



RAJIV GANDHI INSTITUTE OF MANAGEMENT & SCIENCE KAKINADA

(Affiliated to JNTUK, Approved by AICTE)

MBA III & IV SEMESTER COURSE STRUCTURE & SYLLABUS

III & IV SEMESTER COURSE STRUCTURE & SYLLABUS

MASTER OF BUSINESS ADMINISTRATION

(Applicable for the batch admitted from 2024-25)



JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY, KAKINADA: KAKINADA

KAKINADA – 533003, ANDHRA PRADESH (INDIA)

(Established by A.P. Government Act No. 30 of 2008)



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MBA III & IV SEMESTER COURSE STRUCTURE & SYLLABUS

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MBA III & IV SEMESTER COURSE STRUCTURE & SYLLABUS

III SEMESTER							
S.No	Course Code	Courses	Marks	L	T	P	C
1	C-301	Strategic Management	100	4	0	0	4
2	C-302	Operations Research	100	4	0	0	4
3	E -301	Elective -1	100	4	0	0	3
4	E-302	Elective - 2	100	4	0	0	3
5	E-303	Elective - 3	100	4	0	0	3
6	E-304	Elective - 4	100	4	0	0	3
7	VA-301	Entrepreneur Project-III Submission of project proposal report to Govt. bodies and applying the proposal to Govt. agencies like (START-UPS/MSME /NABARD/IDBI/SISI) and the same may be submitted to the University with the acknowledgement.	30	0	0	2	1
Total			630	24	0	2	21

IV SEMESTER							
S.No	Course Code	Courses	Marks	L	T	P	C
1	C-401	Corporate Legal Framework	100	4	0	0	4
2	C-402	Supply Chain Management	100	4	0	0	4
3	E-401	Elective -5	100	3	0	0	3
4	E-402	Elective - 6	100	3	0	0	3
5	E-403	Elective - 7	100	3	0	0	3
6	E-404	Elective - 8	100	3	0	0	3
7	SE-401	Main project Submission and Viva-Voce	100	0	0	8	4
Total Marks / Credits			700	20	0	8	24
			2910				111

- ✓ **Note: The students opting for dual specialization must select Elective 1 and 2 from first specialization and 3 and 4 from second specialization in III semester.**
- ✓ **The students opting for dual specialization must select Elective 5 and 6 from first specialization and 7 and 8 from second specialization in IV semester.**

*The project work documentation shall be checked with anti-plagiarism software (Turnitin). The permissible similarity shall be less than 30%.

The project shall be done in a chosen specialization (or) He/she can start his own business by showing the proofs such as GST certificate, owner of the firm etc...



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COURSES OFFERED (Specializations)

1	Human Resource Management
2	Finance
3	Systems
4	Logistics and Supply Chain Management
5	Health Care and Hospital Management
6	Artificial Intelligence
7	Digital Marketing



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1. HUMAN RESOURCE MANAGEMENT

HRM	III Sem	EHR-301	Learning and Development
		EHR-302	Performance and Compensation Management
		EHR-303	Strategic Human Resource Management
		EHR-304	Talent Acquisition and Management
	IV Sem	EHR-401	Labor Welfare and Employment laws
		EHR-402	International HRM
		EHR-403	Employee Relations and Workplace Culture
		EHR-404	Human Capital Management

2. FINANCE

FINANCE	III Sem	EFM-301	Investment and Portfolio Management
		EFM-302	Financial Markets and Services
		EFM-303	Taxation Management
		EFM-304	Banking institutions and financial reforms
	IV Sem	EFM-401	Corporate Strategic Finance
		EFM-402	Risk Management
		EFM-403	Global Financial Management
		EFM-404	Financial Derivatives

3. SYSTEMS

SYSTEMS	III Sem	ESY-301	Data Mining & Data Warehousing
		ESY-302	Software Project Management
		ESY-303	Managing Digital Innovation and Transformation
		ESY-304	Block chain in Business and Management
	IV Sem	ESY-401	Introduction to Artificial Intelligence
		ESY-402	Enterprise Resource Planning
		ESY-403	Internet of Things(IOT)
		ESY-404	Data Analytics



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4. LOGISTICS AND SUPPLY CHAIN MANAGEMENT

LOGISTICS AND SUPPLY CHAIN MANAGEMENT	III Sem	ELS-301	Store keeping and Warehousing management
		ELS-302	Supply Chain Risk Management
		ELS-303	Purchasing and Material Management
		ELS-304	Reverse Logistics
	IV Sem	ELS-401	Enterprise Resource Planning
		ELS-402	Shipping and Maritime law
		ELS-403	International Logistics Management
		ELS-404	Green Supply Chain Management

5. HEALTH CARE AND HOSPITAL MANAGEMENT

HEALTH CARE AND HOSPITAL MANAGEMENT	III Sem	EHH-301	Health Economics
		EHH-302	Health Care Policies and Delivery Systems
		EHH-303	Hospital organization and Management
		EHH-304	Hospital Functions and Support Services
	IV Sem	EHH-401	Health Analytics
		EHH-402	Managed Health Care and Insurance
		EHH-403	Health Laws, Ethics and Regulations
		EHH-404	Patient Care & Services Management

6. ARTIFICIAL INTELLIGENCE

ARTIFICIAL INTELLIGENCE	III Sem	EAI-301	Introduction to Artificial Intelligence
		EAI-302	Python Programming
		EAI-303	Block chain Technology
		EAI-304	Machine Learning
	IV Sem	EAI-401	Natural Language Processing
		EAI-402	Augmented Reality & Virtual Reality
		EAI-403	Deep Learning
		EAI-404	Data Visualization



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7. DIGITAL MARKETING

DIGITAL MARKETING	III Sem	EDM-301	Fundamentals of Digital Marketing
		EDM-302	Integrated Marketing Communication
		EDM-303	Search Engine Marketing
		EDM-304	Social Media Marketing
	IV Sem	EDM-401	E – Business Management
		EDM-402	System Analysis and Design
		EDM-403	Content Marketing
		EDM-404	Ai in Digital Marketing



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III Semester

STRATEGIC MANAGEMENT

L	T	P	C
4	0	0	4

UNIT-I

Introduction: Concepts in Strategic Management, Strategic Management as a process – Developing a strategic vision, Mission, Objectives, Policies – Factors that shape a company's strategy – Crafting a strategy.

UNIT-II

Environmental Scanning: Industry and Competitive Analysis -Evaluating company resources and competitive capabilities – SWOT Analysis – Strategies and competitive advantages in diversified companies and its evaluation. Tools and techniques- Porter's Five Force Model, BCG Matrix, GE Model,

UNIT-III

Strategy Formulation : Strategy Framework For Analyzing Competition, Porter's Value Chain Analysis, Competitive Advantage of a Firm, Exit and Entry Barriers - Formulation of strategy at corporate, business and functional levels. Types of Strategies

UNIT-IV

Strategy Implementation : Strategy and Structure, Strategy and Leadership, Strategy and culture connection - Operationalising and institutionalizing strategy- Organizational Values and Their Impact on Strategy – Resource Allocation – Planning systems for implementation.

UNIT-V

Strategy Evaluation and control – Establishing strategic controls - Measuring performance – appropriate measures- Role of the strategist – using qualitative and quantitative benchmarking to evaluate performance - strategic information systems – problems in measuring performance – Strategic surveillance -strategic audit

References

1. P.Subba Rao: Business Policy and Strategic Management, Himalaya Publishing House, New Delhi, 2010
2. Kazmi: Strategic Management and Business Policy, Tata McGraw Hill, 2009
3. R.Srinivasn: Strategic Management, PHI Learning, New Delhi, 2009
4. Adrian Haberberg & Alison: Strategic Management, Oxford University Press, New Delhi, 2009



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III Semester

L	T	P	C
4	0	0	4

OPERATIONS RESEARCH

Unit – I:

Importance-The History of OR-Definition-Features-Scope of Operations Research –Linear Programming: Introduction-Advantages of using LP-Application areas of LP- Formation of Mathematical modelling, Graphical method, the Simplex Method; Justification, interpretation of Significance of All Elements in the Simplex Tableau, Artificial variable techniques: Big M Method.

UNIT II:

Transportation, Assignment Models: Definition and application of the transportation model, Methods for finding initial solution-tests for optimality-variations in transportation problem, the Assignment Model, Travelling Salesman Problem.

Unit – III:

Dynamic Programming – Applications of D.P. (Capital Budgeting, Production Planning, Solving Linear Programming Problem) – Integer Programming – Branch and Bound Method. Unit – IV: Game Theory: Introduction – Two Person Zero-Sum Games, Pure Strategies, Games with Saddle Point, Mixed strategies, Rules of Dominance, Solution Methods of Games Without Saddle point – Algebraic, matrix and arithmetic methods.

Unit – V:

CPM & PERT and Replacement Model: Drawing networks – identifying critical path – probability of completing the project within given time- project crashing – optimum cost and optimum duration. Replacement models comprising single replacement and group replacement.

Relevant cases have to be discussed in each unit and in examination case is compulsory from any unit.

References:

1. Winston, Operations Research, Cengage, ND
2. Anand Sharma, Operations Research, Himalaya Publishing House,
3. Kalavarthy, S.Operations Research, Vikas Publishers House Pvt Ltd.,
4. Mcleavey & Mojena, Principles of Operations Research for Management, AITBS publishers,
5. V.K.Kapoor, Operation Research Techniques for Management, Sultan Chand & Sons,
6. Richard Bronson & Govindasami Naadimuthu, SCHAUM'S OUTLINE OF THEORY & PROBLEMS OF Operations Research, 2nd Ed., Tata Mc Graw-Hill Edition,
7. JK Sharma Operation Research – Theory and Applications, MacMillan.



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Third Semester

Human Resource Management

S. No	Course Code	SUBJECT TITLE
1	EHR-301	Learning and Development
2	EHR-302	Performance and Compensation Management
3	EHR-303	Strategic Human Resource Management
4	EHR-304	Talent Acquisition and Management



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III SEMESTER ELECTIVES (HUMAN RESOURCE MANAGEMENT)

III Semester

LEARNING AND DEVELOPMENT

L	T	P	C
4	0	0	3

Course Outcomes:

1. Understand foundations of L&D and its strategic significance.
2. Understand Theories of Learning and Instructional Design.
3. Learn to assess training needs at multiple organizational levels.

Unit I: Introduction to Learning and Development-Definition, Scope and Importance of Learning and Development in Organisational growth- Evolution of Training and Development- L&D as a Strategic Business Partner- The Learning Organisation (Peter Senge's Principles)-Learning Styles.

Unit II: Theories of Learning and Instructional Design Adult learning theories(Andragogy)- Principles of Instructional Design (ADDIE Model, SAM)-Learning Objectives (Bloom's Taxonomy)-Designing Training Content- Selecting Delivery Methods (classroom, e-learning, blended)-Role of Learning Management System(LMS).

Unit III: Training Needs Assessment (TNA) Purpose and Importance of TNA-Process of Training Needs Identification-Organizational, Task and Person Analysis- Methods for conducting TNA (Surveys, Interviews, Focus Groups and Job Analysis)- Identifying skill gaps and competency Mapping-Aligning TNA with Business Goals.

UNIT IV: Designing training and Evaluation of Training Effectiveness Setting training objectives- Developing training content and Materials-Selecting training methods-Importance of evaluating training programs- Methods of training evaluation- Feedback mechanisms and continuous improvement.

UNIT V: Career and Leadership Development Career Planning and development initiatives- Succession Planning and talent management- Leadership development programs-Coaching and mentoring in organizations- Contemporary issues in Learning and Development-Digital transformation, Gamification, Mobile learning, Diversity and inclusion in training programs- Ethical considerations in L&D.

Relevant cases have to be discussed in each unit and in examination case is compulsory from any unit.

Reference Books:

1. Raymond A. Noe, **Employee Training and Development**, 2024, 9th Edition, McGraw-Hill Education
2. Rosemary Harrison, Learning and Development, Latest CIPD Edition (2023), Chartered Institute of Personnel and Development (CIPD), UK
3. Kathy Beevers & Andrew Rea, Learning and Development Practice in the Workplace, 4th Edition (2022), Kogan Page / CIPD Publishing
4. B. Janakiram & D. Ravindra, Training and Development: Text, Research and Cases, 2nd Edition (2023), Biztantra / Dreamtech Press



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L	T	P	C
4	0	0	3

III Semester

PERFORMANCE AND COMPENSATION MANAGEMENT

Unit- I:

Introduction to Performance Management- Definition-Significance-Objectives-Evaluation of Performance Management Systems (PMS)-Distinction between performance appraisal and performance management- Key Performance Areas(KPAs) and Key Result Areas(KRAs)- Performance Standards and goal setting-Competency Mapping and assessment- Strategies for effective performance management.

Unit- II:

Performance Management Cycle: Performance Planning –Performance monitoring and feedback- Performance Appraisal and Evaluation- Performance review and Development-Tools and Techniques of Performance Appraisal. Planning Individual Performance- Strategic Planning –Linkages to strategic planning- Barriers to performance planning.

Unit-III:

Performance Monitoring and Counseling: Supervision- Objectives and Principles of Monitoring- Monitoring Process- Periodic reviews- Problem solving- engendering trust -Role efficiency- Coaching- Counseling and Monitoring- Concepts and Skills.

UNIT -IV:

Compensation Management: Concept and definition – objectives and dimensions of Compensation Management-Components of Compensation – factors influencing compensation –Role of compensation and Reward in Modern Organizations Compensation as a Retention strategy- aligning compensation strategy with business strategy -Theoretical Foundations of Compensation.

UNIT V:

Compensation Structure: Developing salary structures and pay grades- Market based pay structures- Internal equity and external competitiveness- Executive Compensation- Components and design of executive pay packages- long – term incentives and executive compensation. Incentive plans and benefits- Employee benefits and services. Linking compensation to employee engagement and retention.

Relevant cases have to be discussed in each unit and in examination case is compulsory from any unit.

References

1. Prem Chadha: –Performance Management||, Macmillan India, New Delhi, 2008.
2. Michael Armstrong & Angela Baron, –Performance Management||: The New Realities, Jaico Publishing House, New Delhi, 2010.
3. T.V.Rao, –Appraising and Developing Managerial Performance||, Excel Books, 2003.
4. David Wade and Ronad Recardo, –Corporate Performance Management||, Butter Heinemann, New Delhi, 2002.
5. Dewakar Goel: –Performance Appraisal and Compensation Management||, PHI Leaarning, New Delhi, 2009
6. A.M. Sarma –Performance Management Systems|| Himalaya Publishing House, New Delhi, 2010.



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III Semester

L	T	P	C
4	0	0	3

STRATEGIC HUMAN RESOURCE MANAGEMENT

Course Objectives

- ☐ Understand the concept and significance of SHRM.
- ☐ Apply SHRM principles to align HR strategy with business goals.
- ☐ Evaluate the role of HR analytics in strategic decision-making.
- ☐ Formulate HR strategies for talent management, performance management, and organizational development.
- ☐ Assess the impact of global trends and challenges on SHRM practices.

Course outcomes:

1. Understand the strategic role of HR.
2. Aligning HR strategy with business strategy.
3. Develop strategic performance and compensation system.
4. Navigate global and ethical challenges in SHRM.

UNIT-I

Human Resource Strategy: Introduction to Strategic Human Resource Management - Evaluation objectives and Importance of Human Resources Strategy- Strategic fit – A conceptual framework - Human Resources contribution to strategy - Strategy driven role behaviors and practices – Theoretical Perspectives on SHRM approaches.

UNIT-II

Strategic Human Resource Planning: Objectives, benefits, levels of strategic planning -Activities related to strategic HR Planning-Basic overview of various strategic planning models-Strategic HR Planning model-Components of the strategic plan.

UNIT-III

Strategy Implementation: Strategy implementation as a social issue-The role of Human Resource-Work force utilization and employment practices-Resourcing and Retention strategies-Reward and Performance management strategies.

UNIT-IV

Strategic Human Resource Development: Concept of Strategic Planning for HRD Levels in Strategic HRD planning-Training and Development Strategies-HRD effectiveness.

UNIT-V

Human Resource Evaluation: Overview of evaluation - Approaches to evaluation, Evaluation Strategic contributions of Traditional Areas - Evaluating Strategic Contribution of Emerging Areas-HR as a Profit centre and HR outsourcing strategy.

Relevant cases have to be discussed in each unit and in examination case is compulsory from any unit.



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References:

1. Charles R. Greer: "Strategic Human Resource Management" - A General Manager Approach - Pearson Education, Asia
2. Fombrun Charles & Tichy: "Strategic Human Resource Management" - John Wiley Sons, 1984
3. Dr. Anjali Ghanekar "Strategic Human Resource Management" Everest Publishing House, Pune 2009
4. Tanuja Agarwala "Strategic Human Resource Management" Oxford University Press, New Delhi 2014 www.universityupdates.in || www.android.universityupdates.in || www.ios.universityupdates.in www.universityupdates.in || www.android.universityupdates.in || www.ios.universityupdates.in University Updates
5. Srinivas R Kandula "Strategic Human Resource Development" PHI Learning PVT Limited, New Delhi 2009
6. Dreher, Dougherty "Human Resource Strategy" Tata Mc Graw Hill Publishing Company Limited, New Delhi 2008



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III Semester

TALENT ACQUISITION AND MANAGEMENT

L	T	P	C
4	0	0	3

Course Objectives: To facilitate students in developing insights and understanding of effective management and development of talent in teams and organizations.

Contents:

Unit I: Introduction to Talent Acquisition: Definition and Scope of Talent and Talent Management, Importance of Talent Management, historical context of talent management, Challenges and Dilemmas, Workforce Planning and forecasting. Talent acquisition in the context of globalization and gig economy.

Unit II: Job Analysis and Employer Branding: Job Analysis-Process-Methods. Job description and Job Specification. Competency based job profiling- Employer Branding-Concepts, strategies and best practices. Employee Value Proposition(EVP).

Unit III: Sourcing and Recruitment Strategies: Internal Vs External Sourcing-Recruitment Methods-Social media recruitment –Use of AI and HR analytics in sourcing- Talent pools and Pipelines-Recruitment Process Outsourcing (RPO).

Unit IV: Selection and Onboarding: Selection tools-Resumes, Application forms, Interviews (Types), Psychometric Tests-Assessment Centers, Group Discussions, Case Interviews-Reference & background checks-Legal and ethical issues in selection-Effective onboarding practices – strategic importance and design. Diversity and Talent. Talent management and future directions

Unit V: **Metrics and Evaluation in Talent Acquisition: Key** Recruitment Metrics-Cost per hire, Time to fill, Quality of hire, Offer acceptance rate. Recruitment Analytics and Dashboards. Retention vs Acquisition. Future of Talent Acquisition – AI, Automation, Remote hiring, DEI in hiring

Suggested Readings:

1. Collings, D.G., Mellahi, K. & Cascio, W.F. (2017). The Oxford Handbook of Talent Management: Oxford University Press.
2. Wilcox, M. (2016). Effective Talent Management: Aligning Strategy, People and Performance. Routledge.
3. Sparrow, P., Scullion, H. & Tarique, I. (eds) (2014) Strategic Talent Management: Contemporary Issues in Global Context. Cambridge: Cambridge University Press.
4. Sparrow, P., Hird, M., and Cooper, C.L. (2015).



