | | | | | | | |
| C2 | To understand the concept of utility and demand analysis and demand forecasting | | | | | | | | | | | | |
| C3 | To know about production function and market structure | | | | | | | | | | | | |
| C4 | To have an idea and understanding about Macroeconomics like National Income, savings and investment, Indian economic policy and Planning. | | | | | | | | | | | | |
| C5 | To Provide insights on Money Market, Inflation and Deflation, Monetary and Fiscal policies, FDI and cashless economy. | | | | | | | | | | | | |
| **SYLLABUS** | | | | | | | | | | | | | |
| **UNIT** | **Details** | | | | | | | **No. of Hours** | | | **Course Objectives** | | |
| I | Introduction: Definition of Managerial Economics. Decision Making and the Fundamental Concepts Affecting Business Decisions – the Incremental Concept, Marginalism, Equi-marginal Concept, the Time Perspective, Discounting Principle, Opportunity Cost Principle- Micro and Macro Economics. | | | | | | | 12 | | | C1 | | |
| II | Utility Analysis and the Demand Curve: Elasticity of Demand - Demand Analysis: Basic Concepts, and tools of analysis for demand forecasting. Use of Business Indicators: Demand forecasting for consumer, Consumer Durable and Capital Goods. Input-Output Analysis – Consumer Behavior-Consumer Equilibrium | | | | | | | 12 | | | C2 | | |
| III | The Production Function: Production with One Variable Input – Law of Variable Proportions – Production with Two Variable Inputs – Production Isoquants – Isocost Lines Estimating Production Functions- Returns to Scale– Economies Vs Diseconomies of Scale – Cost Concepts – Analysis of cost – Short and long run costs.  Market Structure: Perfect and Imperfect Competition – Monopoly, Duopoly, Monopolistic Competition – Pricing Methods. | | | | | | | 12 | | | C3 | | |
| IV | Macro Economic Variables – National Income- Concepts – Gross Domestic Product, Gross National Product, Net National Product – Measurement of National Income, Savings, Investment - Business Cycles and Contracyclical Policies – Role of Economic Policy – Indian Economic Planning | | | | | | | 12 | | | C4 | | |
| V | Commodity and Money Market: Demand and Supply of Money – Money Market Equilibrium – Monetary Policy – Inflation – Deflation – Stagflation-Role of Fiscal Policies- Indian Fiscal Policies - Government Policy towards Foreign Capital and Foreign Collaborations – Globalization and its Impact. Cashless economy and digitalized cash transfers; Economic models and its steps; FEMA-GST-Industrial Policy in India and its effects on growth. | | | | | | | 12 | | | C5 | | |
|  | **Total** | | | | | | | **60** | | |  | | |
| **Course Outcomes** | | | | | | | | | | | | | |
| **Course Outcomes** | On completion of this course, students will; | | | | | | | **Program Outcomes** | | | | | |
| **CO1** | Be able to understand the basic concepts of managerial economics that helps the firm in decision making process. | | | | | | | PO2, PO4 | | | | | |
| **CO2** | Be familiar about the Basic concepts of Demand, Supply and Equilibrium and their determinants | | | | | | | PO4, PO6, PO7 | | | | | |
| **CO3** | Have better idea and understanding about production function and market structure | | | | | | | PO6, PO7 | | | | | |
| **CO4** | Have better insights about macroeconomics concepts like National income, Savings and Investment, Indian Economic Policy and planning | | | | | | | PO8 | | | | | |
| **CO5** | Possess better knowledge about Money market, Monetary and Fiscal policy, inflation and deflation, FDI and globalization and Cashless economy and digitalized cash transfers. | | | | | | | PO7 | | | | | |
| **Reading List** | | | | | | | | | | | | | |
| 1. | <http://pearsoned.co.in/prc/book/paul-g-keat-managerial-economics-economic-tools-todays-decision-makers6e-6/9788131733530> | | | | | | | | | | | | |
| 2. | [http://www.onlinevideolecture.com/mba-programs/kmpetrov/managerial economics/?courseid=4207](http://www.onlinevideolecture.com/mba-programs/kmpetrov/managerial%20economics/?course_id=4207) | | | | | | | | | | | | |
| 3. | <https://www.slideshare.net/dvy92010/nature-and-scope-of-managerial-economics-76225857> | | | | | | | | | | | | |
| 4. | The Indian Economic Journal - SAGE Journals | | | | | | | | | | | | |
| **References Books** | | | | | | | | | | | | | |
| 1. | 1. Damodaran, S., Managerial Economics, 2nd Edition, Oxford University Press, 2011. | | | | | | | | | | | | |
| 2. | Dwivedi, D.N., Managerial Economics, Vikas Publishing House, 2011. | | | | | | | | | | | | |
| 3. | R. L. Varshney , K.L. Maheshwari., Managerial Economics, Sultan Chand & Sons, 2014. | | | | | | | | | | | | |
| 4. | William F. Samuelson, Stephen G. Marks, Jay L., Zagorsky., Managerial Economics, Wiley Publishers, 9th Edition (2021) | | | | | | | | | | | | |
| 5. | H. L. Ahuja., Managerial Economics., Atlantic Publishers and distributors(P) Ltd., 2017. | | | | | | | | | | | | |
| 6. | Dominick Salvatore, Managerial Economics: Principles and worldwide applications, 9E Adaptation, Oxford university press, 9th Edition, 2020. | | | | | | | | | | | | |

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|  | **PO 1** | **PO 2** | **PO 3** | **PO 4** | **PO 5** | **PO 6** | **PO 7** | **PO 8** |
| **CO 1** |  | 2 |  | 3 |  |  |  |  |
| **CO 2** |  |  |  | 3 |  | 2 | 2 |  |
| **CO 3** |  |  |  |  |  | 3 | 3 |  |
| **CO 4** |  |  |  |  |  |  |  | 2 |
| **CO 5** |  |  |  |  |  |  | 2 |  |

**3-Strong 2-Medium 1-Low**

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| **Subject Code** | **Subject Name** | **Category** | **L** | **T** | **P** | **O** | **Credits** | | **Inst. Hours** | **Marks** | | | |
| **CIA** | | **External** | **Total** |
|  | **Legal Systems in Business** | Core | 4 | - | - | - | 4 | | 60 | 25 | | 75 | 100 |
| **Course Objectives** | | | | | | | | | | | | | |
| C1 | To create knowledge and understanding on law of contracts | | | | | | | | | | | | |
| C2 | To describe about sale of goods and Negotiable instrument act | | | | | | | | | | | | |
| C3 | To have an overall understanding about partnership act and company law. | | | | | | | | | | | | |
| C4 | To familiarize various labor laws for effective administration of Human Resource of an organization. | | | | | | | | | | | | |
| C5 | To provide insights and awareness about consumer protection act, Cyber-crimes, Intellectual property Rights. | | | | | | | | | | | | |
| **SYLLABUS** | | | | | | | | | | | | | |
| **UNIT** | **Details** | | | | | | | **No. of Hours** | | | **Course Objectives** | | |
| I | **The Law of Contracts:** Definition of Contact Offer and Acceptance – Essential Elements of a Valid Contract: Free Consent – Competency of Parties – Lawful Consideration – Legality of Object. Void, Voidable, Unenforceable and Illegal Contracts – Performance of Contracts – Privity of Contracts – Assignment of Contracts – By Whom Contract must be Performed – Time and Place of Performance – Performance of Reciprocal Promises – Contracts which need not be performed, Discharge of Contracts : By Performance, By Agreement, By Impossibility, By Lapse of Time, By Operation of Law and By Breach of Contracts – Remedies for Breach of Contracts. | | | | | | | 12 | | | C1 | | |
| II | **Sale of Goods Act:** Definition of a Sale and a Contract of Sale – Difference between (1) Sale and an Agreement to Sell (2) Sale and a Contract Form (3) Sale and Bailment (4) Sale and Mortgage of Goods (5) Sale and Time Purchase Conditions and Warranties – Passing of Property of Goods – Rights of an Unpaid Seller.  **Negotiable Instruments Act:** Negotiable Instruments in General: Cheques, Bills of Exchange and Promissory Notes – Definition and Characteristics | | | | | | | 12 | | | C2 | | |
| III | **Partnership Act:** Evolution – Definition of Partnership – Difference between Partnership and Joint Family Business – Kinds of Partnerships – Registration – Rights and Liabilities of Partners – Dissolution.  **Company Law:** Evolution of Company Form of Organisation – Companies Separate Legal Entity – Comparison of Company with Partnership and Joint Hindu Family Business – Kinds of Companies – Comparison of Private and Public Companies – Formation of Companies – General Idea About Memorandum and Articles of Association, Prospectus, Statement in lieu of Prospectus – Management of Companies – General Idea of Management of Companies – Officers, Meetings – Resolutions – Account and Audit – Winding up of Companies – General Idea of the Different Modes of Winding Up. | | | | | | | 12 | | | C3 | | |
| IV | **Labour Law:** Factories Act, Minimum Wages Act, Industrial Disputes Act, Employees Compensation Act, Payment of Bonus Act 1965. Payment of Gratuity Act 1972. ESI Act, Employees Provident Fund and Miscellaneous Provisions Act 1952, Maternity Benefits Act, Child labour Abolition & Regulation Act,1986- Inter-state Migrant Workmen (Regulation of Employment & Conditions of services) Act 1979- Bonded Labour system (Abolition)Act 1976- Sexual Harassment of women at Workplace (Prevention, Prohibition & Redressal) Act 2013- Contract Labour (Regulation and Abolition) Act- Four Labour Codes and Rules-RTI Act 2005. | | | | | | | 12 | | | C4 | | |
| V | Consumer Protection Act, Competition Act 2002, Cyber Crimes, IT Act 2008 – Intellectual Property Rights: Types of Intellectual Property – Trademarks Act 1999 – The Copyright Act 1957 – International Copyright Order, 1999 – Design Act, 2000; UNICITRAL – United Nations Commission on International Trade Law. | | | | | | | 12 | | | C5 | | |
|  | **Total** | | | | | | | **60** | | |  | | |
| **Course Outcomes** | | | | | | | | | | | | | |
| **Course Outcomes** | On completion of this course, students will; | | | | | | | **Program Outcomes** | | | | | |
| **CO1** | Have knowledge on understandings on law of contract. | | | | | | | PO4, PO6, PO7 | | | | | |
| **CO2** | Know the sale of Goods & Negotiable instrument act. | | | | | | | PO6 | | | | | |
| **CO3** | Have understandings on partnership and company law | | | | | | | PO6, PO7 | | | | | |
| **CO4** | Have familiarize with various labour laws. | | | | | | | PO5, PO6, PO7 | | | | | |
| **CO5** | Possess insights & awareness about consumer protection Act Cyber Crimes, Intellectual Property Rights. | | | | | | | PO8 | | | | | |
| **Reading List** | | | | | | | | | | | | | |
| 1. | <http://www.legalserviceindia.com/article/> | | | | | | | | | | | | |
| 2. | [http://www.freebookcentre.net/Law/Law-Books.html 2](http://www.freebookcentre.net/Law/Law-Books.html%202) | | | | | | | | | | | | |
| 3. | <https://www.mooc-list.com/course/business-law-wma> | | | | | | | | | | | | |
| 4. | <https://ilj.law.indiana.edu/> | | | | | | | | | | | | |
| **References Books** | | | | | | | | | | | | | |
| 1. | Kapoor ND., Legal Systems in Business, Edition 2 (2021), Sultan Chand & Sons. | | | | | | | | | | | | |
| 2. | Rao, P.M., Mercantile Law, PHI Learning, 2011. | | | | | | | | | | | | |
| 3. | Majumdar, A. K. and Kapoor, G.K., Company Law, 15th Edition, Taxmann Publications Pvt. Ltd., 2012. | | | | | | | | | | | | |
| 4. | Majumdar, A. K. and Kapoor, G.K., Company Law and Practice, 17th Edition, Taxmann Publications Pvt. Ltd., 2012. | | | | | | | | | | | | |
| 5. | Intellectual Property Laws, Universal Law Publishing, 2012. | | | | | | | | | | | | |
| 6. | Daniel Albuquerque , Legal systems in Business, Oxford University Press India, 2nd Edition, 2015. | | | | | | | | | | | | |

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|  | **PO 1** | **PO 2** | **PO 3** | **PO 4** | **PO 5** | **PO 6** | **PO 7** | **PO 8** |
| **CO 1** |  |  |  | 2 |  | 2 | 2 |  |
| **CO 2** |  |  |  |  |  | 2 |  |  |
| **CO 3** |  |  |  |  |  | 2 | 2 |  |
| **CO 4** |  |  |  |  | 2 | 2 | 2 |  |
| **CO 5** |  |  |  |  |  |  |  | 2 |

**3-Strong 2-Medium 1-Low**

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| **Subject Code** | **Subject Name** | **Category** | **L** | **T** | **P** | **O** | **Credits** | | **Inst. Hours** | **Marks** | | | |
| **CIA** | | **External** | **Total** |
|  | **Entrepreneurship Development** | Extra Disciplinary | 3 | - | - | - | 3 | | 45 | 25 | | 75 | 100 |
| **Course Objectives** | | | | | | | | | | | | | |
| C1 | To introduce students to entrepreneurship and its growth in India. | | | | | | | | | | | | |
| C2 | To impart knowledge on innovation, its types, role of technology in innovation, patents and licensing. | | | | | | | | | | | | |
| C3 | To orient the students on new venture creation | | | | | | | | | | | | |
| C4 | To enable students to prepare a feasible business plan | | | | | | | | | | | | |
| C5 | To give inputs on various types of financing available for new ventures. | | | | | | | | | | | | |
| **SYLLABUS** | | | | | | | | | | | | | |
| **UNIT** | **Details** | | | | | | | **No. of Hours** | | | **Course Objectives** | | |
| I | Introduction: The Entrepreneur – Definition – Characteristics of Successful entrepreneur. Entrepreneurial scene in India; MSME; Analysis of entrepreneurial growth in different communities – Case histories of successful entrepreneurs. Similarities and Distinguish between Entrepreneur and Intrapreneur. | | | | | | | 9 | | | C1 | | |
| II | Innovation in Business: Types of Innovation – Creating and Identifying Opportunities for Innovation – Design Thinking- The Technological Innovation Process – Creating New Technological Innovation and Intrapreneurship – Licensing – Patent Rights – Innovation in Indian Firms | | | | | | | 9 | | | C2 | | |
| III | New Venture Creation: Identifying Opportunities for New Venture Creation: Environment Scanning – Generation of New Ideas for Products and Services. Creating, Shaping, Recognition, Seizing and Screening of Opportunities. Feasibility Analysis: Technical Feasibility of Products and Services – Marketing Feasibility: Marketing Methods – Pricing Policy and Distribution Channels | | | | | | | 9 | | | C3 | | |
| IV | Business Plan Preparation: Benefits of a Business Plan – Elements of the Business Plan – Developing a Business Plan – Guidelines for preparing a Business Plan – Format and Presentation; Start-ups and e-commerce Start-ups. Business Model Canvas | | | | | | | 9 | | | C4 | | |
| V | Financing the New Venture: Capital structure and working capital Management: Financial appraisal of new project, Role of Banks – Credit appraisal by banks. Institutional Finance to Small Industries – Incentives – Institutional Arrangement and Encouragement of Entrepreneurship. | | | | | | | 9 | | | C5 | | |
|  | **Total** | | | | | | | **45** | | |  | | |
| **Course Outcomes** | | | | | | | | | | | | | |
| **Course Outcomes** | On completion of this course, students will; | | | | | | | **Program Outcomes** | | | | | |
| **CO1** | Be able to know about growth of entrepreneurship in India | | | | | | | PO4, PO7 | | | | | |
| **CO2** | Gain knowledge on innovation, its types, role of technology in innovation, patents and licensing | | | | | | | PO7, PO8 | | | | | |
| **CO3** | Obtain knowledge on new venture creation | | | | | | | PO6, PO7 | | | | | |
| **CO4** | Be able to prepare a business plan | | | | | | | PO7, PO8 | | | | | |
| **CO5** | Gian knowledge on various types of financing available for new ventures. | | | | | | | PO7, PO8 | | | | | |
| **Reading List** | | | | | | | | | | | | | |
| 1. | <http://www.jimssouthdelhi.com/sm/BBA6/ED.pdf> | | | | | | | | | | | | |
| 2. | https://[www.cengage.com/highered](http://www.cengage.com/highered) | | | | | | | | | | | | |
| 3. | <https://roadmapresearch.com/entrepreneurship-beyond-curriculum> | | | | | | | | | | | | |
| 4. | The International Journal of Entrepreneurship and Innovation | | | | | | | | | | | | |
| **References Books** | | | | | | | | | | | | | |
| 1. | Reddy, N., Entrepreneurship: Text and Cases, Cengage Learning, 2010. | | | | | | | | | | | | |
| 2. | Roy, R., Entrepreneurship, 2nd Edition, Oxford University Press, 2011. | | | | | | | | | | | | |
| 3. | Barringer, B., Entrepreneurship: Successfully Launching New Ventures,  3rd Edition, Pearson, 2011. | | | | | | | | | | | | |
| 4. | Bessant, J., and Tidd, J., Innovation and Entrepreneurship, 2nd Edition, John  Wiley &amp; Sons, 2011. | | | | | | | | | | | | |
| 5. | Desai, V., Small Scale Industries and Entrepreneurship, Himalaya Publishing  House, 2011. | | | | | | | | | | | | |
| 6. | Entrepreneurship: Successfully Launching New Ventures, Global Edition, 6th  Edition Bruce R. Barringer, Texas A & amp; M University, R. Duane Ireland,  ©2018 |Pearson | | | | | | | | | | | | |

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|  | **PO 1** | **PO 2** | **PO 3** | **PO 4** | **PO 5** | **PO 6** | **PO 7** | **PO 8** |
| **CO 1** |  |  |  | 3 |  |  | 3 |  |
| **CO 2** |  |  |  |  |  |  | 3 | 2 |
| **CO 3** |  |  |  |  |  | 2 | 3 |  |
| **CO 4** |  |  |  |  |  |  | 3 | 2 |
| **CO 5** |  |  |  |  |  |  | 3 | 3 |

