NOORUL ISLAM CENTRE FOR HIGHER EDUCATION

(Deemed to be University Under Section 3 of the UGC Act, 1956)
Kumaracoil, Thuckalay

DEPARTMENT OF MANAGEMENT STUDIES

MASTER OF BUSINESS ADMINISTRATION
CURRICULUM AND SYLLABI

REGULATION 2023

NOORUL ISLAM CENTRE FOR HIGHER EDUCATION, Kumaracoil

Regulation : 2023

Curriculum and Syllabi

MBA Program

DEPARTMENT OF MANAGEMENT STUDIES

Master of Business Administration (MBA)

Vision of the University

To be recognized by the Government and society at large as an institution able to deliver excellence with relevance in the field of higher education and research focusing on the needs of the nation in tune with the technological revolution to cope with the knowledge explosion and global competence.

Mission of the University

To develop the institution as a Centre of Excellence, keeping pace with the advances in the field, so as to provide quality higher education to the students and instill in them high standards of discipline and ethics so that they become enlightened individuals in the service of humanity and to carry out focused research in the frontier areas of science and technology.

Faculty of Management Studies

Department of Management Studies

Vision of the Department

Vision Statement: To build NICHE–FMS as a preferred Institution for innovative learning, that would mould potential managers with global mindset, excellent leadership and entrepreneurial spirit

Mission of the Department

M1: NICHE-FMS aims to provide quality management education through imparting high quality teaching, research and practical based training programs.

M2: NICHE-FMS strives to promote social land business entrepreneurship with the spirit of innovation and enquiry in close interface with industry.

M3: NICHE-FMS aims to cultivate management professionals with global mind set have high professional competence and outstanding leadership qualities

DESCRIPTION OF THE PROGRAMME

The Master of Business Administration (MBA) program stands as a pinnacle of graduate-level education, meticulously crafted to equip students with a comprehensive understanding of business management principles and practices. Spanning over two academic years, this program offers a rigorous curriculum that delves into various facets of business administration, including finance, marketing, operations, human resources, entrepreneurship, shipping and logistics, healthcare, aviation management, and artificial intelligence, culminating in strategic management.

At the core of the MBA curriculum lie foundational courses meticulously designed to instill a robust understanding of business fundamentals. These courses encompass disciplines such as accounting, economics, organizational behavior, and business ethics, serving as the bedrock upon which students build their expertise. Moreover, the program facilitates specialization through a diverse array of elective courses and concentrations, enabling students to tailor their education to align with their unique career aspirations and interests.

Integral to the MBA experience are immersive experiential learning opportunities that foster the application of theoretical knowledge in real-world scenarios. From engaging in dynamic case studies and collaborative group projects to participating in interactive simulations, internships, and consulting projects, students are continually immersed in hands-on experiences that cultivate practical skills and provide invaluable insights into the complexities of contemporary business landscapes.

Moreover, the program places a profound emphasis on leadership development, communication proficiency, critical thinking, and decision-making acumen, recognizing these as quintessential attributes for aspiring business leaders. Through a meticulously curated curriculum and engaging pedagogical approaches, students are nurtured to evolve into astute leaders primed to navigate the multifaceted challenges of the corporate realm with aplomb.

One of the hallmarks of the MBA program is its extensive networking ecosystem, facilitating meaningful interactions with peers, alumni, and industry stalwarts. These networking avenues serve as catalysts for forging valuable connections and harnessing invaluable resources for career advancement, thereby enriching the overall learning journey.

Upon successful completion of the MBA program, graduates emerge poised to embark on diverse career trajectories across an array of industries and sectors. Armed with a globally recognized and esteemed degree, they are empowered to pursue coveted roles in corporate management, consulting, finance, entrepreneurship, marketing, and beyond. The MBA credential not only confers a competitive edge in the job market but also unlocks avenues for continual professional growth and advancement, underscoring its enduring relevance and transformative potential in shaping the future leaders of tomorrow.

PROGRAMME OUTCOME – POS

Programme Outcome -PO	
PO-A	An ability to identify, analyze formulate and use the appropriate managerial skills for obtaining solution.
PO-B	An ability to function effectively on multi-disciplinary teams
PO-C	Apply conceptual business foundations to solve practical decision-making problems
PO-D	Recognize and address ethical issues and values and apply them in organizational settings
PO-E	Integrate tools and concepts from multiple functional areas (i.e. finance, marketing, operations, logistics, etc.)to solve business problems
PO-F	Identifybusinessopportunities,designandimplementinnovationsinwork space
PO-G	An ability to communicate effectively, both in writing and orally
PO-H	A Knowledge of contemporary issues

Duration of the programme: 2 Years/ IV Semesters

Total credit: 49

SEMESTER I

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MA4505	Statistics for Management	3	1	0	4
2.	MS4501	Integrated Business Management	3	0	0	3
3.	MS4502	Economic Decisions in Business	3	0	0	3
4.	MS4503	Advanced Organizational Behaviour	3	0	0	3
5.	MS4504	Managerial Accounting	3	0	0	3
6.	MS4505	Corporate Law & Ethics	3	0	0	3
7.	MS4506	Strategic Business Communication	3	0	0	3
8.	MS4507	Entrepreneurship& Innovation	3	0	0	3
TOTAL			**24**	**1**	**0**	**25**

SEMESTER – II

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MA4506	Resource Management Techniques	3	1	0	4
2.	MS4508	Marketing Management	3	0	0	3
3.	MS4509	Financial Management	3	0	0	3
4.	MS4510	Human Resource Management	3	0	0	3
5.	MS4511	Production and Operations Management	3	0	0	3
6.	MS4512	Research Methodology	3	0	0	3
7.	MS4513	Business Analytics	3	0	0	3
PRACTICAL						
8.	MS4571	Data Analysis And Business Modelling Lab	0	0	0	2
TOTAL			**21**	**1**	**0**	**24**

SYLLABUS FORMAT

SEMESTER – I

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MA4505	Statistics for Management	3	1	0	4
2.	MS4501	Integrated Business Management	3	0	0	3
3.	MS4502	Economic Decisions in Business	3	0	0	3
4.	MS4503	Advanced Organizational Behaviour	3	0	0	3
5.	MS4504	Managerial Accounting	3	0	0	3
6.	MS4505	Corporate Law & Ethics	3	0	0	3
7.	MS4506	Strategic Business Communication	3	0	0	3
8.	MS4507	Entrepreneurship& Innovation	3	0	0	3
TOTAL			**24**	**1**	**0**	**25**

MA4505	STATISTICS FOR MANAGEMENT	L	T	P	C
		3	1	0	4

OBJECTIVE:

To equip the students with different statistical techniques to summarize, analyse the interpret data, which are essential for decision making. Also the students should familiarize to solve statistical problems using computer packages like SPSS.

SUBJECT CODE: MA4505 SUBJECT NAME: STATISTICS FOR MANAGEMENT		
Course Outcome – Cos		**Cognitive Skill**
CO-01	Represent and statistically analyze data both graphically and numerically. Analyze and interpret statistical data using appropriate probability distributions, e.g. binomial and normal.	R, U, A, E, An
CO-02	Build-up the ability to perform a regression analysis, and compute and interpret the coefficient of correlation. Able to understand and to apply the concepts and methods underlying the analysis of univariate time series, and the context for interpretation of results	R, U, A, E, An
CO-03	Perform parameter testing techniques, including single mean and difference of means. Understand the concept of Analysis of Variance	R, U, A, E, An
CO-04	Able to test the samples using Non- parametric test	R, U, A, E, An

CO-05	Understand the concepts of Quality Control and Statistical Process Control (SPC), Control Charts for Variables. Set Mean Chart Limits ($\overline{X}$ -Charts), Range Chart Limits (R-Charts) and Control Charts for Attributes (p-charts and c-charts).	R, U, A, E, An

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	S	S	S	S	S	S	S
CO-02	L	S	M	S	S	M	S	S
CO-03	S	S	S	S	M	S	S	S
CO-04	S	M	S	S	S	S	S	S
CO-05	S	S	S	S	L	S	S	L

S-Strong, M-Medium,L-Low,N-Not relevant

UNIT I DESCRIPTIVE STATISTICS AND DISTRIBUTIONS (9)

Introduction to Statistics – Classification, Frequency distribution: Discrete and continuous frequency distribution. – Diagrammatic and Graphic representation: Bar diagram, Rectangle diagram and Pie diagram – Histograms-. Measures of Central Tendency –Dispersion:Range, Standard deviation, Variance - Co-efficient of variation - Applications of Binomial and Normal distributions. (Problems only)

UNIT II CORRELATION AND TIME SERIES ANALYSIS (9)

Correlation Analysis- Karl Pearson‘s correlation coefficient-Regression lines.
Components of time series: Graphical Method, Method of Semi-Average, Method of Moving Average, Curve fitting by method of Least Square.

UNIT III TESTING OF HYPOTHESIS - PARAMETIRC TESTS (9)

Hypothesis testing: Test for means of large samples (ztest), Test for means of small samples (t-test), F-test, ANOVA- one and two way classifications

UNIT IV NON-PARAMETRIC TESTS (9)

Chi-square tests for independence of attributes and goodness of fit. Sign test for paired data. Rank sum test. Kolmogorov-Smirnov – test for goodness of fit, comparing two populations. Mann – Whitney U test and Kruskal Wallis test. One sample run test.

UNIT V STATISTICAL QUALITY CONTROL (9)

Quality Control –Chance causes and Assignable causes - Control charts for variables – Control chart for Mean ($\overline{X}$) and Range (R). Control charts for Attributes, Proportion of defective (p chart), Number of defectives per unit (c chart).

L: 45 + T: 15, TOTAL: 60 PERIODS

REFERENCES:

1. Gupta.S.P ― Statistical Methods‖ Sultan Chand &Sons 38th Edition 2004

2. Srivastava, S.C. ―Fundamentals of Statistics‖, Sangya Srivastava Anmol Publications Private Limited, New Delhi,2006.
3. Bruce L. Bowcman, Richard T.O. Connell and Michael L. Hand, ―Business Statistics in Practice‖, 2nd Edition, McGraw – Hill, 2001.

MS4501	INTEGRATED BUSINESS MANAGEMENT	L	T	P	C
		3	0	0	3

OBJECTIVES:

1. To introduce students to the fundamental concepts and theories of management, enabling them to develop a strong foundation in the subject.
2. To familiarize students with different approaches to management and their practical implications in real-world scenarios.
3. To develop students' skills in decision-making, planning, organizing, and controlling, essential for effective management in business environments.
4. To provide an understanding of the staffing and directing functions of management, including topics such as recruitment, training, leadership, and communication.
5. To enhance students' knowledge of international business organizations and the impact of globalization on business operations, encouraging a global mindset in their future careers.

SUBJECT CODE: MS4501 SUBJECT NAME: INTEGRATED BUSINESS MANAGEMENT		
Course Outcome – Cos		**Cognitive Skill**
CO-01	Explain the nature, scope, and functions of management and the contributions made by key management thinkers throughout history	U,R
CO-02	Apply different approaches to management, such as the systems approach, contingency approach, and decision theory approach, to solve management problems	A,R
CO-03	Analyze and develop effective plans, considering planning premises, components of planning, and the importance of the planning process.	R, U, A, E, An
CO-04	Demonstrate knowledge of the staffing and directing functions, including selection, training, motivation, leadership, and communication techniques	A,E
CO-05	Evaluate the significance of international business organizations, understand different modes of international trade, and assess the implications of globalization on business operations, including the role of multinational corporations and ethical considerations	E,AN

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	S	S	S	S	S	S	S
CO-02	L	S	S	S	S	M	S	S
CO-03	S	S	M	S	S	S	S	S

CO-04	S	S	S	S	S	S	L	S
CO-05	S	L	S	S	M	S	S	S

S-Strong, M-Medium,L-Low,N-Not relevant

UNIT I INTRODUCTION 9

Management: Definition – Nature – Scope and Functions – Management Science or Art – Management thoughts – History and Evolution – Contribution of F.W. Taylor – Scientific Management – Contribution by Fayol – Peter F. Drucker – Gilbreth – Mary Follet – Barnard – Herbert Simon contributions – Approaches to Management – Management Science approach – Human Behaviour approach – Systems approach – Contingency approach – Empirical approach – Managerial Roles approach – Decision theory approach – Re-Engineering approach.

UNIT II PLANNING AND ORGANISING 9

Planning – Nature, Importance and Planning Process – Planning premises – Components of planning – MBO – Decision making – Meaning – Types – Process – Decision Making under Uncertainly – Forms of Organisation – Structure – Departmentation – Span of control - Authority and Responsibility – Centralisaion and Decentralisation – Delegation of Authority

UNIT III STAFFING, DIRECTING & CONTROLLING 9

General Principles, importance and techniques – Man power planning – Selection – Training and Development – Needs – Methods – Performance Appraisal – Methods – Job Analysis – Motivation – Leadership – Communication – Controlling – Objectives and Process of control – Devices of control– Integrated control – Special control techniques –Management Audit – Requirement for effective system – Budgetary control.

UNIT IV INTERNATIONAL BUSINESS ORGANIZATIONS 9

Evolution and Development of International Business – Importance – Theories of International Business _ Modes of International trade – Licensing – Franchising – Management contracts – International Monetary Fund – World Bank – International Financial Corporation – Asian Development Bank – UNCTAD, UNIDO, International Trade Centre.

UNIT V Globalization 9

Globalization - Dimensions –Globalization of Business – Essential conditions of Globalization – Advantages – Implications and impact. Multinational Corporations – Definition – Code of Conduct – Merits and De-merits – Multinationals in India - intellectual property regime and the R&D environment.

TOTAL: 45 HOURS

BOOKS FOR REFERENCE:

[1]. Management: Concept, Theory and Practices, S.N. Chand, 2022

[2]. Management Concept & Practices - SBPD Publication, Sanjay Gup, SBPD Publications, 2021

[3]. _Fundamentals of Management‘ – Stephen P. Robbins and David A. Decenzo, Pearson Education.

[4]. _Management Concepts and Strategies‘ – J.S. Chandan, Vikas Publishing House, New Delhi.

[5]. _Principles and Practice of Management‘ – L.M. Prasad, Sulthan Chand, New Delhi.

[6]. _Business Ethics and Corporate Governance, - Ghosh. B.N., Tata McGraw Hill.

MS4502	ECONOMIC DECISIONS IN BUSINESS	L	T	P	C
		3	0	0	3

OBJECTIVES:

1. To provide students with a solid foundation in managerial economics, enabling them to understand the economic principles underlying business decision-making.
2. To familiarize students with the different types of business decisions and the decision-making process employed by managers.
3. To develop students' skills in analyzing demand, including demand functions, elasticity of demand, and demand forecasting techniques.
4. To enhance students' understanding of cost analysis, production functions, and cost functions, enabling them to evaluate the determinants of costs in business operations.
5. To explore pricing and market structures, including perfect competition, monopoly, monopolistic competition, and oligopoly, and to analyze pricing strategies and price discrimination.

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Subject code: MS4502 Subject Name: Economic Decisions in Business		
Course Outcome – Cos		**Cognitive Skill**
CO-01	Apply economic principles to managerial decision-making and analyze the impact of economic factors on business operations.	A
CO-02	Evaluate demand functions, determine elasticity of demand, and forecast demand for products or services.	E
CO-03	Utilize utility theory, indifference curves, and marginal analysis to analyze consumer behavior and make informed pricing decisions	U
CO-04	. Analyze production functions, cost functions, and different types of costs to understand the cost structure of a business and make cost-effective decisions	An
CO-05	Assess different market structures, understand pricing strategies, and analyze the impact of market competition on pricing and profitability	U

Mapping of Course Outcome with Programme Outcome

PO / **CO**	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	S	S	L	S	S	S	S
CO-02	S	L	S	S	S	S	S	S
CO-03	S	S	S	S	S	M	S	S
CO-04	S	S	S	S	S	S	S	M
CO-05	S	M	S	S	S	S	M	S

S-Strong, M-Medium,L-Low,N-Not relevant

UNIT I INTRODUCTION **9**

General Foundations of Managerial Economics - Economic Approach - Circular Flow of Activity – The nature of managerial decision making-types of business decisions-Managerial decision-making process.

UNIT II DEMAND AND COST ANALYSIS **9**

Demand Function — Elasticity of demand - Determinant of Demand -Utility and Demand – Cardinal and Ordinal Utility Analysis– Indifference Curves and Maps –Demand Forecasting - Production Functions in the Short and Long Run -Factors of Production -Cost Functions – Determinants of Costs -Type of Costs.

UNIT III PRICING AND MARKET STRUCTURE **9**

Price and Output Decisions in Different Market – Perfect Competition – Monopoly – Monopolistic Competition – Price Discrimination – Pricing Policy - Oligopoly – Cournots Model of Duopoly – Kinked Demand Curve.

UNIT IV MACRO ECONOMIC ANALYSIS **9**

National Income – National Income Concepts - Economic Indicators - Inflation – Causes of Inflation– Types of Inflation — Deflation – Business Cycles – Phases - Fluctuation in Foreign Exchange rate – Determinants of Foreign exchange rates – Forex market.

UNIT V MACRO ECONOMIC ENVIRONMENT **9**

Economic Transition in India - Liberalization, Privatization and Globalization - Public-Private Participation (PPP) - Foreign Direct Investment(FDIs).
One case study to be discussed – per unit – in the class.

TOTAL: 45 HOURS

BOOKS FOR REFERENCE:

[1]. _Managerial Economics‘- Dr. H. L. Ahuja, S. Chand & company limited.
[2]. _Managerial Economics‘ – D.N. Dwivedi, Vikas Publishing House Private Limited, New Delhi
[3]. _Managerial Economics‘ - Varshney R.L. &Mageswari, P.L. Mehta, Sultan Chand,
[4]. _Economics‘ – Paul A. Samuelson, McGraw Hill
[5]. _Managerial Economics‘ – Peterson & Lewis, PH1.

		L	T	P	C
MS4503	**ADVANCED ORGANIZATIONAL BEHAVIOUR**	3	0	0	3

OBJECTIVES:

1. To introduce students to the fundamental concepts and theories of organizational behaviour, emphasizing the need and importance of studying human behaviour in organizations.
2. To analyze individual behaviour, including attitudes, personality, perception, learning, and motivation, and their implications for individual performance and job satisfaction.
3. To examine group behaviour, including theories of group dynamics, organizational structure, decision-making processes, employee participation, conflict management, and team building.
4. To explore the concepts of leadership and communication, including sources of power, leadership theories, interpersonal and organizational communication, and the role of effective communication in organizational success.
5. To understand organizational dynamics, including organizational culture and climate, organizational change, resistance to change, creativity and innovation, and the role of organizational development in improving efficiency and effectiveness.