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III SEMESTER FINANCE

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1	EFM-301	Investment and Portfolio Management
2	EFM-302	Financial Markets and Services
3	EFM-303	Taxation Management
4	EFM-304	Banking institutions and financial reforms



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III Semester

L	T	P	C
4	0	0	3

INVESTMENT AND PORTFOLIO MANAGEMENT

Course Objective:

- 1) provides a broad overview of investment management, focusing on the application of Finance theory to the issue faced by portfolio managers and investors in general and
- 2) To provide conceptual foundation for the purpose of undertaking Investment analysis for securities as well as portfolios.

Course Outcomes:

At the end of this course students should be able to:

- 1) To provide a theoretical and practical background in the field of investments.
- 2) Designing and managing the bond as well as equity portfolios in the real word.
- 3) Valuing equity and debt instruments.
- 4) Measuring the portfolio performances

Unit-I:

Concept of Investment: Investment Vs Speculation, and Security Investment Vs Non- Security Forms of Investment-Investment Environment in India. Investment Process - Sources of Investment Information, Security Markets – Primary and Secondary – Types of securities in Indian Capital Market, Market Indices. Calculation of SENSEX and NIFTY.

Unit-II:

Return and Risk: Meaning and Measurement of Security Returns. Meaning and Types of Security Risks: Systematic Vs Non-systematic Risk. Measurement of Total Risk - Intrinsic Value Approach to Valuation of Bonds - Preference Shares and Equity Shares.

Unit-III:

Fundamental Analysis: – Economy, Industry and Company Analysis, Technical Analysis – Concept and Tools and Techniques Analysis – Technical Analysis Vs Fundamental Analysis - Efficient Market Hypothesis; Concept and Forms of Market Efficiency.

Unit-IV:

Elements of Portfolio Management: - Portfolio Models – Markowitz Model, Efficient Frontier and Selection of Optimal Portfolio. Sharpe Single Index Model and Capital Asset Pricing Model, Arbitrage Pricing Theory.

Unit-V:

Performance Evaluation of Portfolios: - Sharpe Model -Treynor -Jensen's Model- Fama Decomposition - Evaluation of Mutual Fund.

Suggested Readings:

1. Fisher DE and Jordon RJ, Security Analysis and Portfolio Management, PHI, New Delhi
2. Ambika Prasad Dash, Security Analysis and Portfolio Management, IK Int Pub House, New Delhi
3. Satyanarayana, Security Analysis and Portfolio Management, Discovery Publishing House, New Delhi
4. Hirt and Block, Fundamentals of Investment Management, Tata Mc Graw Hill, New Delhi



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5. Reily Frank K, Investment Analysis and Portfolio Management, Cengage, New Delhi
6. Bodie, Kane, Marcus and Mohanty, Investments, TataMcGraw Hill, New Delhi
7. Peter Lynch, One Up on Wall Street, Simon & Schuster Paperbacks, New York
8. Sharpe W, Alexander, GJ., & Baily JV., Investments, TMH, New Delhi
9. Avadhani, VA, SAPM, Himalaya Publishers.
10. Bhalla, VK Investment Management, S.Chand., New Delhi
11. Preeti Singh, Investment Management, Himalaya Publishers.
12. Timothy Vick, How to Pick Stocks like Warren Buffett, TMH, New Delhi



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III Semester

L	T	P	C
4	0	0	3

FINANCIAL MARKETS AND SERVICES

Course Objectives:

- 1) Evaluate empirical evidence of market performance, and contrast it with theories of market performance.
- 2) Research and analyze specific problems or issues related to financial markets and institutions.
- 3) Exploring the international integration of international financial markets and analyzes the implications for financial managers.

Course Outcomes:

- 1) To familiarize with the Indian financial system through knowing the types of various financial institutions, instruments and financial markets.
- 2) To understand the various constituents of capital markets, functioning of capital markets and regulatory mechanisms associated with capital markets.
- 3) To understand the various types of Financial Services and to appreciate the role of financial services in economic development.
- 4) To understand the various types of Non-Banking Financial Companies (NBFCs) and to appreciate the role of financial services in economic development.
- 5) To know various legislations relating with financial sector and the recommendations of various committees suggesting financial reforms.

UNIT 1

Structure of Financial System: Role of Financial System in Economic Development – Financial Markets and Financial Instruments – Capital Markets – Money Markets – Primary Market Operations – Role of SEBI – Secondary Market Operations – Regulation – Functions of Stock Exchanges – Listing – Formalities – Financial Services Sector Problems and Reforms.

UNIT 2

Financial Services: Concept, Nature and Scope of Financial Services – Regulatory Framework of Financial Services – Growth of Financial Services in India – Merchant Banking – Meaning- Types – Responsibilities of Merchant Bankers – Role of Merchant Bankers in Issue Management – Regulation of Merchant Banking in India.

UNIT 3

Venture Capital: Growth of Venture Capital in India – Financing Pattern under Venture Capital – Legal Aspects and Guidelines for Venture Capital, Leasing – types of Leases – Microfinance models: Generic models viz. SHG, Grameen, and Co- operative, variants SHG NABARD model, SIDBI model, SGSY model, Grameen Bangladesh model, credit unions.



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UNIT 4

Credit Rating: Meaning, Functions – Debt Rating System of CRISIL, ICRA and CARE. Factoring, Forfeiting and Bill Discounting – Types of Factoring Arrangements – Factoring in the Indian Context;

UNIT 5

Mutual Funds: Concept and Objectives, Functions and Portfolio Classification, Organization and Management, Guidelines for Mutual Funds, Working of Public and Private Mutual Funds in India. Debt Securitization – Concept and Application – De-mat Services-need and Operations- role of NSDL and CSDL.

Relevant cases have to be discussed in each unit and in examination case is compulsory from any unit.

Suggested Readings:

- 1) Bhole & Mahakud, Financial Institutions and Market, TMH, New Delhi
- 2) Satyanarayana, Financial Markets and Services Discovery Publishing House, New Delhi
- 3) V.A.Avadhani, Marketing of Financial Services, Himalayas Publishers, Mumbai
- 4) DK Murthy, and Venugopal, Indian Financial System, IK Int Pub House
- 5) Anthony Saunders and MM Cornett, Fin Markets & Institutions, TMH,
- 6) Edminister R.D., Financial Institution, Markets and Management.
- 7) Punithavathy Pandian, Financial Markets and Services, Vikas, New Delhi
- 8) Vasanth Desai, Financial Markets & Financial Services, Himalaya, Mumbai



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III Semester

TAXATION MANAGEMENT

L	T	P	C
4	0	0	3

Course Objective:

- 1) This course aims at teaching Indian tax system, various heads of income and tax planning with reference to salaried persons.
- 2) Students will also get an overview of income tax department's website and how to file a return.
- 3) Students will learn legal ways of minimizing tax liability by making use of various tax exemptions and deductions.

Course Outcomes:

After doing this course student will be able to:

- 1) Calculate income under various heads.
- 2) Compute total income.
- 3 Make tax plan for individual.
- 4) File tax return

Unit –I:

General Principles of Tax – Direct and Indirect Taxes – State Power to Levy Tax – Tax System – Provisions of Income Tax Act 1961 – Finance Act – Basic Concepts.

Unit- II:

Direct tax system:-Income Tax – Deductions, Computation, Payment and Accounting- deductions from Gross Total Income, Rebates and Reliefs and Computation of Taxable Income and Tax Payable, Filing of Income Tax Returns – Provisions, Forms and Due Dates, Notices and Assessments.

Unit III:

Tax Planning for Firms, HUFs and AOPs- partnership firm under Income Tax Law, tax deductions available to firms, Provisions relating to interest and remuneration paid to partner, Computation of partnership firms 'book profit, Set-off and carry-forward of losses of Firms and taxation of HUFs and Associations of Persons (AOPs).

Unit IV:

Corporate Taxation- Computation of taxable income, Carry-forward and set-off of losses for companies, Minimum Alternative Tax (MAT), Set-off and Carry-forward of Amalgamation Losses, Tax Planning for Amalgamation, Merger and Demerger of Companies, Tax Provisions for Venture Capital Funds

Unit V:

Tax Audit and Accounting for Income Tax - Tax Audit, Qualities and Qualifications Required in Tax Auditors, Forms, Reports and Returns and Tax Reporting and Disclosure in Financial Statements

Suggested Readings:

1. Dr. V.K. Singhania & Dr. Kapil Singhania, Direct Taxes Law and Practice, Taxman Publications Pvt. Ltd., New Delhi.
2. Bhagavati Prasad, Direct Taxes Law and Practice, Wishwa Prakashan, New Delhi.
3. Dinkar Pagare, Income Tax and Practice, Sultan Chand and Sons, New Delhi.



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III Semester

L	T	P	C
4	0	0	3

BANKING INSTITUTIONS AND FINANCIAL REFORMS

Course Objectives:

- 1) To introduce students to the Indian financial system & Banking system
- 2) To enrich student's understanding of the fundamental concepts and banking reforms
- 3) To equip students with the knowledge and skills necessary to become employable in the Banking sector.

Course outcome:

- 1) Subjects give overview of financial system to students such as flow of funds in financial system, financial system and economic development.
- 2) Students learn different financial system and their framework and reforms
- 3) Students studies non-banking financial institutions, their role in financial system, sources of finance and RBI guidelines.
- 4) Students learn the concept of financial reforms and its importance in rural economy.

Unit – I: Financial System in India: Introduction - Evolution of Banking - Phases of development - RBI and the Financial System - Committees on Banking Sector Reforms - Prudential Banking -- RBI Guidelines and directions- financial sector reforms.

Unit – II: Banking system:- Organization, Structure and Functions of RBI and Commercial Banks: Introduction - Origination, Structure and Functions of RBI and Commercial Banks - Role of RBI and Commercial Banks - Lending and Operation policies - Banks as Intermediaries - NBFCs - Growth of NBFCs - FDI in Banking Sector - Banking Regulations - Law and Practice.

Unit – III: Financial Institutions and Development Banking : Introduction - Origin, Growth and Lending Policies of Terms lending Institutions - Working of IDBI - IFCI - STCs - SIDBI - LIC - GIC - UTI - Role of Financial Institutions in Capital Market.

Unit – IV: New Financial Instruments and Institutions: Private Banks - Old generation and New generation private banks - Foreign Banks - NSE - Depositories - DFHI - New Equity and Debt Instruments - SEBI and RBI guidelines.

Unit – V: Financial sector reforms: Reforms in banking sectors – Reforms in Debt market – reforms in foreign exchange market –Monetary reform- currency reforms – crypto currency regulations

Suggested Readings:

1. Koch W Timothy and Scott S Macdonald, "Bank Management" Thomson (South-Western), Bangalore 2005 (Text Book)
2. Khan M Y., "Indian Financial System", Tata Mc Graw Hill, New Delhi, 2004
3. Srivastava, RM ., "Management of Indian Financial Institutions", Himalaya Publishing House, Mumbai, 2005
4. Avadhani V A., "Investments and Securities Markets in India", Himalaya Publishing House, Mumbai, 2004
5. Srinivasan NP and Saravanavel, P., "Development Banking in India and Abroad", Kalyani Publications, Ludhiyana, 2001



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III SEMESTER SYSTEMS

S. No	Course Code	SUBJECT TITLE
1	ESY-301	Data Mining & Data Warehousing
2	ESY-302	Software Project Management
3	ESY-303	Managing Digital Innovation and Transformation
4	ESY-304	Block chain in Business and Management



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III Semester

L	T	P	C
3	0	0	3

DATA MINING & DATA WAREHOUSING

Pre-requisites: Data Structures, Algorithms, Probability & Statistics, Data Base Management Systems

Course Objectives: The main objective of the course is to

- Introduce basic concepts and techniques of data warehousing and data mining
- Examine the types of the data to be mined and apply pre-processing methods on raw data
- Discover interesting patterns, analyse supervised and unsupervised models and estimate the accuracy of the algorithms.

UNIT-I: Data Warehousing and Online Analytical Processing: Basic concepts, Data Warehouse Modeling: Data Cube and OLAP, Data Warehouse Design and Usage, Data Warehouse Implementation, Cloud Data Warehouse, Data Mining and Pattern Mining, Technologies, Applications, Major issues, Data Objects & Attribute Types, Basic Statistical Descriptions of Data, Data Visualization, Measuring Data Similarity and Dissimilarity. (Text Book- 1)

UNIT II: Data Preprocessing: An Overview, Data Cleaning, Data Integration, Data Reduction, Data Transformation and Data Discretization. (Text Book- 1)

UNIT-III: Classification: Basic Concepts, General Approach to solving a classification problem, Decision Tree Induction: Attribute Selection Measures, Tree Pruning, Scalability and Decision Tree Induction, Visual Mining for Decision Tree Induction, Bayesian Classification Methods: Bayes Theorem, Naïve Bayes Classification, Rule-Based Classification, Model Evaluation and Selection. (Text Book- 2)

UNIT-IV: Association Analysis: Problem Definition, Frequent Itemset Generation, Rule Generation: Confident Based Pruning, Rule Generation in Apriori Algorithm, Compact Representation of frequent item sets, FP-Growth Algorithm. (Text Book- 2)

UNIT-V: Cluster Analysis: Overview, Basics and Importance of Cluster Analysis, Clustering techniques, Different Types of Clusters; K-means: The Basic K-means Algorithm, K-means Additional Issues, Bi-secing K Means, Agglomerative Hierarchical Clustering: Basic Agglomerative Hierarchical Clustering Algorithm DBSCAN: Traditional Density Center-Based Approach, DBSCAN Algorithm, Strengths and Weaknesses. (Text Book- 2)



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Text Books:

1. Data Mining concepts and Techniques, 3rd edition, Jiawei Han, Michel Kamber, Elsevier, 2011.
2. Introduction to Data Mining: Pang-Ning Tan & Michael Steinbach, Vipin Kumar, Pearson, 2012.

Reference Books:

1. Data Mining: VikramPudi and P. Radha Krishna, Oxford Publisher.
2. Data Mining Techniques, Arun K Pujari, 3rd edition, Universities Press, 2013.
3. (NPTEL course by Prof.PabitraMitra)
http://onlinecourses.nptel.ac.in/noc17_mg24/preview
4. http://www.saedsayad.com/data_mining_map.htm



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III Semester

L	T	P	C
3	0	0	3

SOFTWARE PROJECT MANAGEMENT

Course Objectives:

At the end of the course, the student shall be able to:

- To describe and determine the purpose and importance of project management from the perspectives of planning, tracking and completion of project
- To compare and differentiate organization structures and project structures
- To implement a project to manage project schedule, expenses and resources with the application of suitable project management tools

UNIT-I:

Conventional Software Management: The waterfall model, conventional software Management performance.

Evolution of Software Economics: Software Economics, pragmatic software cost estimation.

Improving Software Economics: Reducing Software product size, improving software processes, improving team effectiveness, improving automation, Achieving required quality, peer inspections.

UNIT-II:

Life cycle phases: Engineering and production stages, inception, Elaboration, construction, transition phases. **Artifacts of the process:** The artifact sets, Management artifacts, Engineering artifacts, programmatic artifacts.

UNIT- III:

Model based software architectures: A Management perspective and technical perspective.

Work Flows of the process: Software process workflows, Iteration workflows.

Checkpoints of the process: Major mile stones, Minor Milestones, Periodic status assessments.

UNIT- IV:

Project Organizations and Responsibilities: Line-of-Business Organizations, Project Organizations, evolution of Organizations.

Project Control and Process instrumentation: The seven core Metrics, Management indicators, quality indicators, life cycle expectations, pragmatic Software Metrics, Metrics automation.



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UNIT-V:

Agile Methodology, Adapting to Scrum, Patterns for Adopting Scrum, Iterating towards Agility.

Text Books:

1. Software Project Management, Walker Royce, PEA, 2005.
2. Succeeding with Agile: Software Development Using Scrum, Mike Cohn, Addison Wesley.
3. The DevOps Handbook: How to Create World-Class Agility, Reliability, and Security in Technology Organizations, Gene Kim , John Willis , Patrick Debois , Jez Humb,1st Edition, O'Reilly publications, 2016.

Reference Books:

1. Software Project Management, Bob Hughes,3/e, Mike Cotterell, TMH
2. Software Project Management, Joel Henry, PEA
3. Software Project Management in practice, Pankaj Jalote, PEA, 2005,
4. Effective Software Project Management, Robert K.Wysocki, Wiley,2006.



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III Semester

L	T	P	C
3	0	0	3

MANAGING DIGITAL INNOVATION AND TRANSFORMATION

Course Objectives

- To understand digital transformations and information in the globalization world
- To explore social media transformation in the business world
- To develop on building digital capabilities
- To understand the challenges on using digital platform for business
- To learn digital transformations in the space of cloud computing

UNIT -I : Introduction to Digital Transformations: The five domains of digital transformations — customer, competition, data, innovation, and value, 1-farness customer networks, turn data into assets, adapt value proposition

UNIT-II : Classification of Digital Transformations: Business Model, product development, data, processes, knowledge, self—service, and organizational culture; Social Media Transformation: understand requirements, document goals, objective and social media tactics, establish potential future state operating model, gap analysis and recommendations.

UNIT-III : Building digital capabilities: challenges ongoing digital, handling employee during digital transformations, developing companywide strategy; Digital transformations in the space of cloud computing: prepare and drive digital transformations.

UNIT –IV: Re-Organisation in Order to Bridge the Gap to Digital Customers - Digitalization of Professional Services: Value Creation in Virtual Law Firms - Digital Transformation Supporting. Public Service Innovation: Business Model Challenges and Sustainable – Development Opportunities.

UNIT – V

Areas of IT management and its challenges, IT services, IT organisation - Enterprise Innovation and the Digital Transformation - Industry, development trends, business competitiveness due to Technology - Using Technology as Innovation, Integration and Interconnection of business - IT strategy, IT governance, IT sourcing and controlling

References:

- Herbert, Lindsay; Digital Transformation: Build your organization's Future for the Innovation Age, Bloomsbury Publication, 2017
- Venkatraman, V; The Digital Matrix: New rules for business transformation through technology; Lifetree Media Ltd, 2017
- Velte, A. T; Velte, T. J; and Elsenpeter, R; Cloud Computing: A Practical Approach, Mcgraw Hill Education (India) Private Limited, 2017 (23rd reprint)
- Rogers, David, The Digital Transformation Playbook — Rethink your Business for the Digital Age (Columbia Business School Publishing), 2016.
- Westerman, G; Bonnet, D; and McAfee, A; Leading Digital: Turning Technology into Business Transformation; Harvard Business Review Press, 2014.
- Srinivasan. J, and Suresh. J, Cloud Computing: A Practical Approach for learning and implementation, Pearson Publication, 2014



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III Semester

L	T	P	C
3	0	0	3

BLOCK CHAIN IN BUSINESS AND MANAGEMENT

Course Introduction

Blockchain technology has generated massive interest among governments, enterprises, and academics, because of its capability of providing a transparent, secure, tamper-proof solution for interconnecting different stakeholders in a trustless setup. In January 2021, the Ministry of Electronics and Information Technology (MeiTY), Government of India, published the first draft of the "National Strategy on Blockchain" that highlights 17 potential applications that are of national interest. Against this backdrop, this subject will cover the basic design principles of Blockchain technology and its applications over different sectors.