**3-Strong 2-Medium 1-Low**

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| **Subject Code** | **Subject Name** | **Category** | **L** | **T** | **P** | **O** | **Credits** | | **Inst. Hours** | **Marks** | | | |
| **CIA** | | **External** | **Total** |
|  | **Soft Skills I – Executive Communication** | Soft Skills | - | - | 2 | - | 2 | | 30 | 25 | | 75 | 100 |
| **Course Objectives** | | | | | | | | | | | | | |
| C1 | To acquire communication awareness they are going to get for the industry. | | | | | | | | | | | | |
| C2 | To make the customer realize that you can provide them with information and other essential things | | | | | | | | | | | | |
| C3 | To explore the skill of writing business proposals | | | | | | | | | | | | |
| C4 | To **develop a** plan for the meetings and interviews | | | | | | | | | | | | |
| C5 | To analyze the skills required for non-verbal communication | | | | | | | | | | | | |
| **SYLLABUS** | | | | | | | | | | | | | |
| **UNIT** | **Details** | | | | | | | **No. of Hours** | | | **Course Objectives** | | |
| I | **UNIT 1- Communication:** Meaning and Significance of Communication for Management- Types of Communication Factors Affecting Effectiveness of Communication- Barriers to Communication- Principles of Effective Communication Dyadic Communication- Face-to-face Communication. Other Modes of Communication. | | | | | | | 6 | | | C1 | | |
| II | **UNIT 11- Business Correspondence:** Planning Business Messages: Analyzing the Task, Anticipating the Audience. Adapting the Message Organizing and Writing Business Messages: Patterns of organization, Use of Tools such as Mind Maps, Composing the Message- Norms for Business Letters Letters for Different Kinds of Situation: Personalized Standard Letters, Enquiries, Inviting Quotations, Sending Quotations, Placing Orders, Inviting tenders, Claim letters, Customers Complaints, Collection Letters, Sales Promotion Letters- Revising Business Messages: Revising for Clarity. Conciseness and Readability, Proof reading and Evaluating- Letters of application and resume. | | | | | | | 6 | | | C2 | | |
| III | **UNIT III- Business Reports and Proposals:** Structure of Reports- Long and Short Reports: Formal and Informal Reports- Writing Research Reports- Technical Reports- Norms for Including Exhibits and Appendices- Writing Business Proposals. | | | | | | | 6 | | | C3 | | |
| IV | **UNIT IV- Conducting Meetings and Interviews:** Procedure for Conducting Meetings- Preparing Agenda, Minutes and Resolutions- Conducting Seminars and Conferences- Procedure of Regulating Speech- Evaluating Oral Presentations Drafting Speech- Participating in Debates and Group Discussions- Presentation Skills- Fluency Development Strategies- Attending and Conducting Interviews- Listening. | | | | | | | 6 | | | C4 | | |
| V | **UNIT V- Non-verbal Communication:** Personal Appearance- Posture- Body Language- Reading Nonverbal Messages- Use of Charts. Diagrams and Tables- Visual and Audio-visual Aids for Communication. | | | | | | | 6 | | | C5 | | |
|  | **Total** | | | | | | | **30** | | |  | | |
| **Course Outcomes** | | | | | | | | | | | | | |
| **Course Outcomes** | On completion of this course, students will; | | | | | | | **Program Outcomes** | | | | | |
| **CO1** | Understanding of theories and concepts, types and various modes of communication in organizations | | | | | | | PO4, PO6 | | | | | |
| **CO2** | Development of skills on developing Business Correspondence | | | | | | | PO4, PO6 | | | | | |
| **CO3** | Development of skills onpreparing Business Reports and Proposals | | | | | | | PO4, PO6 | | | | | |
| **CO4** | To draft effective business correspondence with brevity, and clarity in designing and developing clean and lucid organizing skills. | | | | | | | PO4, PO6 | | | | | |
| **CO5** | To demonstrate his/her verbal and non-verbal communication ability through presentations. | | | | | | | PO4, PO6 | | | | | |
| **Reading List** | | | | | | | | | | | | | |
| 1. | <https://www.skillsyouneed.com/ips/communication-skills.html> | | | | | | | | | | | | |
| 2. | <https://mtbt.fpg.unc.edu/more-baby-talk/10-ways-promote-language-and-communication-skills-infants-and-toddlers> | | | | | | | | | | | | |
| 3. | <http://skillopedia.com> | | | | | | | | | | | | |
| 4. | <https://www.habitsforwellbeing.com/9-effective-communication-skills> | | | | | | | | | | | | |
| **References Books** | | | | | | | | | | | | | |
| 1. | Chaney, L. and Martin, J., Intercultural Business Communication. Person, 4 ed., 2008. | | | | | | | | | | | | |
| 2. | Chaturvedi, Business Communication, Person, 2 edition, 2011 | | | | | | | | | | | | |
| 3. | Bovec L. Courtland and John V. Thill, Business Communication Today, 10 ed., Pearson Education, New Delhi, 2011. | | | | | | | | | | | | |
| 4. | American Management Association, The AMA Handbook of Business Writing: The Ultimate Guide to Style, Usage, Punctuation, Construction and Formatting, 2010. | | | | | | | | | | | | |
| 5. | Gerson, Sharan J., and Steven M Gerson, Technical Writing: Process and Product, Person Education, New Delhi, 2008 | | | | | | | | | | | | |

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|  | **PO 1** | **PO 2** | **PO 3** | **PO 4** | **PO 5** | **PO 6** | **PO 7** | **PO 8** |
| **CO 1** |  |  |  | 3 |  | 3 |  |  |
| **CO 2** |  |  |  | 3 |  | 3 |  |  |
| **CO 3** |  |  |  | 3 |  | 3 |  |  |
| **CO 4** |  |  |  | 3 |  | 3 |  |  |
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**3-Strong 2-Medium 1-Low**

**SEMESTER II**

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| **Subject Code** | **Subject Name** | **Category** | **L** | **T** | **P** | **O** | **Credits** | | **Inst. Hours** | **Marks** | | | |
| **CIA** | | **External** | **Total** |
|  | **Applied Operations Research** | Core | 3 | 1 | - | - | 4 | | 60 | 25 | | 75 | 100 |
| **Course Objectives** | | | | | | | | | | | | | |
| C1 | To provide the students with introduction on OR and its models to aid in understanding its applicability in the various functional areas of management. | | | | | | | | | | | | |
| C2 | To understand the concept of linear programming models in determining profit maximization and cost minimization | | | | | | | | | | | | |
| C3 | To learn about various methods adopted in transportation and Assignments models. | | | | | | | | | | | | |
| C4 | To determine about inventory models, replacement models, job sequencing, networking model and Queuing model | | | | | | | | | | | | |
| C5 | To throw light on dynamic model and game models and the application of pure and mixed strategies in competitive environment. | | | | | | | | | | | | |
| **SYLLABUS** | | | | | | | | | | | | | |
| **UNIT** | **Details** | | | | | | | **No. of Hours** | | | **Course Objectives** | | |
| I | Introduction: Overview of operations research – Origin – Nature, scope & characteristics of OR – Models in OR – Application of operations research in functional areas of management | | | | | | | 08 | | | C1 | | |
| II | Linear Programming Problem: Linear programming problem model – Formulation – Maximization & Minimization problem – Graphical method – Simplex method – Artificial variable –- Primal & Dual. | | | | | | | 12 | | | C2 | | |
| III | Transportation problem: Basic Solution – North / West corner Solution, LCM, VAM, Matrices method – Optimal Solution – Stepping stone method – Vogel’s approximation method – Modi method – Degeneracy – Imbalance matrix. Assignment model: Hungarian method – Traveling salesmen problem. | | | | | | | 12 | | | C3 | | |
| IV | Project Scheduling and Resource Management: Deterministic Inventory models – Purchasing & Manufacturing models – Probabilistic inventory models – Replacement model – Sequencing – Brief Introduction to Queuing models. Networking – Programme Evaluation and Review Technique (PERT) and Critical Path Method (CPM) for Project Scheduling- Crashing – Resource allocation and Resource Scheduling. | | | | | | | 18 | | | C4 | | |
| V | Game Theory and Strategies: Games theory – two player zero sum game theory – Saddle Point –Mixed Strategies for games without saddle points – Dominance method – Graphical and L.P Solutions- Goal Programming; Simulation; Integer programming and Dynamic programming. | | | | | | | 10 | | | C5 | | |
|  | **Total** | | | | | | | **60** | | |  | | |
| **Course Outcomes** | | | | | | | | | | | | | |
| **Course Outcomes** | On completion of this course, students will; | | | | | | | **Program Outcomes** | | | | | |
| **CO1** | Obtain insight on the origin and nature of OR and also the application of various models of OR. | | | | | | | PO4, PO6 | | | | | |
| **CO2** | Learn about the graphical, Simplex, Big M and dual methods of Linear programming problem. | | | | | | | PO1, PO2, PO6, PO7 | | | | | |
| **CO3** | Be well versed with the concept of transportation and Assignments models | | | | | | | PO1, PO2, PO6, PO7 | | | | | |
| **CO4** | Have better understanding on inventory models, replacement models, job sequencing, networking model and Queuing model | | | | | | | PO1, PO2, PO6, PO7 | | | | | |
| **CO5** | Be imparted knowledge on the various methods of game model | | | | | | | PO2, PO7 | | | | | |
| **Reading List** | | | | | | | | | | | | | |
| 1. | [www.cbom.atozmath.com](http://www.cbom.atozmath.com) | | | | | | | | | | | | |
| 2. | <http://www.pondiuni.edu.in/storage/dde/downloads/mbaii_qt.pdf> | | | | | | | | | | | | |
| 3. | [http://164.100.133.129;81/econtent/Uploads/Operations\_Research.pdf](http://164.100.133.129:81/econtent/Uploads/Operations_Research.pdf) | | | | | | | | | | | | |
| 4. | <https://www.journals.elsevier.com/operations-research-perspectives> | | | | | | | | | | | | |
| **References Books** | | | | | | | | | | | | | |
| 1. | Anderson, D.R., Sweeney, D.J., Williams, T.A. and Martin, K., An Introduction to Management Science: Quantitative Approach to Decision Making, 14th Edition Paperback – 1, Cengage Learning India Pvt. Ltd., 2019 | | | | | | | | | | | | |
| 2. | Gupta, P.K., and Comboj, Introduction to Operations Research, S. Chand, 2014 | | | | | | | | | | | | |
| 3. | Hiller, F., Liebermann, Nag and Basu, Introduction to Operations Research, 11th Edition Paperback, Tata McGraw-Hill Publishing Co. Ltd., 2021 | | | | | | | | | | | | |
| 4. | Khanna, R.B., Quantitative Techniques for Managerial Decision Making, 3rd Edition – Paperback, New Age International Publishers, 2018 | | | | | | | | | | | | |
| 5. | Taha, H.A., Operations Research: An Introduction, 10th Edition, Pearson, 2019 | | | | | | | | | | | | |
| 6. | Vohra,N.D., Quantitative Techniques in Management, 5th Edition, Tata McGraw Hill Education Pvt. Ltd., 2017. | | | | | | | | | | | | |

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|  | **PO 1** | **PO 2** | **PO 3** | **PO 4** | **PO 5** | **PO 6** | **PO 7** | **PO 8** |
| **CO 1** |  |  |  | 2 |  | 2 |  |  |
| **CO 2** | 3 | 2 |  |  |  | 2 | 2 |  |
| **CO 3** | 3 | 3 |  |  |  | 3 | 2 |  |
| **CO 4** | 3 | 3 |  |  |  | 2 | 2 |  |
| **CO 5** |  | 3 |  |  |  |  | 2 |  |

**3-Strong 2-Medium 1-Low**

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| **Subject Code** | **Subject Name** | **Category** | **L** | **T** | **P** | **O** | **Credits** | | **Inst. Hours** | **Marks** | | | |
| **CIA** | | **External** | **Total** |
|  | **Human Resource Management** | Core | 4 | - | - | - | 4 | | 60 | 25 | | 75 | 100 |
| **Course Objectives** | | | | | | | | | | | | | |
| C1 | To embark importance of HRM role, functions and need | | | | | | | | | | | | |
| C2 | To assimilate theoretical and practical implications of HRP | | | | | | | | | | | | |
| C3 | To critically use appropriate training tools | | | | | | | | | | | | |
| C4 | To analyze and implement an effective performance management | | | | | | | | | | | | |
| C5 | To extrapolate and design compensation management techniques | | | | | | | | | | | | |
| **SYLLABUS** | | | | | | | | | | | | | |
| **UNIT** | **Details** | | | | | | | **No. of Hours** | | | **Course Objectives** | | |
| I | **Introduction:** Introduction of Human Resource Management: Importance of Human Resources, Definition and Objectives of Human Resources Management, Qualities of a good HR manager – Evolution and growth of Human Resource Management in India. Functions of Human Resource Management. Strategic Human Resource Management (SHRM).Human Resource Policies: Need, type and scope, Human Resource Accounting and Audit- Gig Economy. | | | | | | | 12 | | | C1 | | |
| II | **Human Resource Planning (HRP):** Human Resources Planning: Long and Short term planning, Job Analysis, Skills inventory, Job Description, Job Specification and Succession Planning, Strategic Human Resource Planning.  Recruitment and selection: Purposes, types and methods of recruitment and selection, Relative merits and demerits of the different methods, Recruitment and Social Media.  Placement, Induction, Transfers, Promotions, Dismissal, Resignation, Exit Interviews, Reduction of attrition rate- Attrition and retention management | | | | | | | 12 | | | C2 | | |
| III | **Training, Development & Career Management:**  Importance and benefits of Training and Development, Types of Training Methods, Executive Development Programs, Concept and process of Career Management; Competency mapping, Knowledge Management & Talent Management. | | | | | | | 12 | | | C3 | | |
| IV | **Performance Management:**  Importance, process and Methods: Ranking, rating scales, critical incident method, Removing subjectivity from evaluation, MBO as a method of appraisal, Performance Feedback, Online PMS. Human Resource Information System; International Human Resource Management; Cross cultural diversity management; Hybrid work culture; work-life balance; Quality of work-life; HR Analytics. | | | | | | | 12 | | | C4 | | |
| V | **Compensation Management:** Wage and Salary Administration: Job Evaluation, Calculation of Wage, Salary, Prerequisites, Compensation Packages, Cost of Living Index and Calculation of Dearness Allowance, Rewards and Incentives; ESOP-Financial and non-financial incentives, Productivity – linked Bonus, Compensation Criteria, Rewards and Recognition. | | | | | | | 12 | | | C5 | | |
|  | **Total** | | | | | | | **60** | | |  | | |
| **Course Outcomes** | | | | | | | | | | | | | |
| **Course Outcomes** | On completion of this course, students will; | | | | | | | **Program Outcomes** | | | | | |
| **CO1** | Gain an understanding of HRM policies and importance. | | | | | | | PO4, PO6 | | | | | |
| **CO2** | Implement appropriate HRP in workplace. | | | | | | | PO6 | | | | | |
| **CO3** | Apply feasible Training method and manage career progressions. | | | | | | | PO5, PO6, PO7 | | | | | |
| **CO4** | Demonstrate managing performance of human resources. | | | | | | | PO6, PO7 | | | | | |
| **CO5** | Design and justify compensation framework. | | | | | | | PO4, PO6, PO7 | | | | | |
| **Reading List** | | | | | | | | | | | | | |
| 1. | <https://businessjargons.com/performance-management.html> | | | | | | | | | | | | |
| 2. | <https://www.hr-guide.com/data/G400.htm> | | | | | | | | | | | | |
| 3. | <https://www.managementstudyguide.com/training-development-hr-function.htm> | | | | | | | | | | | | |
| 4. | <https://www.tandfonline.com/toc/rijh20/current> | | | | | | | | | | | | |
| **References Books** | | | | | | | | | | | | | |
| 1. | Ashwathappa, K., Human Resource Management, 9th Edition, Tata McGraw-Hill Education Pvt. Ltd., 2021. | | | | | | | | | | | | |
| 2. | Ivanecevich, J.M., Human Resource Management, 12th Edition, Tata McGraw-Hill Education Pvt. Ltd., 2020. | | | | | | | | | | | | |
| 3. | Gary Dessler & Biju Varrkey, Human Resource Management, 16th Edition, Pearson India Pvt. Ltd., 2020. | | | | | | | | | | | | |
| 4 | DeCenzo, D.A., Robbins S.P., Susan L Verhulst, Human Resource Management, 11th Edition, Wiley India Pvt. Ltd., 2015. | | | | | | | | | | | | |
| 5. | Leigh Thompson, Making the team, A guide for Managers, Pearson, 6th Edition 2019. | | | | | | | | | | | | |
| 6. | Gary Dessler, Fundamentals of Human Resource Management, Pearson, 4th Edition 2017. | | | | | | | | | | | | |

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|  | **PO 1** | **PO 2** | **PO 3** | **PO 4** | **PO 5** | **PO 6** | **PO 7** | **PO 8** |
| **CO 1** |  |  |  | M |  | M |  |  |
| **CO 2** |  |  |  |  |  | M |  |  |
| **CO 3** |  |  |  |  | S | S | M |  |
| **CO 4** |  |  |  |  |  | M | M |  |
| **CO 5** |  |  |  | M |  | M | M |  |

**3-Strong 2-Medium 1-Low**

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| **Subject Code** | **Subject Name** | **Category** | **L** | **T** | **P** | **O** | **Credits** | | **Inst. Hours** | **Marks** | | | |
| **CIA** | | **External** | **Total** |
|  | **Marketing Management** | Core | 4 | - | - | - | 4 | | 60 | 25 | | 75 | 100 |
| **Course Objectives** | | | | | | | | | | | | | |
| C1 | To develop an understanding and enhance the knowledge about marketing theories, principles, strategies and concepts and how they are applied. | | | | | | | | | | | | |
| C2 | To provide with opportunities to analyze marketing activities within the firm. | | | | | | | | | | | | |
| C3 | To analyze and explore the buyer behavior pattern in marketing situations. | | | | | | | | | | | | |
| C4 | To understand the branding, pricing and strategies in marketing a product. | | | | | | | | | | | | |
| C5 | To upgrade the knowledge and awareness of Consumer Rights in the Market. | | | | | | | | | | | | |
| **SYLLABUS** | | | | | | | | | | | | | |
| **UNIT** | **Details** | | | | | | | **No. of Hours** | | | **Course Objectives** | | |
| I | Introduction: Marketing Management Philosophies – What is marketing- The concepts of marketing- Marketing and Services – Digital Marketing – Social Media Marketing – Current marketing challenges; Rural Marketing – E-Rural Marketing – International Marketing – Industrial Marketing. | | | | | | | 12 | | | C1 | | |
| II | Strategic Marketing– Marketing Management Process – Analysis of Marketing opportunities, Selecting Target Consumers, developing Marketing Mix Analysis of Macro and Micro environment Marketing Research as an Aid to Marketing, Marketing Research Process – Sales Forecasting –Techniques. Marketing Tactics, The Mix Service and Retail Marketing. | | | | | | | 12 | | | C2 | | |
| III | MIS: Marketing Information Systems- Customer Relationship Management (CRM) Customer Engagement Marketing – Sales force Automation- Marketing Analytics | | | | | | | 12 | | | C3 | | |
| IV | Buyer Behaviour: Factors Influencing Consumer Behaviour – Buying situation– Buying Decision Process – Industrial Buyer Behaviour. Market Segmentation : Targeting and Positioning – Competitive Marketing Strategies. Customer Life Cycle – Customer Life time Value, Product Portfolio Management. | | | | | | | 12 | | | C4 | | |
| V | Product Policies: Consumer and Industrial Product Decisions, Branding, Packaging and Labelling – New Product Development and Product Life Cycle Strategies, Pricing – Pricing Strategies and approaches, Promotion Decisions: Promotion Mix – Integrated Marketing Communication – Advertising and Sales Promotion - Sales Force Decisions, Selection, Training, Compensation and Control – Publicity and Personal Selling – Distribution Management – Channel Management: Selection, Co-operation and Conflict Management – Vertical, Horizontal and Multi-channel Systems Consumer Protection – Awareness of Consumer Rights in the Market Place. | | | | | | | 12 | | | C5 | | |
|  | **Total** | | | | | | | **60** | | |  | | |
| **Course Outcomes** | | | | | | | | | | | | | |
| **Course Outcomes** | On completion of this course, students will; | | | | | | | **Program Outcomes** | | | | | |
| **CO1** | Understand the fundamental principles of marketing, marketing concepts and ideas. | | | | | | | PO4, PO6, PO7 | | | | | |
| **CO2** | Understand the organization’s marketing strategy and marketing environment. Familiar with marketing research with forecasting techniques. | | | | | | | PO4, PO6 | | | | | |
| **CO3** | Understand the buyer behavior and market segmentation and competitive marketing strategies. | | | | | | | PO4, PO6, PO7 | | | | | |
| **CO4** | Think strategically about branding, pricing and marketing issues. | | | | | | | PO3, PO4, PO6, PO7 | | | | | |
| **CO5** | Familiar with Promotion decisions along with awareness on Consumer Rights in the Market Place. | | | | | | | PO6, PO8 | | | | | |
| **Reading List** | | | | | | | | | | | | | |
| 1. | <https://ocw.mit.edu/courses/sloan-school-of-management/15-810-marketing-management-fall-2010/lecture-notes/> | | | | | | | | | | | | |
| 2. | <https://cpbucket.fiu.edu/mar3023vd1131/syllabus.html> | | | | | | | | | | | | |
| 3. | <https://www.ama.org/ama-academic-journals/> | | | | | | | | | | | | |
| 4. | <https://www.emerald.com/insight/publication/issn/0736-3761> | | | | | | | | | | | | |
| **References Books** | | | | | | | | | | | | | |
| 1. | Pillai & Baghawathy, Marketing Management, S.Chand , 2010. | | | | | | | | | | | | |
| 2. | Gupta Prachi, Aggarwal Ashita , et al., Marketing Management: Indian Cases, 1st Edition, 2017 | | | | | | | | | | | | |
| 3. | G.Shainesh Philip Kotler, et..al., Marketing Management; Indian Case Studies included, 16th Edition, Pearson, 2022 | | | | | | | | | | | | |
| 4. | [Warren J. Keegan](https://www.amazon.in/Warren-J-Keegan/e/B001ILHKJY?ref=sr_ntt_srch_lnk_2&qid=1656309878&sr=1-2), Global Marketing Management, 8thEdition, Pearson, 2017. | | | | | | | | | | | | |
| 5. | Mullins, Marketing Management: A Strategic Decision Making Approach, 7th Edition, McGraw-Hill, 2010. | | | | | | | | | | | | |
| 6. | Philip Kotler and  [Keven Lane Keller](https://www.amazon.in/s/ref=dp_byline_sr_book_2?ie=UTF8&field-author=Keven+Lane+Keller&search-alias=stripbooks), Marketing Management, 15th Edition, Pearson, 2015 | | | | | | | | | | | | |