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SUBJECT CODE: MS4503 SUBJECT NAME: ADVANCED ORGANIZATIONAL BEHAVIOUR		
Course Outcome – Cos		**Cognitive Skill**
CO-01	Understand and explain the fundamental concepts, models, and theories of organizational behaviour and their relevance in managing people within organizations.	U
CO-02	Analyze individual behaviour factors, such as attitudes, personality, perception, learning, and motivation, and apply this knowledge to improve individual performance and job satisfaction	An
CO-03	Assess group behaviour dynamics, including organizational structure, decision-making processes, employee participation, conflict management, and team building, to enhance group effectiveness and collaboration.	U,R
CO-04	Evaluate leadership styles, sources of power, and communication processes in organizations, and apply effective leadership and communication strategies to foster a positive	E
CO-05	Analyze and apply organizational dynamics concepts, such as organizational culture, change management, creativity and innovation, and organizational development, to enhance organizational efficiency and effectiveness	An

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	S	S	S	S	S	S	S
CO-02	S	S	S	S	S	S	S	S
CO-03	S	S	S	S	S	S	S	S
CO-04	S	S	S	S	S	S	S	S
CO-05	S	S	S	S	S	S	S	S

S-Strong, M-Medium,L-Low,N-Not relevant

UNIT I INTRODUCTION **9**

Definition, need and importance – Management Functions – Roles - Skills – Fundamental Concepts – Hawthrone Experiments and their Significance in Industry – Models of Organizational Behaviour – Disciplines - Organizational Behaviour Process

UNIT II INDIVIDUAL BEHAVIOUR **9**

Foundations of Individual Behaviour – Attitudes – Components - Personality – Personality Determinants – Personality Theories - Perception – Learning – Learning Theories - Motivation – Motivational Theories.

UNIT III GROUP BEHAVIOUR **9**

Organizational Structure and theories – Decision process – Groups in Organization – Formal Vs Informal Groups – Group Dynamics – Employee Participation – Transactional Analysis – Team Building – Conflict - Organizational Conflict – Management of Conflict – Negotiation – Importance-

Negotiation Process - Common Negotiation Mistakes - Tools of Powerful Negotiations.

UNIT IV LEADERSHIP AND COMMUNICATION 9

Power and authority Sources of Power. Leadership – Definition – Importance – Leadership Theories – Communication – Functions – Communication process - Interpersonal Communication - Organizational Communication – Barriers Effective Organizational Communication.

UNIT V ORGANIZATIONAL DYNAMICS 9

Organizational Culture and Climate – Organizational Change – Resistance to Change – Change Management - Creativity and Innovation - Organizational Development - Organizational.Efficiency and Effectiveness. Discussion of real-world case studies related to organizational behavior issues - Application of theoretical concepts to practical situations.

Recommended Textbooks:

[1]. Robbins, S. P., Judge, T. A., & Campbell, T. T. (2020). Organizational Behavior (18th ed.). Pearson.
[2]. Luthans, F. (2017). Organizational Behavior: An Evidence-Based Approach (13th ed.). McGraw-Hill Education.
[3]. Colquitt, J. A., LePine, J. A., & Wesson, M. J. (2020). Organizational Behavior: Improving Performance and Commitment in the Workplace (6th ed.). McGraw-Hill Education.

Reference Books:

[1]. Greenberg, J. (2017). Behavior in Organizations (11th ed.). Pearson.
[2]. Kinicki, A., & Fugate, M. (2018). Organizational Behavior: A Practical, Problem-Solving Approach (2nd ed.). McGraw-Hill Education.

MS4504	**MANAGERIAL ACCOUNTING**	L	**T**	**P**	**C**
		3	0	0	3

OBJECTIVES:

1. Understand the fundamental concepts, conventions, and principles of accounting applicable to managerial decision-making.
2. Develop practical knowledge and skills in preparing, analyzing, and interpreting financial statements of organizations.
3. Apply cost accounting techniques to determine product costs, analyze cost behavior, and support managerial decision-making.
4. Utilize management accounting tools, such as ratio analysis, fund flow analysis, cash flow analysis, and budgetary control, for effective planning and control.
5. Evaluate and interpret financial and managerial accounting information to support strategic decision-making and enhance organizational performance.

Subject Code: MS4504 Subject Name: Managerial Accounting		
Course Outcome – Cos		**Cognitive Skill**
CO-01	Apply accounting concepts, conventions, and principles to analyze and record financial transactions accurately.	A
CO-02	Prepare and interpret financial statements, including income statements, balance sheets, and cash flow statements.	U,R
CO-03	Analyze and evaluate the costs associated with producing goods or providing services using cost accounting techniques.	An

CO-04	Utilize management accounting tools and techniques to analyze financial statements, evaluate performance, and make informed business decisions	An,E
CO-05	. Apply budgeting techniques and use variance analysis to monitor and control organizational performance	A

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	L	S	S	S	M	S	S
CO-02	S	S	S	S	S	S	S	S
CO-03	S	L	S	S	S	S	S	S
CO-04	S	S	S	S	M	S	S	L
CO-05	M		S	S	S	S	S	S

S-Strong, M-Medium,L-Low,N-Not relevant

Unit 1: Introduction to Managerial Accounting **7**

Introduction to Managerial Accounting: Definition, nature, and scope - Managerial versus Financial Accounting: Differences and similarities - Cost concepts and classifications -Cost behaviour analysis: Fixed costs, variable costs, and mixed costs - Cost-volume-profit analysis: Breakeven point, contribution margin, and margin of safety.

Unit 2: Costing Systems and Cost Allocation **8**

Job Order Costing: Cost accumulation, job order cost sheets, and overhead allocation - Process Costing: Equivalent units, weighted average method, and FIFO method - Activity-Based Costing (ABC): Principles, cost drivers, and advantages - Cost Allocation: Direct allocation, step-down allocation, and reciprocal allocation methods - Joint and By-Product Costing: Cost allocation methods and decision-making implications.

Unit 3: Budgeting and Variance Analysis **10**

Budgeting: Types of budgets (master budget, flexible budget, and capital budget), budgeting process, and budgetary control - Standard Costs and Variance Analysis: Standard costing system, direct material and labour variances, and overhead variances - Performance Evaluation: Return on Investment (ROI), Residual Income (RI), and Balanced Scorecard - Responsibility Accounting: Cost, profit, and investment centres - Transfer Pricing: Methods and implications.

Unit 4: Decision-Making and Relevant Costs **10**

Relevant Costs and Decision-Making: Differential costs, opportunity costs, and sunk costs -Cost-Volume-Profit (CVP) Analysis for Decision-Making: Target profit analysis, make-or-buy decisions, and special order decisions Pricing Decisions: Cost-plus pricing, target costing, and pricing strategies - Capital Budgeting: Time value of money, payback period, net present value, internal rate of return, and profitability index Risk and Uncertainty in Decision-Making: Sensitivity analysis and expected value.

Unit 5: Performance Measurement and Management **10**

Performance Measures: Return on Investment (ROI), Residual Income (RI), Economic Value Added (EVA), and Quality Costs - Balanced Scorecard: Perspectives (financial, customer, internal processes, and learning and growth), and performance measures - Lean Accounting: Principles and techniques for eliminating waste and improving efficiency - Environmental Management Accounting: Environmental costs, eco-efficiency, and sustainability - Emerging Topics in Managerial Accounting: Activity-Based Management (ABM), target costing, and strategic cost management.

TOTAL: 45 HOURS

BOOKS FOR REFERENCE:

Recommended Textbooks:

1. Horngren, C. T., Datar, S. M., Rajan, M. V., Beaubien, A., & Graham, J. (2020). Cost Accounting: A Managerial Emphasis (16th ed.). Pearson.
2. Garrison, R. H., Noreen, E. W., Brewer, P. C., &Chesley, R. (2019). Managerial Accounting (17th ed.). McGraw-Hill Education.
3. Jiambalvo, J. (2018). Managerial Accounting (7th ed.). Wiley.
4. Atkinson, A. A., Kaplan, R. S., Matsumura, E. M., & Young, S. M. (2021). Management Accounting: Information for Decision-Making and Strategy Execution (8th ed.). Pearson.

Reference Books:

1. Hansen, D. R., &Mowen, M. M. (2018). Cost Management: Accounting and Control (7th ed.). Cengage Learning.
2. Bhattacharya, S., Dearden, J., &Prodhan, N. C. (2021). Management Accounting: Concepts and Applications. Oxford University Press.
3. Drury, C. (2018). Management and Cost Accounting (10th ed.). Cengage Learning EMEA.
4. Langfield-Smith, K., Thorne, H., & Hilton, R. (2021). Management Accounting: Information for Managing and Creating Value (9th ed.). McGraw-Hill Education.

MS4505	CORPORATE LAW & ETHICS	L	T	P	C
		3	0	0	3

OBJECTIVES:

1. To familiarize students with the legal framework and principles underlying business contracts, including the Indian Contract Act, and provide an understanding of the essential elements, formation, performance, breach, and remedies associated with contracts.
2. To provide an in-depth understanding of special contracts, such as sales of goods contracts and negotiable instruments, including their formation, performance, rights and liabilities of parties, and discharge mechanisms.
3. To develop students' knowledge of company law, including the formation of companies, memorandum and articles of association, prospectus, directors' powers and liabilities, winding up of companies, and corporate governance principles.
4. To introduce students to the basics of tax laws, including corporate tax planning, computation of total income, tax planning under various heads, and an overview of Goods and Service Tax (GST) principles.
5. To explore industrial laws, including an overview of key acts related to factories, industrial disputes, gratuity, employees' provident fund, employees' state insurance, and the Code on Wages. Additionally, to emphasize the importance of business ethics and emotional intelligence in the corporate environment.

Subject Code: MS4505 Subject Name: Corporate Law & Ethics		
Course Outcome – Cos		**Cognitive Skill**
CO-01	To familiarize students with the legal framework and principles underlying business contracts, including the Indian Contract Act, and provide an understanding of the essential elements, formation, performance, breach, and remedies associated with contracts.	U,R
CO-02	To provide an in-depth understanding of special contracts, such as sales of goods contracts and negotiable instruments, including their formation, performance, rights and liabilities of parties, and discharge mechanisms.	U,R
CO-03	To develop students' knowledge of company law, including the formation of companies, memorandum and articles of association, prospectus, directors' powers and liabilities, winding up of companies, and corporate governance principles.	An
CO-04	introduce students to the basics of tax laws, including corporate tax planning, computation of total income, tax planning under various heads, and an overview of Goods and Service Tax (GST) principles.	An
CO-05	explore industrial laws, including an overview of key acts related to factories, industrial disputes, gratuity, employees' provident fund, employees' state insurance, and the Code on Wages. Additionally, to emphasize the importance of business ethics and emotional intelligence in the corporate environment	E

UNIT I THE INDIAN CONTRACT ACT, 1872 9

Essential of a valid Contract, void agreement, Formation of a Contract, Performance of Contracts, Breach of Contracts and its remedies - Law of Agency – How Created – Classification of Agents - Relations of Principal and Agent

UNIT II SPECIAL CONTRACTS 9

Sales of Goods Act, 1930: Formation of Sales Contract – Transfer of title- Performance of Sales Contract- Conditions and Warranties – Rights of an Unpaid Seller. The Negotiable Instrument Act,1881:Nature and types – Negotiation and Assignment – Holder in Due Course, Special rules for
Cheque and drafts, discharge of negotiable instruments.

UNIT III COMPANY LAW 9

Nature and types of Companies, Formation of Company, Memorandum and Articles of Association, Prospectus, Power, Duties and liabilities of Directors, Winding up of company, Corporate Governance.

UNIT IV TAX LAWS 9

Overview of Corporate Tax planning – computation of total income and tax planning under various heads for Corporate Assessee – Overview of Goods and Service tax (GST) – concepts and general principles – charge of Goods and service tax – registration – valuation of taxable good and services – Payment of tax – Furnishing of Returns of tax

UNIT V INDUSTRIAL LAW AND ETHICS 9

An overview of Factories Act - Industrial Dispute Act - Payment of Gratuity Act - Employees Provident Fund and Miscellaneous Provisions Act - Employees State Insurance Act - The Code on Wages, 2019-Business Ethics and Emotional intelligence

TOTAL: 45 PERIODS

BOOKS FOR REFERENCE:

[1]. ‗Elements of Mercantile Law‘ – N.D. Kapoor, Sulthan-chand and Company, New Delhi.2019
[2]. ‗Company Law‘ Companies Act 2013 (Corporate Law 1) | Dr. SR Myneni | Law Book For Students | Asia Law House | 2021
[3]. Commercial Law Including Company Law & Industrial Law Business Law by Arun Kumar Sen, Jitendra Kumar Mitra (Author), The World Press Private Limited (Publisher) 2021
[4]. Direct Taxes Planning and Management- Dr. Vinoth K. Singhania 2023
[5]. ‗Corporate Tax Planning and Managrment‖ Dr.GirishAhuja.Dr.Ravi Gupta 2023
[6]. Bar Acts: Indian Contract Act, 1872, Sale of Goods Act 1930, Negotiable Instruments Act 1881

MS4506	STRATEGIC BUSINESS COMMUNICATION	L	T	P	C
		3	0	0	3

OBJECTIVES:

1. To introduce students to the fundamental concepts and models of communication in a business context.
2. To develop students' skills in various forms of written business communication, including reports, emails, memos, and social media content.
3. To enhance students' oral communication abilities, including delivering effective presentations, participating in meetings, and utilizing visual aids.
4. To foster students' cross-cultural communication competence by understanding cultural influences, adapting communication strategies, and working effectively in multicultural teams.
5. To equip students with crisis management skills and ethical considerations in business communication, including planning and implementing crisis communication strategies, managing media relations, and utilizing social media platforms

Subject Code: MS4506 Subject Name: Strategic Business communication		
Course Outcome – Cos		**Cognitive Skill**
CO-01	Apply principles of verbal and nonverbal communication to enhance interpersonal skills and listening abilities in a business context.	A
CO-02	Deliver compelling and professional business presentations utilizing appropriate visual aids and managing Q&A sessions effectively	U
CO-03	Adapt communication strategies to different cultural contexts, demonstrating sensitivity to cultural differences and effectively communicating in multicultural teams	A
CO-04	Analyze and respond to crisis situations by developing crisis communication plans, managing media relations, and utilizing social media platforms appropriately	An
CO-05	Evaluate and address ethical considerations in business communication, demonstrating awareness of legal and ethical issues and making ethical decisions in various communication scenarios.	E

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	S	L	S	S	S	M	S
CO-02	L	S	S	S	S	S	S	S
CO-03	S	S	S	L	S	S	S	S
CO-04	S	S	S	S	S	S	S	S
CO-05	M	S	S	S	M	S	S	S

S-Strong, M-Medium,L-Low,N-Not relevant

Unit 1: Introduction to Strategic Business Communication **9**

Importance of Communication in Business - Models of Communication - Principles of Communication - Verbal and Nonverbal Communication - Barriers to Effective Communication - Role and Importance of Strategic Communication in Business - Communication Channels in Business -Introduction to Interpersonal Skills - Listening Skills in Business

Unit 2: Written Business Communication **9**

Basics of Business Writing - Structure of Business Reports and Proposals - Writing Effective Business Emails -Writing Memos and Notices - Writing for Social Media Platforms - Writing for Websites and Blogs - The importance of Clarity and Brevity in Business Writing -Proofreading and Editing in Business Writing - Legal and Ethical Considerations in Written Communication

Unit 3: Oral Business Communication **9**

Fundamentals of Effective Presentations - Structure and Preparation of a Business Presentation - Use of Visual Aids in Presentations - Conducting and Participating in Meetings - Conference Calls and Video Conferencing - Improving Interpersonal Communication Skills - Understanding Non-Verbal Communication - Importance of Active Listening - Managing Q&A Sessions in Business Presentations

Unit 4: Cross-Cultural and International Business Communication **9**

Introduction to Cross-Cultural Communication - The Impact of Culture on Communication - Challenges in Cross-Cultural Communication - Strategies for Effective Cross-Cultural Communication - Business Etiquette in Different Cultures - Communication in a Global Business Environment - Communicating in Multicultural Teams - Role of Technology in International Business Communication - Case Studies of Cross-Cultural Communication

Unit 5: Crisis Management and Ethical Considerations in Business Communication **9**

Introduction to Crisis Communication - The Role of Communication in Crisis Management - Pre-Crisis Planning and Communication Strategies - Media Relations during a Crisis - Communication during and after a Crisis - Ethical Issues in Business Communication - Role of PR in Crisis Management - Use of Social Media in Crisis Communication - Case Studies of Crisis Communication

Books for Reference:

[1]. "Business Communication: Building Critical Skills" - Locker, K. O., and Kaczmarek, S. K.
[2]. "Business Communication: Process and Product" - Guffey, M. E., and Loewy, D.
[3]. "Excellence in Business Communication" - Thill, J. V., and Bovee, C. L.
[4]. "Strategic Business Communication: An Integrated, Ethical Approach" - Farrell, R.
[5]. "Intercultural Business Communication" - Chaney, L. H., and Martin, J. S.
[6]. "The Handbook of Crisis Communication" - Coombs, W. T., and Holladay, S. J.

		L	T	P	C
MS4507	**ENTREPRENEURSHIP INNOVATION**	3	0	0	3

OBJECTIVES:

1. To understand the fundamental concepts and theories of entrepreneurship, including its evolution, different schools of thought, and its significance in the economy.
2. To develop the knowledge and skills necessary for idea generation, opportunity evaluation, and conducting a feasibility analysis to assess the viability of business opportunities.
3. To explore various aspects of planning and launching a venture, such as writing a business plan, securing financing, building a balanced team, and understanding legal structures and intellectual property rights.
4. To gain insights into innovation and its role in entrepreneurship, including different types of innovation, innovation strategies, managing risks, and fostering an innovation culture and environment.
5. To examine the challenges and strategies associated with scaling and managing growth in a startup, including growth strategies, leadership transitions, team management, financial management, and exit strategies.

Subject Code: MS4507 Subject Name: Entrepreneurship Innovation		
Course Outcome – Cos		**Cognitive Skill**
CO-01	Analyze and evaluate the viability of business opportunities through the application of idea generation techniques, feasibility analysis, market research, and competitive analysis	An

CO-02	Develop effective business plans, including the structure, components, and elevator pitch, while considering legal structures, intellectual property rights, and operational requirements	U,R
CO-03	Demonstrate an understanding of different types of innovation, innovation strategies, and the process of innovation from idea to market, while effectively managing risks and fostering an innovation culture.	U
CO-04	Apply growth strategies, such as organic growth and mergers/acquisitions, and identify and enter new markets to effectively scale a business, while navigating the challenges associated with growth	A
CO-05	Understand the significance of leadership transition, team management, financial management, and exit strategies in a growing venture, while learning from failure, turnaround situations, and successful growth case studies	U

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	m	S	S	S	S	S	S	S
CO-02	S	S	M	S	S	M	S	S
CO-03	S	S	S	S	S	S	S	S
CO-04	S	L	S	S	M	S	S	S
CO-05	S	S	S	S	S	L	S	M

S-Strong, M-Medium,L-Low,N-Not relevant

Unit 1: Introduction to Entrepreneurship **9**

Defining Entrepreneurship: Evolution and Different Schools of Thought - Importance of Entrepreneurship in the Economy - Traits and Characteristics of Successful Entrepreneurs - Types of Entrepreneurs: Lifestyle vs. Growth-Oriented - The Entrepreneurial Mindset and Attitude - Social Entrepreneurship - Women and Minority Entrepreneurship - Intrapreneurship: Entrepreneurship within Organizations - Entrepreneurial Failure and Lessons Learned

Unit 2: Idea Generation and Opportunity Evaluation **9**

Idea Generation: Techniques and Methods - Creativity and Innovation in Idea Generation - Identifying and Assessing Opportunities - Conducting a Feasibility Analysis - The Business Model Canvas - Market Research and Analysis for Entrepreneurs - Understanding Customer Needs - Competitive Analysis - The Value Proposition

Unit 3: Planning and Launching a Venture **9**

Writing a Business Plan: Structure and Components - The Elevator Pitch - Sources of Financing for Start-ups - Crowd funding and Venture Capital - Building a Balanced Team: Roles and Responsibilities - Legal Structure of the Business: Sole Proprietorship, Partnership, LLC, Corporation - Understanding Intellectual Property Rights - Setting Up Operations: Location, Layout, Equipment -

Launching the Venture: Timing, Process, Challenges

Unit 4: Innovation and Entrepreneurship **9**

Understanding Innovation: Definition, Types, and Importance - Sources of Innovation - The Process of Innovation: From Idea to Market - Innovation Strategies: Incremental vs. Radical Innovation - Innovation Leadership - Open Innovation and Co-Creation - Innovation Culture and Environment - Managing Risks in Innovation - Disruptive Innovation and Industry Change

Unit 5: Scaling and Managing Growth **9**

Growth Strategies for Start-ups: Organic Growth vs. M&A - Identifying and Entering New Markets - The Challenges of Scaling a Business - Leadership Transition and the Role of the Founder - Building and Managing Teams in a Growing Company - Financial Management for Growth - Exit Strategies: Acquisition, IPO, Succession - Failure, Turnaround, and the Role of Pivot - Case Studies of Successful Growth and Scale

Books for Reference:

[1]. "Entrepreneurship: Theory, Process, and Practice" - Kuratko, D. F.
[2]. "Innovation and Entrepreneurship" - Drucker, P.
[3]. "The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses" - Ries, E.
[4]. "The Art of Startup Fundraising" - Gonzalez, A.
[5]. "The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail" - Christensen, C. M.
[6]. "Zero to One: Notes on Startups, or How to Build the Future" - Thiel, P. & Masters, B.