Course Outcomes

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

CO1: Reflect on the underlying technology that drive blockchain in business.

CO2: Explain the underlying technology that drive blockchain in business with examples.

CO3: Apply the learnt tools and techniques to share information and assets.

CO4: Analyse business case for use of Blockchain technology

CO5: Use open-source tools to create a blockchain use case.

CO6: Evaluate the Blockchain use case considering best practices.

Course Content

UNIT-1 • Introduction to blockchain: Importance in the business, Evolution of Blockchain Technology, Elements of a Blockchain, Types of Blockchain, Introduction to cryptography & cryptocurrencies Money, Block Structure and real world applications.

UNIT-2• Blockchain Technology and frameworks: Introduction to popular Blockchain technologies, Smart Contracts & DApps, Identity and Anonymity on Blockchain, Governance and Consensus

UNIT-3 • Use cases of blockchain in business applications: Blockchain and Cryptocurrency (Bitcoin, Ethereum), Blockchain and NFT, Blockchain in Supply Chain and Manufacturing, Blockchain in Fintech, Blockchain in Healthcare, Blockchain in Government and Public Service.

UNIT-4 Blockchain Applications: Blockchain Consensus: network models, corruption tolerance, sybil resistance- Nakamoto Consensus: security, attacks and incentives- Scalability in Blockchain- Introduction to IoT.

UNIT-5 Practical blockchain: Hyperledger and Ethereum – concepts and application, Hyperledger Composer

References:

1. Don Tapscott and Alex Tapscott; Blockchain Revolution; Portfolio Penguin, 1st Edition, 2016; ISBN: .0241237858
2. Mohsen Attaran and Angappa Gunasekaran; Applications of Blockchain Technology in Business; Springer; 1st Edition; 2019; ISBN – 9783030277987.
3. Hyperledger Tutorials - <https://www.hyperledger.org/use/tutorials>
4. Ethereum Development Resources - <https://ethereum.org/en/developers>



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III SEMESTER

LOGISTICS AND SUPPLY CHAIN MANAGEMENT

S. No	Course Code	SUBJECT TITLE
1	ELS-301	Store keeping and Warehousing management
2	ELS-302	Supply Chain Risk Management
3	ELS-303	Purchasing and Material Management
4	ELS-304	Reverse Logistics



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STORE KEEPING AND WAREHOUSING MANAGEMENT

Objectives: To familiarize the students with Store keeping and Warehousing their importance, methods of valuation of stock to provide adequate knowledge to minimize the cost and improve the overall efficiency of the storekeeping and warehousing operations.

Outcome: Students must gain an insight into the intricacies of Store keeping and Warehousing and their importance and impact on efficient logistics and supply chain management

UNIT I: Warehousing Management – Warehouse Functions – Objectives of Stores – Location and Layout – Prevention – Management of Receipts – Issue Control – Stores Documentation

UNIT II: Stock Valuation and Verification: Need for Valuation – Methods of Valuation – FIFO – LIFO – Average Price – Weighted Average – Standard Cost – Replacement Price – Stock Verification – Process of Verification –Material Storage Systems – benefits – methods.

UNIT III: Disposal of Obsolete and Scrap items - Management of SOS – Categorization of Obsolete/Surplus – Reasons for Obsolescence – Control of Obsolescence – Control of Scrap – Responsibility for Disposal – Disposal Methods -

UNIT IV: Insurance: Risk Management - Buyer's Interest – Marine Insurance – Inland Transit Insurance – Stores Insurance – Contractors All Risk Insurance – Miscellaneous Insurance – A to Z Claims Procedure – Loss Minimization- Spare Parts Management - Salient Features of Spares – Inventory Control of Spares – Categorization of Spares – Provisioning of Spares – Pricing of Spares – Relevance of Maintenance – Maintenance Costs

UNIT V: IT for Warehouse Management (WM): Warehouse documentation – Information flows in the warehouse – ERP – WMS – Bar code – RFID – Organization Data – Warehouse Structure – Warehouse Master Data – WM Material master view – Organization Data – Define Warehouse structure Warehouse number - Storage type- Storage section - Storage Bin - Picking Area - Storage unit – Quantity- Creating Transfer requirement automatically/ manually - Creating Transfer requirement for storage – Data mining and warehousing

REFERENCES

Gudehus and Kotzab – Comprehensive logistics – Springer – second edition – 2012

Dr. K.C Jain, Patidar, Purchasing and Material Management, S.Chand and co, 2011

Gopalakrishnan P.– Purchasing and Materials management – Tata McGraw Hill – 23rd Edition – 2008.

Alan Rushton, John Oxley, Phil Croucher - The hand book of logistics and distribution management, Kogan page limited, 2000

David Blythe Foster - Automatic warehouse – London Lliffe – 1970.



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SUPPLY CHAIN RISK MANAGEMENT

UNIT I

Basics of Risk Management: Risk and Management-Growth of risk Management-defining Risk-Features of Risk. Decisions and Risk- Decisions with Certainty-Uncertainty-risk- ignorance-Managing risk.

UNIT II

Risks in Supply Chain: Risks arising out of Trends affecting Supply Chain-Integration-Cost Reduction-Agile Logistics-E Business- Globalization, Outsourcing-Supply chain risk management-Aims steps and Principles. Trends in Supply Chain Management. Integration of supply Chains, Cost Reduction, Agile logistics, E – Business, Globalization, Outsourcing, Changing practices in Logistics. Approaches to Risk Management.

UNIT III

Identifying and Analysing Risks: Types of Risks-Identifying Risks-Tools for analyzing past events-Collecting opinions—analyzing operations—Measuring Risk—Likelihood of a risky event-Consequences of risk—Responding to Risks—Alternative Responses—Defining the options and choosing the best response—Network view of risk—Shared risks.

UNIT IV

Creating Resilient Supply Chains: Designing of a Resilient Supply Chain—Principles of designing resilient Supply Chain—Physical features of a resilient supply chain—Relationship within a resilient supply chain—Risk compensation and Business Continuity. Risk and Management - Risk in the Supply Chain, Features of Risk, Decisions & Risk, Structure of Decisions, Decisions with uncertainty, Risk, ignorance, Managing Risk Structure of a Supply Chain, Increasing Risk.

UNIT V

Identifying Risks – Types of Risks, Tools for analyzing past events, Operations, Problems with Risk Identification, Measuring Risk, Consequences of Risk, Responding to Risk – Alternative responses, Defining Options, Choosing the best response, Implementation & Activation, A Network view of Risk – Shared Risks, Achieving an Integrated approach, Analyzing & responding to risks. Business Continuity Management: Emergencies and Crisis—Views of BCM and steps in BCM

Text Books:

1. Supply Chain Risk Management by Donald Walters, Kogan Page First Edition
2. The New Supply Chain Challenge Risk Management in a Global Economy by Bosman R, FM Global, Johnson RI 2006
3. Gregory L. Schlegel, Robert J. Trent Supply Chain Risk Management: An Emerging Discipline (Resource Management) Hardcover – Import, 3 Nov 2014.
4. Donald Waters – Supply Chain Risk Management, Published by the Chartered Institute of Logistics & Transport, U.K
5. Jeremy F. Shapiro, Modelling the Supply Chain, Duxbury.



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PURCHASING AND MATERIAL MANAGEMENT

Objective:

To gain the insights into purchasing and materials management for efficient utilization and optimization of resources and to gain practical knowledge in application of the same to enhance the firm's overall efficiency.

Outcome: Students are enabled to efficiently utilize the knowledge gained in managing the purchases and materials to enhance the firms profitability and overall efficiency.

UNIT I:

Purchase and pricing policies: Purchase policy- Rate and Running Contract – Subcontracting – Systems Contract – Stockless purchase –Buying seasonal items – Forward Buying – Hedging – Purchasing Activities – Indent Status – A to Z of Purchase Order –Transportation – Incoming Inspection – Bill settlement –Documentation.

UNIT II:

Meaning of Right Price – Price Analysis – Determination of Right Price – Influencing Factors on Pricing – Classification of Pricing – Price Forecasting - Right Place – Purchase Budgets – Budgetary control – Need Identification Problems – Definition of lead time Elements- Cost Reduction and Lead time.

UNIT III:

Relevance of Good Supplier - Advantages of Good Relations –Prerequisites – Evaluation of Suppliers – The Buyers Role – Role of the Vendor –Relevance of Good Suppliers – Need for vendor evaluation – Goals of Vendor Rating – Advantages of Vendor Rating – Parameters of Vendor Rating.

UNIT IV:

Role of Material Management – Classes of Material – Materials and Profitability – Profit Center Concept – Material Objective –Centralized Purchasing-Decentralizing – Delegation of Powers – Definition of Material Planning –Bill of Material – Material Requirement Planning – Importance of Material Research- Definition – Advantages of Materials Information System .

UNIT V:

Codification – Classification – Methodology–Requirement of codes – Coding Structure and Design –Advantages - International Codification – Cost and Consequences – Right Quantity – Economic Ordering Quantity – Derivations of EOQ - Ethics In Materials Management – Ethics in Buying – Code of Ethics – Problems in Ethics – Backdoor Selling – A to Z Tips for Ethical Purchasing – Professionalization.

REFERENCE

1. P Gopalakrishnan, M Sundaresan, Material management an integrated approach , PHI Learning Private Limited, 2011
2. Rajendra Mishra, Materials Management, Excel books, 2009
3. A.K.Datta, Materials Management: Procedures, text and cases – PHI, 2008.
4. Gopalakrishnan P, Purchasing and Materials management – Tata McGraw Hill, 2001
5. Michiel R. Leenders, Harold E. Fearon, Wilbur B. England, Purchasing and Materials management, Irwin, 1989



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REVERSE LOGISTICS

Objective: The students are enabled to know the importance of Reverse Supply Chain Management

Outcome: Students are capable of applying the knowledge gained in the organizational context for success.

UNIT I

Introduction: Description of reverse supply chain networks – benefits of reverse logistics – barriers to reverse logistics – continuation of forward supply chains – history of reverse logistics – principal drivers of the movement – activities in reverse logistics - services, returns, relocation, restoration – modification and repair - remanufacturing, recycling, disposal.

UNIT II

Role of private industry: new paradigms in product design (design for sustainability) – design and operate green supply chains – develop systems to manage reverse logistics – participate in job ventures to seek social objectives

UNIT III

Role of government and customers: Government - research – to identify threats and opportunities – legislation for standardizing business requirements – regulation – participation. Role of customers – participant in RSC – educated customer – supporter of green supply chain

UNIT IV

Reverse logistics networks: Continuation of the forward supply chain, operate in an open system environment – heavily outsourced by major businesses – support and service – need for a life cycle system approach – need for IT – other considerations in designing reverse supply chains

UNIT V

Future of Reverse logistics : Growth in amount of materials recycled – increase in number of companies performing reverse logistics activities – joint venture between private business and governments – increased emphasis on preventing not just reusing - increasing focus on TQM and six sigma – prominent companies practicing Reverse SCM – recent trends

REFERENCES :

Harald Dyckhoff, Richard Lackes, Joachim Reese – supply chain management and Reverse logistics, springer, 2004

Hamed Fazlollahtabar, Supply chain management models , CRC Press, Richard E. Crandall, William R. Crandall, Charlie C. Chen, Principles of Supply Chain Management, CRC Press, 2009

Rossi Setchi, Robert J. Howlett, Ying Liu, Peter Theobald, Sustainable Design and Manufacturing, springer 2016

Srivathsan Narayanan, Optimizing Reverse Logistics with SAP ERP, Galileo Press, 2010



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III SEMESTER

HEALTH CARE AND HOSPITAL MANAGEMENT

S. no	Course Code	SUBJECT TITLE
1	EHH-301	Health Economics
2	EHH-302	Health Care Policies and Delivery Systems
3	EHH-303	Hospital organization and Management
4	EHH-304	Hospital Functions and Support Services



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HEALTH ECONOMICS

Objective: It is intended to provide an in-depth knowledge about the sources of funds and its effective utilization to achieve a better quality of health care services within a reasonable cost.

Unit I: Introduction of Economics Nature of Economics Analysis - - functioning of Economic systems - Circular flow and interdependence of Economic activity - Basic Economic concepts - scarcity - Opportunity cost - Discounting principle - Concept of marginal Utility - Demand - Supply and Elasticity - Relevance of Economics to health and medical care.

Unit II: Demand Analysis and Production Function Utility analysis - Nature of Demand and determinants - law of demand - Elasticity of Demand - Supply Curves - Cost Concepts and Cost Analysis. Production function - production with one variable input. Law of variable proportion: production with two variable inputs: production isoquant: isocost lines. Estimating production functions: cost concepts and break even analysis.

Unit III: Health Determinants Unique Nature of Health - Health as a Consumer and investment Good - Valuation of Health - Externalities in Health care - Economic Evaluation in Healthcare.

Unit IV: Market Analysis Market Configuration - price determination under different market conditions- nature and Characteristics of Health care markets - Demand for supply of health care services - Market failure and Government intervention and control.

Unit V: Health care Finances and Trends Health care indicators - Health policies -Health care expenditure - Financing of Health care, Allocations under 5 year plans - National Rural Health Machine (NRHM) - Human Development indices. .Public Health in India: Public health challenges, cost concern, consumer empowerment, fostering experimentation in the health sector. New delivery and financing models, policy reform and entrepreneurial ventures, innovation in health delivery organization.



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III Semester

L	T	P	C
4	0	0	3

HEALTH CARE POLICIES AND DELIVERY SYSTEM

Objective: To understand the importance of health care policies and to be acquainted with the disaster and safety, delivery system.

UNIT I Introduction – Theoretical frame work – Environment – Internal and External – Environmental scanning – Economic Environment – Competitive Environment – natural Environment – Politico Legal Environment – socio Cultural Environment- International and Technological Environment.

UNIT II A Conceptual Approach to Understanding the Health Care Systems – Evolution – Institutional Settings – Out Patient services – Medical Services – surgical Services – Operating Department – Pediatric services – Dental services – Psychiatric services – casualty & Emergency services – Hospital Laboratory services – Anesthesia services – Obstetrics and Gynecology services – Neuro – Surgery service – Neurology services.

UNIT III Overview of Health care sector in India – Primary care – Secondary care – Tertiary care – Rural Medical care – urban medical care – curative care – preventive care – General & special Hospitals – Understanding the hospital management – Role of medical, Nursing staff, Paramedical and Supporting Staff – Health Policy – Population Policy – Drug Policy – Medical Education Policy.

UNIT IV Health Care Regulation – WHO, International Health Regulations, IMA, MCI, State Medical Council Bodies, Health universities and Teaching Hospitals and other Health care Delivery Systems.

UNIT V Epidemiology – Aims – Principles – Descriptive, Analytical and Experimental Epidemiology – Methods – Uses.

Suggested Readings:

1. A & Lee, K., Economics of Health, OUP, Oxford, 1983.
2. Liz Haggard, Sarah Hosking, Healing the Hospital Environment: Design, Maintenance, and Management of Healthcare Premises
3. Park JE, Park K., Textbook of preventive and social medicine, 20th edition, Banarsidas Bhanot Publishers. 2009
4. S.L GOEL, Healthcare Management and Administration, Deep & Deep publications Pvt.Ltd., New Delhi.



HOSPITAL ORGANIZATION AND MANAGEMENT

Course Objective: To familiarize the students with the basic concepts and principles of management, organization and leadership on hospitals.

Unit-I: Role of a professional manager in a Hospital: concept of management – evolution of management thought – significance of hospital management – role and importance of hospital management – Responsibilities of an Hospital Manager – The transition factors of hospital management.

Unit-II: Managerial function in a hospital: Management process, managerial skills, levels of management, application of managerial functions in hospital. Decision making models in hospital – steps in decision making – techniques and process of decision making – overcoming barriers to effective decision making.

Unit-III: Behavioral concepts and theories: cognitive process, perception and its stages, creativity and problem solving. Process of motivation – Theories of motivation – Motivating medical and paramedical professionals. Leadership styles and influence process – features and importance of leadership – Leadership styles – Successful VS Effective leader.

Unit-IV: Organization structure and planning process: Introduction – nature and structure of the hospital organization – formal and informal organizations – factors influencing the choice of structure – Line and Staff relationship – Designing structure for a service organization. Strategic and operational planning – Planning practices in Indian hospitals. Controlling – process of control and methods of control.

Unit-V: Organizational climate and social responsibility: Meaning, need, significance of organizational climate – distinction between culture and climate. Need, nature and causes of organizational change – management of change in hospitals. Social responsibilities of hospital management – objectives – responsibilities of hospital manager.

Suggested Readings:

1. Koontz & Weirich, Essentials of Management, Tata McGraw Hill Publishing Company, New Delhi.
2. Stoner, Freeman & Gilbert, Management, PHI, 6th Edition.
3. Robbins.S.P., Fundamentals of Management, Pearson, 2003.
4. Robbins.S. Organisational Behaviour, X edn., Prentice-Hall, India.
5. Umasekaran, Organisational Behaviour.
6. VSP Rao, V Hari Krishna – Management: Text and Cases, Excel Books, I Edition, 2004



III Semester

L	T	P	C
4	0	0	3

HOSPITAL FUNCTIONS AND SUPPORT SERVICES

Objective: To get familiarized with support service systems and to get acquainted with hazards and its management in hospital environment.

UNIT I

Nutrition and Dietary services – Pharmacy services – Medical Records services.

UNIT II

Facilities Engineering – Maintenance of Civil Assets – Electrical supply and Water supply – Medical gas pipeline – Plumbing and Sanitation – Air conditioning system – Hot water and Steam supply – Communication Systems – Biomedical engineering departments in modern hospitals.

UNIT III

Laundry services – Housekeeping services – CSSD-Energy conservation methods – AMC.

UNIT IV

Ambulance services – Mortuary services – Hospital security services – other ancillary services

UNIT V

Disaster management – Fire hazards – Engineering Hazards – Radiological hazards. - Outsourcing of Support services – Waste disposal and management.

Suggested Readings:

G.D.Kunders, Hospital and Facilities

Planning and Design Jacob Kline, Hand book
of Bio-Medical Engineering

Webster J.G and Albert M. Coe, Clinical Engineering Principles and Practices Antony Kelly,
Maintenance Planning and Control



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III SEMESTER ARTIFICIAL INTELLIGENCE

S. no	Course Code	SUBJECT TITLE
1	EAI-301	Introduction to Artificial Intelligence
2	EAI-302	Python Programming
3	EAI-303	Block chain Technology
4	EAI-304	Machine Learning



III Semester

INTRODUCTION TO ARTIFICIAL INTELLIGENCE

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3	0	0	3

Course Outcome(s):

This course introduces students to the basic knowledge representation, problem solving, and learning methods of artificial intelligence.

UNIT-I

Introduction, Overview of Artificial intelligence: Problems of AI, AI technique, Tic - Tac - Toe problem. Intelligent Agents, Agents & environment, nature of environment, structure of agents, goal based agents, utility based agents, learning agents.

Problem Solving, Problems, Problem Space & search: Defining the problem as state space search, production system, problem characteristics, issues in the design of search programs.