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|  | **PO 1** | **PO 2** | **PO 3** | **PO 4** | **PO 5** | **PO 6** | **PO 7** | **PO 8** |
| **CO 1** |  |  |  | 2 |  | 2 | 2 |  |
| **CO 2** |  |  |  | 3 |  | 3 |  |  |
| **CO 3** |  |  |  | 2 |  | 2 | 2 |  |
| **CO 4** |  |  | 2 | 2 |  | 2 | 2 |  |
| **CO 5** |  |  |  |  |  | 2 |  | 2 |

**3-Strong 2-Medium 1-Low**

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| **Subject Code** | **Subject Name** | **Category** | **L** | **T** | **P** | **O** | **Credits** | | **Inst. Hours** | **Marks** | | | |
| **CIA** | | **External** | **Total** |
|  | **Operations Management** | Core | 3 | 1 | - | - | 4 | | 60 | 25 | | 75 | 100 |
| **Course Objectives** | | | | | | | | | | | | | |
| C1 | To understand the production function, production design & capacity planning, | | | | | | | | | | | | |
| C2 | Exploring the Make or Buy decision, and thus understanding the role of inventory management | | | | | | | | | | | | |
| C3 | To determine multiple plant location decisions and effective utilization of plant layout. To explain the models, concepts, and techniques adopted in the areas of inventory control and maintenance. | | | | | | | | | | | | |
| C4 | To elucidate the importance and usefulness of work-study and quality control tools | | | | | | | | | | | | |
| C5 | To provide insights on service operations management and waiting line analysis. | | | | | | | | | | | | |
| **SYLLABUS** | | | | | | | | | | | | | |
| **UNIT** | **Details** | | | | | | | **No. of Hours** | | | **Course Objectives** | | |
| I | INTRODUCTION: Operations Management- Nature, Scope, Historical Development, Functions- Long term Vs Short term issues- A Systems Perspective- Challenges- Manufacturing Trends in India-Production Design and Process Planning- Types of Production Processes- Plant Capacity-Capacity Planning- Make or Buy Decisions- Use of Crossover Chart for Selection Processes-Types of Charts used in Operations Management. | | | | | | | 12 | | | C1 | | |
| II | FACILITY DESIGN: Plant Location: Factors to be considered in Plant Location- Location Analysis Techniques- Choice of General Region, Particular community and Site- Multiple Plant Location Decision- Plant Location Trends. Layout of Manufacturing Facilities: Principles of a Good Layout- Layout Factors- Basic Types of Layout- Principles of Materials Handling- Materials Handling Equipment - Role of Ergonomics in Job Design. | | | | | | | 12 | | | C2 | | |
| III | INVENTORY CONTROL AND MAINTENANCE: Basic Inventory Models- Economic Order Quantity- Economic Batch Quantity- Reorder Point-Safety Stock- Inventory Costs-Classification and Codification of Stock- ABC Classification-Materials Requirement Planning (MRP)- JIT- Implications of Supply Chain Management. Maintenance: Preventive Vs Breakdown Maintenance- Group Replacement Vs Individual Replacement- Breakdown Time Distribution- Maintenance of Cost Balance- Procedure for Maintenance. | | | | | | | 12 | | | C3 | | |
| IV | DESIGN OF WORK SYSTEMS AND QUALITY CONTROL: Work Study- Objectives- Procedure- Method Study and Motion Study- Work Measurement-Time Study-Performance Rating- Allowance Factors- Standard Time- Work Sampling Techniques- Job Sequencing and Scheduling. Quality Control: Purpose of Inspection and Quality Control- Different Types of Inspection- Acceptance Sampling- The Operating Characteristic Curve- Control Charts for Variables and Attributes; Quality Circles; TQM – Six Sigma, Kaizen | | | | | | | 14 | | | C4 | | |
| V | SERVICE OPERATIONS MANAGEMENT: Introduction to Services Management- Nature of Services- Types of Services- Service Encounter-Designing Service Organizations- Service Facility Location and Layout- Service Blueprinting-Waiting Line Analysis for Service Improvement- Service Processes and Service Delivery. | | | | | | | 10 | | | C5 | | |
|  | **Total** | | | | | | | **60** | | |  | | |
| **Course Outcomes** | | | | | | | | | | | | | |
| **Course Outcomes** | On completion of this course, students will; | | | | | | | **Program Outcomes** | | | | | |
| **CO1** | Understand the concepts of production and its design, capacity planning and make or buy decisions. | | | | | | | PO2, PO4 | | | | | |
| **CO2** | Be cognizant of the complexity involved in plant location decisions and utilization of plant layout. | | | | | | | PO2, PO7 | | | | | |
| **CO3** | Understand the Inventory models and the importance of maintenance techniques. | | | | | | | PO6, PO7 | | | | | |
| **CO4** | Be aware of work-study procedures and the importance on quality control tools | | | | | | | PO1, PO2, PO6, PO7 | | | | | |
| **CO5** | Have insight on service operations, service delivery and waiting line analysis. | | | | | | | PO2, PO6, PO7 | | | | | |
| **Reading List** | | | | | | | | | | | | | |
| 1. | [www.shsu.edu/~mgt\_ves/mgt560/ServiceManagement.ppt](http://www.shsu.edu/~mgt_ves/mgt560/ServiceManagement.ppt) | | | | | | | | | | | | |
| 2. | zums.ac.ir/files/research/site/ebooks/strategy/operations-strategy.pdf | | | | | | | | | | | | |
| 3. | <https://www.emerald.com/insight/publication/issn/0144-3577> | | | | | | | | | | | | |
| 4. | <https://www.inderscience.com/jhome.php?jcode=ijaom> | | | | | | | | | | | | |
| **References Books** | | | | | | | | | | | | | |
| 1. | Aswathappa K and Shridhara Bhat K, Production and Operations Management, 2nd Edition, Himalaya Publishing House, 2021. | | | | | | | | | | | | |
| 2. | Mahadevan B, Operations Management Theory and Practice, 3rd Edition, Pearson Education, 2015. | | | | | | | | | | | | |
| 3. | Russel and Taylor, Operations and Supply Chain Management, 8th Edition, Wiley, 2021. | | | | | | | | | | | | |
| 4. | William J Stevenson, Operations Management, 14th Edition, McGraw Hill, 2021. | | | | | | | | | | | | |
| 5. | Gerard Cachon and Christian Terwiesch, Operations Management, 3rd Edition, McGraw Hill, 2022. | | | | | | | | | | | | |
| 6. | Prof. K C Jain, Production and Operations Management, 1st Edition, Wiley, 2022. | | | | | | | | | | | | |

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|  | **PO 1** | **PO 2** | **PO 3** | **PO 4** | **PO 5** | **PO 6** | **PO 7** | **PO 8** |
| **CO 1** |  | 2 |  | 2 |  |  |  |  |
| **CO 2** |  | 2 |  |  |  |  | 2 |  |
| **CO 3** |  |  |  |  |  | 2 | 2 |  |
| **CO 4** | 2 | 2 |  |  |  | 2 | 2 |  |
| **CO 5** |  | 2 |  |  |  | 2 | 2 |  |

**3-Strong 2-Medium 1-Low**

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| **Subject Code** | **Subject Name** | **Category** | **L** | **T** | **P** | **O** | **Credits** | | **Inst. Hours** | **Marks** | | | |
| **CIA** | | **External** | **Total** |
|  | **Financial Management** | Core | 3 | 1 | - | - | 4 | | 60 | 25 | | 75 | 100 |
| **Course Objectives** | | | | | | | | | | | | | |
| C1 | To create an understanding and familiarize the students to the fundamentals of financial management and create awareness on the various sources of finance. | | | | | | | | | | | | |
| C2 | To create awareness on the various investment techniques on the investment decision making. | | | | | | | | | | | | |
| C3 | To throw light on the concept of cost of capital and familiarize on the technique of identifying the right source of capital. | | | | | | | | | | | | |
| C4 | To educate on the concept of capital structure and the create understanding on the concept of dividend. | | | | | | | | | | | | |
| C5 | To create an understanding on the concept of working capital, its need, importance, factors and forecasting technique | | | | | | | | | | | | |
| **SYLLABUS** | | | | | | | | | | | | | |
| **UNIT** | **Details** | | | | | | | **No. of Hours** | | | **Course Objectives** | | |
| I | Introduction: Financial management: Definition and scope – objectives of Financial Management – Profit Maximization - wealth maximization - functions and role of finance manager. Sources of finance – short term – Bank Sources – Long term – Shares – Debentures – Preferred stock – Debt: Hire purchase, Leasing, Venture Capital – Private equity- International Financial Management- Financial Planning- Behavioural Finance- Capital Market- Money Market- Micro Finance- Financial Information System. | | | | | | | 12 | | | C1 | | |
| II | Investing Decision - Capital Budgeting Process – Techniques of Investment Appraisal: Pay Back Period; Accounting Rate of Return, Time Value of Money- DCF Techniques –Net Present Value, Profitability Index and Internal Rate of Return- Problems - Risk analysis in Capital Budgeting- Introduction to Fintech – Digital Currency - Cryptocurrency – Financial Modeling; Hurdle Rate. | | | | | | | 12 | | | C2 | | |
| III | Cost of Capital - Cost of specific sources of capital – Cost of equity capital – Cost of debt – Cost of preference – Cost of retained earnings - weighted average cost of capital. EBIT -EPS Analysis - Operating Leverage - Financial Leverage-problems. | | | | | | | 12 | | | C3 | | |
| IV | Capital structure - Factors influencing capital structure – optimal capital structure - capital structure theories – Net Income Approach – Net Operating Income (NOI) Approach – Modigliani - Miller(MM) Approach – Traditional Approach – Practical Problems. Dividend and Dividend policy: Meaning, classification - sources available for dividends -Dividend policy general, determinants of dividend policy. | | | | | | | 12 | | | C4 | | |
| V | Working Capital Management - Definition and Objectives - Working Capital Policies - Factors affecting Working Capital requirements - Forecasting Working Capital requirements (problems) - Cash Management - Receivables Management and - Inventory Management - Working Capital Financing - Sources of Working Capital and Implications of various Committee Reports- Financial Analytics. | | | | | | | 12 | | | C5 | | |
|  | **Total** | | | | | | | **60** | | |  | | |
| **Course Outcomes** | | | | | | | | | | | | | |
| **Course Outcomes** | On completion of this course, students will; | | | | | | | **Program Outcomes** | | | | | |
| **CO1** | Be aware of the basic concepts of financial management and understand the various sources of finance. | | | | | | | PO4, PO6, PO7 | | | | | |
| **CO2** | Possess knowledge on investment decision making. | | | | | | | PO1, PO2, PO6, PO7 | | | | | |
| **CO3** | Have insights on the cost of capital and would have familiarized themselves with the technique of calculating the cost of capital. | | | | | | | PO2, PO7 | | | | | |
| **CO4** | Have learnt the concept of capital structure and dividend | | | | | | | PO6, PO7 | | | | | |
| **CO5** | Have good understanding on the concept of working capital, its need, importance, factors and the methods of forecasting it. | | | | | | | PO1,PO2, PO4, PO7 | | | | | |
| **Reading List** | | | | | | | | | | | | | |
| 1. | https://accountingexplained.com/managerial/capital-budgeting/ | | | | | | | | | | | | |
| 2. | http://www.studyfinance.com/lessons/workcap/ | | | | | | | | | | | | |
| 3. | Journal of International Financial Management & Accounting | | | | | | | | | | | | |
| 4. | The Management Accountant Journal - icmai-rnj.in | | | | | | | | | | | | |
| **References Books** | | | | | | | | | | | | | |
| 1. | S.N.Maheswari, Finanacial Management, Sulthan Chand & Sons, 15th Edition, 2019 | | | | | | | | | | | | |
| 2. | I.M. Pandey Financial Management, Vikas Publishing House Pvt. Ltd., 11th edition, 2018. | | | | | | | | | | | | |
| 3. | Van Horne, J.C., Financial Managememt and Policy, 13th Edition, Pearson, 2015. | | | | | | | | | | | | |
| 4. | Prasanna Chandra, Financial Management, 10th edition, Tata McGraw Hill, 2019 | | | | | | | | | | | | |
| 5. | Periasamy, P., Financial Management, 4th Edition, Tata McGraw-Hill Education Pvt. Ltd., 2017. | | | | | | | | | | | | |
| 6. | Brigham, E.F. and Ehrhardt, M.C., Financial Management: Theory and Practice, 14th Edition, 2015. | | | | | | | | | | | | |

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|  | **PO 1** | **PO 2** | **PO 3** | **PO 4** | **PO 5** | **PO 6** | **PO 7** | **PO 8** |
| **CO 1** |  |  |  | 2 |  | 2 | 2 |  |
| **CO 2** | 2 | 3 |  |  |  | 2 | 2 |  |
| **CO 3** |  | 2 |  |  |  |  | 3 |  |
| **CO 4** |  |  |  |  |  | 2 | 3 |  |
| **CO 5** | 2 | 2 |  | 3 |  |  | 2 |  |

**3-Strong 2-Medium 1-Low**

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| **Subject Code** | **Subject Name** | **Category** | **L** | **T** | **P** | **O** | **Credits** | **Inst. Hours** | | **Marks** | | | |
| **CIA** | **External** | **Total** | |
|  | **Strategic Management** | Core | 4 | - | - | - | 4 | 60 | | 25 | 75 | 100 | |
| **Course Objectives** | | | | | | | | | | | | |
| C1 | To enable the students understand the importance of vision and mission in framing corporate strategy. | | | | | | | | | | | |
| C2 | To provide insights on how business is responsible socially and ethically. | | | | | | | | | | | |
| C3 | To highlight on the environmental analysis framework. | | | | | | | | | | | |
| C4 | To throw light on strategic formulation and strategic choice. | | | | | | | | | | | |
| C5 | To understand strategic implementation and strategic control. | | | | | | | | | | | |
| **SYLLABUS** | | | | | | | | | | | | |
| **UNIT** | **Details** | | | | | **No. of Hours** | | | **Course Objectives** | | | |
| I | Introduction: Strategy – Strategic Management Process – Developing a Strategic Vision –Mission- Setting Objectives– Strategies and Tactics – Importance of Corporate Strategy – the 7-S Framework- Corporate Governance– Board of Directors: Role and Functions – Board Functioning – Top Management: Role and Skills. | | | | | 12 | | | C1 | | | |
| II | Corporate Policy and Planning in India: Importance – Characteristics – Objectives - Policy Formulation and Development – Types of Business Policies-Implementation of Policies. Society and Business: Social Responsibility of Business –Corporate Governance and Ethical Responsibility. | | | | | 12 | | | C2 | | | |
| III | Environmental Analysis: Environmental Scanning – Industry Analysis - The Synthesis of External Factors - Internal Scanning – Value Chain Analysis – SWOT Audit –Scenario planning- Creating an Industry Matrix. | | | | | 12 | | | C3 | | | |
| IV | Strategy Formulation and Analysis: Strategy Formulation – Strategic Factors Analysis Summary Matrix (SFAS) Portfolio Analysis – Business Strategy- TOWS Matrix– Corporate Strategy – Functional Strategy – Strategic Choice – Generic, Competitive Strategies; ETOP, TOWS | | | | | 12 | | | C4 | | | |
| V | Strategy Implementation: Strategy Implementation - Corporate Culture – Matching Organisation Structure to Strategy – Mergers and Acquisitions and Diversifications – Strategic Leadership Strategic Control: Measurement in Performance- Problems in Measurement of Performance- Strategy Audit-Strategic Control Process – Du Pont’s Control Model – Balanced Score Card – Michael Porter’s Framework for Strategic Management – Future of Strategic Management – Strategic Information System. | | | | | 12 | | | C5 | | | |
|  | **Total** | | | | | **60** | | |  | | | |
| **Course Outcomes** | | | | | | | | | | | | |
| **Course Outcomes** | On completion of this course, students will; | | | | | **Program Outcomes** | | | | | | |
| **CO1** | Be able to frame vision and mission statements. | | | | | PO3, PO4, PO7 | | | | | | |
| **CO2** | Be social and ethically responsible. | | | | | PO3, PO8 | | | | | | |
| **CO3** | Possess insights on making environmental analysis. | | | | | PO3, PO8 | | | | | | |
| **CO4** | Possess knowledge on learning strategic formulation & strategy choice. | | | | | PO2, PO5, PO7 | | | | | | |
| **CO5** | Understanding strategic implementation and control. | | | | | PO4, PO5, PO7 | | | | | | |
| **Reading List** | | | | | | | | | | | | |
| 1. | Strategic Management Journal – Wiley online Library | | | | | | | | | | | |
| 2. | Journal of strategy and Management – Emerald Insight | | | | | | | | | | | |
| 3. | Mastering Strategic Management – [www.opentextbooks.org.hk](http://www.opentextbooks.org.hk) | | | | | | | | | | | |
| 4. | Mastering Strategic Management – [www.saylor.org](http://www.saylor.org). | | | | | | | | | | | |
| **References Books** | | | | | | | | | | | | |
| 1. | V S P Rao, Strategic Management Text and Cases, 2nd edition 2013. | | | | | | | | | | | |
| 2. | Kazmi, A., Strategic Management and Business Policy, 15th Edition, Tata McGraw-Hill Education, 2018. | | | | | | | | | | | |
| 3. | Dess, G., Lumpkin, G.T. and Eisner, A., Strategic Management, 8th Edition, Tata McGraw-Hill, 2018. | | | | | | | | | | | |
| 4. | Hill, C.W.L. and Jones, G.R., Strategic Management: An Integrated Approach, 9th Edition, Cengage Learning, 2012. | | | | | | | | | | | |
| 5. | Pearce II, J., Robinson, R.B. and Mittal, A., Strategic Management: Formulation, Implementation and Control, 12th Edition, McGraw-Hill, 2017. | | | | | | | | | | | |
| 6. | Wheelen, T.L. and Hunger, D., Strategic Management and Business Policy, 13th Edition, Pearson, 2012. | | | | | | | | | | | |