SEMESTER – II

SL. NO	COURSE CODE	COURSE TITLE	L	T	P	C
THEORY						
1.	MA4506	Resource Management Techniques	3	1	0	4
2.	MS4508	Marketing Management	3	0	0	3
3.	MS4509	Financial Management	3	0	0	3
4.	MS4510	Human Resource Management	3	0	0	3
5.	MS4511	Production and Operations Management	3	0	0	3
6.	MS4512	Research Methodology	3	0	0	3
7.	MS4513	Business Analytics	3	0	0	3
PRACTICAL						
8.	MS4571	Data Analysis And Business Modelling Lab	0	0	0	2
TOTAL			**21**	**1**	**0**	**24**

		L	T	P	C
MA4506	**RESOURCE MANAGEMENT TECHNIQUES**	3	0	0	4

OBJECTIVE:

To develop mathematical skill to analyse various complex problems in the business environment and to study applications of operations research in functional areas of management.

Subject Code: MA4506	Subject Name: Resource Management Techniques	
Course Outcomes – Cos		**Cognitive Skills**
CO - 01	Formulate and solve mathematical model (linear programming problem) for a physical situations like production, distribution of goods and economics and solve them graphically in 2 dimensions. Solve the problem of transporting the products from origins to destinations with least transportation cost and assignment problems.	R, U, A, E, An
CO - 02	Understand the concept of Inventory Control and can do the problems on it.	R, U, A, E, An
CO - 03	Ability to design new simple models, like: CPM, PERT. Learn how to define a project in terms of activities such that a network can be used to describe the project, compute the critical path and the project completion time, convert optimistic, most probable, and pessimistic time estimates into expected activity time estimates.Determine optimal sequence of n-jobs to be processed on k-machines that minimize the Total elapsed time	R, U, A, E, An
CO - 04	Understand the terminology & nomenclature appropriate queueing theory, demonstrate the knowledge and understand the various queueing models and formulate concrete problems using	R, U, A, E, An
	queueing theoretical approaches.Capable of simulate data and learn its application in Queuing system.	
CO - 05	Ability to solve the zero-sum two- person games .Assess and formulate decision making strategies to address operating issues that have short, intermediate or long lead times	R, U, A, E, An

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	L	S	S	S	S	S	S
CO-02	S	S	S	L	S	S	S	S
CO-03	S	S	S	S	S	S	M	S
CO-04	S	M	S	L	S	S	S	S
CO-05	S	S	S	S	M	S	S	S

S-Strong, M-Medium,L-Low,N-Not relevant

UNIT I GRAPHICAL SOLUTION OF LINEAR PROGRAMMING PROBLEM AND ITS APPLICATION (9)

Linear Programming – Formulation, Graphical Solution.Transportation problem- Vogel‘s approximation method – MODI method. Assignment problem (balanced problem only) – Hungarian method – Traveling salesman problem.

UNIT II INVENTORY CONTROL (9)

Deterministic Inventory Models-EOQ Models with shortages-EOQ Models without shortages-Inventory Models with Probabilistic Model- Instantaneous demand with Stock level Discrete and Continuous

UNIT III PROJECT MANAGEMENT AND SEQUENCING PROBLEMS (9)

Network- Construction – Critical Path Method – Project Evaluation and Review Technique. Job Sequence: Introduction- Johnsons rule for n jobs through two machines- n jobs through three machines- n jobs through m machines- 2 jobs with K machines.

UNIT IV QUEUEING THEORY ANDSIMULATION (9)

Introduction – characteristics- queue discipline - Kendall notation- Queues with Single server infinite and finite system capacity -simple problems.

Simulation: Introduction to Simulation – Random Number Generation using Congruence Method, Applications to Queueing problems

UNIT V GAME THEORY AND DECISION THEORY (9)

Two person zero sum games – Saddle point – Dominance rule - Graphical solution.

Decision Theory: Concepts of decision making; Decision environments; Decision under uncertainty and under risk .

L: 45 + T: 15, TOTAL: 60 PERIODS

REFERENCES:

1. Gupta P.K., Man Mohan, ―Problems in Operations Research‖ (Methods and Solutions), Sultan Chand and Sons, Ninth Edition, 2003.
2. Hamdy A Taha,‖ Introduction to Operations Research‖, Prentice Hall India, Seventh Edition, Third Indian Reprint 2004.

		L	T	P	C
MS4508	**MARKETING MANAGEMENT**	3	0	0	3

OBJECTIVES:

1. To familiarize students with the fundamental concepts and theories of marketing management.
2. To develop an understanding of consumer behavior and its influence on marketing strategies.
3. To explore the components of the marketing mix and their role in creating a competitive advantage.
4. To equip students with the knowledge and skills required for conducting effective marketing research.
5. To examine the emerging trends in marketing and their impact on business strategies

Subject Code: MS4508 Subject Name :Marketing Management

Course Outcome – Cos		Cognitive Skill
CO-01	Demonstrate a comprehensive understanding of the concepts and theories of marketing management.	U,R
CO-02	Analyze consumer behavior and identify factors that influence consumer decision-making processes.	An
CO-03	Develop marketing strategies by segmenting the market, targeting specific customer groups, and positioning products or services effectively.	U,R
CO-04	Apply the marketing mix elements, including product planning, branding, pricing, distribution, advertising, sales promotions, and personal selling, to create a cohesive marketing strategy	A
CO-05	. Utilize marketing research techniques and tools to gather and analyze data, make informed marketing decisions, and evaluate customer satisfaction, preferences, and perceptions	E

Mapping of Course Outcome with Programme Outcome

PO\CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO1	S	S	M	S	M	M	L	M
CO2	S	S	L	S	M	M	M	M
CO3	S	S	M	S	S	M	L	M
CO4	S	S	M	S	S	M	L	S
CO5	S	S	L	S	M	S	M	S

S-Strong, M-Medium,L-Low,N-Not relevant

UNIT I Understanding Marketing Management 9

The Concepts of Marketing – Marketing Environment – Marketing‘s Relationship with other Functional Areas – Identifying customer - Market Segmentation, Targeting and Positioning - Role of Marketing with Special Reference of India.

UNIT II Consumer Behaviour 9

Consumer Behaviour –Factors influence on Consumer Behaviour-procurement process-decision making process - models of decision making and theories – Organizational Buyers – Marketing of Services.

UNIT III Marketing Mix 9

Marketing Mix: Product-Planning-New Product Development-Branding-Brand Vs Product-Pricing Decisions- Place —Channel and distribution-Supply –Advertising - Sales Promotions- Personal Selling.

UNIT IV Marketing Research 9

Types of Marketing Research – Market Research Process – Tools and Techniques – Applications of Marketing Research in Product Launching – Demand Estimation – Advertising and Brand Preference Studies – Customer Satisfaction – Customer Perception – Customer Distribution – Preparation of

Market Research Reports.

UNIT V Trends in Marketing 9

Marketing in a Globalized Environment – Online Marketing – Social media marketing - b2b marketing- relationship marketing – green marketing – rural marketing – Future of – CRM – Customer Based Business Strategy.

TOTAL: 45 HOURS

BOOKS FOR REFERENCE:

[1]. Kotler, P., & Keller, K. L. (2022). Marketing management (15th ed.). Pearson. ISBN 9780135204269.

[2]. Kotler, P., Kartajaya, H., & Setiawan, I. (2020). Marketing 4.0: Moving from traditional to digital. Wiley. ISBN 9781119482972.

[3]. Ramasamy, K., & Namakumari, S. (2019). Marketing management: Planning, implementation and control (3rd ed.). Macmillan Publishers India. ISBN 9789352179237.

[4]. Zikmund, W. G., & d'Amico, M. (2018). Marketing: Concepts and strategies (12th ed.). Cengage Learning. ISBN 9781337965157.

[5]. Douglas, J. D., & Craig, C. S. (2017). International marketing: A managerial approach (12th ed.). Wiley. ISBN 9781119184590.

[6]. Walker, B. J., & Mullins, J. W. (2018). Marketing management: A strategic decision-making approach (14th ed.). McGraw-Hill Education. ISBN 9780071824445.

[7]. Saxena, R. (2023). Marketing management (3rd ed.). Tata McGraw-Hill. ISBN 9788123943289.

MS4509	FINANCIAL MANAGEMENT	L	T	P	C
		3	0	0	3

OBJECTIVES:

1. To introduce students to the fundamental concepts and objectives of financial management.
2. To develop an understanding of the sources of finance and the cost of capital for businesses.
3. To examine different capital structure theories and their implications for financial decision-making.
4. To equip students with the knowledge and skills required for effective working capital management.
5. To provide students with the tools and techniques for evaluating investment opportunities through capital budgeting.

Subject code: MS4509 Subject Name :Financial Management		
Course Outcome – Cos		**Cognitive Skill**
CO-01	Understand the nature, scope, and objectives of financial management and its role in decision- making processes.	U,R
CO-02	Analyze various sources of finance and determine the cost of capital for different funding	An

CO-03	Evaluate capital structure theories and their impact on the financial decisions of a company.	E
CO-04	Apply concepts and techniques of working capital management to optimize liquidity and profitability	A
CO-05	Utilize different capital budgeting techniques to assess investment opportunities and make sound investment decisions based on risk and return considerations	An

Mapping of Course Outcome with Programme Outcome

PO\CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO1	S	M	M	S	M	M	M	M
CO2	S	S	L	M	L	M	M	S
CO3	S	S	L	S	L	M	L	M
CO4	S	S	M	M	M	S	L	S
CO5	S	S	L	M	L	S	M	S

S-Strong, M-Medium,L-Low,N-Not relevant

UNIT I Financial Management Overview **9**

Basic Concepts and Definitions - Nature, scope and objectives of financial management – Financial Decisions - finance functions - Risk and Return - Time Value of Money - Valuation Concepts and Models: Valuation of Securities –Bond or Debenture Valuation - Preference shares Valuation -Equity Shares Valuation - Case Studies

UNIT II Sources of Finance and Cost of Capital **9**

Source and Cost of finance – Classification of Sources of Fiancé - short term -medium term- long term –Security financing- Ownership securities: Equity – Preference – Creditorship securities: Bonds – Debentures - Loan financing – Innovative sources of finance: Venture Capital - Leasing - Hire Purchase – Euro issues- FCCBs – GDRs - ADRs – ADSs - Cost of Capital - Measurement of cost of Capital – Weighted average cost of Capital. – Case Studies

UNIT III Capital Structure and Dividend Policy **9**

Financial Structure - Capital Structure – Forms - Determinants – Theories of capital structure- Leverages: Financial Leverage- Operating leverage – Composite Leverage -. Dividend policy: determinants - Concepts of relevance – Irrelevance - Type of dividend policy - Practical consideration - Forms of dividends – Case Studies.

		L	T	P	C
MS4510	**HUMAN RESOURCE MANAGEMENT**	3	0	0	3

OBJECTIVES:

1. To introduce students to the concepts, scope, and objectives of human resource management.
2. To provide an understanding of the processes involved in HR planning, recruitment, and

selection.

3. To develop knowledge and skills in training and development, performance appraisal, and employee counseling.
4. To examine the principles and practices of compensation, including wage administration and welfare schemes.
5. To familiarize students with the concepts and approaches in industrial relations, grievance handling, and employee discipline

Subject Code: MS4510-Subject Name : Human resource Management		
Course Outcome – Cos		**Cognitive Skill**
CO-01	Understand the scope and importance of human resource management in organizations.	U,R
CO-02	Conduct job analysis and create job descriptions and specifications.	An
CO-03	Apply effective recruitment and selection methods to attract and retain qualified employees.	A
CO-04	Design and implement training and development programs to enhance employee skills and performance.	A
CO-05	Evaluate compensation systems and administer welfare schemes to promote employee	E

Mapping of Course Outcome with Programme Outcome

PO\CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO1	M	M	S	M	M	M	M	L
CO2	M	M	S	M	S	M	L	L
CO3	M	S	S	M	S	M	L	M
CO4	M	S	S	M	S	S	L	M
CO5	M	S	S	M	S	M	L	M

S-Strong, M-Medium,L-Low,N-Not relevant

UNIT – I Introduction of HRM **9**

Introduction to Human Resource Management – Definition and scope of PM, HRM and HPM – human resources planning – concept, aims and objectives – Job Analysis- Job description and job specification – recruitment – source of manpower supply – selection – test, interview and reference – induction and placement- promotion and transfer – Case Study

UNIT – II Training and Development **9**

Training and Development – assessment of training needs and training methodologies – evaluation of training schemes- management development programs and career planning – performance appraisal – concept and purpose – methods and techniques – employee counselling – Case Study.

UNIT – III Compensation **9**

Compensation – wage and salary administration – executive compensation packages- welfare and benefit schemes – quality circles and quality of work life – employee job evaluation – incentive schemes and bonus – welfare administration – employee morale and job satisfaction – Case Study.

UNIT – IV Industrial Relations **9**

Industrial relations- introduction to IR – concept and approaches – role of government, employees and trade unions in IR – employer employee relation – union management relations – industrial disputes –causes and effects – IR machinery – collective bargaining – conciliation – arbitration and adjudication – modern trends in IR – Case Study

UNIT – V Grievance Handling **9**

Employee grievance handling and redressal – complaint and grievance – grievance handling machinery and procedure – employee discipline – standing orders - suspension – retrenchment and dismissal – participative management – works committee – joint management council – computerization – human resources information system– Case Study.

TOTAL: 45 HOURS

BOOKS FOR REFERENCE:

[1]. Pattnayek, P. (2020). Human resource management (4th ed.). Prentice Hall. ISBN 9788120349396.

[2]. Flippo, E. E. (2016). Personnel management (9th ed.). McGraw-Hill Education. ISBN 9781259622533.

[3]. Memoria, C. B. (2021). Personnel management (12th ed.). Himalaya Publishers. ISBN 9788185836254.

[4]. Ashwathappa, K. (2021). Human resource and personnel management (7th ed.). Tata McGraw-Hill. ISBN 9788123946257.

[5]. Strauss, G., & Sayles, L. R. (2019). Managing human resources: The challenge of leadership in turbulent times (10th ed.). McGraw-Hill Education. ISBN 9781260119248.

[6]. Hersey, P., Blanchard, K. H., & Johnson, D. W. (2014). Management of organizational behavior: Leading human resources (10th ed.). Prentice Hall. ISBN 9780132989453.

		L	T	P	C
MS4511	**PRODUCTION AND OPERATIONS MANAGEMENT**	3	0	0	3

OBJECTIVES:

1. To introduce students to the concepts, scope, and objectives of production and operations management.
2. To provide students with knowledge and skills in capacity planning, location planning, layout planning, and production planning and control.
3. To enable students to understand supply chain management, purchase management, and stores management principles and practices.
4. To develop students' understanding of inventory management techniques, work study methods, and standard time estimation.

5. To familiarize students with quality management principles, maintenance management strategies, and project management frameworks.

SUBJECT CODE: MS4511 SUBJECT NAME : PRODUCTION AND OPERATIONS MANAGEMENT		
Course Outcome – Cos		**Cognitive Skill**
CO-01	Define and explain the scope, objectives, and historical evolution of production and operations management.	R.U
CO-02	Apply capacity planning techniques, location decision factors, and layout planning principles to optimize production systems	A
CO-03	Analyze and evaluate supply chain strategies, perform materials requirement planning, and manage purchasing and stores effectively	An
CO-04	Utilize inventory management models, conduct work study using method study and time measurement techniques, and estimate standard time.	An
CO-05	Understand and apply quality management concepts, statistical quality control tools,maintenance management principles, and project management frameworks	U,A

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	M	M	M	M	L	M	L	M
CO-02	S	S	M	M	L	M	M	S
CO-03	S	S	M	M	L	M	S	S
CO-04	S	S	M	M	L	S	M	S
CO-05	S	S	M	M	M	S	M	S

S-Strong, M-Medium,L-Low,N-Not relevant

UNIT I INTRODUCTION TO OPERATION MANAGEMENT 9

Production and Operations Management (POM) – Definition – Scope – Objectives – Importance – Role – Historical evolution. Systems view of production and operations management. Production systems (CAD, CIM, FMS) - Differences between manufacturing and Service Operations (Product Vs Services) – Case studies

UNIT II CAPACITY, LOCATION AND LAYOUT PLANNING 9

Capacity planning – Framework and Types; Location Planning – Location Decision Factors and Planning methods (Numerical); Layout planning – Planning and Principles of Layout, Classification of Plant Layout; Production Planning and Control – Functions, Sequencing and Scheduling (Numerical); Manufacturing Resource Planning

UNIT III SUPPLY CHAIN, PURCHASE AND STORES MANAGEMENT 9

Supply Chain Management – Strategy, Design and Integration, Vendor Selection Criteria and Rating (Numerical); Materials Requirement Planning (MRP I) – Planning Elements and Inputs (Numerical); Purchase Management – Principles, Process and Types of Purchasing Systems; Stores Management – Functions, Location, Layout and Accounting Procedures.

UNIT IV INVENTORY MANAGEMENT AND WORK STUDY 9

Inventory Management – Meaning, Types, Costs and Models – Purchasing Model without and with Shortages, Manufacturing Model without and with Shortages (Numerical), Selective Inventory Controlling Techniques (Numerical); Work study – Method study – Steps and Recording Techniques, Work Measurement (Time study) – Steps, Techniques and Estimation of Standard time (Numerical)

UNIT V QUALITY, MAINTENANCE AND PROJECT MANAGEMENT 9

TQM – Definition – Benefits – Obstacles – Frame work – Six Sigma Concepts of Process Capability – Quality Circles KAIZEN, JAPAN 5'S. UNIT V Quality, Maintenance and Project Management Quality Management – Concepts, Cost of quality, Dimensions, Tools, Statistical Quality Control charts – X and Range , c chart and p chart (Numerical); Maintenance Management – Functions,

Objectives, Types of plant maintenance, Cost balance, Types of failures, Individual and group machine replacements (Numerical); Project Management – Meaning, Phases / Framework, Roles and Responsibilities of Project manager

TOTAL: 45 PERIODS

BOOKS FOR REFERENCE:

[1]. Padhi, S. S. (2018). Operations management: Text and cases. Star Business Series. ISBN 9789350157274.