UNIT-II

Search techniques: Problem solving agents, searching for solutions; uniform search strategies: breadth first search, depth first search, depth limited search, bidirectional search, comparing uniform search strategies. Heuristic search strategies Greedy best-first search, A* search, AO* search, memory bounded heuristic search: local search algorithms & optimization problems: Hill climbing search, simulated annealing search, local beam search

UNIT-III

Constraint satisfaction problems: Local search for constraint satisfaction problems. Adversarial search, Games, optimal decisions & strategies in games, the minimax search procedure, alpha-beta pruning, additional refinements, iterative deepening.

UNIT- IV

Knowledge & reasoning: Knowledge representation issues, representation & mapping, approaches to knowledge representation. Using predicate logic, representing simple fact in logic, representing instant & ISA relationship, computable functions & predicates, resolution, natural deduction. Representing knowledge using rules, Procedural verses declarative knowledge, logic programming, forward verses backward reasoning, matching, control knowledge.

UNIT-V

Probabilistic reasoning: Representing knowledge in an uncertain domain, the semantics of Bayesian networks, Dempster-Shafer theory, Planning Overview, components of a planning system, Goal stack planning, Hierarchical planning, other planning techniques

Expert Systems: Representing and using domain knowledge, expert system shells, and knowledge acquisition.

Home Assignments:

Assignments should include problems related to the topics covered in lectures, like heuristics, optimal search, and graph heuristics. Constraint satisfaction problems, k-nearest neighbors, decision trees, etc. can be included in home assignments.



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Text Books:

1. Stuart Russell and Peter Norvig, Artificial Intelligence: A Modern Approach
2. Artificial Intelligence, Russel, Pearson

Reference Books:

3. Artificial Intelligence, Ritch & Knight, TMH
4. Introduction to Artificial Intelligence & Expert Systems, Patterson, PHI
5. Logic & Prolog Programming, Saroj Kaushik, New Age International
6. Expert Systems, Giarranto, VIKAS



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PYTHON PROGRAMMING

Course Objectives:

The main objectives of the course are to

- Introduce core programming concepts of Python programming language.
- Demonstrate about Python data structures like Lists, Tuples, Sets and dictionaries
- Implement Functions, Modules and Regular Expressions in Python Programming and to create practical and contemporary applications using these

UNIT-I:

History of Python Programming Language, Thrust Areas of Python, Installing Anaconda Python Distribution, Installing and Using Jupyter Notebook.

Parts of Python Programming Language: Identifiers, Keywords, Statements and Expressions, Variables, Operators, Precedence and Associativity, Data Types, Indentation, Comments, Reading Input, Print Output, Type Conversions, the type () Function and Is Operator, Dynamic and Strongly Typed Language.

Control Flow Statements: if statement, if-else statement, if...elif...else, Nested if statement, while Loop, for Loop, continue and break Statements, Catching Exceptions Using try and except Statement.

Sample Experiments:

1. Write a program to find the largest element among three Numbers.
2. Write a Program to display all prime numbers within an interval
3. Write a program to swap two numbers without using a temporary variable.
4. Demonstrate the following Operators in Python with suitable examples.
 - i) Arithmetic Operators
 - ii) Relational Operators
 - iii) Assignment Operators
 - iv) Logical Operators
 - v) Bit wise Operators
 - vi) Ternary Operator
 - vii) Membership Operators
 - viii) Identity Operators
5. Write a program to add and multiply complex numbers
6. Write a program to print multiplication table of a given number.

UNIT-II:

Functions: Built-In Functions, Commonly Used Modules, Function Definition and Calling the function, return Statement and void Function, Scope and Lifetime of Variables, Default Parameters, Keyword Arguments, *args and **kwargs, Command Line Arguments.

Strings: Creating and Storing Strings, Basic String Operations, Accessing Characters in String by Index Number, String Slicing and Joining, String Methods, Formatting Strings.

Lists: Creating Lists, Basic List Operations, Indexing and Slicing in Lists, Built-In Functions Used on Lists, List Methods, del Statement.

Sample Experiments:

7. Write a program to define a function with multiple return values.
8. Write a program to define a function using default arguments.
9. Write a program to find the length of the string without using any library functions.



10. Write a program to check if the substring is present in a given string or not.
11. Write a program to perform the given operations on a list:
 - i. addition
 - ii. insertion
 - iii. slicing
12. Write a program to perform any 5 built-in functions by taking any list.

UNIT-III:

Dictionaries: Creating Dictionary, Accessing and Modifying key:value Pairs in Dictionaries, Built-In Functions Used on Dictionaries, Dictionary Methods, del Statement.

Tuples and Sets: Creating Tuples, Basic Tuple Operations, tuple() Function, Indexing and Slicing in Tuples, Built-In Functions Used on Tuples, Relation between Tuples and Lists, Relation between Tuples and Dictionaries, Using zip() Function, Sets, Set Methods, Frozenset.

Sample Experiments:

13. Write a program to create tuples (name, age, address, college) for at least two members and concatenate the tuples and print the concatenated tuples.
14. Write a program to count the number of vowels in a string (No control flow allowed).
15. Write a program to check if a given key exists in a dictionary or not.
16. Write a program to add a new key-value pair to an existing dictionary.
17. Write a program to sum all the items in a given dictionary.

UNIT-IV:

Files: Types of Files, Creating and Reading Text Data, File Methods to Read and Write Data, Reading and Writing Binary Files, Pickle Module, Reading and Writing CSV Files, Python os and os.path Modules.

Object-Oriented Programming: Classes and Objects, Creating Classes in Python, Creating Objects in Python, Constructor Method, Classes with Multiple Objects, Class Attributes Vs Data Attributes, Encapsulation, Inheritance, Polymorphism.

Sample Experiments:

18. Write a program to sort words in a file and put them in another file. The output file should have only lower-case words, so any upper-case words from source must be lowered.
19. Python program to print each line of a file in reverse order.
20. Python program to compute the number of characters, words and lines in a file.
21. Write a program to create, display, append, insert and reverse the order of the items in the array.
22. Write a program to add, transpose and multiply two matrices.
23. Write a Python program to create a class that represents a shape. Include methods to calculate its area and perimeter. Implement subclasses for different shapes like circle, triangle, and square.



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UNIT-V:

Introduction to Data Science: Functional Programming, JSON and XML in Python, NumPy with Python, Pandas.

Reference Books:

1. Python with Machine Learning by Dr. A. Krishna Mohan et al. SChand publications.
 2. Introduction to Programming Using Python, Y. Daniel Liang, Pearson.
 3. Gowri shankar S, Veena A., Introduction to Python Programming, CRC Press.
- Python Programming, S Sridhar, J Indumathi, V M Hariharan, 2nd Edition, Pearson, 2024



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BLOCKCHAIN TECHNOLOGY

Course Objectives:

- To learn the fundamentals of Block Chain and various types of block chain and consensus mechanism.
- To understand public block chain system, Private block chain system and consortium block chain.
- Able to know the security issues of blockchain technology.

UNIT – I

Fundamentals of Blockchain: Introduction, Origin of Blockchain, Blockchain Solution, Components of Blockchain, Block in a Blockchain, The Technology and the Future.

Blockchain Types and Consensus Mechanism: Introduction, Decentralization and Distribution, Types of Blockchain, Consensus Protocol.

Cryptocurrency: Bitcoin, Altcoin and Token: Introduction, Bitcoin and the Cryptocurrency, Cryptocurrency Basics, Types of Cryptocurrencies, Cryptocurrency Usage.

UNIT – II

Public Blockchain System: Introduction, Public Blockchain, Popular Public Blockchains, The Bitcoin Blockchain, Ethereum Blockchain.

Smart Contracts: Introduction, Smart Contract, Characteristics of a Smart Contract, Types of Smart Contracts, Types of Oracles, Smart Contracts in Ethereum, Smart Contracts in Industry.

UNIT – III

Private Blockchain System: Introduction, Key Characteristics of Private Blockchain, Private Blockchain, Private Blockchain Examples, Private Blockchain and Open Source, E-commerce Site Example, Various Commands (Instructions) in E-commerce Blockchain, Smart Contract in Private Environment, State Machine, Different Algorithms of Permissioned Blockchain, Byzantine Fault, Multichain.

Consortium Blockchain: Introduction, Key Characteristics of Consortium Blockchain, Need of Consortium Blockchain, Hyperledger Platform, Overview of Ripple, Overview of Corda.

Initial Coin Offering: Introduction, Blockchain Fundraising Methods, Launching an ICO, Investing in an ICO, Pros and Cons of Initial Coin Offering, Successful Initial Coin Offerings, Evolution of ICO, ICO Platforms.

UNIT – IV

Security in Blockchain: Introduction, Security Aspects in Bitcoin, Security and Privacy Challenges of Blockchain in General, Performance and Scalability, Identity Management and Authentication, Regulatory Compliance and Assurance, Safeguarding Blockchain Smart Contract (DApp), Security Aspects in Hyperledger Fabric.

Applications of Blockchain: Introduction, Blockchain in Banking and Finance, Blockchain in Education, Blockchain in Energy, Blockchain in Healthcare, Blockchain in Real-estate, Blockchain in Supply Chain, The Blockchain and IoT. Limitations and Challenges of Blockchain.



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UNIT – V

Blockchain Case Studies:

Case Study 1 – Retail,

Case Study 2 – Banking and Financial Services,

Case Study 3 – Healthcare,

Case Study 4 – Energy and Utilities.

Blockchain Platform using Python: Introduction, Learn How to Use Python Online Editor, Basic Programming Using Python, Python Packages for Blockchain.

Blockchain platform using Hyperledger Fabric: Introduction, Components of Hyperledger Fabric Network, Chain codes from Developer.ibm.com, Blockchain Application Using Fabric Java SDK.

Text book:

1. “Block chain Technology”, Chandramouli Subramanian, Asha A.George, Abhilasj K A and Meena Karthikeyan , Universities Press.

Reference Books:

1. Blockchain Blue print for Economy, Melanie Swan, SPD Oreilly.
2. Blockchain for Business, Jai Singh Arun, Jerry Cuomo, Nitin Gauar, Pearson Addition Wesley



MACHINE LEARNING

Course Objectives:

The objectives of the course is to

- Define machine learning and its different types (supervised and unsupervised) and understand their applications.
- Apply supervised learning algorithms including decision trees and k-nearest neighbours (k-NN).
- Implement unsupervised learning techniques, such as K-means clustering.

Course Outcomes: At the end of the course, student will be able to

- Enumerate the Fundamentals of Machine Learning
- Build Nearest neighbour based models
- Apply Models based on decision trees and Bayes rule
- Make use of Linear discriminants for machine Learning
- Choose appropriate clustering technique

UNIT-I

Introduction to Machine Learning: Evolution of Machine Learning, Paradigms for ML, Learning by Rote, Learning by Induction, Reinforcement Learning, Types of Data, Matching, Stages in Machine Learning, Data Acquisition, Feature Engineering, Data Representation, Model Selection, Model Learning, Model Evaluation, Model Prediction, Search and Learning, Data Sets.

UNIT-II

Nearest Neighbor-Based Models: Introduction to Proximity Measures, Distance Measures, Non-Metric Similarity Functions, Proximity Between Binary Patterns, Different Classification Algorithms Based on the Distance Measures, K-Nearest Neighbor Classifier, Radius Distance Nearest Neighbor Algorithm, KNN Regression, Performance of Classifiers, Performance of Regression Algorithms.

UNIT-III

Models Based on Decision Trees: Decision Trees for Classification, Impurity Measures, Properties, Regression Based on Decision Trees, Bias-Variance Trade-off, Random Forests for Classification and Regression. **The Bayes Classifier:** Introduction to the Bayes Classifier, Bayes' Rule and Inference, The Bayes Classifier and its Optimality, Multi-Class Classification | Class Conditional Independence and Naive Bayes Classifier (NBC)

UNIT-IV

Linear Discriminants for Machine Learning: Introduction to Linear Discriminants, Linear Discriminants for Classification, Perceptron Classifier, Perceptron Learning Algorithm, Support Vector Machines, Linearly Non-Separable Case, Non-linear SVM, Kernel Trick, Logistic Regression, Linear Regression, Multi-Layer Perceptrons (MLPs), Backpropagation for Training an MLP.



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UNIT-V

Clustering :Introduction to Clustering, Partitioning of Data, Matrix Factorization | Clustering of Patterns, Divisive Clustering, Agglomerative Clustering, Partitional Clustering, K-Means Clustering, Soft Partitioning, Soft Clustering, Fuzzy C-Means Clustering, Rough Clustering, Rough K-Means Clustering Algorithm, Expectation Maximization-Based Clustering, Spectral Clustering.

Text Books:

1. “Machine Learning Theory and Practice”, M N Murthy, V S Ananthanarayana, Universities Press (India), 2024

Reference Books:

1. “Machine Learning”, Tom M. Mitchell, McGraw-Hill Publication, 2017
2. “Machine Learning in Action”, Peter Harrington, DreamTech
3. “Introduction to Data Mining”, Pang-Ning Tan, Michel Stenbach, Vipin Kumar, 7th Edition, 2019.



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III SEMESTER

DIGITAL MARKETING

S. no	Course Code	SUBJECT TITLE
1	EDM-301	Fundamentals of digital marketing
2	EDM-302	Integrated marketing communication
3	EDM-303	Search Engine Marketing
4	EDM-304	Social Media Marketing



FUNDAMENTALS OF DIGITAL MARKETING

Unit 1: Introduction to Digital Marketing: The new digital world - trends that are driving shifts from traditional marketing practices to digital marketing practices, the modern digital consumer and new consumer's digital journey. Marketing strategies for the digital world – latest practices.

Unit 2 : Social Media Marketing -Introduction to Blogging, Create a blog post for your project. Include headline, imagery, links and post, Content Planning and writing. Introduction to Facebook, Twitter, Google +, LinkedIn, YouTube, Instagram and Pinterest; their channel advertising and campaigns.

Unit 3 “Acquiring & Engaging Users through Digital Channels: Understanding the relationship between content and branding and its impact on sales, search engine marketing, mobile marketing, video marketing, and social-media marketing. Marketing gamification, Online campaign management; using marketing analytic tools to segment, target and position; overview of search engine optimization (SEO).

Unit 4: Designing Organization for Digital Success: Digital transformation, digital leadership principles, online P.R. and reputation management. ROI of digital strategies, how digital marketing is adding value to business, and evaluating cost effectiveness of digital strategies

Unit 5 : Digital Innovation and Trends: The contemporary digital revolution, digital transformation framework; security and privatization issues with digital marketing Understanding trends in digital marketing – Indian and global context, online communities and co-creation,

Suggested Readings

- 1- Vandana, Ahuja; Digital Marketing, Oxford University Press India (November,2015)
- 2- Moutsy Maiti: Internet Marketing, Oxford University Press India
- 3- Puneet Bhatia: Fundamental of Digital Marketing, 2e, 2019, Pearson Education India
- 4- Liana Li Evans; Social Media Marketing, 1/e, 2011, Pearson Education India

Course Outcome :

Students will develop an understanding of digital and social media marketing practices.

Students will develop understanding of the social media platforms

Students will acquire the skill to acquire and engage consumers online.

Students will develop understanding of building organizational competency by way of digital marketing practices and cost considerations.

Students will develop understanding of the latest digital practices for marketing and promotion.



INTEGRATED MARKETING COMMUNICATION

UNIT I AN INTRODUCTION TO INTEGRATED MARKETING COMMUNICATION (IMC)

An Introduction to Integrated Marketing Communication (IMC): Meaning and role of IMC in Marketing process, one voice communication V/s IMC. Introduction to IMC tools – Advertising, sales promotion, publicity, public relations, and event sponsorship; The role of advertising agencies and other marketing organizations providing marketing services and perspective on consumer behaviour

UNIT II UNDERSTANDING COMMUNICATION PROCESS 9 Understanding communication process: Source, Message and channel factors, Communication response hierarchy- AIDA model, Hierarchy of effect model, Innovation adoption model, information processing model, The standard learning Hierarchy, Attribution Hierarchy, and low 20% involvement hierarchy Consumer involvement- The Elaboration Likelihood (ELM) model, The Foote, Cone and Belding (FCB) Model

UNIT III PLANNING FOR MARKETING COMMUNICATION (MARCOM) Establishing marcom Objectives and Budgeting for Promotional Programmes-Setting communication objectives, Sales as marcom objective, DAGMAR approach for setting ad objectives. Budgeting for marcom-Factors influencing budget, Theoretical approach to budgeting viz. Marginal analysis and Sales response curve, Method to determine marcom budget

UNIT IV DEVELOPING THE INTEGRATED MARKETING COMMUNICATION PROGRAMME Planning and development of creative marcom, Creative strategies in advertising, sales promotion, publicity, event sponsorships etc. Creative strategy in implementation and evaluation of marcom- Types of appeals and execution styles. Media planning and selection decisions- steps involved and information needed for media planning. Measuring the effectiveness of all Promotional tools and IMC.

UNIT V DIGITAL MEDIA & ADVERTISING Digital Media, Evolution of Technology, Convergence of Digital Media, E- Commerce and Digital Media, Advertising on Digital Media, Social Media, Mobile Adverting, E-PR Advertising Laws & Ethics: Adverting & Law, Advertising & Ethics

Advertising & Promotion- An Integrated Marketing Communications Perspective, George Belch, Michael Belch & Keyoor Purani, TATA McGraw Hill 8th edition

2. Wells, Moriarty & Burnett, Advertising, Principles & Practice, Pearson Education, 7th Edition, 2007. Kenneth Clow. Donald Baack, Integrated Advertisements, Promotion and Marketing communication, Prentice Hall of India, New Delhi, 3rd Edition, 2006.

3. Terence A. Shimp and J. Craig Andrews, Advertising Promotion and other aspects of Integrated Marketing Communications, CENGAGE Learning, 9th edition, 2016

4. S. H. H. Kazmi and Satish K Batra, Advertising & Sales Promotion, Excel Books, New Delhi, 3rd Revised edition, 2008.

5. Julian Cummings, Sales Promotion: How to Create, Implement and Integrate Campaigns that Really Work, Kogan Page, London, Fifth Edition, 2010.

7. Jaishri Jethwaney, Advertising Management, Oxford University Press, 2nd Edition, 2013. Dr Niraj Kumar, Integrated Marketing Communication, Himalaya Publishing House 2015



SEARCH ENGINE MARKETING

COURSE OUTCOMES CO217 DM .1 REMEMBERING DEFINE the key concepts in Search Engine Marketing. CO217 DM .2 UNDERSTANDING EXPLAIN the key SEO Tools and techniques CO217 DM .3 APPLYING EXPERIMENT with various techniques and tools for SEO. CO217 DM .4 ANALYSING DISCOVER Inbound Marketing Strategy as a tool for SEM CO217 DM .5 EVALUATING MEASURE the effectiveness of website optimization by using website analytics.

Introduction to SEM/Fundamentals of SEM: Search Engine Marketing (SEM), Understanding Google Search, Comparison between SEO and SEM, Terminologies associated to SEM, Search Engine Results Page (SERP), Organic Reach, Google Display Network (GDN). Understanding Web and Mobile Marketing perspective, Key Terms. (4+2) 2.