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|  | **PO 1** | **PO 2** | **PO 3** | **PO 4** | **PO 5** | **PO 6** | **PO 7** | **PO 8** |
| **CO 1** |  |  | 3 | 2 |  |  | 3 |  |
| **CO 2** |  |  | 3 |  |  |  |  | 3 |
| **CO 3** |  |  | 2 |  |  |  |  | 3 |
| **CO 4** |  | 2 |  |  | 3 |  |  | 2 |
| **CO 5** |  |  |  | 3 | 3 |  |  | 3 |

**3-Strong 2-Medium 1-Low**

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| **Subject Code** | **Subject Name** | **Category** | **L** | **T** | **P** | **O** | **Credits** | | **Inst. Hours** | **Marks** | | | |
| **CIA** | | **External** | **Total** |
|  | **International Business** | Extra Disciplinary | 3 | - | - | - | 3 | | 45 | 25 | | 75 | 100 |
| **Course Objectives** | | | | | | | | | | | | | |
| C1 | To understand and analyze international situations and evaluate international collaborative arrangements and strategic alliances. | | | | | | | | | | | | |
| C2 | To apply knowledge of political, legal, economic and cultural country differences to develop competitive strategies in foreign, regional and global markets. | | | | | | | | | | | | |
| C3 | To throw light on international trade theories and the management of business functional operations in an international context. | | | | | | | | | | | | |
| C4 | To analyze and evaluate barriers, opportunities, market entry modes and the process of internationalization. | | | | | | | | | | | | |
| C5 | To know about regional economic integration and contemporary issues in international business. | | | | | | | | | | | | |
| **SYLLABUS** | | | | | | | | | | | | | |
| **UNIT** | **Details** | | | | | | | **No. of Hours** | | | **Course Objectives** | | |
| I | Introduction: Introduction to International Business: Importance, nature and scope of International business-International Business Vs. Domestic Business; Tariff and non-tariff barriers- transition from Domestic to International Business; Advantages and disadvantages of International business; Balance of Payments; Balance of Trade; Balance of Current Account . Modes of entry into International Business- Internationalization process and managerial implications- Multinational Corporations and their involvement in International Business- Issues in foreign investments, technology transfer, pricing and regulations- International collaborative arrangements and strategic alliances- Counter Trade; Import-Export Process and Documentation. | | | | | | | 9 | | | C1 | | |
| II | International Business Environment and Cultural Differences: International Business Environment: Economic, Political, Cultural and Legal environments in International Business. Framework for analyzing International Business environment. Differences in Culture: Introduction — Social Structure — Religion — Language — Education —Culture and the Workplace — Cultural Change — Cross-cultural Literacy — Culture and Competitive Advantage. | | | | | | | 9 | | | C2 | | |
| III | International Trade Theory: Introduction — Mercantilism, Neo-Mercantilism — Theory of Absolute Advantage — Theory of Comparative Advantage — Heckscher-Ohlin Theory — The New Trade Theory — National Competitive Advantage — Porter's Diamond —General Agreement on Tariff and Trade (GATT)- World Trade Organization (WTO)-GATS-UNCTAD- Trade Blocks; Customs Union-EU- PTA- European Free Trade Area (EFTA)-Central American Common Market(CACM)-Latin American Free Trade Association(LAFTA)- North American Free Trade Agreement(NAFTA)- Association of South East Asian Nations(ASEAN)- CARICOM- GSTP-GSP-SAPTA-Indian Ocean RIM Initiative- BIMSTEC- Bretton Woods Twins- World Bank & IMF, International Finance Corporation- Multilateral Investment Guarantee Agency (MIGA). | | | | | | | 9 | | | C3 | | |
| IV | Global Trading and Investment Environment: Recent Trends in India’s Foreign Trade- India’s Commercial Relations and Trade Agreements with other countries- Institutional Infrastructure for export promotion in India- Export Assistance- Export Finance- Export Processing Zones (EPZs) - Special Economic Zones (SEZs)- Exports by Air, Post and Sea- Small Scale Industries (SSI) and Exports- Role of ECGC- Role of EXIM Bank of India- Role of Commodity Boards- Role of State Trading Agencies in Foreign Trade- STC, MMTC, etc. Foreign Exchange Market- Functions of Foreign Exchange Market- Foreign Direct Investments (FDI); forms of FDI — Horizontal and Vertical Foreign Direct Investment — Advantages of FDI to Host and Home Countries. | | | | | | | 9 | | | C4 | | |
| V | Contemporary Issues: Contemporary Issues in International Business- International Sales Contract- Major Laws- INCO terms- Standard Clauses of International Sales Contract- Role of Indian Council of Arbitration / International Chamber of Commerce in solving Trade disputes. Export Regulations: Procedure for export of goods- Quality Control and Pre- shipment Inspection- Customs Clearance- Port formalities- Exchange regulations for Export- Role of Clearing and Forwarding Agents. | | | | | | | 9 | | | C5 | | |
|  | **Total** | | | | | | | **45** | | |  | | |
| **Course Outcomes** | | | | | | | | | | | | | |
| **Course Outcomes** | On completion of this course, students will; | | | | | | | **Program Outcomes** | | | | | |
| **CO1** | Be aware of the international situations and evaluate international collaborative arrangements and strategic alliances. | | | | | | | PO2, PO4, PO7 | | | | | |
| **CO2** | Possessed knowledge of political, legal, economic and cultural country differences to develop competitive strategies in foreign, regional and global markets. | | | | | | | PO4, PO7 | | | | | |
| **CO3** | Know the various international trade theories and the management of business functional operations in an international context. | | | | | | | PO4, PO6, PO7 | | | | | |
| **CO4** | Be able to evaluate barriers, opportunities, market entry modes and the process of internationalization. | | | | | | | PO2, PO4, PO7 | | | | | |
| **CO5** | Have better understanding on regional economic integration and contemporary issues in international business. | | | | | | | PO6, PO7, PO8 | | | | | |
| **Reading List** | | | | | | | | | | | | | |
| 1. | [www.internationalbusinesscorporation.com](http://www.internationalbusinesscorporation.com) | | | | | | | | | | | | |
| 2. | [www.business-ethics.org](http://www.business-ethics.org) | | | | | | | | | | | | |
| 3. | <https://www.jstor.org/journal/jintebusistud> | | | | | | | | | | | | |
| 4. | Journal of International Business and Management (JIBM) | | | | | | | | | | | | |
| **References Books** | | | | | | | | | | | | | |
| 1. | International Business: Competing in the Global Marketplace (SIE) | 11th Edition – 14 August 2018 by [Charles W. L. Hill](https://www.amazon.in/Charles-W-L-Hill/e/B001IGNO5S/ref=dp_byline_cont_book_1)  (Author), [G. Tomas M. Hult](https://www.amazon.in/s/ref=dp_byline_sr_book_2?ie=UTF8&field-author=G.+Tomas+M.+Hult&search-alias=stripbooks) (Author), [Rohit Mehtani](https://www.amazon.in/s/ref=dp_byline_sr_book_3?ie=UTF8&field-author=Rohit+Mehtani&search-alias=stripbooks) (Author) | | | | | | | | | | | | |
| 2. | International Business | Fourth Edition | By Pearson – 30 November 2017 by [S. Tamer Cavusgil](https://www.amazon.in/s/ref=dp_byline_sr_book_1?ie=UTF8&field-author=S.+Tamer+Cavusgil&search-alias=stripbooks) (Author), [Gary Knight](https://www.amazon.in/s/ref=dp_byline_sr_book_2?ie=UTF8&field-author=Gary+Knight&search-alias=stripbooks) (Author), [John Riesenberger](https://www.amazon.in/s/ref=dp_byline_sr_book_3?ie=UTF8&field-author=John+Riesenberger&search-alias=stripbooks) (Author) | | | | | | | | | | | | |
| 3. | Cherunilam, F., International Business: Text and Cases, 5th Edition, PHI Learning, 2010. | | | | | | | | | | | | |
| 4. | Paul, J., International Business, 5th Edition, PHI Learning, 2010. | | | | | | | | | | | | |
| 5. | Deresky, H., International Management: Managing Across Borders and Cultures, 6th Edition, Pearson, 2011. | | | | | | | | | | | | |
| 6. | Griffin, R., International Business, 7th Edition, Pearson Education, 2012. | | | | | | | | | | | | |

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|  | **PO 1** | **PO 2** | **PO 3** | **PO 4** | **PO 5** | **PO 6** | **PO 7** | **PO 8** |
| **CO 1** |  | 2 |  | 3 |  |  | 2 |  |
| **CO 2** |  |  |  | M |  |  | 2 |  |
| **CO 3** |  |  |  | 3 |  | 3 | 3 |  |
| **CO 4** |  | 3 |  | 3 |  |  | 3 |  |
| **CO 5** |  |  |  |  |  | 3 | 3 | 3 |

**3-Strong 2-Medium 1-Low**

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| **Subject Code** | **Subject Name** | **Category** | **L** | **T** | **P** | **O** | **Credits** | | **Inst. Hours** | **Marks** | | | |
| **CIA** | | **External** | **Total** |
|  | **Soft Skills II - Business Etiquette** | Soft Skills | - | - | 2 | - | 2 | | 30 | 25 | | 75 | 100 |
| **Course Objectives** | | | | | | | | | | | | | |
| C1 | To analyze the Business etiquette at workplace | | | | | | | | | | | | |
| C2 | To determine the Principles of exceptional work behavior | | | | | | | | | | | | |
| C3 | To explore Tech etiquette in using various telecommunication devices and channels | | | | | | | | | | | | |
| C4 | To successfully handle Multi-cultural challenges | | | | | | | | | | | | |
| C5 | To ascertain sensitivity to new and emerging issues in etiquette | | | | | | | | | | | | |
| **SYLLABUS** | | | | | | | | | | | | | |
| **UNIT** | **Details** | | | | | | | **No. of Hours** | | | **Course Objectives** | | |
| I | Introduction to business etiquette: The ABCs of etiquette Meeting and greeting scenarios-Developing a culture of excellence The principles of exceptional work behaviour - What is the role of Good Manners in Business?-Enduring Words  Greetings and Introductions: Guideline for receptionists - Making introductions and greeting people- Greeting Components- The protocol of shaking hands- Introductions - Introductory scenarios - Addressing individuals. | | | | | | | 6 | | | C1 | | |
| II | Meeting and Boardroom Protocol: Guidelines for planning a meeting - Before the meeting - On the day of the Meeting - Guidelines for Attending the meeting - For the Chairperson- For attendees - For Presenters - Planning a power point presentation-Dealing with customer complaints.  Entertaining Etiquette: Planning a meal- Issuing invitations -Business meals basics - Basics of table etiquette - Holding and resting utensils - Business dining etiquette - Multi-cultural Highlight: Japanese Dinning-Specific food Etiquette guidelines. | | | | | | | 6 | | | C2 | | |
| III | Telephone Etiquette: Cell phone etiquette-Social Media Usage etiquette- Telephone etiquette guidelines - Mastering the telephone courtesy - Active listening - Putting callers on hold -Transferring a call - Screening calls - Taking at message - Voice Mail-Closing the call - When Making calls - Closing the call-Handling rude or impatient clients  Internet & email etiquette: Internet usage in the workplace Email- Netiquette - Online chat - Online chat etiquette - Online chat etiquette guidelines | | | | | | | 6 | | | C3 | | |
| IV | Business Attire & Professionalism: Business style and professional image - Dress code - Guidelines for appropriate business attire - Grooming for  success - Guidelines for appropriate business attire - Grooming for success - Multicultural dressing  Diversity Management- Gender Sensitivity- Social Media and Communication with colleagues-Preventing sexual harassment-Disability Etiquette: Basic disability Etiquette practices - Courtesies for wheelchair users Courtesies for blind or visually impaired - Courtesies for the deaf- People with speech impairments. | | | | | | | 6 | | | C4 | | |
| V | Business Ethics: Ethics in the workplace - The challenge of business ethics - Creating an ethical compass - Business ethics and advantages - Ethical Issues - Conflict Management- Conflict resolution strategies - Choosing the appropriate gift in the business environment  Multi-cultural challenges: Multi-cultural etiquette - Example of cultural sensitivity - Cultural differences and their effect on business etiquette- onsite projects-Cultural Highlight: China-Cultural Highlight: India. | | | | | | | 6 | | | C5 | | |
|  | **Total** | | | | | | | **30** | | |  | | |
| **Course Outcomes** | | | | | | | | | | | | | |
| **Course Outcomes** | On completion of this course, students will; | | | | | | | **Program Outcomes** | | | | | |
| **CO1** | Learn using business etiquette at work place | | | | | | | PO4, PO6, PO7 | | | | | |
| **CO2** | Be able to acquire knowledge about the Principles of exceptional work behaviour | | | | | | | PO4, PO6, PO7 | | | | | |
| **CO3** | Be able to enhance their knowledge of latest Tech etiquette in using various telecommunication devices and channels. | | | | | | | PO4, PO6, PO7 | | | | | |
| **CO4** | Get familiarized with the Successful handling of Multi-cultural challenge | | | | | | | PO4, PO6, PO7 | | | | | |
| **CO5** | Become sensitive to new and emerging issues in etiquette | | | | | | | PO4, PO6, PO7 | | | | | |
| **Reading List** | | | | | | | | | | | | | |
| 1. | https://accountingexplained.com/managerial/capital-budgeting/ | | | | | | | | | | | | |
| 2. | http://www.studyfinance.com/lessons/workcap/ | | | | | | | | | | | | |
| 3. | Journal of International Financial Management & Accounting | | | | | | | | | | | | |
| 4. | The Management Accountant Journal - icmai-rnj.in | | | | | | | | | | | | |
| **References Books** | | | | | | | | | | | | | |
| 1. | Gonda, C. M. (2016) Master of Business Etiquette: The Ultimate Guide to Corporate Etiquette and Soft Skills Embassy Books, First Edition. | | | | | | | | | | | | |
| 2. | Mehra, S. K. (2012) Business Etiquette A Guide For The Indian Professional. Noula: HarperCollins | | | | | | | | | | | | |
| 3. | Pachter, B. (2013). The Essentials of Business Etiquette: How to Greet, Eat, and Tweet Your Way to Success (1) edition New York: McGraw-Hill Education. | | | | | | | | | | | | |
| 4. | Past, K. (2008). Indian Business Etiquette: 1 (First edition). Ahmedabad Jaico Publishing House. | | | | | | | | | | | | |
| 5. | Travis, R. (2013). Tech Eliquette: OMG, 2 Edition, RLT Publishing. | | | | | | | | | | | | |
| 6. | Gonda, C. M. (2016) Master of Business Etiquette: The Ultimate Guide to Corporate Etiquette and Soft Skills Embassy Books, First Edition. | | | | | | | | | | | | |

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|  | **PO 1** | **PO 2** | **PO 3** | **PO 4** | **PO 5** | **PO 6** | **PO 7** | **PO 8** |
| **CO 1** |  |  |  | 2 |  | 2 | 2 |  |
| **CO 2** |  |  |  | 2 |  | 2 | 2 |  |
| **CO 3** |  |  |  | 2 |  | 2 | 2 |  |
| **CO 4** |  |  |  | 2 |  | 2 | 2 |  |
| **CO 5** |  |  |  | 2 |  | 2 | 2 |  |

**3-Strong 2-Medium 1-Low**

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| **Subject Code** | **Subject Name** | **Category** | **L** | **T** | **P** | **O** | **Credits** | | **Inst. Hours** | **Marks** | | | |
| **CIA** | | **External** | **Total** |
|  | **Soft Skills III – Computing Skills** | Soft Skills | - | - | 2 | - | 2 | | 30 | 25 | | 75 | 100 |
| **Course Objectives** | | | | | | | | | | | | | |
| C1 | To create awareness and understanding on the basic functions of MS Excel | | | | | | | | | | | | |
| C2 | To elucidate the students on the various advanced functions of MS Excel | | | | | | | | | | | | |
| C3 | To educate the students on MS Access and its application in database management | | | | | | | | | | | | |
| C4 | To enable the students to understand the functions and usage of various cloud based apps like Google Drive, Google Sheets and Google Docs | | | | | | | | | | | | |
| C5 | To enable the students learn the functions and usage of Cloud based apps like Google Forms, Google Slides and Google Cloud Printing. | | | | | | | | | | | | |
| **SYLLABUS** | | | | | | | | | | | | | |
| **UNIT** | **Details** | | | | | | | **No. of Hours** | | | **Course Objectives** | | |
| I | MS Excel – Basic Functions - Workbook – Building – modifying - navigating; Worksheet – Auto fill copying and moving cells, inserting and deleting rows, printing; Formulas and functions-Troubleshooting formulas, Functions and its forms like database, reference, Databases – creating, sorting filtering and linking. | | | | | | | 6 | | | C1 | | |
| II | MS Excel Advanced Functions – Vlookup – Hlookup – Charts – Count - Countif – Sum - Sumif – Product – Sumproduct.  Functions: Mathematical - Financial - logic – Text - Statistical | | | | | | | 6 | | | C2 | | |
| III | MS Access – Components, creating a database and project, import and exporting, customizing; Tables – creating and setting fields; Queries – types, creating, wizards – Reports – creating and layout. | | | | | | | 6 | | | C3 | | |
| IV | Cloud based apps – Google Drive, Google Sheets, Google Docs, | | | | | | | 6 | | | C4 | | |
| V | Cloud based apps - Google Forms, Google Slides – Google Cloud Print | | | | | | | 6 | | | C5 | | |
|  | **Total** | | | | | | | **30** | | |  | | |
| **Course Outcomes** | | | | | | | | | | | | | |
| **Course Outcomes** | On completion of this course, students will; | | | | | | | **Program Outcomes** | | | | | |
| **CO1** | Have awareness and understanding on the basic functions of MS Excel | | | | | | | PO4, PO6, PO7 | | | | | |
| **CO2** | Know the advanced functions of MS Excel | | | | | | | PO4, PO6, PO7 | | | | | |
| **CO3** | Possess knowledge on MS Access and its application in database management | | | | | | | PO2, PO4, PO6, PO7 | | | | | |
| **CO4** | Understand and possess knowledge on the functions and usage of various cloud based apps like Google Drive, Google Sheets and Google Docs | | | | | | | PO4, PO5, PO6, PO7 | | | | | |
| **CO5** | Understand and be aware of the functions and usage of Cloud based apps like Google Forms, Google Slides and Google Cloud Printing. | | | | | | | PO4, PO6, PO7 | | | | | |
| **Reading List** | | | | | | | | | | | | | |
| 1. | Humphrey M.L., Excel For Beginners, Kindle Edition, 2017 | | | | | | | | | | | | |
| 2. | Richard Rost, Learning MS Access Kindle Edition, 2013 | | | | | | | | | | | | |
| 3. | Sachin Srivastava, Google Cloud Platform, Kindle Edition, 2021 | | | | | | | | | | | | |
| 4. | Valarie Lestourgeon, A Beginner’s Guide to GCP, Kindle Edition, 2021 | | | | | | | | | | | | |
| **References Books** | | | | | | | | | | | | | |
| 1. | Gonda, C. M. (2016) Master of Business Etiquette: The Ultimate Guide to Corporate Etiquette and Soft Skills Embassy Books, First Edition. | | | | | | | | | | | | |
| 2. | Mehra, S. K. (2012) Business Etiquette A Guide For The Indian Professional. Noula: HarperCollins | | | | | | | | | | | | |
| 3. | Pachter, B. (2013). The Essentials of Business Etiquette: How to Greet, Eat, and Tweet Your Way to Success (1) edition New York: McGraw-Hill Education. | | | | | | | | | | | | |
| 4. | Past, K. (2008). Indian Business Etiquette: 1 (First edition). Ahmedabad Jaico Publishing House. | | | | | | | | | | | | |
| 5. | Travis, R. (2013). Tech Eliquette: OMG, 2 Edition, RLT Publishing. | | | | | | | | | | | | |