[2]. Panneerselvam, R. (2017). Production & operations management. Prentice Hall India private limited. ISBN 9788120349081.

[3]. Mahadevan, B. (2015). Operations management theory and practice (3rd ed.). Pearson Education India. ISBN 9788131726262.

[4]. Gaither, N., & Frazier, G. (2013). Operations management (9th ed.). Cengage Learning. ISBN 9781111832281.

[5]. Aswathappa, K., & Shridhara Bhat, K. (2014). Production and operations management. Himalaya Publishing House. ISBN 9788184391756.

MS4512	RESEARCH METHODOLOGY	L	T	P	C
		3	0	0	3

OBJECTIVES:

1. To familiarize students with the fundamentals of research, including its meaning, types, and characteristics.

2. To enable students to understand the research design process and its influence on the validity

and reliability of research findings.

3. To equip students with the knowledge and skills to select appropriate sampling methods, collect and manage data efficiently using software applications.
4. To provide students with a comprehensive understanding of data analysis techniques, including descriptive and inferential statistics, multivariate analysis, and regression analysis.
5. To develop students' abilities to write effective research reports, create impactful visual aids, and deliver oral presentations in a professional manner.

Subject Code: MS4512 Subject Name : Research Methodology		
Course Outcome – Cos		**Cognitive Skill**
CO-01	Define and differentiate between various types of research and understand the role of theory in conducting scientific research.	U,R
CO-02	Design research studies, formulate research problems, and develop testable hypotheses	A
CO-03	Apply appropriate sampling methods, select data collection techniques, and effectively manage data using software applications	A
CO-04	Perform descriptive and inferential statistical analysis using various techniques, such as ANOVA, regression analysis, factor analysis, and cluster analysis	An
CO-05	Prepare and present well-structured research reports, employ proper referencing and citation in APA style, and effectively disseminate research findings to relevant stakeholders	E

Mapping of Course Outcome with Programme Outcome

PO / **CO**	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	M	S	L	M	L	S	L	L
CO-02	S	S	M	S	M	S	M	S
CO-03	S	S	M	M	L	S	L	M
CO-04	S	S	M	S	L	S	L	S
CO-05	S	S	M	S	M	S	M	S

S-Strong, M-Medium,L-Low,N-Not relevant

UNIT I Introduction to Research 9

Research – Meaning – Types – Process – Characteristics of scientific research – The role of theory in research – Research problem – Identification, Selection, and formulation - Ethical considerations in research.

UNIT II Research Design and Hypothesis Testing 9

Research design – Meaning – Factors influencing research design – Validity and reliability in research – Measurement of variables – Scale development – Hypothesis – Meaning – Source – Types of Hypotheses – Formulation – Testing Hypotheses – Inferential Statistics.

UNIT III Sampling Design, Data Collection, and Data Management 9

Selection of a Sample – Probability and non-probability sampling methods –Factors influencing sample size – Data collection methods – Interview – Questionnaire – Observation - Experiments – Primary and Secondary data – Data management using software applications

UNIT IV Data Analysis and Interpretation 9

Importance of data analysis – Descriptive statistics – Inferential statistics – Multivariate techniques – ANOVA – Regression Analysis – Factor Analysis – Cluster Analysis – Data interpretation – Use of software for data analysis.

UNIT V Research Reporting and Presentation 9

Research Proposal - Structure and components - Writing a research report - Essentials of a good report - Oral presentation - Visual aids in presentation - Referencing and citation – APA Style - Criteria for evaluating research reports - Dissemination of research findings.

TOTAL: 45 PERIODS

BOOKS FOR REFERENCE:

[1]. Cooper, D. R., & Schindler, R. M. (2022). Business research methods (13th ed.). Tata McGraw-Hill. ISBN 9788123946676.

[2]. Kothari, C. R. (2022). Research methodology: Methods and techniques (9th ed.). New Age International. ISBN 9788122428398.

[3]. Sekaran, U. (2021). Research methods for business: A skill-building approach (7th ed.). John Wiley & Sons. ISBN 9781119626441.

[4]. Creswell, J. W. (2022). Research design: Qualitative, quantitative, and mixed methods approaches (5th ed.). Sage Publications. ISBN 9781544348527.

[5]. Krishnaswamy, O. R., & Ranganathan, M. (2022). Methodology of research in social science (4th ed.). Himalaya Publishing House. ISBN 9788184398123.

[6]. Field, A. P., Miles, J., & Field, Z. (2023). Discovering statistics using R (5th ed.). Sage Publications. ISBN 9781544350265.

[7]. McKinney, W. (2020). Python for data analysis: Data wrangling with Pandas, NumPy, and Matplotlib (2nd ed.). O'Reilly Media. ISBN 9781492039874.

[8]. Bhandarkar, W. L. (2022). Methodology and techniques of social research (2nd ed.). Rawat Publications. ISBN 9788131639460.

<table>
<tr><td rowspan="2">MS4513</td><td rowspan="2">BUSINESS ANALYTICS</td><td>L</td><td>T</td><td>P</td><td>C</td></tr>
<tr><td>3</td><td>0</td><td>0</td><td>3</td></tr>
</table>

OBJECTIVES:

1. To understand the fundamental concepts and terminologies of business analytics and big data.
2. To explore the different levels of business analytics and their applications in decision making.
3. To develop skills in data visualization and analysis using various techniques and tools.
4. To acquire knowledge of time series analysis and forecasting methods for predicting future trends.
5. To gain proficiency in utilizing R programming language for data analysis and manipulation.

Subject Code: MS4513 Subject Name : Business Analytics		
Course Outcome – Cos		**Cognitive Skill**
CO-01	Define and explain the key concepts and terminologies related to business analytics and big data.	U,R
CO-02	Apply various machine learning models to analyze and interpret data for descriptive, diagnostic, predictive, and prescriptive analytics	A
CO-03	Utilize decision support systems and data visualization techniques to support executive decision-making processes.	An
CO-04	Apply time series analysis and forecasting techniques to predict future patterns and trends based on historical data	A
CO-05	Demonstrate proficiency in using R programming language for data analysis, including data manipulation, visualization, and modeling	E

Mapping of Course Outcome with Programme Outcome

PO / **CO**	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	S	S	S	S	S	S	L
CO-02	S	L	L	S	M	S	S	S
CO-03	S	S	S	S	M	S	S	L
CO-04	M	S	S	S	S	M	S	S
CO-05	S	S	S	L	S	S	S	S

S-Strong, M-Medium,L-Low,N-Not relevant

Unit I: Introduction to Business Analytics and Big Data **9**

Business Analytics: Definition - Need – Scope – Terminologies-Process – Importance – Big data: Concepts – Technology-types of data – modifying data in excel – creating Distributions from data– measures of location.

Unit II: Application of Business Analytics **9**

Machine Learning - Introduction and Concepts – Machine Learning Models: Supervised-

Unsupervised— Reinforcement learning-Levels of Business Analytics: Descriptive analytics – Diagnostic analytics-Predictive analytics- Prescriptive analytics.

Unit III: Decision support and Data Visualisation **9**

DSS: Executive and enterprise support-Automated decision support-Data mining: Applications-Techniques-Visual analysis: Data concepts – Data Dashboards - Data exploration & visualization - Scorecards .

Unit IV: Time Series and Forecasting **9**

Time series pattern – forecasting accuracy – moving averages and exponential smoothing - using regression analysis for forecasting – determining the best forecasting model to use - building good spreadsheet model – What-If analysis – some useful excel functions for modeling – auditing spreadsheet model – a simple maximization problem.

Unit V: Data Analysis using R **9**

R Studio: Introduction – R data types and objects, reading and writing data - Data structures in R - R programming fundamentals - Advantages and disadvantages of using R.

BOOKS FOR REFERENCE:

[1]. Camm, J. D., Cochran, J. J., Fry, M. J., Ohlmann, J. W., & Anderson, D. R. (2015). Business statistics: For contemporary decision making (11th ed.). Cengage Learning. ISBN 9781285424193.

[2]. Kuruganti, S., & Basu, H. (2015). Business analytics: Data analysis and decision making (1st ed.). McGraw Hill Education (India) Private Limited. ISBN 9788122420655.

[3]. Marr, B. (2015). Big data: Using smart big data, analytics and metrics to make better decisions and improve performance. Wiley. ISBN 9781119033168.

[4]. Nabavi, M., & Olson, D. L. (2018). Introduction to business analytics. Business Expert Press. ISBN 9781631579846.

[5]. Albright, S. C., & Winston, W. L. (2015). Business analytics: Data analysis and decision making (5th ed.). Cengage Learning. ISBN 9781337558162.

MS4571	DATA ANALYSIS AND BUSINESS MODELING	L	T	P	C
		0	0	0	2

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OBJECTIVES:

- Understand the key concepts and terminology of data analysis and business modeling.
- Apply the principles of data analysis and business modeling to real-world problems.
- Develop the skills necessary to use data analysis and business modeling tools and techniques.
- Gain an appreciation of the importance of data analysis and business modeling to organizations.
- Be able to identify and solve business problems using data analysis and business modeling.

Subject Code: MS4571 Subject Name : Data Analysis and Business Modeling		
Course Outcome – Cos		**Cognitive Skill**
CO-01	Define data analysis and business modeling and explain their importance to organizations.	U,R
CO-02	Identify the different types of data and how to prepare them for analysis.	U,R, A
CO-03	Apply descriptive statistics to summarize and describe data.	A
CO-04	Conduct hypothesis tests to determine whether there is a statistically significant difference between two or more groups.	An
CO-05	Develop correlation and regression models to predict the value of one variable from another.	E

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	M	S	S	M	S	L	S
CO-02	S	S	S	S	S	S	S	S
CO-03	S	S	L	S	L	S	S	L
CO-04	S	S	S	S	S	S	S	S
CO-05	M	S	S	S	S	S	L	S

S-Strong, M-Medium,L-Low,N-Not relevant

Exp. No.	Details of experiments Name	Duration
1	Descriptive Statistics	4
2	Hypothesis - Parametric	4
3	Hypothesis – Non-parametric	4
4	Correlation & Regression	4
5	Forecasting	4
6	Risk Analysis & Sensitivity Analysis	5
7	Revenue Management	4
8	Transportation & Assignment	5
9	Networking Models	4
10	Queuing Theory	5
11	Inventory Models	5

TOTAL: 48 PERIODS

NOORUL ISLAM CENTRE FOR HIGHER EDUCATION
KUMARACOIL

MASTERS IN BUSINESS ADMINISTRATION (MBA)
CURRICULUM & SYLLABUS
REGULATION 2023
SEMESTER III

Sl. No	Code No	Course Title	L	T	P	C
1	MS4514	International Business Environment	3	0	0	3
2	MS4515	Strategic Management	3	0	0	3
3	MS****	Elective 1	3	0	0	3
4	MS****	Elective 2	3	0	0	3
5	MS****	Elective 3	3	0	0	3
6	MS****	Elective 4	3	0	0	3
7	MS****	Elective 5	3	0	0	3
8	MS****	Elective 6	3	0	0	3
9	MS4516	Professional Development	1	0	1	2
10	MS45P1	Summer Placement Project Work (4 weeks)	0	0	6	4
	TOTAL		25	0	7	30

MS4514	International Business Environment	L	T	P	C
		3	0	0	3

Course Description

The International Business Environment course offers a comprehensive exploration of the dynamic and complex global marketplace. This course is designed to equip students with the knowledge and skills necessary to navigate and succeed in international business settings. It covers the fundamental concepts and theories of international business, providing insights into the economic, political, and cultural environments that influence global trade and investment.

Objectives

- Provide students with a comprehensive understanding of the importance, nature, and scope of international business.
- Equip students with the tools to analyze domestic, foreign, and global environmental factors and their impact on international business decisions.
- Examine the global trading environment, including trends, protectionism, and the international financial environment's influence on trade and investment flows.
- Analyze the roles of major international economic institutions like WTO, IMF, and World Bank, and understand the implications of key international agreements on global business.
- Understand the challenges and strategies involved in managing multinational corporations, including foreign investments, technology transfer, and international collaborations.

Course Outcome		Cognitive Skill
CO-01	Students will be able to explain the importance, nature, and scope of international business, including various modes of entry and the internationalization process.	**R, U**
CO-02	Students will critically analyze how domestic, foreign, and global environmental factors influence international business strategies and operations.	**An, E**
CO-03	Students will evaluate major trends and developments in world trade, including tariff and non-tariff barriers, and understand the effects of foreign exchange and interest rate movements on trade and investment flows.	**E, U**
CO-04	Students will demonstrate knowledge of the roles and impacts of institutions such as the WTO, IMF, and World Bank, and understand key international agreements affecting global trade and investment.	**An, U**
CO-05	Students will develop strategies to address challenges in managing multinational corporations, including foreign investments, technology transfer, and international collaborations.	**A, S**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	M	M	N	N	N	M	N
CO-02	N	S	M	S	S	N	N	N
CO-03	M	S	N	N	M	N	S	S
CO-04	S	M	N	S	N	N	N	M

CO-05	N	N	S	N	M	S	N	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT I: Introduction to International Business 9

Importance, nature and scope of international business- modes of entry into International Business- Internationalization process and managerial implications. Environmental Context of International Business- Framework for analyzing international business environment – Domestic, foreign and global environments and their impact on international business decisions, Digital Transformation in International Business.

UNIT II: Global Trading Environment 9

World trade in goods and services – Major trends and developments; World trade and protectionism – Tariff and non-tariff barriers; Counter trade International Financial Environment: Foreign Investments-Pattern, Structure and effects; Movements in foreign exchange and interest rates and then impact on trade and investment flows, Trade Wars and Geopolitical Risks.

UNIT III: International Economic Institutions and Agreements

9 WTO, IMF, World Bank UNCTAD, Agreement on Textiles and Clothing (ATC), GSP, GSTP and other international agreements; International commodity trading and agreements, Digital Trade Agreements.

UNIT IV: Regional Economic Groupings in Practice 9

Regionalism vs. multilateralism, Structure and functioning of EC and NAFTA; Regional economic cooperation, Brexit and Its Impact on the European Union.

UNIT V: Multinational Corporations 9

Multinational Corporations and their involvement in International Business: Issues in foreign investments, technology transfer, pricing and regulations; International collaborative arrangements and strategic alliances. Emerging Developments and Other Issues: Growing concern for ecology; Counter trade; IT and international business, Impact of COVID-19 on Multinational Corporations.

TOTAL: 45 HOURS

TEXTBOOKS

1. "International Business: Competing in the Global Marketplace" by Charles Hill and G. Tomas M. Hult (14th Edition, 2023)
2. "The Global Business Environment: Sustainability in the Balance" by Janet Morrison (6th Edition, 2023)
3. "Global Business" by Mike W. Peng and Klaus Meyer (5th Edition, 2023)
4. "International Business: The New Realities" by S. Tamer Cavusgil, Gary Knight, and John Riesenberger (5th Edition, 2023)

REFERENCES:

1. "International Management: Culture, Strategy, and Behavior" by Fred Luthans and Jonathan Doh (11th Edition, 2022)
2. "International Business: The Challenges of Globalization" by John Wild and Kenneth L. Wild (10th Edition, 2022)

MS4515	Strategic Management	L	T	P	C
		3	0	0	3

Course Description:

This course provides an in-depth exploration of strategic management principles essential for effective organizational leadership. Students will examine the foundational concepts of strategic management, analyze various approaches to strategic formulation and implementation, and explore contemporary strategic issues facing organizations today. Emphasis will be placed on integrating theoretical frameworks with practical applications to enhance decision-making capabilities in a globalized and dynamic business environment.

Objectives

- Understand the fundamental concepts and theories of strategic management, including business policy, corporate strategy, and strategic decision-making processes.
- Analyze the impact of globalization, internet, and e-commerce on strategic management practices.
- Evaluate different approaches to strategic management, including environmental scanning, industry analysis, and resource-based strategies.
- Apply strategic formulation tools such as SWOT analysis, TOWS matrix, and portfolio analysis to develop corporate strategies.
- Examine the process of strategy implementation through organizational structure, human resource management, and ethical considerations.

Course Outcome		Cognitive Skill
CO-01	Able to articulate the foundational concepts of strategic management, including the significance of mission, vision, and objectives in shaping organizational direction and competitiveness in a globalized context.	R, U
CO-02	Proficient in conducting environmental scanning and industry analysis, enabling them to identify key factors influencing organizational strategy and apply strategic budgeting and audit techniques to enhance organizational performance.	U, A
CO-03	Demonstrate competency in utilizing strategic formulation tools such as SWOT analysis, Porter's Five Forces Model, and the BCG Matrix to analyze business situations and formulate appropriate corporate strategies for growth, diversification, and competitive advantage.	U, A
CO-04	Capable of evaluating and implementing strategies through effective organizational structure, human resource management practices, and the application of strategic information systems, ensuring alignment with organizational goals and values.	A, E
CO-05	Critically assess strategic issues related to corporate governance, social responsibility, technology management, and innovation, and propose strategic initiatives tailored to address challenges specific to non-profit organizations, entrepreneurial ventures, and small business enterprises.	E, S

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H

CO-01	M	M	L	L	L	L	M	M
CO-02	S	S	M	M	M	M	S	S
CO-03	S	S	M	M	M	M	S	S
CO-04	S	M	L	S	M	S	S	S
CO-05	S	S	L	M	S	S	L	M

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT I: Introduction **9**

Introduction to Strategic Management, Business Policy and Corporate Strategy, Basic Concepts of Strategic Management, Mission, Vision, and Objectives, Impact of Globalization on Strategic Management, Basic Model of Strategic Management, Strategic Decision Making, Impact of Internet and E-Commerce, Role of Strategic Management in Marketing, Finance, HR, and Global Competitiveness

UNIT II: Approaches to Strategic Management **9**

Environmental Scanning**,** Industry Analysis**,** Competitive Intelligence**,** ETOP (Environmental Threats and Opportunities Profile) Study**,** OCP (Organizational Capability Profile)**,** SAP (Strategic Advantage Profile) Scanning**,** Corporate Analysis**,** Resource-based Approach**,** Value-Chain Approach**,** Scanning Functional Resources**,** Strategic Budgeting and Audit

UNIT III: Strategy Formulation **9**

SWOT Analysis, TOWS Matrix, Various Corporate Strategies: Growth/Expansion, Diversification, Stability, Retrenchment & Combination Strategy, Process of Strategic Planning, Stages of Corporate Development. Corporate Restructuring, Mergers & Acquisitions, Strategic Alliances, Portfolio Analysis, Corporate Parenting, Functional Strategy, BCG Matrix, GE 9 Cell Model, Porter's Five Forces Model, Porter Diamond Model, Strategic Choice, Core Competency, Competitive Advantage

UNIT IV: Strategy Implementation and Evaluation **9**

Strategy Implementation through Organizational Structure, Strategy Implementation through Human Resource Management, Strategy Implementation through Values and Ethics, McKinsey’s 7S Model, Organization Life Cycle, Management and Control, Activity-Based Costing, Strategic Information Systems

UNIT V: Strategic Issues **9**

Corporate Governance and Social Responsibility, Managing Technology and Innovation, Strategic Issues for Non-Profit Organizations, Entrepreneurial Ventures and Small Business Enterprises

TOTAL: 45 HOURS

TEXTBOOKS

1. “Strategic Management: Concepts and Cases” Fred R. David, Forest R. David, 2023
2. “Crafting & Executing Strategy: The Quest for Competitive Advantage”, Arthur A. Thompson Jr., Margaret A. Peteraf, John E. Gamble, A.J. Strickland III, 2023
3. “Strategic Management: Concepts and Cases”, Michael A. Hitt, R. Duane Ireland, Robert E. Hoskisson, 2023

REFERENCES:

1. “Implementing Strategic Change: Managing Processes and Interfaces to Develop a Highly Productive Organization”, Michael A. Beitler, Jeffrey A. Schmidt, 2023
2. “Strategic Management of Technology and Innovation”, Robert A. Burgelman, Clayton M. Christensen, Steven C. Wheelwright, 2023

MS4516	Professional Development	L	T	P	C
		1	0	1	2

Course Overview

This course is designed to provide MBA students with the essential skills and knowledge for professional development. It focuses on practical skills such as communication, leadership, personal branding, networking, and career planning. The course aims to prepare students for the demands of the professional world and enhance their ability to succeed in various business environments.