Search Engine Optimization: Introduction to SEO concept and role in digital marketing: Understanding Search Engine Optimization: Search Engine Optimization (SEO), Features of SEO, Significance of SEO. Model used in Digital Marketing, The Five Stage AACRO POEM model, Inverted Pyramid in SEOS, Content Drilldown, E3model, Understanding Web and Mobile Marketing perspective, Key Terms. (4+2)

3. Search Engine Optimization Tools/Analysis: Key SEO tools, Application and Functions Google Domain, Google my business, Google Search Console, Google Trends, Google Tag manager, SEM Rush, Domain Authority Score, Google Ads, Google Analytics, Google Marketing Platform, Word stream advisor. (4+2)

4. Inbound Marketing: Essentials of an Effective Inbound Strategy, Optimizing Your Website for Search Engines, Convert Visitors in Leads, Creating Content with a Purpose, Lead & its generation online, Relevant Lead and Converting Visitors into Lead, Converting Leads into Sales, Key Terms. (4+2)

5. Application of Web Analytics: Different types of Web Analytics, Social Media Web Analytics, Mobile Web Analytics, Conversion Web Analytics, Key Performance Indicators, Website Traffic Measurement Metrics, Key Terms. (4+2)

1. Digital Marketing Prof. Seema Gupta, 2ndEdition,Mcgraw Hill Publications.

3. Search Engine Marketing by Andreas Ramos & Stephanie Cota, 1stEdition,McGraw-Hill Education.



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SOCIAL MEDIA MARKETING

1. Introduction to social media marketing: Introduction to the concept of social Media-Definition, Characteristics and Scope, History. Social media marketing- Definition, Uses and Scope, Social media platforms - Facebook, YouTube, LinkedIn, Instagram, Twitter, Pinterest, Blogs. Importance of Social Media Marketing. Social Media Marketing advantages and limitations. Introduction to social media marketing strategies. (7+1)
2. Content designing for social media platforms: Terminologies-basics of content creation, process, Identification of target audience and social media platform, defining content mix using sales posts, interactive posts and informative posts, Impact of colors, images on the customer, tools used for content creation like canva, GIFs, Instagram stories, pin templates, tall pins, image cut outs, YouTube video Thumbnail, etc. (10+2)
3. Facebook and Instagram advertising and marketing Introduction to Facebook and Instagram platform as advertising and marketing media, characteristics of Facebook and Instagram marketing. Target audience, page set up, Post types and its dimensions, competitor analysis, case studies. (8+1)
4. Twitter, LinkedIn, YouTube, Pinterest advertising and marketing: Introduction and overview of platforms, Characteristics, how to use these platforms, target audience, profile / account building, how to pin. Crafting summary for marketing, creating and uploading videos, use of hashtags, Case studies. (8+2)
5. Metrics of social media marketing: What is to be measured- Parameters to measure impact-volume, reach and Engagement (engagement rates, engagement metrics). Influence, share of voice (volume and sentiment), referrals and conversions, response rate and time. Case studies. (5+1)

Internet age - Marketing with social media, Dr Apoorva Palkar, Amit Jadhav, Himalaya publication

Social Media Marketing - A Strategic Approach 1st Edition, Nicholas Bormann, Donald Barker, Krista Neher, Melissa Barker - Cengage.



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IV SEMESTER



IV SEMESTER

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CORPORATE LEGAL FRAMEWORK

(Objective: The course is designed to assist students in understanding basic laws affecting a Business Enterprise.)

UNIT- I: Significance of Business Laws—Indian Contract Act, 1872: Meaning and classification of contracts—Essentials elements of a valid contract— performance of a contract—Discharge of a contract—Void agreements- Breach and remedies of a contract.

UNIT-II: The Sale of Goods Act, 1930: Meaning and Essentials of contract of sale— Sale and Agreement to sell—Conditions and Warranties—Transfer of property Performance of a contract of sale—Unpaid seller- Negotiable instrument act 1881 – Foreign exchange management Act 1999 – Environment Protection Act 1986

UNIT-III: The Indian Partnership Act, 1932: Meaning and Essentials of partnership-- Registration of partnership—Kinds of partners—Rights and Liabilities of Partners—Relations of parties to third parties—Dissolution- Elements of Partnership - Types of Partner - Position of Minor as a -Partner - Types of Partnerships - Formation and Registration of Partnership - Relation of Partners to One another - Duties of Partners - Dissolution - Limited Liability Partnership Act, 2008

Unit-IV: The Consumer Protection Act, 1986: Meaning of Consumer, Service, Goods, Deficiency, Defect, Unfair Trade Practices—Rights of Consumers—Machinery For redressal of Grievances—Remedies available to injured consumers – Information Technology Act, 2000 – Essential commodities Act, 1995 -

UNIT-V: The Companies Act, 1956: Nature and Registration—Kinds of Companies—Mode of Incorporation - Memorandum of Association—Article of Association—Kinds of Shares— Powers and duties of Directors—winding up- - Types of Companies in Company Law - Rules of Allotment -Transfer and Transmission of Shares -Statutory Meeting - Annual General Meeting - winding up

Transfer and Transmission of Shares

SUGGESTED BOOKS:

1. N.D.Kapoor—Commercial Law—Sultan chand publishers, New Delhi.
2. S N Maheswaru & Suneed Maheswari—Commercial Laws—Mayoor Paper Backs— NOIDA
3. Satyanarayana – Corporate Company Law Discovery Publishing House, New Delhi
4. Tulisian P.C.—Business Laws—Tata Mc Graswhill Publishing house-New Delhi
5. Kucchal—Business Law—Vikas Publishing House, New Delhi.
6. Avatar Singh—Mercantile Law--EBC—New Delhi.



IV SEMESTER

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SUPPLY CHAIN MANAGEMENT

Course Objectives:

- To understand the fundamentals and strategic importance of supply chains.
- To analyse key drivers and performance metrics in SCM.
- To gain practical knowledge in areas like logistics, inventory, sourcing, and technology integration and apply concepts of sustainability and risk mitigation in global supply chains.

Unit I – Basics of Supply Chain Management: Meaning and definition of SCM - Evolution of SCM - Different views of Supply Chain – Supply Chain vs Logistics – importance of SCM in global competitiveness - Key drivers of SCM: Facilities, Inventory, Transportation, Information, Sourcing, Pricing – Developing Supply Chain Strategy- Strategic fit in Supply Chain.

Unit II- Supply Chain Analysis: Types of Supply Chains - Advanced Planning - Structure of Advanced Planning Systems-Strategic Network Planning - Demand Planning - Master Planning – Demand Fulfilment and ATP - Production Planning and Scheduling Purchasing and Material Requirements Planning Distribution and Transport Planning - Coordination and Integration – Collaborative Planning. - Designing the supply chain network

Unit III: Demand Forecasting and Inventory Management: Role of forecasting in SCM - Types of forecasting methods: Qualitative and Quantitative - Aggregate planning - Inventory management: EOQ, Safety Stock, ABC analysis - Bullwhip effect and its impact - Supply chain responsiveness and efficiency - Competitive and supply chain strategies

Unit IV: Distribution, Sourcing, Procurement and Vendor Management: Logistics management and third-party logistics (3PL) - Network design in distribution - - Last mile delivery challenges - Strategic sourcing and procurement processes - Supplier selection and evaluation - E-procurement and global sourcing - Vendor relationship management

Unit V: Supply Chain Technology and Sustainability: Role of IT in SCM: (ERP, Block Chain and IoT) - Green supply chains and sustainable practices, Supply chain risk management Resilient and agile supply chains - Ethics in SCM

Reference Books

1. **Sunil Chopra & Peter Meindl** – *Supply Chain Management: Strategy, Planning and Operation* - Pearson Education, India
2. Mohanty R.P, S.G Deshmuki –*Supply Chain Management*|| Biztantra, New Delhi
3. **Janat Shah** – *Supply Chain Management: Text and Cases* (Pearson Education)
(Indian context with good case studies)
4. **David Simchi-Levi, Philip Kaminsky & Edith Simchi-Levi** – *Designing and Managing the Supply Chain* (McGraw Hill)
(Balanced between theory and practical tools)
5. **Martin Christopher** – *Logistics and Supply Chain Management* (Pearson)
(Focus on logistics and agile supply chains)
6. **Ailawadi & Singh** – *Logistics Management* (Prentice Hall India)
(Good Indian perspective on logistics operations)



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IV SEMESTER

HUMAN RESOURCE MANAGEMENT

Fourth Semester

S. No	Course Code	SUBJECT TITLE
1	EHR-401	Labor Welfare and Employment laws
2	EHR-402	International HRM
3	EHR-403	Employee Relations and Workplace Culture
4	EHR-404	Human Capital Management



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IV SEMESTER

HUMAN RESOURCE MANAGEMENT

LABOR WELFARE AND EMPLOYMENT LAWS

UNIT I:

Labour Welfare: Introduction to Labour Welfare: Concept, scope and philosophy, principles and approaches of labour welfare, Classification-Evolution of labour welfare in India- Impact of ILO on labour welfare in India. Welfare Officers 'Role, Status and Function, Signs of poor welfare.

UNIT II:

Labour Legislation: Objectives-Principles-Classification-Evaluation of Labour legislation in India-Factories Act 1948, Definitions - Objectives of Act - Factory Inspectorate – Measures to be taken by Factories for Health, Safety and Welfare of Workers - Working Hours - Provisions Relating to Hazardous Processes - Annual Leave with Wages - Special Provisions - Obligations by Employer and Employee - Offences and Penalties.

UNIT III: Wage and Social Security Legislations: Payment of wages Act 1936 - Minimum wages Act 1948 - Payment of Bonus Act 1966 - Employees' State Insurance Act, 1948, Employees' Provident Funds and Miscellaneous Provisions Act, 1952, Payment of Gratuity Act, 1972, Workmen's Compensation Act 1923 - Maternity Benefit Act 1961.

UNIT IV: Industrial Relations Legislation: Industrial Disputes Act 1947 Concept, objectives, Types of Strikes and their Legality – Authorities under the Act and their Duties – Voluntary Reference of Disputes to Arbitration – Types of Strikes and Lock-outs Wages for Strike and Lock-out Period– Change in Conditions of Service.

UNIT V: Industrial Employment (standing orders) Act 1946: Certification of Draft Standing Orders – Appeals – Date of Operation of Standing Orders – Posting of Standing Orders – Payment of Subsistence Allowance. Trade Unions Act 1926. The New Labor Codes: Code on Wages 2019, industrial relations code 2020, code on social security 2020, occupational safety, health and working conditions code 2020.

Relevant cases have to be discussed in each unit and in examination case is compulsory from any unit.

References:

1. Govt. of India (Ministry of Labour, 1969). Report of the Commission on Labour Welfare, New Delhi: Author.
2. Govt. of India (Ministry of Labour, 1983). Report on Royal Commission on Labour in India, New Delhi: Author.
3. Malik, P.L: —Industrial Law||, Eastern Book Company. Laknow
4. Moorthy, M.V: —Principles of Labour Welfare||, Oxford University Press, New Delhi.
5. Pant, S.C: —Indian Labour Problems||, Chaitanya Pub. House. Allahabad.



IV SEMESTER

L	T	P	C
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INTERNATIONAL HUMAN RESOURCE MANAGEMENT

UNIT I

Introduction: A Global HR Perspective in New Economy-Challenges of Globalization - Implications of Managing People and Leveraging Human Resource - Strategic Role of International HRM – Distinction between Domestic and International HRM – HR Challenges at International Level.

UNIT II

Managing International Assignments: Significance -Global HR Planning – Staffing policy – Training and development – performance appraisal –International Labour relations – Industrial democracy - Positioning Expatriate – Repatriate – factors of consideration - Strategies - Legal content of Global HRM- International assignments for Women - Problems.

UNIT III

Cross Culture Management: Importance – Concepts and issues – Understanding Diversity – Managing Diversity Cross- Cultural Theories – Hofstede's Model – Kluckhohn - Strodtbeck Model – Andre- Laurent' Theory – Cultural Issues. considerations - Problems – Skill building methods – Cross Culture Communication and Negotiation – Cross Culture Teams. Talent crunch – Indian MNCs and Challenges.

UNIT IV

Compensation Management: Objectives -Importance – Concepts- Trends - Issues – Methods – Factors of Consideration – Models – incentive methods – Approaches of Compensation in Global Assignments - global compensation implications on Indian systems - Performance Management.

UNIT V

Global Strategic Advantages through HRD: Measures for creating global HRD Climate – Strategic Frame Work of HRD and Challenges - Globalization and Quality of Working Life and Productivity – Challenges in Creation of New Jobs through Globalization- New Corporate Culture.

Relevant cases have to be discussed in each unit and in examination case is compulsory from any unit.

References:

- 1.Subba Rao P: –International Human Resource Management||, Himalaya Publishing House, Hyderabad, 2011
- 2.NilanjanSen Gupta: –International Human Resource Management Text and cases|| Excel Books, New Delhi.
3. Tony Edwards :–International Human Resource Management||, Pearson Education, New Delhi, 2012
4. Aswathappa K, Sadhana Dash: –International Human Resource Management, TMH,



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New Delhi,

5. Monir H Tayeb: —International Human Resource Management||, Oxford Universities Press,
Hyderabad, 2012.



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IV SEMESTER

EMPLOYEE RELATIONS AND WORKPLACE CULTURE

UNIT I:

Industrial Relations Management: Concept-meaning and scope of IR-system frame work-Theoretical perspective- Evaluation –Background of industrial Relations in India- Influencing factors of IR in enterprise and the consequences. Globalization and IR- Recent Trends in Industrial Relations.

UNIT II:

Trade Unions: Introduction-Definition and objectives-growth of Trade Unions in India -Union Recognition-Union Problems-Employees Association- Collective Bargaining –Characteristics-Importance-Principles-The process of CB-Participation in the bargaining Process-Essential conditions for the success of collective bargaining –Negotiating techniques and skills.

UNIT III:

Employee Grievances: Causes of Grievances – Grievances Redressal Machinery – Discipline in Industry - Measures for dealing with Indiscipline–Standing Orders- Code of Discipline.

UNIT IV:

Industrial Disputes: Meaning, nature and scope of industrial disputes - Cases and Consequences of Industrial Disputes –Prevention and Settlement of industrial disputes in India.

UNIT V: Ethics, Diversity and Inclusion in Workplace Culture: Ethical issues in ER, Corporate culture and ethical leadership, Workplace diversity and inclusion, DEI strategies, Role of HR in ethical and inclusive culture building.

Relevant cases have to be discussed in each unit and in examination case is compulsory from any unit.

References

- 1.C.S Venkataratnam: –Industrial Relations||, Oxford University Press, New Delhi, 2011
2. Sinha: –Industrial Relations, Trade Unions and Labour Legislation||, Pearson Education, New Delhi, 2013
3. Mamoria: –Dynamics of Industrial Relations||, Himalaya Publishing House, New Delhi, 2010
4. B.D.Singh: –Industrial Relations|| Excel Books, New Delhi, 2010
5. Arun Monappa: –Industrial Relations||, TMH, New Delhi. 2012
6. Prof. N.Sambasiva Rao and Dr. Nirmal Kumar: –Human Resource Management and Industrial Relations||, Himalaya Publishing House, Mumbai
7. Ratna Sen: –Industrial Relations||, MacMillon Publishers, New Delhi, 2011.



IV SEMESTER

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HUMAN CAPITAL MANAGEMENT

Unit I

Economic theories of Human Capital: Nature and Role of Human Capital; The Human Capital Model; Predictions of Human Capital Approach; Socio-economic relevance of labour problems in changing scenario; Evolution of organized labour; Industrialization and Development of Labour Economy; Growth of Labour Market in India in the globalised setting.

Unit II

Accounting Aspects of Human Capital – Cost Based Models: Meaning, Basic Premises, Need and Significance of HRA, Advantages and Limitation of HRA; Monetary and Non-Monetary Models; Cost Based Models- Acquisition Cost Method, Replacement Cost Model, Opportunity Cost Method, standard cost method, Current Purchasing Power Method (C.P.P.M.); Comparison of Cost incurred on Human capital and the contributions made by them in the light of productivity and other aspects.

Unit III

Accounting Aspects of Human Capital – Value Based Models: Value Based Models - Hermanson's Unpurchased Goodwill Method, Hermanson's Adjusted Discount Future Wages Model, Lev and Schwartz Present Value of Future Earnings Model, Flamholtz's Stochastic Rewards Valuation Model, Jaggi and Lau's Human Resource Valuation Model, Robinson's Human Asset Multiplier Method, Watson's Return on Effort Employed Method, Brummet, Flamholtz and Pyle's Economic Value Method of Group Valuation, Morse's Net Benefit Method; Recent developments in the field of Human Asset/Capital Accounting.

Unit IV

Quality of Work Life: Workers' Participation in Management - Worker's Participation in India, shop floor, Plant Level, Board Level- Quality Circles. Workers' education objectives -Rewarding. Employees Engagement and Empowerment-nature-types-drivers-benefits-measurement of Engagement-Empowerment.

Unit V

Industrial Accidents and safety: meaning and definition of accident-types of industrial accidents-cost and consequences-causes and prevention of accidents- Industrial safety –statutory machineries for industrial safety-safety audit. Social Security: Introduction and types –Social Security in India, Health and Occupational safety programs- work place discipline –work place counselling-meaning –definition –types-advantages-characteristics of an effective counsellor.

Relevant cases have to be discussed in each unit and in examination case is compulsory from any unit.

Suggested Readings:

1. I.L.O., Social & Labour aspects of Economic Development, Geneva
2. Report of the National Commission on Labour



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3. Patterson & Schol., Economic Problems of Modern Life. Mc-Graw Hill Book Company.
4. Walter Hageabuch, Social Economics, Cambridge University Press.
5. S. Howard Patterson, Social Aspects of Industry.
6. Millis and Montgonery, Labours Progress and some Basic Labour Problems. Mc -Graw Hill Book Company.
7. Flamholtz, Eric, Human Resource Accounting, Dickenson Publishing Co., Califf.
8. Hermanson, Roger H. Accounting for Human Assets, Occasionals Paper No.14, Graduate School of Business Administration, Michigan State University.
9. Flamholtz, Eric G., Human Resource Accounting: Advances in Concepts, Methods and Applications, Jossey Eass Publishers, San Francisco, London.
10. Likert, Rensis, The Human Organisation: Its Management and Value, McGraw Hill Book Co., New York, N.Y.
11. Ganguli, Prabuddha, Intellectual Property Rights: Unleashing the Knowledge Economy, Tata McGraw-Hill Publishing Co. Ltd., New Delhi.
12. Chakraborty, S.K., Human Asset Accounting: The Indian Context in Topics in Accounting and Finance, Oxford University Press. Note: Latest edition of the readings may be used.



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IV SEMESTER

FINANCE

S. no	Course	
Code	SUBJECT TITLE	
1	EFM-401	Corporate Strategic Finance
2	EFM-402	International Trade and Finance
3	EFM-403	Global Financial Management
4	EFM-404	Financial Derivatives



IV SEMESTER

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CORPORATE STRATEGIC FINANCE

Course Objective:

- 1) To orient on various aspects in corporate financial management.
- 2) To elaborate on the role of finance manager for making better investment decisions.
- 3) To impart knowledge of various aspects in corporate Strategic Investment Decisions.
- 4) To discuss in detail the aspects pertaining to corporate Strategic Financing Decisions.
- 5) To elucidate the practical aspects of Mergers, Acquisitions and Value Based Management.