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|  | **PO 1** | **PO 2** | **PO 3** | **PO 4** | **PO 5** | **PO 6** | **PO 7** | **PO 8** |
| **CO 1** |  |  |  | 3 |  | 3 | 3 |  |
| **CO 2** |  |  |  | 3 |  | 3 | 3 |  |
| **CO 3** |  | 3 |  | 3 | 3 | 3 | 3 |  |
| **CO 4** |  |  |  | 3 | 3 | 3 | 3 |  |
| **CO 5** |  |  |  | 3 |  | 3 | 3 |  |

**3-Strong 2-Medium 1-Low**

**SEMESTER III**

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| **Subject Code** | **Subject Name** | **Category** | **L** | **T** | **P** | **O** | **Credits** | | **Inst. Hours** | **Marks** | | | |
| **CIA** | | **External** | **Total** |
|  | **Information Systems for Business** | Core | 4 | - | - | - | 4 | | 45 | 25 | | 75 | 100 |
| **Course Objectives** | | | | | | | | | | | | | |
| C1 | To enable students to understand the fundamentals of information system and its role of information in managerial decision making | | | | | | | | | | | | |
| C2 | To throw light on fundamentals of information systems like TPS, DSS, and EIS. | | | | | | | | | | | | |
| C3 | To manage system applications and data to best support functional areas of business | | | | | | | | | | | | |
| C4 | To provide insights in securely managing database and information using the process of | | | | | | | | | | | | |
| C5 | To elucidate the need and importance of ERP, its selection and implementation in workplace | | | | | | | | | | | | |
| **SYLLABUS** | | | | | | | | | | | | | |
| **UNIT** | **Details** | | | | | | | **No. of Hours** | | | **Course Objectives** | | |
| I | Introduction to information system**-**The management, structure and activities- Information needs and sources-Types of management decisions and information need. System classification Elements of system, input, output, process and feedback. | | | | | | | 12 | | | C1 | | |
| II | Transaction Processing information system, Office Automation System (OAS) - Knowledge workers System(KWS); MIS; Information system for managers, Intelligence information system –Decision support system-Executive information systems. | | | | | | | 12 | | | C2 | | |
| III | Functional Management Information System: Production / Operations Information system, Marketing Information Systems, Accounting Information system, Financial Information system, Human resource Information system. | | | | | | | 12 | | | C3 | | |
| IV | System Analysis and Design: The work of a system analyst- SDLC-System design – AGILE Model – Waterfall Model – Spiral Model – Iterative and Incremental Model - RAD Model - Requirement analysis-Data flow diagram, relationship diagram, design- Implementation-Evaluation and maintenance of MIS, Database System: Overview of Database- Components-advantages and disadvantages of database; Data Warehousing and Data Mining; Business Intelligence; Artificial Intelligence; Expert System; Big Data; Cyber Safety and Security- Cryptography; RSA Model of Encryption; Data Science - Block Chain Technology; E-commerce and E-Business models; IOT - RFID. | | | | | | | 12 | | | C4 | | |
| V | Enterprise Resource Planning (ERP) System, Benefits of the ERP, ERP how different from conventional packages , Need for ERP , ERP components , Selection of ERP Package, ERP implementation, Customer Relationship management. Organisation & Types, Decision Making, Data & information, Characteristics & Classification of information, Cost & value of information, various channels of information and MIS; Information system audit and control – E-Governance. | | | | | | | 12 | | | C5 | | |
|  | **Total** | | | | | | | **60** | | |  | | |
| **Course Outcomes** | | | | | | | | | | | | | |
| **Course Outcomes** | On completion of this course, students will; | | | | | | | **Program Outcomes** | | | | | |
| **CO1** | Learn the importance of data and information in managerial decision making. | | | | | | | PO1, PO2, PO6 | | | | | |
| **CO2** | Possess on the various IS and the its relevance to Organizational environment | | | | | | | PO3, PO5, PO8, | | | | | |
| **CO3** | Understand the application of IS on the various functions like Accounting, Finance, Marketing, Operations and HR | | | | | | | PO1, PO3, PO5, PO8 | | | | | |
| **CO4** | To study the various models and new technologies | | | | | | | PO1, PO2, PO6, PO7 | | | | | |
| **CO5** | Be exposed on the importance of selecting the appropriate ERP and its implementation | | | | | | | PO1, PO2, PO5, PO8 | | | | | |
| **Reading List** | | | | | | | | | | | | | |
| 1. | Information Systems for Business and Beyond – opentextbooks.site. | | | | | | | | | | | | |
| 2. | Management Information Systems: Managing the Digital firm – www.textbooks.com | | | | | | | | | | | | |
| 3. | Information systems Journal – Wiley Online Library. | | | | | | | | | | | | |
| 4. | Information Systems management in Business and development organisations – Harekrishna Misra – PHI Learning. | | | | | | | | | | | | |
| **References Books** | | | | | | | | | | | | | |
| 1. | Azam, M., Management Information System, McGrawHill Education, 2012 | | | | | | | | | | | | |
| 2. | Laudon, K., Laudon, J. and Dass, R., Management Information Systems – Managing the Digital Firm, 11th Edition, Pearson, 2010. | | | | | | | | | | | | |
| 3. | Murdick, R.G., Ross, J.E. and Claggett, J.R., Information Systems for Modern Management, 3rd Edition, PHI, 2011. | | | | | | | | | | | | |
| 4. | O’Brien, J.A., Morakas, G.M. and Behl, R., Management Information Systems, 9th Edition, Tata McGraw-Hill Education, 2009. | | | | | | | | | | | | |
| 5. | Saunders, C.S. and Pearson, K.E., Managing and Using Information Systems, 3rd Edition, Wiley India Pvt. Ltd., 2009. | | | | | | | | | | | | |
| 6. | Stair, R. and Reynolds, G., Information Systems, 10th Edition, Cengage Learning,2012. | | | | | | | | | | | | |

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|  | **PO 1** | **PO 2** | **PO 3** | **PO 4** | **PO 5** | **PO 6** | **PO 7** | **PO 8** |
| **CO 1** | 3 | 2 |  |  |  | 3 |  |  |
| **CO 2** |  |  | 3 |  | 3 |  |  | 3 |
| **CO 3** | 2 |  | 3 |  | 2 |  |  | 3 |
| **CO 4** | 3 | 3 |  |  |  | 2 | 3 |  |
| **CO 5** | 3 | 2 |  |  | 2 |  |  | 3 |

**3-Strong 2-Medium 1-Low**

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| **Subject Code** | **Subject Name** | **Category** | **L** | **T** | **P** | **O** | **Credits** | | **Inst. Hours** | **Marks** | | | |
| **CIA** | | **External** | **Total** |
|  | **EMPLOYABILITY SKILLS** | Extra Disciplinary | 3 | - | - | - | 3 | | 45 | 25 | | 75 | 100 |
| **Course Objectives** | | | | | | | | | | | | | |
| C1 | To learn about the employability skills | | | | | | | | | | | | |
| C2 | To understand dimensions of task oriented skills | | | | | | | | | | | | |
| C3 | To study on critical problem-solving techniques | | | | | | | | | | | | |
| C4 | To develop employability skills | | | | | | | | | | | | |
| C5 | To understand the logical and reasoning skills | | | | | | | | | | | | |
| **SYLLABUS** | | | | | | | | | | | | | |
| **UNIT** | **Details** | | | | | | | **No. of Hours** | | | **Course Objectives** | | |
| I | **INTRODUCTION TO EMPLOYABILITY SKILLS**  Meaning – Definition – Hard skills and soft  skills –Employability skills and vocational skills – Employability and employment –  Employability attributes. | | | | | | | 9 | | | C1 | | |
| II | **UNPACKING EMPLOYABILITY SKILLS**  Embedded employability skills – Dimensions of  competency – Task skills –Task Management skills – Contingency Management skills –  Job/Role Environment skills. | | | | | | | 9 | | | C2 | | |
| III | **INTER – RELATIONSHIPS OF EMPLOYABILITY SKILLS**  Communication – Team work –  Problem solving – Initiative and Enterprise – Planning and Organizing – Self management –  Learning – Technology. | | | | | | | 9 | | | C3 | | |
| IV | **RESUME WRITING**  Meaning – Features of good resume – Model (Exercise). Etiquettes – Dress, Cleanliness, Etiquettes to be followed inside the employment seeking process. | | | | | | | 9 | | | C4 | | |
| V | **Arithmetic and Logical Reasoning Skills – Exercise.** | | | | | | | 9 | | | C5 | | |
|  | **Total** | | | | | | | **45** | | |  | | |
| **Course Outcomes** | | | | | | | | | | | | | |
| **Course Outcomes** | On completion of this course, students will; | | | | | | | | | | | | |
| **CO1** | Acquire employability skills | | | | | | | PO4, PO6, PO7 | | | | | |
| **CO2** | understand dimensions of task oriented skills | | | | | | | PO4, PO6, PO7 | | | | | |
| **CO3** | study on critical problem-solving techniques | | | | | | | PO4, PO6, PO7 | | | | | |
| **CO4** | develop employability skills | | | | | | | PO4, PO6, PO7 | | | | | |
| **CO5** | understand the logical and reasoning skills | | | | | | | PO4, PO6, PO7 | | | | | |
| **Reading List** | | | | | | | | | | | | | |
| 1. | <https://www.jobjumpstart.gov.au/article/what-are-employability-skills> | | | | | | | | | | | | |
| 2. | <https://www.simplilearn.com/why-are-employability-skills-important-article> | | | | | | | | | | | | |
| 3. | <https://blog.hubspot.com/marketing/employability-skills> | | | | | | | | | | | | |
| 4. | <https://www.indeed.com/career-advice/finding-a-job/employability-skills> | | | | | | | | | | | | |
| **References Books** | | | | | | | | | | | | | |
| 1. | Soft Skills, Dr. K. Alex | | | | | | | | | | | | |
| 2. | Winning Interview Skills, Complied & Edited by J.K. Chopra. | | | | | | | | | | | | |
| 3. | A Modern Approach to Verbal and Non- Verbal Reasoning, R. S. Aggarwal. | | | | | | | | | | | | |
| 4. | Fafinski, S., Finch, E. (2014). Employability Skills for Law Students. United Kingdom: OUP Oxford. | | | | | | | | | | | | |
| 5. | Trought, F. (2017). Brilliant Employability Skills: How to Stand Out from the Crowd in the Graduate Job Market. United Kingdom: Pearson Education Limited. | | | | | | | | | | | | |
| 6. | Chaita, M. V. (2016). Developing Graduate Employability Skills: Your Pathway to Employment. United States: Universal Publishers. | | | | | | | | | | | | |

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|  | **PO 1** | **PO 2** | **PO 3** | **PO 4** | **PO 5** | **PO 6** | **PO 7** | **PO 8** |
| **CO 1** |  |  |  | 3 |  | 3 |  |  |
| **CO 2** |  |  |  | 3 |  | 3 |  |  |
| **CO 3** |  | 2 |  | 3 |  | 3 |  |  |
| **CO 4** |  |  |  | 3 | 2 | 3 | 1 |  |
| **CO 5** |  |  |  | 3 |  | 3 |  |  |

**3-Strong 2-Medium 1-Low**

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| **Subject Code** | **Subject Name** | **Category** | **L** | **T** | **P** | **O** | **Credits** | | **Inst. Hours** | **Marks** | | | |
| **CIA** | | **External** | **Total** |
|  | **Soft Skills IV – Leadership & Team Building Skills** | Soft Skills | - | - | 2 | - | 2 | | 30 | 25 | | 75 | 100 |
| **Course Objectives** | | | | | | | | | | | | | |
| C1 | To understand the characteristics, style, traits of leaders, and theories of leadership. | | | | | | | | | | | | |
| C2 | To learn more about self-leadership and developing team-building skills through case studies and examples. | | | | | | | | | | | | |
| C3 | To understand how to form, manage and lead the team. | | | | | | | | | | | | |
| C4 | To understand the measures of conflict in a team | | | | | | | | | | | | |
| C5 | To explore team roles & processes in developing and managing a team | | | | | | | | | | | | |
| **SYLLABUS** | | | | | | | | | | | | | |
| **UNIT** | **Details** | | | | | | | **No. of Hours** | | | **Course Objectives** | | |
| I | **Leadership Theories:** Nature of leadership theories & models of leadership - attributes of effective leaders - traits of leadership - interpersonal competence & leadership | | | | | | | 6 | | | C1 | | |
| II | **Leadership Styles:** Leadership qualities -styles of leadership -attitudes-role models & new leadership - cultural differences and diversity in leadership - leader behaviour leadership in different countries- leadership ethics & social responsibility. | | | | | | | 6 | | | C2 | | |
| III | **Leadership Skills:** Leadership skills - Leadership & management - transactional & transformational in leadership -Strength based leadership in practice - Tasks & Relationship approach in leadership - influence tactics of leaders- motivation and coaching skills. Establishing constructive climate- listening to out group members- communication and conflict resolution skills. | | | | | | | 6 | | | C3 | | |
| IV | **Team Work:** Working in group & teams - characteristics of effective team- types- team development: Tuckman's team development stages- Belbin team roles - Ginnett - team effectiveness leadership model. | | | | | | | 6 | | | C4 | | |
| V | **Exploring team roles & processes:** mapping the stages of group development -Building: and developing teams-overcoming resistance coping and conflict and Ego-leading a team managing meetings. | | | | | | | 6 | | | C5 | | |
|  | **Total** | | | | | | | **30** | | |  | | |
| **Course Outcomes** | | | | | | | | | | | | | |
| **Course Outcomes** | On completion of this course, students will; | | | | | | | **Program Outcomes** | | | | | |
| **CO1** | Critical understanding of theories and concepts of leadership and teamwork in organizations | | | | | | | PO4, PO5, PO6, PO7 | | | | | |
| **CO2** | Critical awareness of the importance of teamwork and development of the skills for building effective teams | | | | | | | PO4, PO5, PO6, PO7 | | | | | |
| **CO3** | Understanding of the techniques and practical understanding of how to apply theories and concepts to improve leadership skills. | | | | | | | PO2, PO4, PO5, PO6, PO7 | | | | | |
| **CO4** | Development of skills in effective leadership and professional communication | | | | | | | PO4, PO5, PO6, PO7 | | | | | |
| **CO5** | Demonstrate effective written communication skills for plans, strategies and outcomes. | | | | | | | PO4, PO6, PO7 | | | | | |
| **Reading List** | | | | | | | | | | | | | |
| 1. | Uday Kumar Haldar, Leadership and Team Building, | | | | | | | | | | | | |
| 2. | D.K. Tripathy, Team Building and Leadership with Texts and Cases, Himalaya Publishing House, 2014 | | | | | | | | | | | | |
| 3. | International Journal on Leadership, Publishing India Group | | | | | | | | | | | | |
| 4. | International Journal of Organizational Leadership, CIKD | | | | | | | | | | | | |
| **References Books** | | | | | | | | | | | | | |
| 1. | Gonda, C. M. (2016) Master of Business Etiquette: The Ultimate Guide to Corporate Etiquette and Soft Skills Embassy Books, First Edition. | | | | | | | | | | | | |
| 2. | Mehra, S. K. (2012) Business Etiquette A Guide For The Indian Professional. Noula: HarperCollins | | | | | | | | | | | | |
| 3. | Pachter, B. (2013). The Essentials of Business Etiquette: How to Greet, Eat, and Tweet Your Way to Success (1) edition New York: McGraw-Hill Education. | | | | | | | | | | | | |
| 4. | Past, K. (2008). Indian Business Etiquette: 1 (First edition). Ahmedabad Jaico Publishing House. | | | | | | | | | | | | |
| 5. | Travis, R. (2013). Tech Eliquette: OMG, 2 Edition, RLT Publishing. | | | | | | | | | | | | |
| 6. | Gonda, C. M. (2016) Master of Business Etiquette: The Ultimate Guide to Corporate Etiquette and Soft Skills Embassy Books, First Edition. | | | | | | | | | | | | |

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|  | **PO 1** | **PO 2** | **PO 3** | **PO 4** | **PO 5** | **PO 6** | **PO 7** | **PO 8** |
| **CO 1** |  |  |  | 3 | 3 | 3 | 3 |  |
| **CO 2** |  |  |  | 3 | 3 | 3 | 3 |  |
| **CO 3** |  | 3 |  | 3 | 3 | 3 | 3 |  |
| **CO 4** |  |  |  | 3 | 3 | 3 | 3 |  |
| **CO 5** |  |  |  | 3 |  | 3 | 3 |  |