Course Objectives

- To develop effective communication and presentation skills.
- To enhance leadership and teamwork abilities.
- To build a strong personal brand and professional presence.
- To understand and apply networking strategies.
- To create and implement a comprehensive career development plan.

Course Outcome		Cognitive Skill
CO-01	Demonstrate effective communication and presentation skills for professional settings.	**U, A**
CO-02	Analyze different leadership styles and apply team-building strategies to enhance teamwork.	**An, A**
CO-03	Develop a personal brand and enhance professional presence in online and offline spaces.	**S, A**
CO-04	Formulate effective networking strategies to build and maintain professional relationships.	**E, A**
CO-05	Create a career development plan aligned with personal and professional goals.	**S, E**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	M	M	N	N	N	S	N
CO-02	S	S	M	N	M	N	N	N
CO-03	N	M	S	N	N	N	S	M
CO-04	M	M	N	N	S	N	S	N
CO-05	S	N	S	M	N	S	N	M

S-Strong, M-Medium, L-Low, N-Not relevant

Course Structure (30 hours)

Unit 1: Effective Communication and Presentation Skills (6 hours)

- Fundamentals of Professional Communication (1.5 hours)
  - Verbal and non-verbal communication
  - Active listening skills
  - Professional etiquette in communication
- Advanced Presentation Skills (1.5 hours)
  - Structuring presentations
  - Visual aids and technology in presentations
  - Public speaking and audience engagement
- Practical Sessions (3 hours)
  - Mock presentations with peer feedback

  - Case studies on communication challenges
  - Role-playing exercises

Unit 2: Leadership and Teamwork (6 hours)

- Leadership Theories and Styles (1.5 hours)
  - Overview of leadership theories
  - Identifying personal leadership style
  - Case studies on successful leaders
- Building and Leading Teams (1.5 hours)
  - Team dynamics and roles
  - Conflict resolution and management
  - Motivating and inspiring team members
- Practical Sessions (3 hours)
  - Team-building exercises
  - Leadership simulations
  - Group discussions on leadership challenges

Unit 3: Personal Branding and Professional Presence (6 hours)

- Developing Your Personal Brand (1.5 hours)
  - Importance of personal branding
  - Identifying strengths and unique value propositions
  - Creating a personal brand statement
- Enhancing Professional Presence (1.5 hours)
  - Dressing for success
  - Professional behaviour and ethics
  - Managing online presence and social media
- Practical Sessions (3 hours)
  - Personal branding workshops
  - Mock interviews and elevator pitches
  - Case studies on professional presence

Unit 4: Networking Strategies (6 hours)

- Importance of Networking (1.5 hours)
  - Benefits of professional networking
  - Types of professional networks
  - Identifying networking opportunities
- Building and Maintaining Networks (1.5 hours)
  - Effective networking strategies
  - Utilizing social media for networking
  - Maintaining and nurturing professional relationships
- Practical Sessions (3 hours)
  - Networking events simulations
  - Role-playing networking scenarios
  - Developing a networking action plan

Unit 5: Career Development Planning (6 hours)

- Career Assessment and Goal Setting (1.5 hours)
  - Self-assessment tools and techniques
  - Setting short-term and long-term career goals
  - Identifying career opportunities
- Creating a Career Development Plan (1.5 hours)
  - Strategies for career advancement
  - Continuing education and skill development
  - Work-life balance and stress management

- Practical Sessions (3 hours)
    - Career development workshops
    - One-on-one career coaching sessions
    - Developing a personal career roadmap

Assessments and Evaluation

- **Quizzes**: Regular quizzes to assess understanding of key concepts.
- **Assignments**: Practical assignments and case studies to apply professional development skills.
- **Project**: A comprehensive career development plan tailored to individual career goals.
- **Participation**: Active participation in workshops, simulations, and role-playing exercises.
- **Presentations**: Presenting personal branding statements, career plans, and networking strategies.

TOTAL: 45 HOURS

Recommended Textbooks and Resources

1. Carnegie, D. (2010). *How to Win Friends and Influence People*. Simon & Schuster.
2. Covey, S. R. (2013). *The 7 Habits of Highly Effective People: Powerful Lessons in Personal Change*. Free Press.
3. Goleman, D. (2006). *Emotional Intelligence: Why It Can Matter More Than IQ*. Bantam Books.
4. Robbins, A. (2001). *Awaken the Giant Within: How to Take Immediate Control of Your Mental, Emotional, Physical, and Financial Destiny!*. Simon & Schuster.
5. Pink, D. H. (2009). *Drive: The Surprising Truth About What Motivates Us*. Riverhead Books.
6. Maxwell, J. C. (2011). *The 5 Levels of Leadership: Proven Steps to Maximize Your Potential*. Center Street.
7. Tracy, B. (2011). *Eat That Frog!: 21 Great Ways to Stop Procrastinating and Get More Done in Less Time*. Berrett-Koehler Publishers.
8. Sandberg, S. (2013). *Lean In: Women, Work, and the Will to Lead*. Knopf.
9. Sinek, S. (2009). *Start with Why: How Great Leaders Inspire Everyone to Take Action*. Portfolio.
10. Ibarra, H. (2015). *Act Like a Leader, Think Like a Leader*. Harvard Business Review Press.

SEMESTER IV

Sl. No.	Code No	Title of the Course	L	T	P	C
1.	MS4517	**Corporate Sustainability Management**	**3**	**0**	**0**	**3**
2.	MS****	**Elective – 7**	**3**	**0**	**0**	**3**
3	MS****	**Elective – 8**	**3**	**0**	**0**	**3**
4	MS4518	**Business Incubation and Startup**	**1**	**0**	**1**	**2**
5.	MS45P5	**Final Internship Project Work (8 Weeks)**	**0**	**0**	**16**	**14**
	TOTAL		**10**	**0**	**17**	**25**

MS4517	Corporate Sustainability Management	L	T	P	C
		3	0	0	3

Course Description

This course provides an in-depth exploration of corporate sustainability, focusing on technological, economic, environmental, social, and marketing dimensions. Students will gain an understanding of how businesses can integrate sustainability into their core operations, considering both short-term and long-term implications. Through case studies and practical examples, the course highlights the importance of sustainable development in today's global industrial context and explores strategies for leveraging sustainability as a competitive advantage.

Objectives

- To identify the skills needed to build a strong corporate sustainability strategy for your business.
- To improve the skills which requires for managing sustainability risks and opportunities in the business
- To develop the ability to evaluate the constraints and opportunities facing a variety of institutions and acquire the skills required to implement sustainable policies.
- To increase problem solving scenarios, develop analytical skills and critically evaluate environmental management policies.

Course Outcome		Cognitive Skill
CO-01	Explain the relationship between technology, sustainability, and risk in business development.	**R, U**
CO-02	Analyze the economic aspects of sustainability and their influence on the strategic and operational decisions of global industrial companies.	**An, E**
CO-03	Apply sustainability principles in marketing to build sustainable brands and differentiate products in a competitive market.	**A, S**
CO-04	Evaluate the role of environmental sustainability in mitigating climate change and resource depletion.	**E, An**
CO-05	Analyze social sustainability issues such as health, community involvement, and corruption, and develop strategies for corporate social responsibility.	**AN, S**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	M	N	N	M	N	M	N
CO-02	S	M	S	N	S	N	N	M
CO-03	M	M	M	S	S	M	N	S
CO-04	M	N	S	M	M	N	N	S
CO-05	S	M	N	S	M	S	M	N

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT I: Technological Sustainability 9

Introduction to Technologies, market intelligence techniques, and intellectual property issues related to business development, relationship between risk and sustainability. Technological solutions for carbon mitigation and carbon adaptation. prototype development and recommendations for dealing with the supply chain for highly technological and sustainable projects - Case Study

UNIT II: Economical Sustainability 9

Introduction to the management of economic, social, and environmental sustainability issues in global industrial companies. With economic sustainability is meant, for example, strategy, technological innovation, current and future economic prospects, resource base, and market position- Case Study

UNIT III: Marketing Sustainability 9

Building a Sustainability Brand. Sustainability as a Competitive Differentiator. Social Impact Marketing Frameworks. Consumer and Customer Insights. Mainstream appeal-Overcoming Biases and Barriers to Adoption. Customer Education (Vital Farms). Marketing Challenge. -Sustainable Product Design. Setting Goals and Measurement Frameworks-Case Study

UNIT IV: Environmental Sustainability 9

Fundamental aspects of sustainability, environmental issues, climate change, resource depletion, food-energy-water nexus. Green materials, energy conventional and renewable sources, sustainable development- energy cycles and accounting. Carbon cycle, emissions and sequestration. Concepts of green design. Life-cycle analysis- Case Study

UNIT V: Social Sustainability 9

With social sustainability is meant, for example, safety, health, community involvement, tax issues, and corruption. With environmental sustainability is meant, for example, global warming, pollution, local impact, biodiversity, energy use, water use, and waste. - Case Study

TOTAL: 45 HOURS

TEXTBOOKS

1. " Ann Brockett , Zabihollah Rezaee Corporate Sustainability : Integrating Performance And Reporting ; John Wiley & Sons Inc.
2. ‘Rogers, P.P., Jalal, K.F. and Boyd, J.A., An Introduction to Sustainable Development, Prentice-Hall of India Pvt. Ltd., New Delhi.

REFERENCES:

1. Mark W. McElroy and J.M.L. van Engelen Corporate Sustainability Management: The Art and Science of Managing Non-Financial Performance; Routledge, ISBN-13 978-1844079117
2. Weaver, P., Jansen, L., Grootveld, G.V., Spiegel, E.V. and Vergragt, P., Sustainable Technology
3. Development, Greenleaf Publishing, Sheffield,
4. Grubler, A., Technology and Global Change, Cambridge University Press, Cambridge.

MS4518	Business Incubation and Startup	L	T	P	C
		1	0	1	2

Course Description

This course is designed to provide MBA students with practical skills and knowledge to successfully launch and manage startups. It focuses on the processes of business incubation, from idea generation to business planning, funding, and scaling. The course aims to prepare students for the challenges and opportunities of the entrepreneurial journey, emphasizing hands-on learning and real-world applications.

Objectives

- To understand the fundamentals of business incubation and the startup ecosystem.
- To develop skills for identifying and evaluating business opportunities.
- To learn how to create comprehensive business plans and strategies.
- To explore various funding options and financial management techniques for startups.
- To understand the challenges of scaling a startup and strategies for sustainable growth.

Course Outcome		Cognitive Skill
CO-01	Explain the key components of the startup ecosystem, including the role of business incubators and accelerators.	**R, U**
CO-02	Analyze and validate business opportunities through market research and competitive analysis.	**An, E**
CO-03	Develop comprehensive business plans and strategies, including financial planning and modeling.	**A, S**
CO-04	Assess different funding options and prepare for investor pitches.	**E, A**
CO-05	Formulate strategies for building and managing startup teams and scaling operations.	**S, A**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	M	M	N	N	N	M	N
CO-02	M	S	M	S	S	N	N	N
CO-03	S	M	S	N	S	N	M	S
CO-04	M	S	N	M	S	N	N	M
CO-05	S	S	M	S	S	S	N	S

S-Strong, M-Medium, L-Low, N-Not relevant

Course Structure (30 hours)

Unit 1: Introduction to Business Incubation and Startups (6 hours)

- Overview of the Startup Ecosystem (1.5 hours)
  - Definition and importance of startups
  - Key players in the startup ecosystem
  - Role of business incubators and accelerators
- Idea Generation and Opportunity Recognition (1.5 hours)
  - Techniques for generating business ideas
  - Evaluating and validating business opportunities
  - Market research and analysis
- Practical Sessions (3 hours)

    - Idea generation workshops
    - Case studies on successful startups
    - Group discussions on opportunity recognition

Unit 2: Business Planning and Strategy (6 hours)

- Developing a Business Plan (1.5 hours)
    - Components of a business plan
    - Writing a compelling executive summary
    - Market analysis and competitive strategy
- Business Model Development (1.5 hours)
    - Understanding different business models
    - Lean startup methodology
    - Creating a value proposition
- Practical Sessions (3 hours)
    - Business plan writing workshops
    - Business model canvas exercises
    - Case studies on business strategies

Unit 3: Funding and Financial Management (6 hours)

- Funding Options for Startups (1.5 hours)
    - Bootstrapping, angel investors, and venture capital
    - Crowdfunding and alternative funding sources
    - Preparing for investor pitches
- Financial Planning and Management (1.5 hours)
    - Financial projections and budgeting
    - Cash flow management
    - Key financial metrics for startups
- Practical Sessions (3 hours)
    - Mock investor pitches
    - Financial planning workshops
    - Case studies on startup funding

Unit 4: Building and Managing Teams (6 hours)

- Building a Founding Team (1.5 hours)
    - Identifying and recruiting co-founders
    - Roles and responsibilities in a startup team
    - Team dynamics and conflict resolution
- Leadership and Culture in Startups (1.5 hours)
    - Leadership styles and skills for entrepreneurs
    - Building a positive startup culture
    - Managing and motivating startup teams
- Practical Sessions (3 hours)
    - Team-building exercises
    - Leadership simulations
    - Group discussions on startup culture

Unit 5: Scaling and Sustaining Growth (6 hours)

- Scaling Strategies for Startups (1.5 hours)
    - Identifying growth opportunities
    - Scaling operations and maintaining quality
    - Strategic partnerships and alliances
- Managing Growth Challenges (1.5 hours)
    - Addressing operational and financial challenges
    - Risk management and contingency planning

    - Sustainability and corporate social responsibility
- Practical Sessions (3 hours)
    - Growth strategy workshops
    - Case studies on scaling startups
    - Group discussions on sustainability

Assessments and Evaluation

- **Quizzes**: Regular quizzes to assess understanding of key concepts.
- **Assignments**: Practical assignments and case studies to apply startup management skills.
- **Project**: A comprehensive startup business plan, including financial projections and growth strategies.
- **Participation**: Active participation in workshops, simulations, and group discussions.
- **Presentations**: Presenting business plans, investor pitches, and growth strategies.

Recommended Textbooks and Resources

1. Ries, E. (2011). *The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses*. Crown Business.
2. Osterwalder, A., & Pigneur, Y. (2010). *Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers*. Wiley.
3. Blank, S. G., & Dorf, B. (2012). *The Startup Owner's Manual: The Step-by-Step Guide for Building a Great Company*. K&S Ranch.
4. Maurya, A. (2012). *Running Lean: Iterate from Plan A to a Plan That Works*. O'Reilly Media.
5. Gompers, P., & Lerner, J. (2004). *The Venture Capital Cycle*. MIT Press.
6. Kawasaki, G. (2015). *The Art of the Start 2.0: The Time-Tested, Battle-Hardened Guide for Anyone Starting Anything*. Portfolio.
7. Clifton, J., & Dolan, R. (2015). *Entrepreneurial StrengthsFinder*. Gallup Press.
8. Horowitz, B. (2014). *The Hard Thing About Hard Things: Building a Business When There Are No Easy Answers*. Harper Business.
9. Thiel, P., & Masters, B. (2014). *Zero to One: Notes on Startups, or How to Build the Future*. Crown Business.
10. Aulet, B. (2013). *Disciplined Entrepreneurship: 24 Steps to a Successful Startup*. Wiley.

MS45P5	Final Internship Project Work (8 Weeks)	L	T	P	C
		0	0	16	14

Course Description

The Final Internship Project Work is a critical component of the MBA program, enabling students to apply theoretical concepts in a real-world business environment. Students are required to undertake individual projects in collaboration with a business, corporate, or government organization, under the guidance of both an internal faculty mentor and an external organization-based guide. The project emphasizes practical problem-solving, research, and analytical skills in the student's area of specialization. The culmination of this project involves a comprehensive written report and a viva voce examination.

Objectives

- To integrate academic learning with real-world business practices through practical exposure in a professional environment.
- To enhance the student's research, analytical, and problem-solving abilities by addressing organizational challenges or opportunities.
- To develop the ability to work independently on business-related projects, applying discipline-specific knowledge to generate actionable insights.
- To cultivate effective written and oral communication skills, particularly in the presentation of complex business data, analysis, and findings.

Course Outcome		Cognitive Skill
CO-01	Understand the fundamentals of business incubation and the startup ecosystem	**R, U**
CO-02	Identify and evaluate business opportunities and develop viable business ideas.	**A, U**
CO-03	Create comprehensive business plans and strategies for startups.	**An, E**
CO-04	Explore various funding options and manage financial aspects of a startup.	**S, A**
CO-05	Implement effective strategies for scaling and sustaining startup growth.	**U, S**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	M	L	S	N	N	N	M	N
CO-02	S	M	S	N	S	M	N	N
CO-03	M	S	M	N	M	N	S	S
CO-04	S	M	S	N	N	M	N	M
CO-05	M	N	S	N	N	N	S	S

S-Strong, M-Medium, L-Low, N-Not relevant

1. The student shall do a final project in business /corporate/ Government / private organizations during their final semester of MBA Degree Programme under a faculty guide, preferably in their area of specialization and a guide from the organization.
2. The qualification of guide is the same as that fixed for the summer placement project.
3. The duration of final project is eight weeks.
4. This project work is to be done individually by the students, no group project is allowed.

5. The student shall prepare and submit a project report, printed and bound (preferably spiral bound) with a minimum of 100 A4 pages of text (12 font size, 1.5 spacing, with top margin 1”, bottom margin 1”, left margin 1.25”, right margin 1”.) to the Head of the Department before the last working day of the final semester.
6. The student shall prepare at least four copies of the report; two copies for submission to the Department and one copy for the student which he/she has to bring with him/her at the time of viva voce, and one copy for the organization where he / she does the project.
7. The Head of the Department shall send the projects of all the students together (after internal evaluation) to the Controller of Examination on or before the stipulated date.
8. Projects received late shall be forwarded to the Controller of Examinations along with the student’s request for late submission supported by prescribed fee for late submission as decided by the University.
9. However, such late submission shall be done within 10 days of after the last date fixed for submission of the final semester major project report.
10. All other regulations for MBA minor project are applicable to major project also.

Evaluation of Major Project Report

The major project report submitted by the students shall be evaluated in two stages – external and internal.

1. Internal assessment by the faculty guide is for a maximum of 40% of the total marks for the project.
2. External evaluation is for a maximum of 60% marks for the major project.
3. The criteria for internal evaluation are the same as that of major project.
4. The head of the Department shall send all the project reports of final semester students to the Controller of Examinations after internal evaluation.
5. External evaluation is conducted by the viva-voce board.
6. The sum of the marks awarded, to each student in the Internal evaluation maximum (40%) marks and the external evaluation maximum (60%) marks, shall be the total marks.