Course Outcome:

Students will be able to:

- 1) Understand financial strategy and control of a company.
- 2) Learn the relevance of risk and uncertainty in making corporate strategic decisions.
- 3) Learn various aspects of corporate capital budgeting.
- 4) Understand the corporate capital structure, dividend policy, financial distress, restructuring.
- 5) Identify the different diversification strategies and mergers and acquisitions

Unit-1: Introduction of corporate finance – Shareholder Value Creation (SCV): Market Value Added (MVA) – Market-to-Book Value (M/BV) – Economic Value Added (EVA) – Managerial Implications of Shareholder Value Creation.

Unit-II: Sources of corporate funding: Governing Regulatory Framework for share capital Debt securities – Capital Structure Planning and Policy – Financial Options and Value of the Firm – Dividend Policy and Value of the Firm.

Unit-III: Corporate Investment Strategy – Techniques of Investment Appraisal Under Risk and Uncertainty – Risk Adjusted Net Present Value – Risk Adjusted Internal Rate of Return – Capital Rationing – Decision Tree Approach for Investment Decisions – Evaluation of Lease Vs Borrowing Decision.

Unit-IV: Corporate Merger Strategy – Theories of Mergers – Horizontal and Conglomerate Mergers – Merger Procedure – Valuation of Firm – Financial Impact of Merger – Merge and Dilution Effect on Earnings Per Share – Merger and Dilution Effect on Business Control.

Unit-V: Corporate Takeover Strategy – Types of Takeovers – Negotiated and Hostile Bids – Takeover Procedure – Takeover Defenses – Takeover Regulations of SEBI – Distress Restructuring Strategy – Sell offs – Spin Offs – Leveraged Buyouts.



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Suggested Readings:

1. Van Horn, JC, Financial Management and Policy, Prentice Hall, New Delhi
2. PG Godbole, Mergers, Acquisitions and Corporate Restructuring, Vikas, New Delhi
3. Weaver, Strategic Corporate Finance, Cengage, ND
4. Weston JF, Chung KS & Heag SE., Mergers, Restructuring & Corporate Control, Prentice Hall.
5. Satyanarayana, Strategic Financial Management Discovery Publishing House, New Delhi
6. GP Jakarthy, Strategic Financial Management, Vikas, New Delhi
7. Coopers & Lybrand, Strategic Financial: Risk Management, Universities Press (India) Ltd.
8. Robichek, A, and Myers, S., Optimal Financing Decisions, Prentice Hall Inc.
9. Bhalla, V.K., Managing International Investment and Finance, New Delhi, Anmol, 1997.



IV SEMESTER

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INTERNATIONAL TRADE AND FINANCE

Objectives

- To make the students well aware about the formalities associated with International trade
- To make the students aware of the documentation of International Trade and
- To make the students aware of the FOREX Management and Export Promotion Schemes.

UNIT-I International Trade –Benefits – Basis of International Trade – Foreign Trade and Economic Growth – Balance of Trade – Balance of Payment – Current Trends in India – Barriers to International Trade – Indian EXIM Policy.

UNIT-II Export and Import Finance: Special need for Finance in International Trade – INCO Terms (FOB, CIF, etc.,) – Payment Terms – Letters of Credit – Pre Shipment and Post Shipment Finance – Forfaiting – Deferred Payment Terms – EXIM Bank – ECGC and its schemes – Import Licensing – Financing methods for import of Capital goods.

UNIT-III Foreign Exchange Markets – Spot Prices and Forward Prices – Factors influencing Exchange rates – The effects of Exchange rates in Foreign Trade – Tools for hedging against Exchange rate variations – Forward, Futures and Currency options – FEMA – Determination of Foreign Exchange rate and Forecasting – Law of one price – PPP theory – Interest Rate Parity – Exchange rate Forecasting.

UNIT-IV Export Trade Documents: Financial Documents – Bill of Exchange – Type – Commercial Documents – Proforma, Commercial, Consular, Customs, Legalized Invoice, Certificate of Origin Certificate Value, Packing List, Weight Certificate, Certificate of Analysis and Quality, Certificate of Inspection, Health certificate. Transport Documents - Bill of Lading, Airway Bill, Postal Receipt, Multimodal Transport Document. Risk Covering Document: Insurance Policy, Insurance Cover Note. Official Document: Export Declaration Forms, GR Form, PP Form, COD Form, Softer Forms, Export Certification, GSPS – UPCDC Norms.

UNIT-V Export Promotion Schemes – Government Organizations Promoting Exports – Export Incentives: Duty Exemption – IT Concession – Marketing Assistance – EPCG, DEPB – Advance License – Other efforts I Export Promotion – EPZ – EQU – SEZ and Export House.

REFERENCES

1. Jeevanandam .C, INTERNATIONAL BUSINESS, M/s Sultan & Chand, Delhi, 2008
2. Sumathi Varma, INTERNATIONAL BUSINESS, Ane, Delhi, 2010



IV SEMESTER

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GLOBAL FINANCIAL MANAGEMENT

Courses Objectives

- 1) To study the role that international trade and investment, currency movements, Derivative instruments, hedging strategies, international financial markets, and International agreements and institutions play in the management of multinational Corporations.
- 2) To provide an understanding of both the key features of foreign exchange markets and the actual problems of multinational corporations.
- 3) To understand the importance of balance of trade and balance of payments to the development of macroeconomic policy.
- 4) To distinguish among alternative derivative instruments and different types of exposures multinational corporations face while using derivative instruments.
- 5) To evaluate cross-border investment opportunities, and describe a multinational firm's decision-making process for investment and tax policies.

Course Outcomes

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

- 1) Outline the concepts of applied international financial management and its scope.
- 2) Analyse the evolution of the global monetary system and related world bodies.
- 3) Examine the relationships that exist between national stock markets, currency markets and interest rate markets.
- 4) Develop critical, analytical problem-based learning skills and transferable skills to prepare for postgraduate employment in international financial management.
- 5) Demonstrate the techniques of International capital budgeting, International capital structure and cost of capital and International financing.

Unit I : International Monetary and Financial System: Evolution; Breton Woods Conference and Other Exchange Rate Regimes; European Monetary System, South East Asia Crisis and Current Trends.

Unit II : Foreign Exchange Risk: Transaction Exposure; Accounting Exposure and Operating Exposure – Management of Exposures – Internal Techniques, Management of Risk in Foreign Exchange Markets: Forex Derivatives – Swaps, futures and Options and Forward Contracts.

Unit III : Features of Different International Markets: Euro Loans, CPs, Floating Rate Instruments, Loan Syndication, Euro Deposits, International Bonds, Euro Bonds and Process of Issue of GDRs and ADRs.

Unit IV : Foreign Investment Decisions : Corporate Strategy and Foreign Direct Investment; Multinational Capital Budgeting; International Acquisition and Valuation, Adjusting for Risk in Foreign Investment.



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Unit V: International Accounting and Reporting; Foreign Currency Transactions, Multinational Transfer Pricing and Performance Measurement; Consolidated Financial Reporting.

Suggested Readings:

1. Buckley Adrin, Multinational Finance, 3rd Edition, Engle Wood Cliffs, Prentice Hall of India.
2. S.P.Srinivasan, B.Janakiram, International Financial Management, Wiley India, New Delhi.
3. Clark, International Financial Management, Cengage, ND
4. V.Sharan, International Financial Management, 3rd Edition, Prentice Hall of India.
5. A.K.Seth, International Financial Management, Galgothia Publishing Company.
6. Satyanarayana, Global Financial Management, Discovery Publishing House, New Delhi
7. P.G.Apte, International Financial Management, Tata McGrw Hill, 3rd Edition.
8. Bhalla, V.K., International Financial Management, 2nd Edition, New Delhi, Anmol, 2001.
9. V.A.Avadhani, International Financial Management, Himalaya Publishing House.



IV SEMESTER

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FINANCIAL DERIVATIVES

COURSE OBJECTIVES

- 1) To predict the price movement in the stock market and to provide commitments to prices for future dates to give protection against adverse movements in future prices.
- 2) To understand the basics of the various instruments operating in the stock market along with their trading mechanism and regulations.
- 3) To develop various pricing models of stock prices, trading, hedging of options and Management of derivative exposure.

COURSE OUTCOMES

After completion of this course, the student will be able to

- 1) Students will be able to analyze the risks in different financial markets.
- 2) Acquire ability to selection of various options and then can apply them to specific markets.
- 3) Student will be able to strategically manage the financial derivatives.

Unit - I:

Introduction to Financial Derivatives – Meaning and Need – Growth of Financial Derivatives in India – Derivative Markets – Participants- Functions – Types of Derivatives – Forwards – Futures – Options-Swaps – The Regulatory Framework of Derivatives Trading in India.

Unit –II:

Forward Market: Concept- features of forward contract – classification of forward contracts- forward trading mechanism – determination of forward prices – valuing forward contracts – forward prices vs futures prices- payoff from the forward contracts – foreign currency forwards – pricing currency forward contracts.

Unit - III:

Futures Market: Features of Futures –Differences Between Forwards and Futures – Financial Futures – Trading – Currency Futures – Interest Rate Futures – Pricing of Future Contracts- Value at Risk (VaR)-Hedging Strategies – Hedging with Stock Index Futures – Types of Members and Margining System in India – Futures Trading on BSE & NSE.

Unit - IV:

Options Market: – Meaning & Need – Options Vs Futures -Types of Options Contracts – Call Options – Put Options Factors Affecting Options pricing- Put-Call Parity Pricing Relationship - Pricing Models - Introduction to Binominal Option Pricing Model – Black Scholes Option Pricing Model.

Unit – V:

Swaps Markets: – Meaning – Overview – The Structure of Swaps – Interest Rate Swaps – Currency Swaps – Commodity Swaps – Swap Variant – Swap Dealer Role –Equity Swaps – Economic Functions of Swap Transactions - FRAs and Swaps.



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Suggested Readings:

1. Hull C. John, –Options, Futures and Other Derivatives||, Pearson Educations Publishers,
2. David Thomas. W & Dubofsky Miller. Jr., Derivatives valuation and Risk Management, Oxford University, Indian Edition.
3. ND Vohra & BR Baghi, Futures and Options, Tata McGraw-Hill Publishing Company Ltd.
4. Red Head: Financial Derivatives: An Introduction to Futures, Forward, Options|| Prentice Hall of India.
5. David A. Dubofsky, Thomas W. Miller, Jr.: Derivatives: Valuation and Risk Management, Oxford University Press.
6. Sunil K.Parameswaran, –Futures Markets: Theory and Practice|| Tata-McGraw-Hill Publishing Company Ltd.
7. D.C. Patwari, Financial Futures and Options, Jaico Publishing House.
8. T.V. Somanathan, Derivatives, Tata McGraw-Hill Publishing Company Ltd.
9. NSE Manual of Indian Futures & Options & [www. Sebi.com](http://www.sebi.com)
10. S.C. Gupta, Financial Derivatives: Theory, Concepts and Problems, Prentice Hall of India.



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**IV SEMESTER
SYSTEMS**

S. no	Course	
Code	SUBJECT	TITLE
1	ESMJ-401	Introduction to Artificial Intelligence
2	ESMJ-402	Enterprise Resource Planning
3	ESMJ-403	Internet of Things(IOT)
4	ESYS-404	Data Analytics



IV SEMESTER

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INTRODUCTION TO ARTIFICIAL INTELLIGENCE

Course Outcome(s):

This course introduces students to the basic knowledge representation, problem solving, and learning methods of artificial intelligence.

UNIT-I

Introduction, Overview of Artificial Intelligence: Problems of AI, AI technique, Tic - Tac - Toe problem. Intelligent Agents, Agents & environment, nature of environment, structure of agents, goal based agents, utility based agents, learning agents.

Problem Solving, Problems, Problem Space & search: Defining the problem as state space search, production system, problem characteristics, and issues in the design of search programs.

UNIT-II

Search techniques: Problem solving agents, searching for solutions; uniform search strategies: breadth first search, depth first search, depth limited search, bidirectional search, comparing uniform search strategies. Heuristic search strategies Greedy best-first search, A* search, AO* search, memory bounded heuristic search: local search algorithms & optimization problems: Hill climbing search, simulated annealing search, local beam search

UNIT-III

Constraint satisfaction problems: Local search for constraint satisfaction problems. Adversarial search, Games, optimal decisions & strategies in games, the minimax search procedure, alpha-beta pruning, additional refinements, iterative deepening.

UNIT- IV

Knowledge & reasoning: Knowledge representation issues, representation & mapping, approaches to knowledge representation. Using predicate logic, representing simple fact in logic, representing instant & ISA relationship, computable functions & predicates, resolution, natural deduction. Representing knowledge using rules, Procedural verses declarative knowledge, logic programming, forward verses backward reasoning, matching, control knowledge.

UNIT-V

Probabilistic reasoning: Representing knowledge in an uncertain domain, the semantics of Bayesian networks, Dempster-Shafer theory, Planning Overview, components of a planning system, Goal stack planning, Hierarchical planning, other planning techniques

Expert Systems: Representing and using domain knowledge, expert system shells, and knowledge acquisition.



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(Applicable for batches admitted from 2024-25)

Text Books:

1. Stuart Russell and Peter Norvig, Artificial Intelligence: A Modern Approach
2. Artificial Intelligence, Russel, Pearson

Reference Books:

3. Artificial Intelligence, Ritch & Knight, TMH
4. Introduction to Artificial Intelligence & Expert Systems, Patterson, PHI
5. Logic & Prolog Programming, Saroj Kaushik, New Age International
6. Expert Systems, Giarranto, VIKAS



IV SEMESTER

ENTERPRISE RESOURCE PLANNING

L	T	P	C
3	0	0	3

Course Objectives:

COB 1: To help in understanding basic concepts in ERP.

COB 2: To help in understanding the importance of ERP.

COB 3: To help in analyzing the effects of ERP on business.

Course Outcomes:

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

CO 1: Describe the meaning of ERP.

CO 2: Explain the importance of ERP Implementation.

CO 3: Distinguish Pre ERP implementation and post ERP implementation.

CO 4: Compare ERP System Options and Selection Methods.

CO 5: Research on ERP present and future.

UNIT- I:

Introduction to ERP: Overview of ERP – Introduction and Evolution –advanced ERP-SCM and CRM systems and related technologies – ERP life cycle ERP implementation Life cycle- SDLC and ERP lifecycle.

UNIT-II:

ERP Implementation: reasons for ERP failure. Pre – implementation Tasks – Implementation methodologies – Process definition - Dealing with employee resistance Training and Education – Project management and monitoring Success and failure factors of an ERP implementation.

UNIT-III:

Post ERP implementation: Change Management – post implementation review, support, maintenance and security of ERP. Different business modules of an ERP package. ERP market place and market place dynamics.

UNIT-IV:

ERP System Options and Selection Methods: Optimal Means of Developing an ERP, Measurement of Project Impact, IT Selection and Project Approval, ERP proposal Evaluation, Project Evaluation Techniques.

UNIT-V:

ERP present and future: Turbo charge the ERP system- EAI – ERP. Internet and WWW- Future Directions and trends in ERP – Future Directions in ERP: New Markets, New Technologies, Faster Implementation Methodologies, New Business Segments, Trends in Security.

Relevant cases have to be discussed in each unit and in examination case is compulsory from any unit.

References:

1. Singla: —Enterprise Resource Planning||, Cengage Learning, New Delhi, 2013.
2. Alexleon: —Enterprise Resource Planning||, TMH, New Delhi, 2011.
3. Mahadeo Jaiswal, Ganesh Vanapalli: —Enterprise Resource Planning||, MacMillon, New Delhi, 2013.
4. N.Venkateswaran: —Enterprise Resource Planning||, SCITECH Publiscation, New Delhi, 2009.
5. S.Kesharwani, SBodduluri, M Ashok Kumar: —Enterprise Resource Planning||, Paramount Publishing House, New Delhi, 2012.



IV SEMESTER

L	T	P	C
3	0	0	3

INTERNET OF THINGS

Course Outcome(s):

This course will help students understand basic principles and concepts of Internet-of-Things use cases, applications, architecture and technologies. Students will get an overview of an end to end IoT system encompassing the edge, cloud and application tiers. This course will build upon the foundations created in the pre-requisite courses and will equip the students to architect a complete IoT application on their own. The lab exercises will consist of hands-on experiments that will lead to building an IoT application end-to-end.

UNIT- I

Introduction to IoT and Use cases: Understanding basic concepts of IoT, Consumer IoT vs Industrial Internet, Fundamental building blocks, Use Cases of IoT in various industry domains.

UNIT- II

Architecture: IoT reference architectures, Industrial Internet Reference Architecture, Edge Computing, IoT Gateways, Data Ingestion and Data Processing Pipelines, Data Stream Processing.

UNIT-III

Sensors and Industrial Systems: Introduction to sensors and transducers, integrating sensors to sensor processing boards, introduction to industrial data acquisition systems, industrial control systems and their functions.

UNIT-IV

Networking and Communication for IoT: Recap of OSI 7 layer architecture and mapping to IoT architecture, Introduction to proximity networking technologies (ZigBee, Bluetooth, Serial Communication), Industrial network protocols (Modbus, CANbus), Communicating with cloud applications (web services, REST, TCP/IP and UDP/IP sockets, MQTT, WebSockets, protocols. Message encoding (JSON, Protocol Buffers).

UNIT –V

IoT Data Processing and Storage: Time Series Data and their characteristics, time series databases, basic time series analytics, data summarization and sketching, dealing with noisy and missing data, anomaly and outlier detection.

a) IoT Applications

- Smart Cities
- Connected Vehicles and Telematics
- Smart Grids
- Smart Homes



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- b) IoT data visualization
- c) Survey of cloud based IoT platforms
- d) Low power wide area networks for IoT
- e) IoT device management
- f) Survey of chips, embedded modules and development boards for IoT devices
- g) Embedded and real-time operating systems for IoT
- h) IoT Security
 - Security risks in IoT
 - Securing IoT endpoint devices and secure communication protocols for IoT
 - Security and Privacy of IoT data

Text Books:

1. The Internet of Things, Samuel Greengard, MIT Press Essential Knowledge Series,



IV SEMESTER

L	T	P	C
3	0	0	3

DATA ANALYTICS

Course Outcomes:

After completion of this course students will be able to

- Understand the impact of data analytics for business decisions and strategy
- Carry out data analysis/statistical analysis
- To carry out standard data visualization and formal inference procedures
- Design Data Architecture
- Understand various Data Sources

UNIT-I

Data Management: Design Data Architecture and manage the data for analysis, understand and various sources of Data like Sensors/Signals/GPS etc. Data Management, Data Quality (noise, outliers, missing values, duplicate data) and Data Processing & Processing.

UNIT-II

Data Analytics: Introduction to Analytics, Introduction to Tools and Environment, Application of Modeling in Business, Databases & Types of Data and variables, Data Modeling Techniques, Missing Imputations etc. Need for Business Modeling.

UNIT-III

Regression – Concepts, Basic property assumptions, Least Square Estimation, Variable Rationalization, and Model Building etc. Logistic Regression: Model Theory, Model fit Statistics, Model Construction, Analytics applications to various Business Domains etc.

UNIT-IV

Object Segmentation: Regression Vs Segmentation – Supervised and Unsupervised Learning, Tree Building – Regression, Classification, Overfitting, Pruning and Complexity, Multiple Decision Trees etc. Time Series Methods: Arima, Measures of Forecast Accuracy, STL approach, Extract features from generated model as Height, Average Energy etc. and Analyse for prediction.