**3-Strong 2-Medium 1-Low**

**Specialization Courses: Business Analytics**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Subject Code** | **Subject Name** | **Category** | **L** | **T** | **P** | **O** | **Credits** | **Inst. Hours** | **Marks** | | |
| **CIA** | **External** | **Total** |
| 1 | Fundamentals of Business Analytics | Elective | 3 | - | - | - | 3 | 3 | 25 | 75 | 100 |
| 2 | Data Analytics with R Programming | Elective | 3 | - | - | - | 3 | 3 | 25 | 75 | 100 |
| 3 | Business Analytics Using Python | Elective | 3 | - | - | - | 3 | 3 | 25 | 75 | 100 |
| 4 | Data Visualization | Elective | 3 | - | - | - | 3 | 3 | 25 | 75 | 100 |
| 5 | Data Analytics in Business Functional Areas | Elective | 3 | - | - | - | 3 | 3 | 25 | 75 | 100 |
| 6 | Data Science | Elective | 3 | - | - | - | 3 | 3 | 25 | 75 | 100 |
| 7 | Business Intelligence, Big Data, Cloud Computing | Elective | 3 | - | - | - | 3 | 3 | 25 | 75 | 100 |
| 8 | Block Chain Technology | Elective | 3 | - | - | - | 3 | 3 | 25 | 75 | 100 |
| 9 | Software Project Management | Elective | 3 | - | - | - | 3 | 3 | 25 | 75 | 100 |
| 10 | Design and Analysis of Algorithm | Elective | 3 | - | - | - | 3 | 3 | 25 | 75 | 100 |

**# Choose any 6 electives from the above list in consultation with the HOD or Head.**

**SPECIALIZATION COURSES: BUSINESS ANALYTICS**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Subject Code** | **Subject Name** | **Category** | **L** | **T** | **P** | **O** | **Credits** | | | **Inst. Hours** | **Marks** | | | |
| **CIA** | | **External** | **Total** |
|  | **Fundamentals of Business Analytics** | Elective | 3 | - | - | - | 3 | | | 45 | 25 | | 75 | 100 |
| **Course Objectives** | | | | | | | | | | | | | | |
| C1 | To enable the students to understand the basics of Business Analytics | | | | | | | | | | | | | |
| C2 | To create awareness and understanding on visualizing data through collecting, managing and analyzing data. | | | | | | | | | | | | | |
| C3 | To educate the students on data mining and multi-dimensional data analysis | | | | | | | | | | | | | |
| C4 | To educate the students on machine learning and AI. | | | | | | | | | | | | | |
| C5 | To elucidate the students on the analysis of various areas of business | | | | | | | | | | | | | |
| **SYLLABUS** | | | | | | | | | | | | | | |
| **UNIT** | **Details** | | | | | | | | **No. of Hours** | | | **Course Objectives** | | |
| I | **Introduction to Business Analytics:** Meaning - Historical overview of data analysis – Data Scientist Vs Data Engineer Vs Business Analyst – Career in Business Analytics – Introduction to data science – Applications for data science – Roles and Responsibilities of data scientists | | | | | | | | 9 | | | C1 | | |
| II | **Data Visualization:** 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. | | | | | | | | 9 | | | C2 | | |
| III | **Data Mining:** Introduction to Data Mining - The origins of Data Mining - Data Mining Tasks - OLAP and Multidimensional data analysis - Basic concept of Association Analysis and Cluster Analysis. | | | | | | | | 9 | | | C3 | | |
| IV | **Machine Learning:** 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 – Frame works for building Machine Learning Systems. | | | | | | | | 9 | | | C4 | | |
| V | **Application of Business Analysis:** Retail Analytics - Marketing Analytics - Financial Analytics - Healthcare Analytics - Supply Chain Analytics. | | | | | | | | 9 | | | C5 | | |
|  | **Total** | | | | | | | | **45** | | |  | | |
| **Course Outcomes** | | | | | | | | | | | | | | |
| **Course Outcomes** | On completion of this course, students will; | | | | | | | **Program Outcomes** | | | | | | |
| **CO1** | Define the basics of Business Analytics | | | | | | | | PO1, PO2 | | | | | |
| **CO2** | Describe and visualize data through collecting, managing and analyzing data. | | | | | | | | PO1, PO2, | | | | | |
| **CO3** | Apply knowledge on data mining and multi-dimensional data analysis | | | | | | | | PO2, P05, PO6 | | | | | |
| **CO4** | Survey knowledge on machine learning and AI. | | | | | | | | PO4, PO5 | | | | | |
| **CO5** | Summarize knowledge on the analysis of various areas of business. | | | | | | | | PO2, P05, PO6 | | | | | |
| **Reading List** | | | | | | | | | | | | | | |
| 1. | <https://ptgmedia.pearsoncmg.com/images/9780133552188/samplepages/0133552187.pdf> | | | | | | | | | | | | | |
| 2. | http://www.gerkoole.com/IBA/downloads/IBA\_Koole\_first\_chapters.pdf | | | | | | | | | | | | | |
| 3. | Jeen‐Su Lim, John H. Heinrichs. (2021) Developing context‐relevant project experiences for marketing analytics students. Decision Sciences Journal of Innovative Education 19:2, pages 150-156. | | | | | | | | | | | | | |
| 4. | Wullianallur Raghupathi, Viju Raghupathi. (2021) Contemporary Business Analytics: An Overview. Data 6:8, pages 86. | | | | | | | | | | | | | |
| **References Books** | | | | | | | | | | | | | | |
| 1. | Majid Nabavi, David L.Olson, Introduction to Business Analytics, Business Expert Press, 2018 | | | | | | | | | | | | | |
| 2. | Umesh R Hodeghatta and Umesha Nayak, Business Analytics Using R - A Practical ApproachApress, 2017. | | | | | | | | | | | | | |
| 3. | Jeffery D.Camm, James J. Cochran, Michael J. Fry, Jeffrey W. Ohlmann, David R. Anderson, Essentials of Business Analytics, Cengage Learning, 2015 | | | | | | | | | | | | | |
| 4. | Sandhya Kuruganti, Business Analytics: Applications To Consumer Marketing, McGraw Hill, 2015 | | | | | | | | | | | | | |
| 5. | Bernard Marr, Big Data: Using Smart Big Data, Analytics and Metrics to Make Better Decisions and Improve Performance, Wiley, 2015 | | | | | | | | | | | | | |

**CO-PO MAPPING**

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|  | **PO 1** | **PO 2** | **PO 3** | **PO 4** | **PO 5** | **PO 6** | **PO 7** | **PO 8** |
| **CO 1** | 3 | 2 |  |  |  |  |  |  |
| **CO 2** | 2 | 3 |  |  |  |  |  |  |
| **CO 3** |  | 3 |  |  | 3 | 3 |  |  |
| **CO 4** |  |  |  | 2 | 3 |  |  |  |
| **CO 5** |  | 3 |  |  | 3 | 3 |  |  |

**3 STRONG 2 MEDIUM 1 LOW**

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| **Subject Code** | **Subject Name** | **Category** | **L** | **T** | **P** | **O** | **Credits** | | **Inst. Hours** | **Marks** | | | |
| **CIA** | | **External** | **Total** |
|  | **Data Analytics with R Programming** | Elective | 3 | - | - | - | 3 | | 45 | 25 | | 75 | 100 |
| **Course Objectives** | | | | | | | | | | | | | |
| C1 | To familiarize the students about R programming | | | | | | | | | | | | |
| C2 | To understand the R platform | | | | | | | | | | | | |
| C3 | To learn about R tools | | | | | | | | | | | | |
| C4 | To learn about the tools in R platform | | | | | | | | | | | | |
| C5 | Understand the reinforcement  learning | | | | | | | | | | | | |
| **SYLLABUS** | | | | | | | | | | | | | |
| **UNIT** | **Details** | | | | | | | **No. of Hours** | | | **Course Objectives** | | |
| I | Overview of R programming - Environment setup with R Studio - 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. | | | | | | | 9 | | | C1 | | |
| II | Working with R - Reading and writing data - R libraries - Functions and R programming – the If statement - looping: for, repeat, while - writing functions - function arguments and options – Basic R commands | | | | | | | 9 | | | C2 | | |
| III | Reading and getting data into R (External Data): Using CSV files, XML files, Web Data, JSON files, Databases, Excel files. Working with R Charts and Graphs: Histograms, Boxplots, Bar Charts, Line Graphs, Scatterplots, Pie Charts. | | | | | | | 9 | | | C3 | | |
| IV | Random Forest, Decision Tree, Normal and Binomial distributions, Time Series Analysis, Linear and Multiple Regression, Logistic Regression, Survival Analysis. | | | | | | | 9 | | | C4 | | |
| V | Creating data for analytics through designed experiments, Creating data for analytics through active learning, Creating data for analytics through reinforcement learning. | | | | | | | 9 | | | C5 | | |
|  | **Total** | | | | | | | **45** | | |  | | |
| **Course Outcomes** | | | | | | | | | | | | | |
| **Course Outcomes** | On completion of this course, students will; | | | | | | | **Program Outcomes** | | | | | |
| **CO1** | State knowledge about the R platform | | | | | | | PO2, PO6 | | | | | |
| **CO2** | Explain knowledge on R tools | | | | | | | PO1, PO2, PO6 | | | | | |
| **CO3** | Develop knowledge graphs and other statistical methods | | | | | | | PO5, PO6, PO7 | | | | | |
| **CO4** | Describe advanced statistical tools | | | | | | | PO4, PO7 | | | | | |
| **CO5** | Develop knowledge about active and reinforcement learning | | | | | | | PO1, PO6 | | | | | |
| **Reading List** | | | | | | | | | | | | | |
| 1. | https://www.cs.upc.edu/~robert/teaching/estadistica/rprogramming.pdf | | | | | | | | | | | | |
| 2. | https://diytranscriptomics.com/Reading/files/The%20Art%20of%20R%20Programming.pdf | | | | | | | | | | | | |
| 3. | R Core Team (2016). R: A Language and Environment for Statistical Computing. R Foundation for Statistical Computing, Vienna, Austria. URL https://www.R-project.org/. | | | | | | | | | | | | |
| 4. | Ritz C, Streibig JC (2005). “Bioassay Analysis using R.” Journal of Statistical Software,12(5), 1–22. doi:10.18637/jss.v012.i05. | | | | | | | | | | | | |
| **References Books** | | | | | | | | | | | | | |
| 1. | Raghav Bali, Dipanjan Sarkar and Tushar Sharma, Learning Social Media Analytics with R, Packt Publishing Ltd, 2017. | | | | | | | | | | | | |
| 2. | Nina Zumel and John Mount, Practical Data Science with R, Manning Publications Company, 2014. | | | | | | | | | | | | |
| 3. | Peter Dalgaard, Introductory Statistics with R (Paperback) 1st Edition Springer-Verlag New York, Inc. (ISBN 0-387-95475-9) (2019) | | | | | | | | | | | | |
| 4. | W. N. Venables and B. D. Ripley. 2002, Modern Applied Statistics with S. 4th Edition. Springer. (ISBN 0-387-95457-0)] | | | | | | | | | | | | |
| 5. | Andreas Krause, Melvin Olson. 2005, The Basics of S-PLUS, 4th edition, Springer- Verlag, New York (ISBN 0-387-26109-5) | | | | | | | | | | | | |

**CO- PO MAPPING**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **PO 1** | **PO 2** | **PO 3** | **PO 4** | **PO 5** | **PO 6** | **PO 7** | **PO 8** |
| **CO 1** |  | 3 |  |  |  | 2 |  |  |
| **CO 2** | 2 | 3 |  |  |  | 3 |  |  |
| **CO 3** |  |  |  |  | 3 | 2 | 3 |  |
| **CO 4** |  |  |  | 2 |  |  | 3 |  |
| **CO 5** | 3 |  |  |  |  | 2 |  |  |

**3 STRONG 2 MEDIUM 1 LOW**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Subject Code** | **Subject Name** | **Category** | **L** | **T** | **P** | **O** | **Credits** | | **Inst. Hours** | **Marks** | | | |
| **CIA** | | **External** | **Total** |
|  | **Business Analytics Using Python** | Elective | 3 | - | - | - | 3 | | 45 | 25 | | 75 | 100 |
| **Course Objectives** | | | | | | | | | | | | | |
| C1 | Business data analysis techniques and their theoretical foundations | | | | | | | | | | | | |
| C2 | Visualizations using tableau | | | | | | | | | | | | |
| C3 | To understand business models | | | | | | | | | | | | |
| C4 | Analyse various models | | | | | | | | | | | | |
| C5 | Applications of Marketing Analytics | | | | | | | | | | | | |
| **SYLLABUS** | | | | | | | | | | | | | |
| **UNIT** | **Details** | | | | | | | **No. of Hours** | | | **Course Objectives** | | |
| I | **Introduction**  Introduction to Business Analytics - Evolution of Business Data and Analytics timeline - Types of Analytics - Marketing Analytics Applications - Summarizing & Reporting Marketing Data using Excel | | | | | | | 9 | | | C1 | | |
| II | **Visualizing Business Data using** **Tableau -** Visualizations Using Python & R - Understanding the Metrics across domains -Developing Metrics - Flowchart for Metric Creation | | | | | | | 9 | | | C2 | | |
| III | **Business Models & Strategies** Business Models - Marketing Engineering – Segmentation Analytics – Clustering Algorithms - Positioning Analysis - Data Mining applications | | | | | | | 9 | | | C3 | | |
| IV | **Marketing Mix Analytics**: New Product development decisions - Pricing the Product - Forecasting the Sales – Allocating the Retail space & Sales Resource – Consumer Attribution Modelling Methods | | | | | | | 9 | | | C4 | | |
| V | **Marketing Mix Analytics Applications** Customer Churn Modelling – Purchase Behaviour Prediction Models- social media Listening and Sentimental Analysis – Market Basket Analysis – RFM Analysis – Recommender Systems development | | | | | | | 9 | | | C5 | | |
|  | **Total** | | | | | | | **45** | | |  | | |
| **Course Outcomes** | | | | | | | | | | | | | |
| **Course Outcomes** | On completion of this course, students will; | | | | | | | **Program Outcomes** | | | | | |
| **CO1** | Understand and explain key principles, concepts and terms associated with marketing analytics including the Marketing Metrics, web analytics, big data analytics, social media analytics and analytics trends | | | | | | | PO1, PO6 | | | | | |
| **CO2** | Construct a metric identifying the areas to be measured for the individual or corporate and how it makes sense to the business managers. | | | | | | | PO1, PO2, PO5 | | | | | |
| **CO3** | Demonstrate marketing situations using appropriate instruments to formulate marketing strategies and plans, and to evaluate their impact | | | | | | | PO4, PO6 | | | | | |
| **CO4** | Compare marketing situations using appropriate instruments to formulate marketing strategies and plans, and to evaluate their impact | | | | | | | PO4, PO5, PO6 | | | | | |
| **CO5** | Prepare marketing Instruments and quantitative methods providing students with an image of the complexity and pitfalls of typical marketing situations and problems | | | | | | | PO2, PO6 | | | | | |
| **Reading List** | | | | | | | | | | | | | |
| 1. | <https://bedford-computing.co.uk/learning/wp-content/uploads/2015/10/Python-for-Data-Analysis.pdf> | | | | | | | | | | | | |
| 2. | https://cfm.ehu.es/ricardo/docs/python/Learning\_Python.pdf | | | | | | | | | | | | |
| 3. | Van Rossum G, others (2016). Python Programming Language. URL http://www.python.org/. | | | | | | | | | | | | |
| 4. | Jesus Rogel-Salazar,Data Science and Analytics with Python, 2017 | | | | | | | | | | | | |
| **References Books** | | | | | | | | | | | | | |
| 1. | “R for Marketing Research and Analytics”, Chris Chapman,Springe Publications, 1st Edition, 2015. | | | | | | | | | | | | |
| 2. | “Business Analytics”, Dinesh Kumar U Wiley India, 1st Edition, 2017. | | | | | | | | | | | | |
| 3. | “Marketing Metrics: The Definitive Guide to Measuring Marketing Performance”, Paul W Farris,Pearson Education, 2nd Edition, 2010. | | | | | | | | | | | | |
| 4. | “Business Analytics- Texts and Cases”, Tanushri Banerjee & Arindham BanerjeeSage Publications, 1st Edition, 2019. | | | | | | | | | | | | |
| 5. | “Marketing Analytics – Data Driven Techniques with Microsoft Excel”, Wayne L Winston,Wiley Publications, 1st Edition, 2015.. | | | | | | | | | | | | |

**CO-PO MAPPING**

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|  | **PO 1** | **PO 2** | **PO 3** | **PO 4** | **PO 5** | **PO 6** | **PO 7** | **PO 8** |
| **CO 1** |  | 3 |  |  |  | 2 |  |  |
| **CO 2** | 3 | 3 |  |  | 2 |  |  |  |
| **CO 3** |  |  |  | 2 |  | 3 |  |  |
| **CO 4** |  |  |  | 3 | 2 | 2 |  |  |
| **CO 5** |  | 3 |  |  |  | 3 |  |  |

**3 STRONG 2 MEDIUM 1 LOW**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Subject Code** | **Subject Name** | **Category** | **L** | **T** | **P** | **O** | **Credits** | | **Inst. Hours** | **Marks** | | | |
| **CIA** | | **External** | **Total** |
|  | **Data Visualization** | Elective | 3 | - | - | - | 3 | | 45 | 25 | | 75 | 100 |
| **Course Objectives** | | | | | | | | | | | | | |
| C1 | To understand Data visualization | | | | | | | | | | | | |
| C2 | To understand basic visualizations using tableau with basics | | | | | | | | | | | | |
| C3 | To understand advanced Visualizations using tableau | | | | | | | | | | | | |
| C4 | To understand BI and power BI | | | | | | | | | | | | |
| C5 | Visulizations through R | | | | | | | | | | | | |
| **SYLLABUS** | | | | | | | | | | | | | |
| **UNIT** | **Details** | | | | | | | **No. of Hours** | | | **Course Objectives** | | |
| I | **Data Visualization** –**A primer of Business Intelligence Business** Intelligence - Data Visualization Evolution and Characteristics – Importance of Data Visualization – Data Visualization Process - Data Visualization Tools and Software - Data Visualization Techniques – Best Practices in Data Visualization | | | | | | | 9 | | | C1 | | |
| II | **Data visualization Using Tableau – Basics** - Introduction to Tableau – Tableau interface & Architecture – Data connections & Data Sources – Preparation of Data – Exploring and analyzing data – Creating basic charts – Apply analytics to a worksheet – Creating Groups and Hierarchies - Mapping -Sharing Insights | | | | | | | 9 | | | C2 | | |
| III | **Data visualization Using Tableau – Advanced** Advanced calculations - Parameters – Special Charts - Creation of Dashboards – Dashboard Actions -Story Boards Preparation - Sharing the work – Profile creation in Tableau Public | | | | | | | 9 | | | C3 | | |
| IV | **Reports & Dashboards using Power BI**: Power BI introduction – Power BI Architecture & Process – Connecting Power BI with different Data Sources – Power Query for Data transformation- Data Modelling in Power BI – Reports – Visualization types in Power BI – Statics and Live Dashboards- Data Refresh & Security | | | | | | | 9 | | | C4 | | |
| V | **Visualizing through R , Python & Qlikview** :Grammar of Graphics – GGplot and visualizations using R – Advanced visualizations using matplotlib, seaborn and pyplot – Qlikview overview | | | | | | | 9 | | | C5 | | |
|  | **Total** | | | | | | | **45** | | |  | | |
| **Course Outcomes** | | | | | | | | | | | | | |
| **Course Outcomes** | On completion of this course, students will; | | | | | | | **Program Outcomes** | | | | | |
| **CO1** | Define data visualization process and explore different types of visualization and how humans perceive information. | | | | | | | PO2, PO5 | | | | | |
| **CO2** | Discuss principles of design and color to make visualizations more engaging and effective and apply techniques from user-interface design to create an effective visualization system. | | | | | | | PO1, PO2 | | | | | |
| **CO3** | Demonstrate Data Models and use the DAX Formula language and M language to develop POWERFUL calculations | | | | | | | PO6, PO7 | | | | | |
| **CO4** | Explain visualization system for large datasets and dashboards using tableau and power BI, Python and R, interpret the visualization created from the data set | | | | | | | PO2, PO5 | | | | | |
| **CO5** | Estimate professional-quality business intelligence reports from the ground up and share for collaboration | | | | | | | PO2, PO4 | | | | | |
| **Reading List** | | | | | | | | | | | | | |
| 1. | https://cicerocq.files.wordpress.com/2020/03/sosulski-kristen-data-visualization-made-simple\_-insights-into-becoming-visual-2019-routledge.pdf | | | | | | | | | | | | |
| 2. | https://indico.cern.ch/event/681081/contributions/2790760/attachments/1729504/2794629/Principles-of-Visualization-Course-Pt1-Full.pdf | | | | | | | | | | | | |
| 3. | Eric Hehman, Sally Y. Xie, Doing Better Data Visualization, ,First Published October 8, 2021 | | | | | | | | | | | | |
| 4. | Wilke, C, fundamentals of data visualization : a primer on making informative and compelling figures, 2019 | | | | | | | | | | | | |
| **References Books** | | | | | | | | | | | | | |
| 1. | “Storytelling with Data: A Data Visualization Guide for Business Professionals”, Cole Nussbaumer Knaflic, Amazon Asia-Pacific Holdings Private Limited, 2015. | | | | | | | | | | | | |
| 2. | “Microsoft Power BI Complete Reference: Bring your data to life with the powerful features of Microsoft Power BI”, Devin Knight, Packt Publishing, 2018. | | | | | | | | | | | | |
| 3. | “Data Visualization and Exploration with R: A practical guide to using R, R Studio, and Tidyverse for data visualization, exploration, and data science applications”, Eric Pimpler, Amazon Asia-Pacific Holdings Private Limited, 2017. | | | | | | | | | | | | |
| 4. | “Practical Tableau”, Ryan Sleeper, O'Reilly Media, 2018. | | | | | | | | | | | | |
| 5. | “Visualization: Visual representations of data and information”, The Open University, Amazon Asia-Pacific Holdings Private Limited, 2016. | | | | | | | | | | | | |
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**CO-PO MAPPING**