Viva Voce

1. At the end of fourth semester, each student shall attend a comprehensive viva- voce examination.
2. The Viva Board shall have three members: the Chairman of Board of Examiners, one external and one internal.
3. The University shall appoint an external examiner.
4. The viva voce will cover all the courses of the four-semester program and major project report.
5. The student should get 50% marks in the viva voce for a pass in viva voce.

Structure of the report

Title page
Declaration the candidate
Certificate, in original, from the organization
Certificate from faculty guide
Acknowledgements
Contents
Chapter I : Introduction (Organization profile, Research problem, scope of study, objectives of the study, Research methodology etc.)
Chapter II : Review of Literature
Chapters III and IV : Data organization and Analysis
Chapter V : Findings, Recommendations and Summary
Appendix (Questionnaire, specimen copies of forms, other exhibits etc.)
Bibliography (books, journal articles etc. used or referred for the project work).

ELECTIVE CURRICULUM
A. MARKETING

Sl.No	Code No	Name of the Subjects	L	T	P	C
1	MS45A1	Services Marketing & Customer Relationship Management	3	0	0	3
2	MS45A2	Product and Brand Management	3	0	0	3
3	MS45A3	Advertising Management	3	0	0	3
4	MS45A4	Social Media Marketing	3	0	0	3
5	MS45A5	Retail Marketing	3	0	0	3
6	MS45A6	Sales Management	3	0	0	3
7	MS45A7	Strategic Marketing Management	3	0	0	3
8	MS45A8	Consumer Behaviour	3	0	0	3
9	MS45A9	Rural Marketing	3	0	0	3

MS45A1	Services Marketing & Customer Relationship Management	L	T	P	C
		3	0	0	3

Course Description

This course explores the unique challenges of marketing services as opposed to products, focusing on the development and management of long-term customer relationships. Students will learn strategies for delivering quality service, managing customer expectations, and fostering customer loyalty. Emphasis will be placed on the integration of service marketing with customer relationship management (CRM) practices to enhance customer satisfaction and business performance.

Objectives

- Understand the distinct characteristics of services and their implications for marketing.
- Develop effective service marketing strategies and plans.
- Analyze and apply various customer relationship management tools and techniques.
- Evaluate the role of technology in service marketing and CRM.
- Implement strategies to enhance customer satisfaction and loyalty.

Course Outcome		Cognitive Skill
CO-01	Explain the unique characteristics of services (intangibility, inseparability, variability, perishability) and their implications for marketing strategies.	**U, A**
CO-02	Evaluate customer expectations and perceptions and map the customer journey and touchpoints to enhance service delivery.	**E, An, A**
CO-03	Use models like SERVQUAL to measure service quality and implement strategies to enhance customer satisfaction and loyalty.	**A, An, S**
CO-04	Formulate effective CRM strategies, manage customer data and analytics, and use CRM software to enhance customer relationships and business performance.	**S, A, An**
CO-05	Develop strategies for handling customer complaints and feedback effectively to improve service quality and customer satisfaction.	**S, A, E**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	M	M	N	S	L	N	N
CO-02	M	M	S	M	M	N	L	N
CO-03	M	N	S	N	S	M	M	N
CO-04	S	N	S	M	S	S	S	N
CO-05	M	M	S	L	S	M	M	N

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

Unit 1: Introduction to Service Marketing **9**

Definition and Characteristics of Services: Intangibility, Inseparability, Variability, Perishability - Differences between Services and Goods Marketing- The Service Marketing Mix (7 Ps): Product, Price, Place, Promotion, People, Process, Physical Evidence - Service

Delivery and Consumption - Measuring Service Quality: SERVQUAL Model - Importance of Customer Satisfaction

Unit 2: Customer Behavior in Services **9**

Understanding Consumer Behavior in Service Contexts - Customer Expectations and Perceptions - The Customer Journey and Touchpoints -Techniques for Managing Customer Experiences - Service Blueprinting: Mapping the Service Process

Unit 3: Service Design and Innovation **9**

Principles of Service Design Thinking - New Service Development (NSD) Process: Idea Generation, Concept Development, Service Design, Testing, Commercialization - Role of Innovation in Service Marketing - Designing the Service Environment - Co-Creation of Value with Customers

Unit 4: Customer Relationship Management (CRM) **9**

Introduction to CRM and Its Importance - Developing CRM Strategies: Customer Acquisition, Retention, and Development - Implementation of CRM Systems - Managing Customer Data and Analytics: Data Collection, Data Mining, Customer Segmentation - CRM Software and Technologies - Measuring CRM Performance and ROI

Unit 5: Building and Maintaining Customer Loyalty **9**

Drivers of Customer Loyalty: Satisfaction, Trust, Commitment - Designing Effective Loyalty Programs: Types of Loyalty Programs, Key Elements - Personalization and Customization in Services - Handling Customer Complaints and Feedback - Strategies for Customer Retention: Relationship Marketing, Customer Engagement

TOTAL: 45 HOURS

TEXTBOOKS

1. **Services Marketing: Integrating Customer Focus Across the Firm** by Valarie Zeithaml, Mary Jo Bitner, Dwayne Gremler (2021)
2. **Customer Relationship Management: Concept, Strategy, and Tools** by V. Kumar and Werner Reinartz (2021)
3. **Service Design and Delivery: How Design Thinking Can Innovate Business and Add Value to Society** edited by Daniela Sangiorgi and Alison Prendiville (2022)

REFERENCES:

1. **Managing Customer Relationships: A Strategic Framework** by Don Peppers, Martha Rogers, Bob Dorf (2021)
2. **Customer Experience Management: A Revolutionary Approach to Connecting with Your Customers** by Bernd Schmitt (2023)
3. **Service Innovation: A Business Model Perspective** edited by Andy Neely, Ian Bitran, Veronica Martinez (2021)

MS45A2	Product and Brand Management	L	T	P	C
		3	0	0	3

Course Description

This course offers an in-depth exploration of product and brand management, vital components of a successful marketing strategy. It covers essential concepts, strategies, and processes involved in managing products and brands effectively in a competitive market. The course is divided into five units, each focusing on specific aspects of product and brand management, from introductory concepts to advanced strategic applications.

Objectives

- The students must learn all basic concepts in Product management to introduce innovative new products to the market.
- Every student must understand the Customer Based Brand Equity model to build a superior brand.
- Students must realize the importance of the brand management processes to take effective branding decisions.
- After the acquisition of product and brand knowledge, students can effectively test the product with various possibilities.
- Students can successfully launch a product and do branding on applying the concepts learnt

Course Outcome		**Cognitive Skill**
CO-01	Understand the basic concepts in product management and the steps involved in New product development process	**U, A**
CO-02	Gain knowledge on branding and its applications	**R, U**
CO-03	Appreciate brand management process and applying branding decisions effectively	**A, E**
CO-04	Learn how to use and test products in the market	**U, An**
CO-05	Identify the best way to launch a product and to build brand equity	**An, S**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	M	S	N	S	M	L	N
CO-02	M	L	S	N	M	L	M	N
CO-03	S	M	S	N	S	M	L	N
CO-04	M	L	S	N	S	M	M	N
CO-05	S	M	S	N	S	S	M	N

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

Unit 1: **9**

Introduction to marketing concepts- Introduction to Product Management- Relationship between competition and product management- new product – Market strategies- Product Classification- Product management Process- Factors affecting product decisions and management function- Characteristics and challenges of Product development- New product development process- Models in various phases of New product development

Unit 2: **9**

Customer based brand equity- Making a Brand strong: Brand Knowledge- Sources of Brand equity, Brand Awareness, Brand Image, Building a strong brand- The four steps of Brand building- Brand building blocks , Brand salience- Brand performance, Imagery and Judgments- Brand Feelings – Brand Resonance- Criteria for choosing brand elements, Options and Tactics for Brand elements- Brand identity – Brand Identity perspectives- Brand as Product – Brand as Organization- Brand as a Person – Brand Personality- Brand identity prism

Unit 3: **9**

Strategic brand management process- Brand Architecture- Brand Hierarchy- Brand differentiation - Brand positioning decisions- Concept testing of new product development- Branding Decisions- Brand sponsor decision- Brand Name decision- Brand strategy decision- Co–branding- Brand Repositioning decisions

Unit 4: **9**

Product Use testing in new product development- Packaging, Benefits- Packaging at the point of purchase, Package Design- Packaging Changes, Objectives of test market- Test market limitations- Design consideration in Test Market- Alternative to test market, Other testing methods- In home use tests- Laboratory simulation tests- Mini test market, Regional Rollout- Adaptive Experiments- Selection of a testing procedure

Unit 5: **9**

Launching the product- The Launch cycle- Changes in the stages- Launch Mix- The Launch Techniques, Launch Timing- Coordination of marketing and production- Management of Launch, tracking and control- Tracking the Launch, Control system and tracking- Recall – Unaided recall – Aided recall- Future Brand Priorities

TOTAL: 45 HOURS

TEXTBOOKS

1. "Contemporary Brand Management" by Kevin Lane Keller (2022)
2. "Product Management in Practice: A Real-World Guide to the Key Connective Role of the 21st Century" by Matt LeMay (2021)
3. "Strategic Brand Management: Building, Measuring, and Managing Brand Equity" by Kevin Lane Keller and David A. Aaker (4th edition, 2023)

REFERENCES:

1. "New Product Development: A Practical Workbook for Improving Performance" by Christine A. Tucker (2020)
2. "Packaging Design: Successful Product Branding From Concept to Shelf" by Marianne R. Klimchuk and Sandra A. Krasovec (2021)
3. "Launch: How to Quickly Propel Your Business Beyond the Competition" by Michael A. Stelzner (2022)

MS45A3	**Advertising Management**	**L**	**T**	**P**	**C**
		3	0	0	3

Course Description

Advertising Management is designed to equip students with a deep understanding of the strategic role of advertising within the broader context of marketing management. This course explores the theoretical foundations and practical applications of advertising strategies, emphasizing the integration of traditional and digital media channels to achieve marketing objectives effectively.

Objectives

- Understand the fundamental concepts of advertising and its pivotal role in the marketing mix.
- Analyze the legal, ethical, and social implications of advertising practices.
- Formulate promotional objectives, set budgets, and evaluate advertising effectiveness.
- Gain proficiency in crafting creative advertising campaigns and executing them across various media platforms.
- Utilize advertising research methods to measure and optimize campaign performance.

Course Outcome		**Cognitive Skill**
CO-01	Understand the role of advertising in the marketing process and articulate its significance in achieving organizational objectives.	**R, U**
CO-02	Formulate SMART promotional objectives and design integrated promotional strategies that align with brand positioning and target audience preferences.	**U, A**
CO-03	Developing creative advertising strategies and crafting compelling advertising copy that effectively communicates brand messages and engages target audiences.	**A, An**
CO-04	Skills to conduct media planning, select appropriate media channels (traditional and digital), and optimize media resources to maximize reach and frequency of advertising campaigns.	**A, E**
CO-05	Proficient in applying advertising research methods to measure advertising effectiveness, evaluate campaign performance, and make data-driven decisions to enhance future advertising strategies.	**S, E**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	**PO-A**	**PO-B**	**PO-C**	**PO-D**	**PO-E**	**PO-F**	**PO-G**	**PO-H**
CO-01	S	L	S	L	M	L	L	N
CO-02	M	L	S	L	S	M	M	L
CO-03	S	M	S	M	S	M	M	L
CO-04	M	L	M	L	S	S	M	L
CO-05	S	M	S	M	S	S	M	M

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

Unit 1: Introduction to Advertising Management **9**

Role of Advertising in Marketing- Understanding advertising's function in the marketing mix- Integration of advertising with other marketing elements- Impact of advertising on brand building and sales- Legal, Ethical, and Social Aspects of Advertising- Social responsibility of advertisers towards consumers and society- Communication in Advertising- Processes of communication relevant to advertising.

Unit 2: Promotional Mix and Objectives **9**

Promotional Mix- Components and strategies of the promotional mix- Comparative analysis of different promotional tools (advertising, sales promotion, PR, etc.)- Setting Promotional Objectives- Types and approaches to setting promotional objectives- DAGMAR approach and its application in setting communication goals- Challenges and considerations in defining measurable objectives- Advertising Budgeting

Unit 3: Creative Strategy in Advertising **9**

Advertising Copy- Components and types of advertising copy- Techniques for writing effective copy for different media channels- Role of creativity in capturing audience attention and enhancing brand perception- Creative Strategy and Execution- Process of developing a creative strategy for advertising campaigns- Implementation of creative ideas across various media platforms- Evaluation of creative effectiveness and impact on consumer behavior.

Unit 4: Media Planning and Management **9**

Media Planning- Setting media objectives aligned with advertising goals- Strategies for selecting appropriate media channels (traditional vs. digital)- Optimization of media mix for maximum reach and frequency- Media Evaluation

Unit 5: Advertising Research and Evaluation **9**

Measuring Advertising Effectiveness- Techniques for pre-testing and post-testing advertisements- Market testing and experimental designs in advertising research- Use of internet and digital platforms for real-time advertising evaluation- Positioning Advertising Copy Testing (PACT)- Ethical considerations in conducting advertising research and testing.

TOTAL: 45 HOURS

TEXTBOOKS

1. "Advertising and Integrated Brand Promotion" by Thomas O'Guinn et al. (2022)
2. "Advertising Campaign Strategy: A Guide to Marketing Communication Plans" by Donald Parente and Kirsten Strausbaugh-Hutchinson (2021)
3. "Advertising Creative: Strategy, Copy, and Design" by Tom Altstiel and Jean Grow (2021)

REFERENCES:

1. "Media Planning and Buying in the 21st Century: Integrating Traditional and Digital Media" by K. Subramanian (2023)
2. "Advertising Media Planning: A Brand Management Approach" by Larry Percy et al. (2020)

MS45A4	Social Media Marketing	L	T	P	C
		3	0	0	3

Course Description

Social Media Marketing explores the strategic use of social media platforms as integral components of contemporary marketing strategies. This course delves into the evolving landscape of social media, examining its role in enhancing brand visibility, engaging with target audiences, and driving business growth. Students will learn to develop effective social media campaigns, leverage analytics for decision-making, and navigate ethical considerations in digital marketing practices.

Objectives

- Understand the fundamental concepts of advertising and its pivotal role in the marketing mix.
- Analyze the legal, ethical, and social implications of advertising practices.
- Formulate promotional objectives, set budgets, and evaluate advertising effectiveness.
- Gain proficiency in crafting creative advertising campaigns and executing them across various media platforms.
- Utilize advertising research methods to measure and optimize campaign performance.

Course Outcome		**Cognitive Skill**
CO-01	Understand the role of advertising in the marketing process and articulate its significance in achieving organizational objectives.	**U, A**
CO-02	Formulate SMART promotional objectives and design integrated promotional strategies that align with brand positioning and target audience preferences.	**S, A**
CO-03	Developing creative advertising strategies and crafting compelling advertising copy that effectively communicates brand messages and engages target audiences.	**A, S**
CO-04	Skills to conduct media planning, select appropriate media channels (traditional and digital), and optimize media resources to maximize reach and frequency of advertising campaigns.	**An, A**
CO-05	Proficient in applying advertising research methods to measure advertising effectiveness, evaluate campaign performance, and make data-driven decisions to enhance future advertising strategies.	**E, An, A**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	**PO-A**	**PO-B**	**PO-C**	**PO-D**	**PO-E**	**PO-F**	**PO-G**	**PO-H**
CO-01	S	L	M	N	S	L	M	N
CO-02	M	L	S	N	S	M	N	N
CO-03	M	L	M	N	S	M	L	N
CO-04	S	M	S	N	S	M	L	N
CO-05	M	L	M	S	S	S	M	M

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

Unit 1: Introduction to Social Media Marketing **9**

Overview of Social Media Landscape- Evolution and growth of social media platforms-

Importance of social media in modern marketing strategies- Comparison of major social media platforms (Facebook, Instagram, Twitter, LinkedIn, TikTok, etc.)- **Strategic Role of Social Media**, Integration of social media within the marketing mix, Benefits and challenges of using social media for businesses- Impact of social media on consumer behavior and brand perception.

Unit 2: Social Media Strategy Development **9**

Setting Social Media Objectives- SMART (Specific, Measurable, Achievable, Relevant, Time-bound) objectives in social media marketing- Aligning social media goals with overall marketing and business objectives- **Content Strategy and Creation**- Developing a content strategy for social media platforms- Types of content (text, images, videos, infographics) and their role in engagement- Content creation best practices and tools.

Unit 3: Social Media Advertising and Promotion **9**

Paid Social Media Advertising- Types of social media ads- Targeting options and ad formats on major platforms- Budgeting, bidding strategies, and ROI measurement for social media ads- **Influencer Marketing and Collaboration**- Role of influencers in social media marketing campaigns- Identifying and engaging with influencers- Negotiation, contracts, and measurement of influencer marketing campaigns.

Unit 4: Community Management and Engagement **9**

Building and Managing Social Media Communities- Strategies for community building and engagement- Handling customer queries, complaints, and feedback on social media-Crisis management and reputation management on social platforms- **Measuring and Analyzing Social Media Performance**- Key metrics for evaluating social media performance (reach, engagement, conversions)- Tools and techniques for social media analytics and reporting- Using data to optimize social media strategies and improve ROI.

Unit 5: Social Media Trends and Future Directions **9**

Emerging Trends in Social Media Marketing- Latest innovations and technologies in social media platforms- Impact of AI, AR/VR, and voice search on social media marketing-Predicting future trends and preparing for upcoming changes in social media landscape-**Ethical and Legal Considerations in Social Media Marketing**- Case studies.

TOTAL: 45 HOURS

TEXTBOOKS

1. "Social Media Marketing: A Strategic Approach" by Melissa Barker, Donald I. Barker, Nicholas F. Bormann, and Krista E. Neher (2022)
2. "Social Media Marketing Workbook: How to Use Social Media for Business" by Jason McDonald (2021)
3. "The Art of Social Media: Power Tips for Power Users" by Guy Kawasaki and Peg Fitzpatrick (2020)

REFERENCES:

1. "Social Media Strategy: Marketing, Advertising, and Public Relations in the Consumer Revolution" by Keith A. Quesenberry (2023)
2. "Influencer: Building Your Personal Brand in the Age of Social Media" by Brittany Hennessy (2021)

MS45A5	RETAIL MARKETING	L	T	P	C
		3	0	0	3

Course Description

This course provides an in-depth exploration of the dynamic and evolving field of retail marketing. Students will gain a comprehensive understanding of the retailing environment, examining the various types of retail stores, service and non-store retailing, and strategies to achieve competitive advantage. Key topics include trade area analysis, store location and layout, merchandise planning, pricing strategies, and customer communication in retail. The course also delves into the impact of globalization on retail formats, with a focus on emerging trends in the Indian retail industry, online retailing, and innovative store formats such as interactive kiosks and customized retail experiences.

Objectives

- To understand what marketing means to business executives and academics in retail.
- To understand the ways that retailers use marketing tools and techniques to interact with their customers.

Course Outcome - COs		Cognitive Skill
CO-01	Examine insights into all functional areas of retailing	**R, U**
CO-02	Create Accounts of essential principles of retailing	**U, A**
CO-03	Analyze perspective of the Indian retailing scenario	**U, A**
CO-04	Understand the functions of retail business and various retail formats and retail channels	**A, E**
CO-05	Analyze Retail Market and Financial Strategy including product pricing	**E, S**

R- Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S- Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	M	M	M	S	L	M	M	L
CO-02	L	M	M	S	L	L	S	L
CO-03	M	S	M	S	M	M	M	M
CO-04	M	S	M	S	S	M	S	S
CO-05	M	S	S	S	S	S	S	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT I: Introduction to Retailing **9**

An overview of Retailing-Types of Stores-Product Retailing vs. Service Retailing-Non store Retailing-Retail Strategy-Achieving competitive advantage and positioning Retailing Environment-Legal, Social, Economic, Technological, Issues-Trends in the Indian Retailing Industry.