UNIT-V

Data Visualization: Pixel-Oriented Visualization Techniques, Geometric Projection Visualization Techniques, Icon-Based Visualization Techniques, Hierarchical Visualization Techniques, Visualizing Complex Data and Relations.

TEXT BOOKS:

1. Student's Handbook for Associate Analytics – II, III.
2. Data Mining Concepts and Techniques, Han, Kamber, 3rd Edition, Morgan Kaufmann Publishers.



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Reference Books:

1. Introduction to Data Mining, Tan, Steinbach and Kumar, Addison Wesley, 2006.
2. Data Mining Analysis and Concepts, M. Zaki and W. Meira
3. Mining of Massive Datasets, Jure Leskovec Stanford



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IV SEMESTER

LOGISTICS AND SUPPLY CHAIN MANAGEMENT

S. no	Course	
Code	SUBJECT	TITLE
1	ELS-401	Enterprise Resource Planning
2	ELS-402	Shipping and Maritime law
3	ELS-403	International Logistics Management
4	ELS-404	Green Supply Chain Management



ENTERPRISE RESOURCE PLANNING

Objectives:

To familiarize the students with ERP, ERP Module, SCM and CRM and its application in business related decisions.

UNIT I:

Overview of enterprise systems: Evolution - Risks and benefits - Fundamental technology - Issues to be consider in planning design and implementation of cross functional integrated ERP systems.

UNIT II:

Overview of ERP software solutions: Small medium and large enterprise vendor solutions, BPR, Business Engineering and best Business practices - Business process Management. Overview of ERP modules -sales and Marketing, Accounting, Finance, Materials and Production management etc

UNIT III:

Planning Evaluation and selection of ERP systems: Implementation life cycle – ERP implementation, Methodology and Frame work- Training – Data Migration. People Organization in implementation – Consultants, Vendors and Employees-Case studies.

UNIT IV:

Maintenance of ERP: Organizational and Industrial impact – Success and Failure factors of and ERP Implementation -case studies.

UNIT V:

Extended ERP systems and ERP bolt –on -CRM, SCM, Business analytics etc-Future trends in ERP systems-web enabled, Wireless technologies so on-Case studies.

Outcome: Students gaining knowledge of concepts of ERP and its application in Logistics and Supply Chain Management.

REFERENCES

1. Alexis Leon, Enterprise Resource Planning, second edition, Tata McGraw-Hill, 2008.
2. Summer, ERP, Pearson Education, 2008.
3. Jagan Nathan Vaman, ERP in Practice, Tata McGraw-Hill, 2008
4. Alexis Leon, ERP demystified, second Edition Tata McGraw-Hill, 2006. .
5. Mahadeo Jaiswal and Ganesh Vanapalli, ERP Macmillan India, 2006.



SHIPPING AND MARITIME LAW

Objective: Students will gain insights into the various shipping laws pertaining to Indian exports and imports.

UNIT I

Introduction: Indian Contract Act, 1872 - Contract – Meaning – Essential Elements – Offer and Acceptance – Consideration – Capacity – Consent – Legality of object – Quasi contract – Discharge of Contract – Breach of Contract – Remedies. Contract of Indemnity and Guarantee - Bailment: Rights and Duties of Bailor and Bailee – Contract of Agency: – Creation of Agency – Rights and Duties of Agent and Principal – Termination of Agency

UNIT II

Indian Sale of Goods Act - Contract of Sale: Essentials – Sale and Agreement to Sell – Conditions and Warranties: Caveat Emptor – Sale by non-owners – Delivery of Goods – Rights and Duties of the Buyer and Seller. International Sales of Goods - Contracting Parties - Charter Parties - The Types Of Charter - Ship-Owners Obligations In Getting To The Load Port - Express & Implied Contract On Loading – Payment Of Freight - Special Clauses - Remedies For Non-Payment

UNIT III

Laws on Carriage of Goods: The Bills Of Lading Act 1855 And The Carriage Of Goods By Sea Act 1924 - Non-Contractual Actions - Functions Of The Bill Of Lading – Contracts Of Carriage - Modifications To The Traditional Carriage Contract Model- Third-Party Rights Under The Initial Carriage Contract At Common Law And In Equity - Statutory Transfers.

UNIT IV

The Cargo Claim Enquiry - Duties, Rights and Liabilities of Common Carriers under: (i) The Carriers Act, 1865. (ii) The Railways Act, 1989, (iii) The Carriage By Road Act, 2007 (iv) The Carriage by Air Act, 1972– Indian Consumer Protection Act, 1986: Objects – Rights of Consumers – Consumer Dispute – Procedure of Filing Complaint – Procedure for redressal of Complaints.

UNIT V

Proving Loss Or Damage In Transit—The Evidential Hierarchy Of Lading Statements—Bill Of Lading Statements And Contractual Actions Against The Carrier—Tort Actions Against The Carrier - Actions Against The Person Who Actually Signed The Bill Of Lading.Limitation Of Liability -- Claims Subject To Limitation -- The Right To Limit–Jurisdiction -- Other Limitation Regimes.

Outcome: Students knowledge of maritime laws will help shipping organizations in gaining profitability and sustenance



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REFERENCES:

M.C. Shukla, Mercantile Law, S. Chand & Co., New Delhi, 2011.

M.S.Pandit and ShobhaPandit, Business Law, HPH, Mumbai, 2010.

N.D. Kapoor, Mercantile Law, Sultan Chand & Sons, New Delhi, 2010

Relevant Bare Acts.



INTERNATIONAL LOGISTICS MANAGEMENT

- Objectives:**
1. marketing logistics concept, objective, scope and its elements.
 2. Interface between international marketing and logistics & supply chain management.
 3. Role of transport in logistics.

Learning Outcomes:

1. Assess logistical organizations in terms of functional aggregation and the shift in emphasis from function to process.
2. Students will be aware of logistics concepts and basic activities.

UNIT-1 International Trade: Need and Importance – Recent Trends in World Trade – Leading players – India's Foreign Trade – Commodity Composition and Destination - Overview of International Logistics- Components, Importance, Objectives; Logistic Subsystem;- Integrated Logistics; - Barrier to Internal Integration – Logistics Documents for International Trade.

UNIT-2 Marketing and Logistics Customer Focused Marketing; International Marketing: International Marketing Channel: Role of Clearing Agent, Various Modes of Transport, Choice and Issues for Each Mode, Transport Cost Characteristics

UNIT-3 Basics of Transportation - Functionality and Principles; Multimodal Transport: Modal Characteristics; Modal Comparisons; Legal Classifications; International Air Transport; Air Cargo Tariff Structure; Freight: Definition, Rate; Freight Structure and Practice

UNIT-4 Containerization and Chartering Containerization: Genesis, Concept, Classification, Benefits and Constraints; Inland Container Depot (ICD): Roles and Functions, CFS, Export Clearance at ICD; CONCOR; ICDs under CONCOR; Chartering: Kinds of Charter, Charter Party, and Arbitration.

UNIT-5 inventory Management and Packaging Inventory Management: Introduction, Characteristics, Functionality, Components, Planning; Packaging and Packing: Labels, Functions of Packaging, Designs, Kinds of Packaging; Packing for Transportation and Marking: Types of Boxes, Container, Procedure, Cost, Types of Marking, and Features of Marking -Dynamic Component for Continuous Internal Assessment only: Contemporary Developments Related to the Course during the Semester concerned

REFERENCES

1. International Marketing by SakOnkvisit& John J. Shaw, Publisher: Prentice Hall of India
2. International Marketing by Gupta and Varshing, Publisher: Sultan Chand and Sons
3. Logistic Management and World Sea Borne Trade by MultiahKrishnaveni, Publisher: Himalaya Publication
4. Logistic and Supply Chain Management by Donald J. Bowerson, Publisher: Prentice Hall of India



GREEN SUPPLY CHAIN MANAGEMENT

UNIT I

Introduction – Traditional Supply Chain and Green Supply Chain – Environmental Concern and Supply Chain – Closed-loop Supply Chain – Corporate Environmental Management – Green Supply Chain (GSCM): Definition, Basic Concepts – GSCM Practices

UNIT II

ECO-DESIGN : Design for the Environment (DFE) or Eco-Design – Eco-Design and Supplier Relationships – Definitions of Eco-Design – Tools of Product Eco-Design – Involving suppliers in product ecodesign: Drivers, Challenges and Successful factors

UNIT III

Green Purchasing: Green Procurement and Purchasing – Definitions of green purchasing – Drivers of green purchasing – Green purchasing strategies – Green purchasing performance measurement – Green Supplier Development and Collaboration.

UNIT IV

Green Manufacturing: Green Manufacturing or Production: Evolution, Definitions – 4R's: recycling, remanufacturing, reuse and reduction – Closed-loop Manufacturing – ISO 14000 systems – Life Cycle Analysis (LCA) – Lean Manufacturing for Green Manufacturing or Production.

UNIT V

Green Logistics And Transportation: Green Logistics and Transportation – Definitions of Green Logistics – Critical drivers of Green Logistics – Green transportation and logistics practices – Environmental impacts of transportation and logistics – Closing the Loop: Reverse Logistics.

Text books:

1. Joseph Sarkis, Yijie Dou. Green Supply Chain Management: A Concise Introduction, Routledge, 2017.
2. Charisios Achillas, Dionysis D. Bochtis, Dimitrios Aidonis, Dimitris Folinas. Green Supply Chain Management, Routledge, 2018.

Reference books:

1. Hsiao-Fan Wang, Surendra M. Gupta. Green Supply Chain Management: Product Life Cycle Approach, McGraw Hill publishing, 2011
2. Stuart Emmett, Vivek Sood. Green Supply Chains: An Action Manifesto by Stuart Emmett, Wiley publications, 2010



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IV SEMESTER

HEALTH CARE AND HOSPITAL MANAGEMENT

S. no	Course	
Code	SUBJECT	TITLE
1	EHH-401	Health Analytics
2	EHH-402	Managed Health Care and Insurance
3	EHH-403	Health Laws, Ethics and Regulations
4	EHH-404	Patient Care & Services Management



IV SEMESTER

L	T	P	C
3	0	0	3

HEALTH ANALYTICS

Objective: the role of data analytics in quality and performance improvement efforts, the tools and techniques used for data analytics in health care organizations.

UNIT I: Quality Improvement and Data Analytics – Meaning – Drivers for health care transformation - Identify quality initiatives that have shaped the national health care landscape - Health care quality and value - background and evolution of quality and performance improvement - Quality improvement frameworks that utilize analytics .

UNIT II: Health Care Data as an Organizational Asset - Data information, knowledge and wisdom hierarchy- organizational asset - sources of health care data – challenges for quality and performance improvement - organizational approach for effective use of data analytics

UNIT III: Working with Data - information value chain - importance of data context and relevance to business processes - common data types - basic statistical terms - Recognize common patterns or distributions in statistics - distributions using numerical measures such as mean, median and standard deviation - common graphical representations of data including histograms, bar charts and scatterplots

UNIT IV; Data Analytics Tools and Techniques – Definitions - Process steps of data analytics and the tools - role of the data analyst - tools and techniques used to analyze and interpret healthcare data effectively - various types of databases and how they are structured - data warehouse concepts - enterprise data architecture in health care organizations.

UNIT V: Solve Problems- measures, metrics, and indicators- purpose and use of Key Performance Indicators (KPI's) - health care organizations use the IHI Triple Aim to prioritize performance goals - DMAIC problem-solving model and the tools and techniques used in each step of the process - Apply the DMAIC methodology to a health care issue.

Suggested Readings:

Trevor L. Strome (2013). Healthcare Analytics for Quality and Performance Improvement. John Wiley & Sons, Inc



MANAGED HEALTH CARE AND INSURANCE

Course Objectives: To understand the fundamentals and strategic importance of supply chains. To analyse key drivers and performance metrics in SCM. To gain practical knowledge in areas like logistics, inventory, sourcing, and technology integration and apply concepts of sustainability and risk mitigation in global supply chains.

Unit I – Basics of Supply Chain Management: Meaning and definition of SCM - Evolution of SCM - Different views of Supply Chain – Supply Chain vs Logistics – importance of SCM in global competitiveness - Key drivers of SCM: Facilities, Inventory, Transportation, Information, Sourcing, Pricing – Developing Supply Chain Strategy- Strategic fit in Supply Chain.

Unit II- Supply Chain Analysis: Types of Supply Chains - Advanced Planning - Structure of Advanced Planning Systems-Strategic Network Planning - Demand Planning - Master Planning – Demand Fulfilment and ATP - Production Planning and Scheduling Purchasing and Material Requirements Planning Distribution and Transport Planning - Coordination and Integration – Collaborative Planning. - Designing the supply chain network

Unit III: Demand Forecasting and Inventory Management: Role of forecasting in SCM - Types of forecasting methods: Qualitative and Quantitative - Aggregate planning - Inventory management: EOQ, Safety Stock, ABC analysis - Bullwhip effect and its impact - Supply chain responsiveness and efficiency - Competitive and supply chain strategies

Unit IV: Distribution, Sourcing, Procurement and Vendor Management: Logistics management and third-party logistics (3PL) - Network design in distribution - Last mile delivery challenges - Strategic sourcing and procurement processes - Supplier selection and evaluation - E-procurement and global sourcing - Vendor relationship management

Unit V: Supply Chain Technology and Sustainability: Role of IT in SCM: (ERP, Block Chain and IoT) - Green supply chains and sustainable practices, Supply chain risk management Resilient and agile supply chains - Ethics in SCM

Reference Books

1. **Sunil Chopra & Peter Meindl** – *Supply Chain Management: Strategy, Planning and Operation* - Pearson Education, India
2. Mohanty R.P, S.G Deshmuki – *Supply Chain Management*|| Biztantra, New Delhi
3. **Janat Shah** – *Supply Chain Management: Text and Cases* (Pearson Education)
(Indian context with good case studies)
4. **David Simchi-Levi, Philip Kaminsky & Edith Simchi-Levi** – *Designing and Managing the Supply Chain* (McGraw Hill)
(Balanced between theory and practical tools)
5. **Martin Christopher** – *Logistics and Supply Chain Management* (Pearson)
(Focus on logistics and agile supply chains)

Ailawadi & Singh – *Logistics Management* (Prentice Hall India)
(Good Indian perspective on logistics operations)



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IV SEMESTER

HEALTH LAWS, ETHICS AND REGULATIONS

Objective: To get acquainted with the legal provision and issues related to health care, to familiarize with the medical terminologies and to understand the ethical issues in health care system.

UNIT I Laws relating to Hospital formation: Promotion-Forming society-The Companies Act-Law of Partnership-A Sample Constitution for the Hospital-The Tamil Nadu Clinics Act – Medical Ethics.

UNIT II Laws relating Purchases and funding: Law of contracts-Law of Insurance-Export Import Policy- FEMA-Exemption of Income Tax for Donations-Tax Obligations: Filing Returns and Deductions at Source. Laws pertaining to Health: Central Births and Deaths Registration Act, 1969- Recent amendments – Medical Termination of Pregnancy Act, 1971 – Infant Milk Substitutes, Feeding Bottles and Infant Food Act, 1992.

UNIT III Laws pertaining to Hospitals: Transplantation of Human Organs Act, 1994 – Pre-natal Diagnostic Techniques (Regulation and Prevention of Misuse) Act, 1994 – Medical Negligence – Medico Legal Case – Dying Declaration-MCI act on medical education. The Biomedical Waste (Management and Handling) Rules-Radiation Safety System.

UNIT IV Medical Terminology- Glossary of medical terms: major Diseases and medical specialties-Roots, Prefixes, Suffixes, Abbreviations and symbols-Common roots: element referring to, usage and definition-Common prefixes and suffixes-Common abbreviations: departments, time, general healthcare, routes of medication and laboratory-Symbols.

UNIT V Illness- Classification and description of diseases-Infection Control- Medical asepsis, Nosocomial infection and communicable diseases, Reservoir, carrier and mode of transmission- Overview of Hospital Services -Intensive care unit – Coronary care Unit – Burns, paraplegic & Malignant disease treatment – Hospital welfare services – Hospital standing services – Indian red cross society – Nursing services- Pharmacy – Medical Stores – Housekeeping – Ward Management – Central sterile supply department-Medical Records – Fatal documents – Medical Registers – Statutory records.

Suggested Readings:

- BM Sakharkar, Principles of Hospital Administration and Planning, Jaypee brothers Publications.
- Francis CM, Mario C de Souza ; Hospital Administration – Jaypee brothers Medical Publishers.



IV SEMESTER

L	T	P	C
4	0	0	3

PATIENT CARE AND SERVICES MANAGEMENT

Objective: To understand the importance of patient care management and acquainted with the disaster, safety and Security Management in Hospitals.

UNIT I Patient centric management - Concept of patient care, Patient-centric management, Organization of hospital departments, Roles of departments/managers in enhancing care, Patient counseling & Practical examples of patient centric management in hospitals-Patient safety and patient risk management.

UNIT II Quality in patient care management-Defining quality, Systems approach towards quality, towards a quality framework, Key theories and concepts, Models for quality improvement & Variations in practice

UNIT III Patient classification systems and the role of casemix-Why do we need to classify patients, Types of patient classification systems, ICD 9 (CM, PM), Casemix classification systems, DRG, HBG, ARDRG, Casemix innovations and Patient empowering classification systems.

UNIT IV Medical ethics & auditory procedures-Ethical principles, Civic rights, Consumer Protection Act, Patient complaints powers & procedures of the district forum, State and National commission, Patient appeals, Autopsy, Tort liability, Vicarious liability, Medical negligence, Central & state laws, Use of investigational drugs, Introduction/need & procedures for medical audit, Audit administration & Regulating committees-Confidentiality and professional secrecy, ethics of trust and ethics of rights – autonomy and informed consent, under trading of patient rights – universal accessibility – equity and social justice, human dignity

UNIT V Disaster preparedness-Policies & procedures for general safety, fire safety procedure for evacuation, disaster plan and crisis management. Policies & procedures for maintaining medical records, e-records, legal aspects of medical records, its safety, preservation and storage.

Suggested Readings:

- Goel S L & Kumar R. HOSPITAL CORE SERVICES: HOSPITAL ADMINISTRATION OF THE 21ST CENTURY 2004 ed., Deep Deep Publications Pvt Ltd: New Delhi
- Gupta S & Kant S. Hospital & Health Care Administration: Appraisal and Referral



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IV SEMESTER

ARTIFICIAL INTELLIGENCE

S. no	Course	
Code	SUBJECT	TITLE
1	EAI-401	Natural Language Processing
2	EAI-402	Augmented Reality & Virtual Reality
3	EAI-403	Deep Learning
4	EAI-404	Data Visualization



NATURAL LANGUAGE PROCESSING

Course Objectives:

This course introduces the fundamental concepts and techniques of natural language processing (NLP).

- Students will gain an in-depth understanding of the computational properties of natural languages and the commonly used algorithms for processing linguistic information.
- The course examines NLP models and algorithms using both the traditional symbolic and the more recent statistical approaches.
- Enable students to be capable to describe the application based on natural language processing and to show the points of syntactic, semantic and pragmatic processing.

UNIT I:

INTRODUCTION: Origins and challenges of NLP – Language Modeling: Grammar-based LM, Statistical LM – Regular Expressions, Finite-State Automata – English Morphology, Transducers for lexicon and rules, Tokenization, Detecting and Correcting Spelling Errors, Minimum Edit Distance.