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|  | **PO 1** | **PO 2** | **PO 3** | **PO 4** | **PO 5** | **PO 6** | **PO 7** | **PO 8** |
| **CO 1** |  | 3 |  |  | 2 |  |  |  |
| **CO 2** | 2 | 3 |  |  |  |  |  |  |
| **CO 3** |  |  |  |  |  | 2 | 3 |  |
| **CO 4** |  | 2 |  |  | 3 |  |  |  |
| **CO 5** |  | 3 |  | 2 |  |  |  |  |

**3 STRONG 2 MEDIUM 1 LOW**

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| **Subject Code** | **Subject Name** | **Category** | **L** | **T** | **P** | **O** | **Credits** | | **Inst. Hours** | **Marks** | | | |
| **CIA** | | **External** | **Total** |
|  | **Data Analytics in Business Functional Areas** | Elective | 3 | - | - | - | 3 | | 45 | 25 | | 75 | 100 |
| **Course Objectives** | | | | | | | | | | | | | |
| C1 | To have clear understanding on the concept of HR Analytics | | | | | | | | | | | | |
| C2 | To acquire knowledge on Financial Analytics | | | | | | | | | | | | |
| C3 | To obtain knowledge on CRM Analytics | | | | | | | | | | | | |
| C4 | To understand the concept of Retail Analytics | | | | | | | | | | | | |
| C5 | To acquire knowledge on SCM/Logistics Analytics | | | | | | | | | | | | |
| **SYLLABUS** | | | | | | | | | | | | | |
| **UNIT** | **Details** | | | | | | | **No. of Hours** | | | **Course Objectives** | | |
| I | **HR Analytics:** 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 - Employee retention and turnover - workforce productivity and performance - scenario planning. | | | | | | | 9 | | | C1 | | |
| II | **Financial Analytics**: Prospective analysis – Techniques - Elements of detailed forecast – Sensitivity analysis –-Decision tress analysis of capital budgeting - Credit analysis - Mergers and acquisition – Motivations for M & A – Valuation of M & A - Valuation of equity and debt – Primary and secondary market analysis - Assessing market value of equity with book value and index. | | | | | | | 9 | | | C2 | | |
| III | **CRM Analytics**: 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. | | | | | | | 9 | | | C3 | | |
| IV | **Retail Analytics:** The digital evolution of retail marketing - Digital natives - Constant connectivity social interaction - Predictive modelling - Keeping track - Data availability - Efficiency optimization. | | | | | | | 9 | | | C4 | | |
| V | **SCM/Logistics Analytics:** Warehousing Decisions, Mathematical Programming Models, P-Median Methods, Guided LP Approach, Balmer – Wolfe Method, Greedy Drop Heuristics, Dynamic Location Models, Space Determination and Layout Methods - Analytic Hierarchy Process, Data Envelopment Analysis, Risk Analysis in Supply Chain, measuring transit risks, supply risks, delivering risks. | | | | | | | 9 | | | C5 | | |
|  | **Total** | | | | | | | **45** | | |  | | |
| **Course Outcomes** | | | | | | | | | | | | | |
| **Course Outcomes** | On completion of this course, students will; | | | | | | | **Program Outcomes** | | | | | |
| **CO1** | Clear understanding on the concept of HR Analytics | | | | | | | PO2, PO5 | | | | | |
| **CO2** | Knowledge on Financial Analytics | | | | | | | PO1, PO7 | | | | | |
| **CO3** | Clarity on CRM Analytics | | | | | | | PO1, PO5, PO6 | | | | | |
| **CO4** | Awareness on the concept of Retail Analytics | | | | | | | PO2, PO6 | | | | | |
| **CO5** | Knowledge on SCM/Logistics Analytics | | | | | | | PO2, PO5 | | | | | |
| **Reading List** | | | | | | | | | | | | | |
| 1. | https://book.akij.net/eBooks/2018/May/5aef50939a868/Data\_Science\_for\_Bus.pdf | | | | | | | | | | | | |
| 2. | <http://dspace.vnbrims.org:13000/jspui/bitstream/123456789/4175/1/Business%20analytics%20for%20managers%20taking%20business%20intelligence%20beyond%20reporting.pdf> | | | | | | | | | | | | |
| 3. | https://www.netsuite.com/portal/resource/articles/business-strategy/business-intelligence-examples.shtml?mc24943=v2 | | | | | | | | | | | | |
| 4. | Peter C,Journal of Business Research, Volume 122, January 2021, Pages 889-901 | | | | | | | | | | | | |
| **References Books** | | | | | | | | | | | | | |
| 1. | Jac Fitz-Enz , The New HR Analytics: Predicting the Economic Value of YouCompany's Human Capital Investments, Amacom.2009 | | | | | | | | | | | | |
| 2. | Raghurami Reddy Etukuru, Enterprise Risk Analytics for Capital Markets: Proactive and Real-Time Risk, iUniverse, 2014 | | | | | | | | | | | | |
| 3. | Khalid Zidan,Supply Chain Management: Fundamentals, Strategy, Analytics & Planning for Supply Chain & Logistics Management, CreateSpace Independent Publishing Platform, 2016 | | | | | | | | | | | | |
| 4. | Chan, Hing Kai, Subramanian, Nachiappan, Abdulrahman and Muhammad Dan-Asabe, Supply Chain Management in the Big Data Era, IGI Global. 2016 | | | | | | | | | | | | |
| 5. | Karunakaran, K..Marketing Management. New Delhi: Himalaya Publishing House. 3rd edition, 2013 | | | | | | | | | | | | |
| 6. | Jac Fitz-Enz , The New HR Analytics: Predicting the Economic Value of YouCompany's Human Capital Investments, Amacom.2009 | | | | | | | | | | | | |

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|  | **PO 1** | **PO 2** | **PO 3** | **PO 4** | **PO 5** | **PO 6** | **PO 7** | **PO 8** |
| **CO 1** |  | 3 |  |  | 2 |  |  |  |
| **CO 2** | 3 |  |  |  |  |  | 2 |  |
| **CO 3** | 2 |  |  |  | 3 | 3 |  |  |
| **CO 4** |  | 3 |  |  |  | 2 |  |  |
| **CO 5** |  | 3 |  |  | 2 |  |  |  |

**3 STRONG 2 MEDIUM 1 LOW**

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| **Subject Code** | **Subject Name** | **Category** | **L** | **T** | **P** | **O** | **Credits** | | **Inst. Hours** | **Marks** | | | |
| **CIA** | | **External** | **Total** |
|  | **DATA SCIENCE** | Elective | 3 | - | - | - | 3 | | 45 | 25 | | 75 | 100 |
| **Course Objectives** | | | | | | | | | | | | | |
| C1 | To familiarize the students with the basics of data mining. | | | | | | | | | | | | |
| C2 | Understand the data warehouse | | | | | | | | | | | | |
| C3 | To learn about Regression and correlation | | | | | | | | | | | | |
| C4 | To learn about the tools in the R platform To learn about BI tools | | | | | | | | | | | | |
| C5 | Understand the application in various sectors | | | | | | | | | | | | |
| **SYLLABUS** | | | | | | | | | | | | | |
| **UNIT** | **Details** | | | | | | | **No. of Hours** | | | **Course Objectives** | | |
| I | Data mining, text mining, Web mining, Spatial mining, Process mining, BI process- Private and Public Intelligence, Strategic assessment of implementation. | | | | | | | 9 | | | C1 | | |
| II | Data warehouse – characteristics and view - OLTP and OLAP - Design and development of data warehouse, Metadata models, Extract/ Transform / Load (ETL) design. | | | | | | | 9 | | | C2 | | |
| III | Regression and correlation; Classification- Decision trees; clustering – Neural networks; Market basket analysis- Association rules-Genetic algorithms and link analysis, Support Vector Machine, Ant Colony  Optimization. | | | | | | | 9 | | | C3 | | |
| IV | Business intelligence software, BI on web, Ethical and legal limits, Industrial espionage, modern techniques of crypto analysis, managing and organizing for an effective BI Team. | | | | | | | 9 | | | C4 | | |
| V | Applications in various sectors – Retailing, CRM, Banking, Stock Pricing, Production, Crime, Genetics, Medical, Pharmaceutical field. | | | | | | | 9 | | | C5 | | |
|  | **Total** | | | | | | | **45** | | |  | | |
| **Course Outcomes** | | | | | | | | | | | | | |
| **Course Outcomes** | On completion of this course, students will; | | | | | | | **Program Outcomes** | | | | | |
| **CO1** | Identify knowledge about data mining | | | | | | | PO2, PO5 | | | | | |
| **CO2** | Explain knowledge about data warehouse | | | | | | | PO1, PO6 | | | | | |
| **CO3** | Compare knowledge on regression and correlations | | | | | | | PO1, PO5, PO7 | | | | | |
| **CO4** | Reframe understanding about business intelligence tools | | | | | | | PO5, PO6 | | | | | |
| **CO5** | Generalize knowledge about its applications in various sectors | | | | | | | PO6, PO8 | | | | | |
| **Reading List** | | | | | | | | | | | | | |
| 1. | https://doc.lagout.org/Others/Data%20Mining/Data%20Mining\_%20The%20Textbook%20%5BAggarwal%202015-04-14%5D.pdf | | | | | | | | | | | | |
| 2. | https://doc.lagout.org/Others/Data%20Mining/Business%20Intelligence%20and%20Data%20Mining%20%5BMaheshwari%202014-12-31%5D.pdf | | | | | | | | | | | | |
| 3. | Shu-Hsien Liao, Data mining techniques and applications, 2012 | | | | | | | | | | | | |
| 4. | Dr. M.A. Dorgham, International Journal of Data Mining and Bioinformatics,2020 | | | | | | | | | | | | |
| **References Books** | | | | | | | | | | | | | |
| 1. | Anil Maheshwari, Data Analytics Made Accessible, Kindle edition, 2019. | | | | | | | | | | | | |
| 2. | Foster Provost & Tom Fawcett, Data Science for Business: What You Need to Know Oreilly , 2013 | | | | | | | | | | | | |
| 3. | Jiawei Han, Micheline Kamber and Jian Pei, Data Mining: Concepts and Techniques, 3 rd ed., Morgan Kaufmann Publishers, 2012 | | | | | | | | | | | | |
| 4. | Ian H.Witten, Eibe Frank and Mark A.Hall, Data Mining: Practical Machine Learning Tools and Techniques (3rd ed.). Morgan Kaufmann, 2011 (ISBN 978-0-12-374856-0) | | | | | | | | | | | | |
| 5. | Efraim Turban, Ramesh Sharda, Jay E. Aronson and David King, Business Intelligence, Pearson, 2008. | | | | | | | | | | | | |

**CO-PO MAPPING**

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|  | **PO 1** | **PO 2** | **PO 3** | **PO 4** | **PO 5** | **PO 6** | **PO 7** | **PO 8** |
| **CO 1** |  | 3 |  |  | 2 |  |  |  |
| **CO 2** | 3 |  |  |  |  | 2 |  |  |
| **CO 3** | 3 |  |  |  | 2 |  | 2 |  |
| **CO 4** |  |  |  |  | 2 | 3 |  |  |
| **CO 5** |  |  |  |  |  | 3 |  | 2 |

**3 STRONG 2 MEDIUM 1 LOW**

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| **Subject Code** | **Subject Name** | **Category** | **L** | **T** | **P** | **O** | **Credits** | | **Inst. Hours** | **Marks** | | | |
| **CIA** | | **External** | **Total** |
|  | **Business Intelligence, Big Data, Cloud Computing** | Elective | 3 | - | - | - | 3 | | 45 | 25 | | 75 | 100 |
| **Course Objectives** | | | | | | | | | | | | | |
| C1 | To familiarize the students on big data platform, applications on big data using Pig and Hive. | | | | | | | | | | | | |
| C2 | To provide insights on data mining tools, methods and techniques. | | | | | | | | | | | | |
| C3 | To throw light on business intelligence software and modern techniques of crypto analysis. | | | | | | | | | | | | |
| C4 | To elucidate on cloud computing characteristics, challenges and applications. | | | | | | | | | | | | |
| C5 | To create awareness and importance of predictive analytics and visual data analysis techniques. | | | | | | | | | | | | |
| **SYLLABUS** | | | | | | | | | | | | | |
| **UNIT** | **Details** | | | | | | | **No. of Hours** | | | **Course Objectives** | | |
| I | **Big Data Frameworks:** Introduction to Big Data Platform – Challenges of Conventional Systems - Intelligent data analysis – Nature of Data - Analytic Processes and Tools - Analysis vs Reporting.  Applications on Big Data Using Pig and Hive – Data processing operators in Pig – Hive services – HiveQL – Querying Data in Hive - fundamentals of HBase and Zookeeper - IBM Info Sphere Big Insights and Streams. | | | | | | | 9 | | | C1 | | |
| II | **Data Mining Tools, Methods and Techniques:** Data mining, Text mining, Web mining, Spatial mining, Process mining, BI process, Private and Public intelligence, Strategic assessment of implementing BI Data Mining Techniques: Introduction, Statistical Perspective on Data Mining, Statistics-need and algorithms, Naïve Bayes Algorithm, Chi-Square Automatic Interaction-Detectors (CHAID)- Classification and Regression Tree (CART) - Analysis of Unstructured Data. | | | | | | | 9 | | | C2 | | |
| III | **Modern Information Technology and its Bu siness Opportunities:** Business intelligence software, BI on web, Ethical and legal limits, Industrial espionage, modern techniques of crypto analysis, managing and organizing for an effective BI Team. | | | | | | | 9 | | | C3 | | |
| IV | **Cloud Computing Introduction and Applications:** Cloud issues and challenges - Properties - Characteristics - Service models, Deployment models. Cloud resources: Network and API - Virtual and Physical computational resources - Data-storage. Virtualization concepts - Types of Virtualization- Introduction to Various Hypervisors - High Availability (HA)/Disaster Recovery (DR) using Virtualization, Moving VMs, Cloud ComputingApplications**:** Overview on Amazon AWS, Microsoft Azure and Google App Engine | | | | | | | 9 | | | C4 | | |
| V | **Visualization techniques:** Predictive Analytics- Simple linear regression- Multiple linear regression- Interpretation of regression coefficients. Visualizations - Visual data analysis techniques- interaction techniques - Systems and applications. | | | | | | | 9 | | | C5 | | |
|  | **Total** | | | | | | | **45** | | |  | | |
| **Course Outcomes** | | | | | | | | | | | | | |
| **Course Outcomes** | On completion of this course, students will; | | | | | | | **Program Outcomes** | | | | | |
| **CO1** | State the knowledge on big data platform, applications on big data using Pig and Hive. | | | | | | | PO2, PO6 | | | | | |
| **CO2** | Compare insights on data mining tools, methods and techniques. | | | | | | | PO1, PO5 | | | | | |
| **CO3** | Demonstrate knowledge on business intelligence software and modern techniques of crypto analysis. | | | | | | | PO5, PO6, PO7 | | | | | |
| **CO4** | Summarize cloud computing characteristics, challenges and applications. | | | | | | | PO2, PO6, PO7 | | | | | |
| **CO5** | Develop better understanding on predictive analytics and visual data analysis techniques. | | | | | | | PO1, PO6 | | | | | |
| **Reading List** | | | | | | | | | | | | | |
| 1. | http://dhoto.lecturer.pens.ac.id/lecture\_notes/internet\_of\_things/Big%20Data%20Principles%20and%20Paradigms.pdf | | | | | | | | | | | | |
| 2. | https://www.fujitsu.com/rs/Images/WhiteBookofBigData.pdf | | | | | | | | | | | | |
| 3. | Julian Ereth, H. Baars, Cloud-Based Business Intelligence and Analytics Applications - Business Value and Feasibility,2015 | | | | | | | | | | | | |
| 4. | O. Ylojoki, and J. Porras, “Perspectives to Definition of Big Data: A Mapping Study and Discussion”, Journal of Innovation Management, vol. 4, no. 1, pp. 69-91, 2016. http://hdl.handle.net/10216/83250. | | | | | | | | | | | | |
| **References Books** | | | | | | | | | | | | | |
| 1. | Jaiwei Ham and Micheline Kamber, Data Mining concepts and techniques, Kauffmann Publishers, 2006 | | | | | | | | | | | | |
| 2. | Efraim Turban, Ramesh Sharda, Jay E. Aronson and David King, Business Intelligence,Prentice Hall, 2008. | | | | | | | | | | | | |
| 3. | Colleen Mccue, “Data Mining and Predictive Analysis: Intelligence Gathering and Crime Analysis”, Elsevier, 2nd Edition, 2015. | | | | | | | | | | | | |
| 4. | Michael Berthold, David J. Hand, “Intelligent Data Analysis”, Springer, 2nd Edition, 2007. | | | | | | | | | | | | |
| 5. | Frank J Ohlhorst, “Big Data Analytics: Turning Big Data into Big Money”, Wiley and SAS Business Series, 2013. | | | | | | | | | | | | |