UNIT II: Trade Area Analysis **9**

Retail store location and Layout-Country/Region Analysis- Trade Area Analysis- Site evaluation and Selection-Store design and Layout-Comprehensive Store Planning-Exterior design and Layout -Interior store design and Layout- Interior design elements.

UNIT III: Merchandise Pricing **9**

Planning merchandise needs and merchandise budgets- Methods for determining inventory Evaluation- Assortment planning, buying and vendor relations- Merchandise Pricing- Price Strategies-Psychological Pricing-Mark-up and markdown strategies.

UNIT IV: Communicating with the retail Customer **9**

Communicating with the retail Customer- Retail Promotion Mix- Advertising-Sales Promotion- Publicity-Retail Selling Process- Retail database- In-store customer service.

UNIT: V Globalization and changing retail formats **9**

Globalization and changing retail formats–Online Retailing- International Retailing–Opportunities and Challenges- Market entry formulas- New customized formats (customized stores, portable stores, merchandise depots, retail theatre, service malls, customer-made stores, interactive kiosk 'shopping arcades')

TOTAL: 45 HOURS

Textbooks:

1. Swapna Pradhan, retail management, text & cases, Tata McGraw-Hill Publishing company, New Delhi, 2008

REFERENCES

1. Chetan Bajaj, Tuli & Srivastava, Retail Management, Oxford University Press, New Delhi.2010
2. Giridhar Joshi, Information Technology for Retail, Oxford University Press, New Delhi.2009

MS35A6	SALES MANAGEMENT	L	T	P	C
		3	0	0	3

COURSE DESCRIPTION

The Sales Management course provides an in-depth understanding of managing a sales force and sales operations within an organization. It covers the essential aspects of sales management, personal selling strategies, and salesmanship techniques. Students will learn how to develop and implement sales plans, set up sales organizations, and create effective sales-related marketing policies. The course also addresses sales operations, including budgeting, territory management, quotas, and sales contests, while emphasizing the critical role of a sales manager in training, motivating, and evaluating sales personnel. Through a practical approach, students will explore recruitment, selection, and the development of sales teams to meet organizational goals.

OBJECTIVES:

- Develop a plan for organizing, staffing, and training the sales force.
- Know the distinction between the skills required for selling and sales management.
- Identify the key factors in establishing and maintaining high morale in the sales force.
- Develop an effective sales compensation plan.
- Evaluate the performance of a salesperson.

Course Outcome - COs		**Cognitive Skill**
CO-01	To understand and evaluate the concept of Sales Management and Organization.	**R, U**
CO-02	To understand the roles personal selling, marketing policies, distribution policies, product policies and pricing policies	**U, A**
CO-03	To manage and enhance the effective sales operation, budget, organizing display, showroom and exhibitions.	**U, A**
CO-04	To understand Salesmanship, qualities and functions, types of salesmen and psychology of customers.	**A, E**
CO-05	To manage the sales force recruitment & selection, training, formulation & conduction of sales training programme	**E, S**

R- Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S- Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	**PO-A**	**PO-B**	**PO-C**	**PO-D**	**PO-E**	**PO-F**	**PO-G**	**PO-H**
CO-01	S	M	N	M	N	M	S	M
CO-02	S	M	M	M	N	S	N	M
CO-03	S	N	N	M	M	N	L	L
CO-04	S	L	L	M	N	M	M	S
CO-05	S	N	N	N	L	S	L	M

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT I: Sales Management and Organisation **9**

Objectives and sales management, sales executive as a coordinator, sales management and control, sales organisation - it's purpose, setting up a sales organisation, types of sales organisation.

UNIT II: Personal Selling **9**

Objectives and theories of personal selling, analysing market potential, sales potential and sales forecasting method & evaluation, determining sales related marketing policies -

product policies, distribution policies & pricing policies.

UNIT III: Sales Operations **9**

Sales budget, sales territories, sales Quota's, control of sales, sales meeting and sales contest, organising display, showroom and exhibitions.

UNIT IV: Salesmanship **9**

Sales Manager-Qualities and functions, types of salesman, prospecting, pre-approach & approach, selling sequence, psychology of customers.

UNIT V: Sales force Management **9**

Recruitment & selection, training, formulation & conduction of sales training programme, motivation of sales personnel, compensation of sales personnel, evaluation and supervision of sales personnel.

TOTAL: 45 HOURS

TEXTBOOK:

1. Still, Cundiff &Govoni - Sales management & Cases, Prentice-Hall Of India Pvt

REFERENCES:

1. McMurry & Arnold - How to build a dynamic Sales Organisation - McGraw-Hill
2. Pradhan, Jakate& Mali - Elements of Salesmanship and Publicity - Kitab Mahal
3. Anderson R - Professional Sales Management - McGraw-Hill

MS35A7	STRATEGIC MARKETING MANAGEMENT	L	T	P	C
		3	0	0	3

COURSE DESCRIPTION

Strategic Marketing Management focuses on understanding and applying the principles of strategic management within the context of marketing. The course covers the nature and importance of strategic management, emphasizing the skills, knowledge, and attitudes necessary for effective strategy formulation and implementation. Students will explore how strategic decisions align with corporate policies, business objectives, and organizational missions.

OBJECTIVES

- To understand the nature and importance of strategic marketing management
- To understand the concepts and ideas of strategic marketing
- To understand and know about the financial Strategies- Financial Policy Issues, Sources of finance control of capital issues etc.
- To understand and know about Personnel policies and their significance recruitment, Industrial relations policy, Settlement of Disputes

Course Outcome – Cos		**Cognitive Skill**
CO-01	Compare and contrast the key principles of marketing strategy	**R, U**
CO-02	Explain marketing and strategy concepts and ideas	**U, A**
CO-03	Think strategically about marketing issues and provide recommendations	**U, A**
CO-04	Prepare a professional, logical and coherent report in the form of a marketing plan	**A, E**
CO-05	Deliver an oral presentation in a professional, engaging manner and successfully work as a team	**E, S**

R- Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S- Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	N	L	S	M	M	L	N
CO-02	S	S	M	S	M	L	M	S
CO-03	S	S	L	S	M	L	M	M
CO-04	S	S	M	S	S	M	M	L
CO-05	S	N	M	S	M	L	L	M

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT I: Introduction Strategic Management 9

Strategic Management –Its Nature and Importance, Skills, Knowledge and Attitudes, Group aspects of Strategic Management, Characteristics of Business Policy and Corporate Strategy, Norms of Strategy Making, Organizational Mission, Corporate Objectives and goods, Analysis of Internal Resources, Strength and weaknesses, Strategic advantage analysis- Factors of common concern, Marketing and distribution , financing and Accounting , Production and operations management , R&D, Human Resources and other organizational factor, sources of data for internal analysis and diagnosis.

UNIT II: Growth or expansion strategy 9

Growth or expansion strategy–Diversification strategy, Types-Horizontal, Concentric, Conglomerate, Vertical, various types of integrations, Retrenchment strategy and its variants: External Growth Strategy – Merger, Acquisition and Joint Ventures.

UNIT III: Functional Policies **9**

Functional Policies –Production Policies, Involvement, Integration and choice with respect to production process action activities, Govt. Policies, backward areas and plant locations consideration in India. Maintenance and replacement facilities: Purchasing Policies-Make or buy decisions, criteria for vender selection. Co-ordination of Purchase and production with sales.

UNIT IV: Marketing Strategies and Policies Marketing Decision **9**

Marketing Strategies and Policies Marketing Decision, Variable and Policy issues, product line and product mix policy, PLC, Product Positioning Strategy and Market recommendation, customer and channel Policies, Pricing Policies, Proportional Policies, Optional Marketing Mix.

UNIT V: Financial Strategies **9**

Financial Strategies- Financial Policy Issues, Sources of finance control of capital issues, Types of securities. Financial leverage, Investment and capital allocation policy, capital budgeting, dividend policy, Personnel policies and their significance recruitment, Industrial relations policy, Settlement of Disputes.

TOTAL: 45 HOURS

TEXTBOOKS:

1. P.K. Ghosh: Business Policy, Strategy, Planning and Management
2. Christensen, Andrews Dower: Business Policy- Text and Cases

REFERENCES:

1. William F. Gkycj: Business Policy – Strategy Formation and Management Action
2. Bongee and Colonan: Concept of Corporate Strategy
3. Peter F. Drucker: Management Tasks, Responsibilities, Practices

MS35A8	CONSUMER BEHAVIOUR	L	T	P	C
		3	0	0	3

COURSE DESCRIPTION

This course explores the various factors that influence consumer behavior and how these insights can be applied in marketing strategies. It begins by introducing the nature and importance of consumer behavior, along with the consumer research process. Students will gain an understanding of individual determinants such as perception, learning, personality, attitudes, and motivation that shape consumer decisions. The course also delves into group influences, including reference groups, family decision-making, and the diffusion of innovations. Additionally, environmental influences like social class and culture are examined for their impact on consumer behavior. The course concludes by analyzing the consumer decision-making process, from problem recognition to post-purchase behavior, and covers key consumer behavior models, including Nicosia, Howard & Sheth, and Engel-Kollat Blackwell.

OBJECTIVES

- To provide basic knowledge in fundamentals of marketing management
- To understand the concepts of marketing
- To understand the basic concepts of consumer behavior
- To understand the consumer decision making process

Course Outcome - COs		**Cognitive Skill**
CO-01	To highlight the importance of understanding consumer behavior in Marketing	R, U
CO-02	To study the individual influences on consumers such as personality, perception and motivation	U, A
CO-03	To study the group influences on consumer such as family and opinion leadership	U, A
CO-04	To study the environmental factors, influence the consumer behaviour	A, E
CO-05	To make decision using different models of consumer behaviour	E, S

R- Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S- Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	M	M	L	S	S	S	L
CO-02	L	S	M	S	L	M	S	L
CO-03	M	L	S	S	S	M	S	M
CO-04	L	S	S	M	M	S	M	M
CO-05	S	L	S	L	M	M	M	M

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT I: Introduction to Consumer Behavior (CB) 9

Introduction to Consumer Behavior (CB): Nature and Importance of CB, Application of CB in Marketing, Consumer Research process.

UNIT II Individual Determinants of CB 9

Perception: process, perceived risk - Learning: principles, theories - Personality: nature, theories, self-concept, psychographic and lifestyle - Attitude: Structural model of attitude, attitude formation & change - Motivation: needs/motives & goals, dynamic nature of motivation, Arousal of motives, theories

UNIT III: Group Determinants of CB **9**

Reference group influence: types of consumer relevant groups, factors affecting group influence, application of reference group concept - Family: functions of family, family decision making,
family life cycle (FLC) - Opinion Leadership and Personal influence - Diffusion of Innovation: Adoption process. Diffusion process

UNIT IV: Environmental Influences on CB **9**

Social class, Lifestyle Profile of Social class, application to CB - Culture: characteristics, cross cultural understanding

UNIT V: Consumer Decision making Process **9**

Problem recognition - Information Search Process and Evaluation - Purchasing process - Post purchase behavior - Models of CB-Nicosia, Howard & Sheth, Engel-Kollat Blackwell

TOTAL: 45 HOURS

TEXT BOOKS:

1. Loudan, David L and Bitta, A.J. Della - Consumer Behaviour- McGraw-Hill
2. Schiffman LG and Kanuk LL - Consumer Behaviour - Pearson Financial Times/Prentice Hall

REFERENCES:

1. Loudan, David L and Bitta, A.J. Della - Consumer Behaviour- McGraw-Hill
2. Schiffman LG and Kanuk LL - Consumer Behaviour - Pearson Financial Times/Prentice Hall
3. Nair, Suja R - Consumer Behaviour in Indian Perspective – Himalaya Publishing House
4. Mowen, Jon - Consumer Behaviour - Prentice Hall

MS35A9	RURAL MARKETING	L	T	P	C
		3	0	0	3

COURSE DESCRIPTION

This course provides an in-depth understanding of the unique dynamics of rural markets, focusing on their scope, characteristics, and the role of rural development. Students will explore rural consumer behavior, compare it with urban consumers, and learn how to tailor marketing strategies for this distinct segment. The course also covers agricultural marketing, its economic significance, and the challenges involved, while examining export potential and the role of government and non-government agencies in promoting rural and agricultural sectors.

OBJECTIVES

- To Understand and Explore the Special Areas in Rural Marketing Environment.
- Understand Rural market Distribution.
- Understand the functions performed by the Agricultural marketing system.
- To understand the structure and Importance of rural banking in Indian Economy.

Course Outcome - COs		Cognitive Skill
CO-01	Categorize issues in rural markets and Analyze marketing environment, consumer behaviour, distribution channels, marketing strategies, etc. in the context of rural markets in India	**R, U**
CO-02	Explore the Special Areas in Rural Marketing Environment, Understand opportunities and emerging challenges in the upcoming rural markets	**U, A**
CO-03	Understand the Rural market distribution, Know about the consumer behaviour and trends in Rural marketing	**U, A**
CO-04	Enable to understand the structure and importance of rural banking in Indian Economy, identify basic market problems and assess the effect of market imperfections on the performance of the marketing	**A, E**
CO-05	Understand the functions performed by the agricultural marketing system, Make students aware of current issues and trends in agricultural markets	**E, S**

R- Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S- Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	M	M	M	S	L	M	M	L
CO-02	L	M	M	S	L	L	S	L
CO-03	M	S	M	S	M	M	M	M
CO-04	M	S	M	S	S	M	S	S
CO-05	M	S	S	S	S	S	S	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT I: Concept & scope of rural market **9**

Concept & scope of rural market, Rural development as a core area, Efforts put for Rural development in Five years plans. Rural markets, Characteristics, Rural markets, Environmental factors.

UNIT II: Rural Consumer Behavior **9**

Rural Consumer Behaviour, Rural Consumer Vs Urban Consumers – a comparison, Relevance of Marketing mix for Rural market/Consumers. Problems in rural market

UNIT III: Segmentation **9**

Segmentation, Targeting & Positioning for rural market, Market forces, components of different Product Strategies, Pricing Strategies, Promotional Strategies & Distribution Strategies for Rural consumers.

UNIT IV: Agricultural Markets **9**

Understanding Agricultural Markets, Nature & scope, Objectives of Agriculture Marketing, Challenges in Agriculture Marketing, Agriculture Marketing & its Economic importance, Agricultural Produces and their market.

UNIT V: Export potential for Agri-products **9**

Export potential for agri-products, Major of Government and Non-Govt. Agencies in the development of Rural and Agricultural, Sector Marketing Strategies for Seed; Fertilizers; Pesticides; Farm equipment. Roles.

TOTAL: 45 HOURS

TEXT BOOKS:

1. Badi & Badi - Rural Marketing - Himalaya Publishing House
2. Mamoria, C.B. & Badri Vishal - Agriculture problems in India - Kitab Mahal

REFERENCES:

1. Arora, R.C - Integrated Rural Development - S. Chand Limite
2. Gopalaswamy.T.P - Rural Marketing - Vikas Publishing House Pvt Limited

ELECTIVE CURRICULUM
B. FINANCIAL MANAGEMENT

Sl.No	Code	Name of the Subjects	L	T	P	C
1	MS45B1	Financial Markets	2	1	0	3
2	MS45B2	Strategic Investment Management	2	1	0	3
3	MS45B3	Financial Derivatives and Risk Management	2	1	0	3
4	MS45B4	Risk and Insurance Management	2	1	0	3
5	MS45B5	International Financial Management	2	1	0	3
6	MS45B6	Strategic Financial Management	2	1	0	3
7	MS45B7	Analytics in Finance	2	1	0	3
8	MS45B8	Strategic Applications of FinTech	2	1	0	3
9	MS45B9	Digital Finance and Corporate Strategy	2	1	0	3

MS45B1	Financial Markets	L	T	P	C
		2	1	0	3

Course Description

The capital market plays a very important role in promoting economic growth through the mobilization of long-term savings and the savings get invested in the economy for productive purpose. The major intent of the course is to develop in the students' knowledge about the various investments involved in Indian capital market which regulates the growth of an economy and provides lot of employment opportunities.

Objectives.

- To understand the structure and classification of financial markets and instruments and identify the roles and responsibilities of key market participants.
- To analyze various capital issue methods like rights issue, bonus issue, and private placements
- To learn about fixed income markets, bond markets, and their trading platforms.
- To evaluate the pricing and valuation of commodities and the impact of global events on commodity prices.
- To analyze the uses, advantages, and risks associated with derivatives and develop practical understanding through hedging and derivative case studies.

Course Outcome		**Cognitive Skill**
CO-01	To Understand the Financial Markets and Instruments: Students will gain an in-depth understanding of financial markets, their participants, and key instruments such as bonds, money markets, and capital markets. They will explore the functions and importance of primary and secondary markets, as well as the evolution of financial regulations, including the role of SEBI and its regulatory framework through case studies.	**U, A, An**
CO-02	To Analyze Capital Issues and Instruments: Students will understand capital issues, including equity and debt instruments, and develop knowledge about the characteristics, types, and pricing of bonds. They will also explore credit ratings, default risks, and insider trading regulations. Students will learn to manage pre- and post-issue activities such as prospectus issuance, rights issues, and private placements, supported by relevant case studies	**A, An, E**
CO-03	To Navigating Equity and Fixed Income Markets: Students will acquire knowledge of the structure and functioning of equity markets, including stock exchanges (NSE, BSE, OTC), trading mechanisms, and equity indices. They will also learn about the processes of IPOs and secondary offerings. Additionally, students will explore the bond markets and trading platforms through case studies in both equity and fixed income markets.	**A, An, E**
CO-04	To Understanding Forex and Commodity Markets: Students will develop an understanding of the structure and functioning of forex markets, focusing on exchange rate determination, currency trading, and forex derivatives. They will also analyze the impact of macroeconomic factors on exchange rates. Additionally, students will explore commodity markets, including their trading mechanisms, pricing, and the influence of global events on	**U, A, An, E**

	commodity prices.	
CO-05	To Explore the Derivatives and Risk Management: Students will gain a comprehensive understanding of derivatives, including forward contracts, futures contracts, options, and swaps (interest rate and currency swaps). They will differentiate between futures and options contracts, cash and futures markets, and examine the valuation of swaps. Furthermore, students will explore the use of derivatives for hedging and risk management, with a focus on the types of traders, settlement mechanisms, and associated risks, using case studies.	**U, A, An, E**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	S	M	M	M	S	S	L
CO-02	M	M	L	S	M	M	S	M
CO-03	M	S	M	S	L	S	M	M
CO-04	S	S	M	M	S	S	M	S
CO-05	S	M	S	L	M	M	L	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT I Introduction to Financial Markets 9

Overview of Financial Markets and Instruments - Market Participants and Their Roles - Functions and Importance of Financial Markets - Primary / Secondary markets: Bond Market – Money Market – Capital Market- Evolution – need for regulatory mechanism – establishment of SEBI – SEBI Act / Rules and Regulations - **Case Study**

UNIT II Capital Issues 9

Capital Issues – Equity and Debt Instruments - Characteristics and Types of Bonds – Pricing – Credit Ratings and Default Risk– Insider trading – Management of Pre-issue and Post issue activities including Issue of Prospectus / Offer documents – Rights issue – Bonus issue – Private Placements - **Case Study**

UNIT III Equity and Fixed Income Markets 9

Structure and Function of Equity Markets - Stock Exchanges and Trading Mechanisms: National Stock Exchange — Bombay Stock Exchange – OTC market- Equity Market Indices and Benchmarks - Initial Public Offerings (IPOs) and Secondary Offerings - - Fixed Income Markets: - Bond Markets and Trading Platforms - **Case Study**

UNIT IV Forex Markets and Commodities market 9

Structure and Function of Forex Markets - Exchange Rate Determination - Currency Trading and Forex Derivatives - Impact of Macroeconomic Factors on Exchange Rates - Commodity Markets: Overview of Commodity Markets - Trading Mechanisms and Key Participants - Pricing and Valuation of Commodities - Impact of Global Events on Commodity Prices

UNIT V Derivatives Market 9

Derivatives – Definition – Types – Forward Contracts – Futures Contracts – Options – Differences between future and Option contracts -– Differences between Cash and Future Markets – Definition of SWAP – Interest Rate SWAP – Currency SWAP – Valuation of Interest rate SWAPs and Currency SWAPs - Types of Traders – OTC and Exchange Traded Securities – Types of Settlement – Uses and

Advantages of Derivatives – Risks in Derivatives - Hedging Case **Study**

TOTAL: 45 HOURS

TEXTBOOKS

1. Bharat's Compendium on SEBI, Capital Issues and Listing.
2. Nabhi's Manual for Capital Issues, SEBI and Mutual Funds, Nabhi Publications.
3. 'Capital Market Management' – V.A. Avadhani. Himalaya Publishing House, New Delhi.
4. "Futures and Other Derivative Securities", John Hull, Publisher: Pearson US

REFERENCES:

1. "Capital Markets in India" Rajesh Chakrabarti, Sage Publications
2. "Derivatives and Risk Management", Sundaram Janakiramanan, Pearson Education India
3. Indian capital Market- Uma and Arumugam- Tata Mcgraw Hill- New Delhi
4. Indian capital Market Trends and Reforms –Aringdom Banerjee ICFAF University press

MS45B2	Strategic Investment Management	L	T	P	C
		3	0	0	3

Course Description

This course offers valuable insights into the world of investment with extensive coverage of topics like fundamental analysis and technical analysis for security analysis framework. It also presents the core of the modern portfolio practices and financial models at a length covering of CAPM model, Index model, Arbitrage pricing theory, Portfolio theory, and portfolio management in international setting. It also helps students to develop the skills for developing portfolio constructions, revision, reconstruction and investment advisory.