UNIT II:

WORD LEVEL ANALYSIS: Unsmoothed N-grams, Evaluating N-grams, Smoothing, Interpolation and Backoff – Word Classes, Part- of-Speech Tagging, Rule-based, Stochastic and Transformation-based tagging, Issues in PoS tagging – Hidden Markov and Maximum Entropy models.

UNIT III:

SYNTACTIC ANALYSIS: Context-Free Grammars, Grammar rules for English, Treebanks, Normal Forms for grammar – Dependency Grammar – Syntactic Parsing, Ambiguity, Dynamic Programming parsing – Shallow parsing Probabilistic CFG, Probabilistic CYK, Probabilistic Lexicalized CFGs – Feature structures, Unification of feature structures

UNIT IV:

SEMANTICS AND PRAGMATICS: Requirements for representation, First-Order Logic, Description Logics – Syntax-Driven Semantic analysis, Semantic attachments – Word Senses, Relations between Senses, Thematic Roles, selectional restrictions – Word Sense Disambiguation, WSD using Supervised, Dictionary & Thesaurus, Bootstrapping methods – Word Similarity using Thesaurus and Distributional methods.

UNIT V:

DISCOURSE ANALYSIS AND LEXICAL RESOURCES: Discourse segmentation, Coherence – Reference Phenomena, Anaphora Resolution using Hobbs and Centering Algorithm – Coreference Resolution – Resources: Porter Stemmer, Lemmatizer, Penn Treebank, Brill's Tagger, WordNet, PropBank, FrameNet, Brown Corpus, British National Corpus (BNC).

Text Books:

1. Speech and Language Processing: An Introduction to Natural Language Processing,



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Computational Linguistics and Speech, 2ndEdition, Daniel Jurafsky, James H. Martin - Pearson Publication,2014.

2. Natural Language Processing with Python, First Edition, Steven Bird, Ewan Klein and Edward Loper, OReilly Media,2009.

Reference Books:

1. Language Processing with Java and Ling Pipe Cookbook, 1stEdition, Breck Baldwin, Atlantic Publisher, 2015.
2. Natural Language Processing with Java, 2ndEdition, Richard M Reese, OReilly Media,2015.
3. Handbook of Natural Language Processing, Second, NitinIndurkhya and Fred J. Damerau, Chapman and Hall/CRC Press, 2010.Edition
4. Natural Language Processing and Information Retrieval, 3rdEdition, TanveerSiddiqui, U.S. Tiwary, Oxford University Press,2008.



IV SEMESTER

L	T	P	C
3	0	0	3

AUGMENTED REALITY & VIRTUAL REALITY

Objectives:

- Provide a foundation to the fast growing field of AR and make the students aware of the various AR concepts.
- To give historical and modern overviews and perspectives on virtual reality. It describes the fundamentals of sensation, perception, technical and engineering aspects of virtual reality systems.

UNIT - I

Introduction to Augmented Reality: Augmented Reality - Defining augmented reality, history of augmented reality, Examples, Related fields

Displays: Multimodal Displays, Visual Perception, Requirements and Characteristics, Spatial Display Model, Visual Displays

Tracking: Tracking, Calibration, and Registration, Coordinate Systems, Characteristics of Tracking Technology, Stationary Tracking Systems, Mobile Sensors

UNIT - II

Computer Vision for Augmented Reality: Marker Tracking, Multiple-Camera Infrared Tracking, Natural Feature Tracking by Detection, Outdoor Tracking.

Interaction: Output Modalities, Input Modalities, Tangible Interfaces, Virtual User Interfaces on Real Surfaces, Augmented Paper, Multi-view Interfaces, Haptic Interaction

Software Architectures: AR Application Requirements, Software Engineering Requirements, Distributed Object Systems, Dataflow, Scene Graphs

UNIT - III

Introduction to Virtual Reality: Defining Virtual Reality, History of VR, Human Physiology and Perception

The Geometry of Virtual Worlds: Geometric Models, Axis-Angle Representations of Rotation, Viewing Transformations

Light and Optics: Basic Behavior of Light, Lenses, Optical Aberrations, The Human Eye, Cameras, Displays

UNIT - IV

The Physiology of Human Vision: From the Cornea to Photoreceptors, From Photoreceptors to the Visual Cortex, Eye Movements, Implications for VR

Visual Perception: Visual Perception - Perception of Depth, Perception of Motion, Perception of Color Visual Rendering: Visual Rendering -Ray Tracing and Shading Models, Rasterization, Correcting Optical Distortions, Improving Latency and Frame Rates, Immersive Photos and Videos



UNIT - V

Motion in Real and Virtual Worlds: Velocities and Accelerations, The Vestibular System, Physics in the Virtual World, Mismatched Motion and Vection

Interaction: Motor Programs and Remapping, Locomotion, Social Interaction

Audio: The Physics of Sound, The Physiology of Human Hearing, Auditory Perception, Auditory Rendering

Text Books:

1. Augmented Reality: Principles & Practice by Schmalstieg / Hollerer, Pearson Education India; First edition (12 October 2016), ISBN-10: 9332578494
2. Virtual Reality, Steven M. LaValle, Cambridge University Press, 2016

Reference Books:

1. Allan Fowler-AR Game Development||, 1st Edition, A press Publications, 2018, ISBN 978-1484236178
2. Understanding Virtual Reality: Interface, Application and Design, William R Sherman and Alan B Craig, (The Morgan Kaufmann Series in Computer Graphics)". Morgan Kaufmann Publishers, San Francisco, CA, 2002
3. Developing Virtual Reality Applications: Foundations of Effective Design, Alan B Craig, William R Sherman and Jeffrey D Will, Morgan Kaufmann, 2009
4. Designing for Mixed Reality, Kharis O'Connell Published by O'Reilly Media, Inc., 2016, ISBN:9781491962381
5. Sanni Siltanen- Theory and applications of marker-based augmented reality. Julkaisija – Utgivare Publisher. 2012. ISBN 978-951-38-7449-0
6. Gerard Jounghyun Kim, "Designing Virtual Systems: The Structured Approach", 2005



IV SEMESTER

L	T	P	C
3	0	0	3

DEEP LEARNING

Course Objectives: The main objective of the course is to make students:

- Learn deep learning methods for working with sequential data,
- Learn deep recurrent and memory networks,
- Learn deep Turing machines,
- Apply such deep learning mechanisms to various learning problems.
- Know the open issues in deep learning, and have a grasp of the current research directions.

UNIT I:

Fundamentals of Deep Learning: Artificial Intelligence, History of Machine learning: Probabilistic Modeling, Early Neural Networks, Kernel Methods, Decision Trees, Random forests and Gradient Boosting Machines, Fundamentals of Machine Learning: Four Branches of Machine Learning, Evaluating Machine learning Models, Overfitting and Underfitting. [Text Book 2]

UNIT II: Introducing Deep Learning: Biological and Machine Vision, Human and Machine Language, Artificial Neural Networks, Training Deep Networks, Improving Deep Networks. [Text Book3]

UNIT III: Neural Networks: Anatomy of Neural Network, Introduction to Keras: Keras, Tensor Flow, Theano and CNTK, Setting up Deep Learning Workstation, Classifying Movie Reviews: Binary Classification, Classifying newswires: Multiclass Classification. [Text Book 2]

UNIT IV:

Convolutional Neural Networks: Neural Network and Representation Learning, Convolutional Layers, Multichannel Convolution Operation, Recurrent Neural Networks: Introduction to RNN, RNN Code, PyTorch Tensors: Deep Learning with PyTorch, CNN in PyTorch. [Text Book 3]

UNIT V:

Interactive Applications of Deep Learning: Machine Vision, Natural Language processing, Generative Adversarial Networks, Deep Reinforcement Learning. [Text Book 1]

Deep Learning Research: Autoencoders, Deep Generative Models: Boltzmann Machines Restricted Boltzmann Machines, Deep Belief Networks. [Text Book 1]

Text Books:

1. Deep Learning- Ian Goodfellow, Yoshua Bengio and Aaron Courville, MIT Press, 2016
2. Deep Learning with Python - Francois Chollet, Released December 2017, Publisher(s): Manning Publications, ISBN: 9781617294433
3. Deep Learning Illustrated: A Visual, Interactive Guide to Artificial Intelligence - Jon



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Krohn, Grant Beyleveld, Aglaé Bassens, Released September 2019, Publisher(s): Addison-Wesley Professional, ISBN: 9780135116821

4. Deep Learning from Scratch - Seth Weidman, Released September 2019, Publisher(s): O'Reilly Media, Inc., ISBN: 9781492041412

Reference Books:

1. Artificial Neural Networks, Yegnanarayana, B., PHI Learning Pvt. Ltd, 2009.
2. Matrix Computations, Golub, G.,H., and Van Loan,C.,F, JHU Press,2013.
3. Neural Networks: A Classroom Approach, Satish Kumar, Tata McGraw-Hill Education, 2004.

Web Link:

Swayam NPTEL: Deep Learning: https://onlinecourses.nptel.ac.in/noc22_cs22/preview



IV SEMESTER

L	T	P	C
3	0	0	3

DATA VISUALIZATION

Course Objectives:

- To understand the fundamentals of data visualization.
- To know the working principles of various information visualization depth tools.
- To acquire knowledge about the issues in data representation.
- To visualize the Data using tools Tableau
- To gain skill in designing real time interactive information visualization system.

Course Outcomes: Upon completion of the course, the students will be able to

- Apply mathematics and basic science knowledge for designing information visualizing System.
- Collect data ethically and solve engineering problem in visualizing the information.
- Implement algorithms and techniques for interactive information visualization.
- Conduct experiments by applying various modern visualization tool and solve the space layout problem.
- Analyze and design system to visualize multidisciplinary multivariate Data individually or in teams.

Develop a cost effective and a scalable information visualization system.

UNIT-1

Context of data visualization – Definition, Methodology, Visualization design objectives. Key Factors – Purpose, visualization function and tone, visualization design options – Data representation, Data Presentation, Seven stages of data visualization, widgets, data visualization tools. Mapping - Time Series - Connections and Correlations - Scatterplot Maps - Trees, Hierarchies, and Recursion - Networks and Graphs

Unit II VISUALIZATION TECHNIQUES FOR TIME-SERIES, TREES & GRAPHS Mapping

- Time series - Connections and correlations – Indicator-Area chart-Pivot table- Scatter charts, Scatter maps - Tree maps, Space filling and non-space filling methods Hierarchies and Recursion - Networks and Graphs-Displaying Arbitrary Graphs-node link graph-Matrix representation for graphs- Info graphics

Unit III TEXT AND DOCUMENT VISUALIZATION : Acquiring data, - Where to Find Data, Tools for Acquiring Data from the Internet, Locating Files for Use with Processing, Loading Text Data, Dealing with Files and Folders, Listing Files in a Folder ,Asynchronous Image Downloads, Web Techniques, Parsing data - Levels of Effort, Tools for Gathering Clues, Text Markup Languages, Regular Expressions, Grammars and BNF Notation, Compressed Data, Vectors and Geometry, Binary Data Formats, Advanced Detective Work.

Unit IV INTERACTIVE DATA VISUALIZATION: Drawing with data – Scales – Axes – Updates, Transition and Motion – Interactivity - Layouts – Geomapping – Exporting, Framework



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– D3.js, Tableau Dashboards

Unit V SECURITY IN DATA VISUALIZATION : Port scan visualization - Vulnerability assessment and exploitation - Firewall log visualization - Intrusion detection log visualization - Attacking and defending visualization systems – Creating secured visualization system..

REFERENCES:

- 1) Colin Ware, “Information Visualization Perception for Design”, Third edition, Morgan Kaufmann Publishers, 2012.
- 2) Robert Spence, “Information Visualization Design for Interaction”, Second Edition, Pearson Education.
- 3) Matthew O. Ward, George Grinstein, Daniel Keim, “Interactive Data Visualization: Foundation, Techniques and Applications



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IV SEMESTER

DIGITAL MARKETING

S. no	Course	
Code	SUBJECT	TITLE
1	EDM-401	E – BUSINESS MANAGEMENT
2	EDM-402	SYSTEM ANALYSIS AND DESIGN
3	EDM-403	CONTENT MARKETING
4	EDM-404	AI IN DIGITAL MARKETING



E – BUSINESS MANAGEMENT

COURSE OBJECTIVE: To understand the practices and technology to start an online business.

UNIT I INTRODUCTION TO e-BUSINESS 8 e-business, e-business vs e-commerce, Economic forces – advantages – myths – e-business models, design, develop and manage e-business, Web 2.0 and Social Networking, Mobile Commerce, S-commerce

UNIT II TECHNOLOGY INFRASTRUCTURE 10 Internet and World Wide Web, internet protocols - FTP, intranet and extranet, information publishing technology- basics of web server hardware and software.

UNIT III BUSINESS APPLICATIONS 10 Consumer oriented e-business – e-tailing and models - Marketing on web – advertising, e-mail marketing, affiliated programs - e-CRM; online services, Business oriented e-business, e-governance, EDI on the internet, Delivery management system, Web Auctions, Virtual communities and Web portals – social media marketing

UNIT IV e-BUSINESS PAYMENTS AND SECURITY E-payments - Characteristics of payment of systems, protocols, e-cash, e-cheque and Micro payment systems- internet security – cryptography – security protocols – network security.

UNIT V LEGAL AND PRIVACY ISSUES 8 Legal, Ethics and privacy issues – Protection needs and methodology – consumer protection, cyber laws, contracts and warranties, Taxation and encryption policies.

2. Efraim Turban, Jae K. Lee, David King, Ting Peng Liang, Deborrah Turban, Electronic Commerce A managerial perspective, Pearson Education Asia, 2010. 3.

4. Parag Kulkarni, Sunita Jahirabadao, Pradeep Chande, e business, Oxford University Press, 2012. Hentry Chan & el , E-Commerce – fundamentals and Applications, Wiley India Pvt Ltd, 2007.

5. Gary P. Schneider, Electronic commerce, Thomson course technology, Fourth annual edition, 2007 6. Bharat Bhasker, Electronic Commerce – Frame work technologies and Applications, 3rd Edition. Tata McGrawHill Publications, 2009

7. Kamlesh K. Bajaj and Debjani Nag, Ecommerce- the cutting edge of Business, Tata McGraw Hill Publications, 7th reprint, 2009.



SYSTEM ANALYSIS AND DESIGN

Unit – I System Analysis Fundamentals: Introduction to System, System Analysis and Design, Need for System Analysis and Design, Role of the System Analyst System Development Strategies: SDLC, Structured Analysis Development Method, System Prototype Method.

Unit – II Case Tools: Benefits of Computer-Assisted Tools, Categories of Automated Tools, Case Components Organizations as System: Interrelatedness and Interdependence of System, System Process, Boundaries, System Feedback, Managing Project 29

Unit – III Review and Selection Fact-Finding Techniques: Interview, Questionnaire, Record Review, Observation Data Flow Diagram: Advantages, Notations, Rules, Leveling, Logical and Physical DFD. Data Dictionary: Importance, Data Elements, Describing Process Specification Structured Decisions: Decision Tree, Decision Tables, Structured English.

Unit– IV The Essentials of Design Designing Effective Output: Objectives, Types of Output, Method, Factors to consider - Designing Effective Input: Objectives, Guideline for Form design, Screen and Web Forms, Designing User Interface: Objectives, Types of user interface, Designing Accurate Data – Entry Procedures: Objectives, Effective coding, Data-Entry Method, Ensuring data quality through input validation

Unit – V Quality Assurance through Software Engineering - Design of Software, Software design and documentation: Structured Flowcharts, HIPO, Warnier/Orr Diagrams Managing Quality Assurance: Level of Assurance, Level of Test Implementation of Information System: Training Strategies, Conversion, Post Implementation Review - Case Studies - Financial Accounting System - Payroll System - Library System - Inventory System - Online Banking System - Railway Reservation system (Input, Output, DFD)

Reference Books

1. Goyal, Systems Analysis and Design, PHI Learning, 2011.
2. Hoffner, J., Modern System Analysis and Design, 6th Edition, Pearson, 2009.
3. Kendall and Kendall, System Analysis and Design, 4th Edition, PHI Private Learning Ltd., 2011.
4. Langer, Analysis and Design of Information Systems, 3rd Edition, Springer India, 2008.
5. Satzinger, J.W., System Analysis and Design, Cengage Learning India, 2007.
6. Senn, J.A., Analysis and Design of Information Systems, 2nd Edition, Tata McGraw-Hill, 2008.



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CONTENT MARKETING

UNIT I: Introduction to Content Marketing and Management: Why and how content is important to business – use of content marketing, Content strategy and planning, Forming mission statement and its importance, selection of Niche Markets.

UNIT II: Business goals and planning for websites -Naming primary and lower level goals-CMS overview and concepts, Intro to Word Press - Word Press design, navigation and site structure,

UNIT III: Adding and managing content - Adding and managing functionality on the site. Writing for the Web-Refining content – design, brand guidelines - Tools for developing visual content -HTML and CSS, overview for CMS

UNIT IV: Competitive analysis -Collecting content ideas, Tools and resources for creating and managing content -Social media channels – community and communication, distributing content.

UNIT V: Tools for social media management -Establishing metrics -Evaluating data- Capstone Project

Note: Capstone projects are designed to apply the skills and knowledge learned in the course and will include the following elements as projects are shared:

1. Explain the criteria that guided your content development.
2. Present your website and other media channels that highlight that content.
3. Give a summary of your plan for developing, managing, and distributing future content.



AI IN DIGITAL MARKETING

Unit-1 An Introduction to Artificial Intelligence: Definition of AI, Features of AI, Scope of AI, types of AI, History of Artificial Intelligence, How is Artificial Intelligence Changing the face of Digital Marketing? , Importance of AI in DM, AI in Advertising.

Unit-2: AI applications: AI applications include advanced web search engines (e.g., Google Search), recommendation systems (used by YouTube, Amazon, and Netflix), understanding human speech (such as Siri and Alexa), self-driving cars (e.g., Waymo), generative or creative tools (Chat GPT and AI art), automated decision-making, and competing at the highest level in strategic game systems (such as chess and Go).

Unit-3: AI in Marketing: Publica, Affectiva, EliseAI, Google Ads, IBM, RTB House, Salesforce, Yext , Conversica, Mutiny.

Unit-4: AI applications in DM: Generating Content, Product Recommendation and Content Curation, Use of AI Chatbots, Chatbot Marketing, Predictive Analysis, Digital Advertising, Online Searches, Email Marketing.

Unit-5: AI and SEO, ML,NLP: Improved Keyword Research, Content Optimization, Enhanced User Experience, Predictive SEO, Voice Search Optimization, Visual Search Optimization; Machine Learning- Definition, Importance; how Natural Language Processing (NLP) Influencing Digital Marketing?

References:

1. Melanie Mitchell, Artificial Intelligence: A Guide for Thinking Humans
2. Stuart Russell & Peter Norvig, Artificial Intelligence: A Modern Approach ,Third Edition, By Pearson
3. Mosim Khan (2020), Artificial Intelligence In Digital Marketing
4. Alex Ferreira do Prado, Artificial Intelligence allied to Digital Marketing
5. Parth Dixit(2023) "Digital Marketing in the Age of Artificial Intelligence"