**CO-PO MAPPING**

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|  | **PO 1** | **PO 2** | **PO 3** | **PO 4** | **PO 5** | **PO 6** | **PO 7** | **PO 8** |
| **CO 1** |  | 3 |  |  |  | 2 |  |  |
| **CO 2** | 2 |  |  |  | 3 |  |  |  |
| **CO 3** |  |  |  |  | 3 | 2 | 2 |  |
| **CO 4** |  | 3 |  |  |  | 3 | 2 |  |
| **CO 5** | 3 |  |  |  |  | 2 |  |  |

**3 STRONG 2 MEDIUM 1 LOW**

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| **Subject Code** | **Subject Name** | **Category** | **L** | **T** | **P** | **O** | **Credits** | | **Inst. Hours** | **Marks** | | | |
| **CIA** | | **External** | **Total** |
|  | **Block Chain Technology** | Elective | 3 | - | - | - | 3 | | 45 | 25 | | 75 | 100 |
| **Course Objectives** | | | | | | | | | | | | | |
| C1 | To acquire knowledge of various techniques and various algorithms used in Blockchain | | | | | | | | | | | | |
| C2 | To understand how blockchain systems work and how to securely interact with them | | | | | | | | | | | | |
| C3 | To familiarize the functional and operational aspects of cryptocurrency | | | | | | | | | | | | |
| C4 | To establish deep understanding of the Ethereum model and deploy smart contracts applications | | | | | | | | | | | | |
| C5 | To understand the consensus and hyper ledger fabric in block chain technology. | | | | | | | | | | | | |
| **SYLLABUS** | | | | | | | | | | | | | |
| **UNIT** | **Details** | | | | | | | **No. of Hours** | | | **Course Objectives** | | |
| I | Introduction: Distributed Database, Two General Problem, Byzantine General problem and Fault Tolerance, Hadoop Distributed File System, Distributed Hash Table, ASIC resistance, Turing Complete. Cryptography: Hash function, Digital Signature - ECDSA, Memory Hard Algorithm, Zero Knowledge Proof. | | | | | | | 9 | | | C1 | | |
| II | Blockchain & Applications: Introduction to Block chain, Gartner's Hype Curve and Evolution of Blockchain Technology, Blockchain Need & Genesis, Key Characteristics of Blockchain, Blockchain Structure, Blockchain types and Network, Mining and Consensus, How Blockchain Works, Bitcoin Whitepaper, Understanding Bitcoin, Components of a Block, Forks: soft & hard forks, Ummer blocks, Different forks from Bitcoin, Wallets, Transactions, Public & Private keys, Blockchain Applications : Internet of Things, Medical Record Management System, Do-main Name Service and future of Blockchain. | | | | | | | 9 | | | C2 | | |
| III | Cryptocurrency:History, Distributed Ledger, Bitcoin protocols - Mining strategy and rewards, Ethereum - Construction, DAO, Smart Contract, GHOST, Vulnerability, Attacks, Sidechain, Namecoin. Cryptocurrency Regulation: Stakeholders, Roots of Bitcoin, Legal Aspects - Cryptocurrency Exchange, Black Market and Global Economy. | | | | | | | 9 | | | C3 | | |
| IV | Ethereu**:** Need of Ethereum, Ethereum Foundation, Ethereum Whitepaper, How Ethereum Works, Ethereum network, Ethereum Virtual Machine, Transactions and Types, Mining & Consensus, Smart Contracts. | | | | | | | 9 | | | C4 | | |
| V | Hyperledger fabric: Hyperledger, Hyperledger Fabric, Comparison between Fabric & Other Technologies, Fabric Architecture, Components of Hyperledger Fabric, Advantages of Hyperledger Fabric Blockchain, How Hyperledger Fabric Works. | | | | | | | 9 | | | C5 | | |
|  | **Total** | | | | | | | **45** | | |  | | |
| **Course Outcomes** | | | | | | | | | | | | | |
| **Course Outcomes** | On completion of this course, students will; | | | | | | | **Program Outcomes** | | | | | |
| **CO1** | Define the importance and the foundations of Blockchain. | | | | | | | PO2, PO6 | | | | | |
| **CO2** | Associate key features, different types of platforms & languages of blockchain technology. | | | | | | | PO1, PO2, PO8 | | | | | |
| **CO3** | Solev better insights about cryptocurrency concepts. | | | | | | | PO1, PO6, PO7 | | | | | |
| **CO4** | Explain the design principles of ethereum. | | | | | | | PO2, PO5 | | | | | |
| **CO5** | Develop hyperledger fabric model and its architecture. | | | | | | | PO2, PO6 | | | | | |
| **Reading List** | | | | | | | | | | | | | |
| 1. | http://book.itep.ru/depository/blockchain/blockchain-by-melanie-swan.pdf | | | | | | | | | | | | |
| 2. | https://www.blockchainexpert.uk/book/blockchain-book.pdf | | | | | | | | | | | | |
| 3. | Sanyam Jain, Journal of Emerging Technologies and Innovative Research,2017 | | | | | | | | | | | | |
| 4. | Sheikh Mohammad Idrees, Exploring the Blockchain Technology: Issues, Applications and Research Potential,2021 | | | | | | | | | | | | |
| **References Books** | | | | | | | | | | | | | |
| 1. | Imran Bashir, Mastering Blockchain, Packt Publishing, March 2017 | | | | | | | | | | | | |
| 2. | Debajani Mohanty, BlockChain: From Concept to Execution, BPB Publications, 2nd edition, 2018 | | | | | | | | | | | | |
| 3. | Artemis Caro, Blockchain: Bitcoin, Ethereum&Blockchain: The Beginners Guide to Understanding the Technology Behind Bitcoin & Cryptocurrency, 2017 | | | | | | | | | | | | |
| 4. | Andreas M. Antonopoulos, Gavin Wood, Mastering Ethereum: Building Smart Contracts and DApps, O'REILLY, 2018 | | | | | | | | | | | | |
| 5. | Nitin Gaur, Luc Desrosiers, Venkatraman Ramakrishna, Petr Novotny, Dr. Salman A. Baset and Anthony O’Dowd, Hands-on Blockchain with Hyperledger, Packt Publishing, 2018 | | | | | | | | | | | | |
| 6. | Arvind Narayanan, Joseph Bonneau, Edward Felten, Andrew Miller, Steven Goldfede, “Bitcoin and Cryptocurrency Technologies”, Princeton University Press, 2016. | | | | | | | | | | | | |

**CO-PO MAPPING**

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|  | **PO 1** | **PO 2** | **PO 3** | **PO 4** | **PO 5** | **PO 6** | **PO 7** | **PO 8** |
| **CO 1** |  | 3 |  |  |  | 2 |  |  |
| **CO 2** | 2 | 3 |  |  |  |  |  | 3 |
| **CO 3** | 3 |  |  |  |  | 3 | 2 |  |
| **CO 4** |  | 2 |  |  | 3 |  |  |  |
| **CO 5** |  | 3 |  |  |  | 3 |  |  |

**3 STRONG 2 MEDIUM 1 LOW**

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| **Subject Code** | **Subject Name** | **Category** | **L** | **T** | **P** | **O** | **Credits** | | **Inst. Hours** | **Marks** | | | |
| **CIA** | | **External** | **Total** |
|  | **Software Project Management** | Elective | 3 | - | - | - | 3 | | 45 | 25 | | 75 | 100 |
| **Course Objectives** | | | | | | | | | | | | | |
| C1 | To acquire and understand the concept of software projects and steps in software project management | | | | | | | | | | | | |
| C2 | To enable the students to prepare business proposals for software management | | | | | | | | | | | | |
| C3 | To familiarize the students to evaluate technical feasibility and financial viability of projects | | | | | | | | | | | | |
| C4 | To establish deep understanding of the market acceptability and social desirability of software projects | | | | | | | | | | | | |
| C5 | To make the students as effective project managers and as part of software project teams. | | | | | | | | | | | | |
| **SYLLABUS** | | | | | | | | | | | | | |
| **UNIT** | **Details** | | | | | | | **No. of Hours** | | | **Course Objectives** | | |
| I | Software projects and metrics - Software Project Management – Concepts and 3 P’s (People, problem and process) Metrics in the process and project domains, Software measurement – size-oriented metrics, function-oriented metrics and extended function point metrics, Integrating metrics within the software process | | | | | | | 9 | | | C1 | | |
| II | Software project planning - Software Project planning – objectives, scoping, Resources – human resources, reusable software resources and environmental resources Software project estimation – Popular decomposition techniques – problem-based, process-based and empirical estimation (COCOMO model). | | | | | | | 9 | | | C2 | | |
| III | Software outsourcing and project scheduling - The Make-Buy decision – creating a decision tree, Software outsourcing – issues involved Project Scheduling and tracking – relationship between people and effort – defining a task set for the software project. | | | | | | | 9 | | | C3 | | |
| IV | Software risk management and configuration management -Risk Management – Reactive and Proactive risk strategies, Risk identification, projection, mitigation and monitoring – RMMM Plan Software configuration management – process and standards | | | | | | | 9 | | | C4 | | |
| V | Object-oriented software projects and CASE tools -Management of Object-oriented software projects – process framework, metrics, estimation and scheduling approach, Computer-aided Software Engineering (CASE) – CASE tools – their building blocks and taxonomy | | | | | | | 9 | | | C5 | | |
|  | **Total** | | | | | | | **45** | | |  | | |
| **Course Outcomes** | | | | | | | | | | | | | |
| **Course Outcomes** | On completion of this course, students will; | | | | | | | **Program Outcomes** | | | | | |
| **CO1** | Understand the steps in software project management | | | | | | | PO2, PO6 | | | | | |
| **CO2** | Discuss and prepare business proposals for software management | | | | | | | PO1, PO2, PO8 | | | | | |
| **CO3** | Discover better insights about technical feasibility and financial viability of projects | | | | | | | PO1, PO6, PO7 | | | | | |
| **CO4** | Support the market acceptability and social desirability of software projects | | | | | | | PO2, PO5 | | | | | |
| **CO5** | Develop the students as effective project managers and as a part of software project teams. | | | | | | | PO2, PO6 | | | | | |
| **Reading List** | | | | | | | | | | | | | |
| 1. | http://softwareprojectmanager.org | | | | | | | | | | | | |
| 2. | http://www.softwareprojects.org | | | | | | | | | | | | |
| 3. | http://www.rspa.com/spi/project-mgmt.html | | | | | | | | | | | | |
| 4. | http://www.project.net/ | | | | | | | | | | | | |
| **References Books** | | | | | | | | | | | | | |
| 1. | Robert T. Futrell, Donald F. Shafer, and Linda I. Safer, Quality Software Project Management, Pearson Education, 2002 | | | | | | | | | | | | |
| 2. | Ian Sommerville, Software Engineering, Pearson Education, 2010 | | | | | | | | | | | | |
| 3. | Bob Hughes and Mike Cotterell, Software Project Management,McGraw-Hill, 2009 | | | | | | | | | | | | |
| 4. | Roger Pressman, Software Engineering: A Practitioner's Approach, Tata McGraw-Hill, 2005 | | | | | | | | | | | | |

**CO-PO MAPPING**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **PO 1** | **PO 2** | **PO 3** | **PO 4** | **PO 5** | **PO 6** | **PO 7** | **PO 8** |
| **CO 1** |  | 3 |  |  |  | 2 |  |  |
| **CO 2** | 2 | 3 |  |  |  |  |  | 3 |
| **CO 3** | 3 |  |  |  |  | 3 | 2 |  |
| **CO 4** |  | 2 |  |  | 3 |  |  |  |
| **CO 5** |  | 3 |  |  |  | 3 |  |  |

**3 STRONG 2 MEDIUM 1 LOW**

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| **Subject Code** | **Subject Name** | **Category** | **L** | **T** | **P** | **O** | **Credits** | | **Inst. Hours** | **Marks** | | | |
| **CIA** | | **External** | **Total** |
|  | **Design and Analysis of Algorithms** | Elective | 3 | - | - | - | 3 | | 45 | 25 | | 75 | 100 |
| **Course Objectives** | | | | | | | | | | | | | |
| C1 | To understand and apply the algorithm analysis techniques. | | | | | | | | | | | | |
| C2 | To enable the students to critically analyse the efficiency of alternative algorithmic solutions for the same problem. | | | | | | | | | | | | |
| C3 | To familiarize the students with the different algorithm design techniques. | | | | | | | | | | | | |
| C4 | To establish deep understanding of the design and analysis of algorithms | | | | | | | | | | | | |
| C5 | To make the students understand the limitations of Algorithmic power. | | | | | | | | | | | | |
| **SYLLABUS** | | | | | | | | | | | | | |
| **UNIT** | **Details** | | | | | | | **No. of Hours** | | | **Course Objectives** | | |
| I | Notion of an Algorithm – Fundamentals of Algorithmic Problem Solving – Important Problem Types – Fundamentals of the Analysis of Algorithmic Efficiency –Asymptotic Notations and their properties. Analysis Framework – Amortized analysis – Mathematical analysis for Recursive and Non-recursive algorithms – Types of Solution Procedure/Algorithm | | | | | | | 9 | | | C1 | | |
| II | Introduction – Terminologies of Graph – Network – Tree. Data Structure – Stack – Queue – Linked List – Binary Tree – Balanced Tree – Matrix Algorithms – Magic Square Problem – Tower of Hanoi – String Matching – Hashing. Network Algorithms – Dijkstra’s Algorithm – Floyd’s Algorithm – Minimum Spanning Tree – Maximal Flow Problem | | | | | | | 9 | | | C2 | | |
| III | Sorting Algorithms – Insertion Sort – Bubble Sort – Heap Sort – Quick Sort – Merge Sort – PARSORT – Radix Sort – Selection Sort – Topological Sort. Backtracking Algorithms – n-Queen Problem – Hamiltonian Circuit Problem – Subset Sum Problem – Graph Colouring Problem. Search Algorithms – Increment Search – Binary Search – Fibonacci Search – Brand and Bound Algorithms – Heuristics – Travelling Salesman Problem – Simple Heuristic to Minimize Total Tardiness in Single Machine Scheduling Problem – Heuristic for Total Covering Problem – Huffman Code – Transportation Problem – Heuristics for Scheduling. | | | | | | | 9 | | | C3 | | |
| IV | Dynamic Programming – Terminologies – Knapsack Problem – Shortest Path Problem – Minimizing total tardiness in a Single Machine Scheduling Problem – Reliability Problem – Travelling Salesman Problem – Chained Matrix Multiplication – Binomial Coefficients. MetaHeuristics – Simulated Annealing Algorithm – Genetic Algorithm – Tabu Search – Ant Colony Optimization Algorithm. Cryptography – Substitution Algorithms – Transposition Methods – Public-key Cryptography. Probabilistic Algorithms – Construction of Cumulative Probability Distribution – Methods of Random Number Generation – Discrete Event Simulation | | | | | | | 9 | | | C4 | | |
| V | Benchmarking of Algorithms – Comparison of Algorithm using Optimal Solutions – Comparison of Algorithm in terms of Performance Measure of Another Algorithm – Comparison of GA-based Heuristic (GAH) with an existing Heuristic (H). Algorithms to Schedule Processor – Concept of Single Processor Scheduling – Algorithms to Schedule Jobs in Parallel Processors – Scheduling 56 of Pre-emptible Dependent Jobs on Parallel Processors to Minimize Makespan. Complexity of Algorithms – Intractability of Problem – Problems with Polynomial Time Algorithms – Exponential Time Algorithms – Problems for those neither Intractability is Proved nor Polynomial Time Algorithm Exist till now. P, NP, NP-Complete, NP-Hard and NP-Easy Problems | | | | | | | 9 | | | C5 | | |
|  | **Total** | | | | | | | **45** | | |  | | |
| **Course Outcomes** | | | | | | | | | | | | | |
| **Course Outcomes** | On completion of this course, students will; | | | | | | | **Program Outcomes** | | | | | |
| **CO1** | Understand and apply the algorithm analysis techniques | | | | | | | PO2, PO6 | | | | | |
| **CO2** | Discuss the efficiency of alternative algorithm solutions for the same problem | | | | | | | PO1, PO2, PO8 | | | | | |
| **CO3** | Sketch better insights about the different algorithm design techniques | | | | | | | PO1, PO6, PO7 | | | | | |
| **CO4** | Explain the design and analysis of algorithms | | | | | | | PO2, PO5 | | | | | |
| **CO5** | Support the students to understand the limitations of algorithmic power. | | | | | | | PO2, PO6 | | | | | |
| **Reading List** | | | | | | | | | | | | | |
| 1. | R. Panneerselvam, Design and Analysis of Algorithms, PHI Learning Private Limited | | | | | | | | | | | | |
| 2. | Thomas H.Cormen, Charles E.Leiserson, Ronald L. Rivest and Clifford Stein, ―Introduction to Algorithms, Third Edition, PHI Learning Private Limited, 2012. | | | | | | | | | | | | |
| **References Books** | | | | | | | | | | | | | |
| 1. | Ellis Horowitz, Sartaj Sahni and Sanguthevar Rajasekaran, Computer Algorithms/ C++, Second Edition, Universities Press, 2007 | | | | | | | | | | | | |
| 2. | Alfred V. Aho, John E. Hopcroft and Jeffrey D. Ullman, ―Data Structures and Algorithms, Pearson Education, Reprint 2006. | | | | | | | | | | | | |
| 3. | Harsh Bhasin, ―Algorithms Design and Analysis, Oxford university press, 2016. | | | | | | | | | | | | |
| 4. | S. Sridhar, ―Design and Analysis of Algorithms, Oxford university press, 2014. | | | | | | | | | | | | |

**CO-PO MAPPING**

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| **CO 2** | 2 | 3 |  |  |  |  |  | 3 |
| **CO 3** | 3 |  |  |  |  | 3 | 2 |  |
| **CO 4** |  | 2 |  |  | 3 |  |  |  |
| **CO 5** |  | 3 |  |  |  | 3 |  |  |

**3 - STRONG 2 - MEDIUM 1 - LOW**

**Evaluation and Assessment**

The students will be Evaluated and Assessed on all the courses as given below:

|  |  |  |
| --- | --- | --- |
| **Methods of Evaluation** | | |
| **Internal Evaluation** | Continuous Internal Assessment Test | 25 Marks |
| Assignments |
| Seminars |
| Attendance and Class Participation |
| **External Evaluation** | End Semester Examination | 75 Marks |
|  | Total | 100 Marks |
| **Methods of Assessment** | | |
| **Recall (K1)** | Simple definitions, MCQ, Recall steps, Concept definitions | |
| **Understand/ Comprehend (K2)** | MCQ, True/False, Short essays, Concept explanations, Short summary or overview | |
| **Application (K3)** | Suggest idea/concept with examples, Suggest formulae, Solve problems, Observe, Explain | |
| **Analyze (K4)** | Problem-solving questions, Finish a procedure in many steps, Differentiate between various ideas, Map knowledge | |
| **Evaluate (K5)** | Longer essay/ Evaluation essay, Critique or justify with pros and cons | |
| **Create (K6)** | Check knowledge in specific or offbeat situations, Discussion, Debating or Presentations | |