Objectives

1. To provide students with a comprehensive understanding of the investment environment, including the investment process, alternatives, and sources of information, as well as the structure and functioning of securities markets (primary, secondary, equity, debt, and derivatives) and the role of regulatory bodies like the Securities Exchange Board of India (SEBI).
2. To equip students with the ability to analyze different types of risks, their measurement, and the concept of time value of money, along with the valuation techniques for bonds, stocks, and preferred stocks, using models like the Dividend Discount Model, Constant Growth Model, and Two-Stage Growth Model.
3. To enable students to conduct comprehensive fundamental analysis by examining macroeconomic indicators, industry classifications, industry life cycles, and key financial metrics for company analysis. Students will learn techniques for economic forecasting, industry analysis, and the estimation of a company's intrinsic value through strategic, accounting, and financial analysis.
4. To familiarize students with the tools and techniques of technical analysis, such as charting, Dow Theory, moving averages, and relative strength analysis, while understanding the differences between technical and fundamental analysis. Students will also explore the Efficient Market Theory and the Random Walk Theory, providing insights into market behavior.
5. To provide students with the knowledge and skills required for portfolio management, including portfolio construction, risk diversification, and the application of models like the Markowitz Model, Sharp Index Model, and Capital Asset Pricing Model (CAPM). Students will learn the portfolio management process, performance evaluation using Sharp's, Treynor's, and Jenson's measures, and will explore active vs. passive management strategies.

Course Outcome		Cognitive Skill
CO-01	To Understand the Structure of Securities Markets and Investment Processes: Students will be able to explain the various components of the investment environment, including the types of securities, the investment process, and the structure of primary, secondary, equity, debt, and derivatives markets. They will also gain knowledge of regulatory frameworks like SEBI and the role of market participants.	**R, U**
CO-02	To Evaluate Risk and Return in Securities Investments: Students will be able to assess various types of investment risks and apply measures of risk to evaluate the returns on bonds, stocks, and preferred stocks. They will effectively use valuation models such as the Dividend Discount Model, Constant Growth Model, and Two-Stage Growth Model to analyze investment	**U, A, An, E**

	returns.	
CO-03	To Conduct Comprehensive Fundamental Analysis for Investment Decisions: Students will be proficient in conducting macroeconomic, industry, and company analysis to make informed stock investment decisions. They will understand how to estimate intrinsic value using strategic, accounting, and financial analysis, and apply economic forecasting techniques for investment decision-making.	**A, An, E**
CO-04	To Apply Technical Analysis and Understand Market Efficiency: Students will gain expertise in using technical analysis tools, including charting techniques, Dow Theory, moving averages, and rate of change, to predict stock price movements. They will also understand the principles of the Efficient Market Theory and Random Walk Theory, and the implications of market efficiency on investment strategies.	**A, An, E**
CO-05	To Develop and Manage Investment Portfolios: Students will be capable of constructing and managing investment portfolios using diversification strategies and risk-return analysis. They will apply models like the Markowitz Model, CAPM, and Sharpe Index to optimize portfolio performance, formulate portfolio strategies, and evaluate performance using metrics such as Sharpe's, Treynor's, and Jensen's measures	**U, A, An, E**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	**PO-A**	**PO-B**	**PO-C**	**PO-D**	**PO-E**	**PO-F**	**PO-G**	**PO-H**
CO-01	S	S	S	S	M	M	L	S
CO-02	S	S	S	M	S	M	S	L
CO-03	S	M	M	M	M	S	L	M
CO-04	M	S	M	L	S	M	S	M
CO-05	S	S	M	S	S	M	M	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT I: Investment Environment **9**

Introduction to Securities –Investment process – Investment alternatives – Sources of Investment information- Securities Markets: Participants in the Securities market - Primary market – Secondary market – Equity market - Debt market – Derivatives market – Securities Exchange Board of India

UNIT II: Security Analysis **9**

Risk and Return Analysis: Risk – types - measures of risk - Time value concept - Bond return and valuation: - Stock return and valuation: Dividend Discount Model - Constant growth model – Two stages Growth model- Preferred stock valuation

UNIT III: Fundamental Analysis: **9**

Macroeconomic Analysis – Economic forecasting – Stock investment decisions – Techniques of economic forecasting -. Industry Analysis: Classification of Industries – Industry life cycle – Key issues in an Industry analysis. Company Analysis: Strategy analysis - Accounting analysis – Financial Analysis – Estimation of Intrinsic value

UNIT IV: Technical Analysis and the Efficient Market Theory **9**

Technical Analysis: Assumptions – Technical analysis vs. Fundamental analysis – Charting techniques - Dow Theory – Moving averages analysis – Relative strength analysis – Rate of change –Efficient market theory – Random Walk theory

UNIT V: Portfolio Management and Strategies **9**

Portfolio Construction and Choice: Diversification and Portfolio Risk– Portfolio return and risk – Markowitz Model – The sharp index model– Capital Asset Pricing Model- Portfolio Management Process: Specification of investment objectives and constraints- Quantification of capital market expectations - Choice of asset mix –Formulation of Portfolio strategy- Selection of securities– Portfolio execution - Portfolio revision- Performance Evaluation: Sharp's, Treynor's and Jenson's measures - Active vs. Passive Management Strategies

TOTAL: 45 HOURS

TEXTBOOKS

1. 'Investment Analysis and Portfolio Management' – Prasanna Chandra, McGraw Hill Education (India) Private Ltd Fifth Edition. 2017.

Module I - Chapter 1 1.3-1.28 Chapter 2 2.1-2.2.28 Chapter 3-3.1-3.48
Module II – Chapter 4 4.3 - 4.28, Chapter 5 5.1- 5.22
Module III – Chapter 14 14.1-14.26 Chapter 15 15.1- 15.13
Module IV – Chapter 16 16.1 – 16.18
Module V - Chapter 7 7.3 -7.23, Chapter 8 8.1- 8.32 Chapter 22 22.3-22- 40 Chapter23 23-1 23.26

2. 'Security Analysis and Portfolio Management' – Donald E.Fischer & Ronald J.Jordan, Prentice Hall of India Private Ltd., New Delhi, 2002

Module I - Part I 1-1.16 2 22 -37 3 45- 59 4 65-85 5 89- 103 6 105-119
Module II – Part II 7 124-132 8 153- 170 9 185-199 15 339-358 16 373- 385
Module III – Part II 10 214 -227 11 235-250
Module IV – Part II 12 275 – 297 13 305 – 315 14 325-335
Module V - Part III 17 393 – 396 18 404 – 412 19 430 – 437 20 452 – 459 21482-492

REFERENCES:

1. 'Security Analysis and Portfolio Management' – PunithavathyPandian, Vikas Publishing House Private Ltd., Second edition 2013
2. 'Securities Analysis and Portfolio Management' – V.A. Avadhani, Himalaya Publishing House, 1997
3. 'Security Analysis and Portfolio Management' – Dr. Kevin, Publishers Prentice-Hall of India Investment Management' – V.K. Bhalla, S.Chand & Company Ltd., Seventh Edition 2002

MS45B3	Financial Derivatives and Risk Management	L	T	P	C
		3	0	0	3

Course Description

This course offers an in-depth exploration of derivative instruments and their crucial role in risk management within financial markets. It begins with an introduction to various types of derivatives, including forward contracts, futures, options, and swaps, while highlighting the differences between cash and futures markets, types of traders, and the advantages and risks associated with derivatives. Through case studies and practical applications, this course equips students with the tools to analyze and apply derivatives for hedging and risk management in real-world financial scenarios.

Objectives

- To understand the concept and types of derivatives, including forward contracts, futures, options, and swaps and differentiates between cash and future markets and the various types of traders in derivative markets.
- To study the application of futures contracts for hedging and understand different types of futures, including securities, stock indices, currencies, and commodities.
- To analyze the intrinsic and time value of options, along with option payoffs for securities, stock indices, currencies, and futures and Explore option pricing models and compare futures and options contracts.
- To learn the valuation techniques for interest rate swaps and currency swaps, along with bonds and floating rate notes (FRNs).
- To analyze the contract terminology and specifications for stock futures, index futures, and interest rate derivatives in the Indian context.

Course Outcome		Cognitive Skill
CO-01	Upon completing this course, students will be able to Understand the different types of derivatives, including forward contracts, futures, options, and swaps, and their role in financial markets and analyze the differences between cash and future markets and the types of traders in derivative markets.	**U, An**
CO-02	To apply futures contracts for hedging purposes across various asset classes such as securities, stock indices, currencies, and commodities, Analyze the relationship between future prices, forward prices, and spot prices and their implications for pricing and trading strategies and evaluate delivery options and their impact on futures contracts.	**A, An, E**
CO-03	To Calculate the intrinsic and time value of options and understand their payoff structures in different market conditions and analyze the application of options in securities, stock indices, currencies, and futures markets.	**A, An, E**
CO-04	To Evaluate the valuation methods for interest rate swaps, currency swaps, bonds, and floating rate notes (FRNs) and analyze the credit risks involved in swaps and their impact on counterparty risk.	**A, An, E**
CO-05	To Evaluate the contract terminology and specifications for stock futures, index futures, and interest rate derivatives in the Indian context and develop practical insights into the functioning of derivative markets in India, applying knowledge to real-world scenarios.	**A, An, E**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	M	M	S	S	S	S	L	M
CO-02	M	M	M	S	S	M	S	S
CO-03	L	M	L	S	M	M	M	S
CO-04	S	S	M	M	S	S	M	S
CO-05	S	S	M	S	M	S	L	M

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT I INTRODUCTION 9

Derivatives – Definition – Types – Forward Contracts – Futures Contracts – Options – Swaps – Differences between Cash and Future Markets – Types of Traders – OTC and Exchange Traded Securities – Types of Settlement – Uses and Advantages of Derivatives – Risks in Derivatives.

UNIT II FUTURES CONTRACT 9

Specifications of Futures Contract - Margin Requirements – Marking to Market – Hedging - using Futures – Types of Futures Contracts – Securities, Stock Index Futures, Currencies and Commodities – Delivery Options – Relationship between Future Prices, Forward Prices and Spot Prices.

UNIT III OPTIONS 9

Definition – Exchange Traded Options, OTC Options – Specifications of Options – Call and Put Options – American and European Options – Intrinsic Value and Time Value of Options – Option payoff, options on Securities, Stock Indices, Currencies and Futures – Options pricing models – Differences between future and Option contracts.

UNIT IV SWAPS 9

Definition of SWAP – Interest Rate SWAP – Currency SWAP – Role of Financial Intermediary – Warehousing – Valuation of Interest rate SWAPs and Currency SWAPs Bonds and FRNs – Credit Risk.

UNIT V DERIVATIVES IN INDIA 9

Evolution of Derivatives Market in India – Regulations - Framework – Exchange Trading in Derivatives – Commodity Futures – Contract Terminology and Specifications for Stock Options and Index Options in NSE – Contract Terminology and specifications for stock futures and Index futures in NSE – Contract Terminology and Specifications for Interest Rate Derivatives.

TOTAL: 45 HOURS

TEXTBOOKS

1. John.C.Hull, Options, Futures and other Derivative Securities', PHI Learning, 9th Edition, 2012
2. Keith Redhead, 'Financial Derivatives – An Introduction to Futures, Forwards, Options and SWAPs',– PHI Learning, 2011.

REFERENCES:

1. Stulz, Risk Management and Derivaties, Cengage Learning, 2nd Edition, 2011.
2. Varma, Derivaties and Risk Management, 2ndt Edition, 2011.
3. David Dubofsky – 'Option and Financial Futures – Valuation and Uses, McGraw Hill International Edition.
4. S.L.Gupta, Financial Derivaties- Theory, Concepts and Practice, Prentice Hall Of India, 2011. 5. Website of NSE, BSE.

MS45B4	**Risk and Insurance Management**	**L**	**T**	**P**	**C**
		3	**0**	**0**	**3**

Course Description

The course is intended to provide an overall view of the risk and risk management process. It further elaborates on property and liability risk management, Life, Health and income exposures. It explains the state of affairs of insurance industry in India.

Objectives

- To provide a comprehensive understanding of risk identification, evaluation techniques, and the different types of risk exposures such as property, liability, life, health, and loss of income, along with the application of non-insurance risk management techniques.
- To equip students with the ability to select and implement appropriate risk management techniques for both personal and commercial properties, business liabilities, and workers' compensation, with the aid of practical case studies.
- To familiarize students with personal risk management strategies, focusing on automobile and homeowners' insurance policies, premium ratings, and cost containment measures, while understanding the role of safety advances in mitigating risks.
- To enable students to analyze life and health insurance, including tax incentives, contract provisions, cost-sharing mechanisms, and reforms, as well as understand the structure and benefits of annuities and employee benefit programs like health and retirement plans.
- To provide insight into the general insurance sector in India, focusing on the regulatory framework, particularly the IRDA Act, investment norms, and the protection of policyholders' interests, while also examining the challenges faced by regulatory authorities.

Course Outcome		**Cognitive Skill**
CO-01	Upon completion of this unit Students will be able to Understand, identify and evaluate different types of risks, including property, liability, life, health, and income loss exposures, and assess the role of non-insurance risk management techniques.	**U, An, E**
CO-02	Students will develop the skills to select and implement appropriate risk management techniques in various scenarios, with a focus on case studies that provide practical insight into real-world risk management practices.	**U, A, An**
CO-03	Students will learn to manage personal risks, such as those related to automobile ownership and homeownership, by understanding insurance claims, premium rates, policy coverage, and risk management techniques specific to personal property and liability	**U, A, An,**
CO-04	Students will be able to assess the importance of life and health insurance, including the mechanics of cost-sharing, types of life insurance, tax incentives, policy provisions, and health care reforms, along with understanding annuities and employee benefits.	**A, An, E**
CO-05	Students will develop an understanding of the general insurance sector in India, including the regulatory framework under the IRDA Act, investment norms, policyholder protection, and the challenges faced by regulatory authorities.	**A, An, E**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	S	S	M	M	M	M	S
CO-02	M	M	M	S	S	M	M	L
CO-03	S	S	M	S	M	M	L	M
CO-04	S	S	L	M	L	S	M	M
CO-05	S	S	M	M	M	S	S	M

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

Unit – I Introduction to Risk 9

Risk – Risk identification evaluation, Property and liability Loss exposures, Life, Health, and Loss of Income exposures and non-insurance risk management techniques. Selecting and Implementing Risk management techniques - **Case Study**

Unit – II Risk Management 9

Property and liability risk Management- Risk Management of commercial property, Business liability and risk management insurance - Workers' compensation and alternative risk managing. - **Case Study**

Unit - III Personal Risk Management 9

Risk Management of Auto owners - Insurance Claims – the need for insurance-personal automobile policy-personal automobile rating- premium and death rates-cost containment advances in driver and auto safety- Risk management of homeowners policy coverage-perils covered by the policy-flood Insurance-personal articles floater-personal risk management - **Case Study**

Unit – IV Health Insurance 9

Loss of life – types of life insurance- tax incentives for life insurance- Life insurance contract provisions- Loss of Health- Health insurance providers- mechanics of cost sharing- health expense insurance- disability income insurance - health insurance policy provisions - health care reforms-Annuities- structures of annuities- annuity characteristics- annuity taxation-Employee's benefits-health and retirement benefits. - **Case Study**

Unit – V General Insurance 9

General insurance industry in India – IRDA Act- Investment norms – Protection of policy holders Interest- Importance of General insurance – Role of Regulatory authorities – Challenges in General Insurance.-**Case Study**

TOTAL: 45 HOURS

TEXTBOOKS

1. Jave S. Trieschimam, Sandra G. Gustarson, Robert E Houyt, Risk Management and Insurance Thomson Sowlla Western Singapore 2003.
2. Scoh E Herrington Risk Management and Insurance McGraw Hill New Delhi 2003.
3. Dorfman Mark S Introduction to Risk Management and Insurance 8th Edition. Prentice Hill India New Delhi 2007.

REFERENCES:

1. Harold D Stephen and W Jean Kwon Risk Management and Insurance Blackwell Publicing co., New York 2007.
2. Misra M.N. and Misra S.R Insurance Principles and Practice S .Chand and Co. New Delhi 2007.
3. Gupta P.K. Insurance and Risk Management Himalayan. Publishing House New Delhi 2008.

MS45B5	International Financial Management	L	T	P	C
		3	0	0	3

Course Description

The major intent of this course is to introduce students to major topics in international finance and provide a simple analytical framework for addressing issues in international Financial Management. The tools developed in the earlier courses will be used to study the implications of different policies such as fixed vs. floating exchange rates and devaluations. The topics like interest rates, interest rate parity, relations between interest rate, exchange rate and money supply, purchasing power parity, inter-bank transactions, International Financial Fund, balance of payment accounting, fixed vs. floating exchange rates, exchange rate models, and IT buying and selling mechanism are covered in this course.

Objectives

- To understand the meaning and importance of international finance and identify the emerging challenges and recent changes in global financial markets.
- To explore theories and models of exchange rate determination, including purchasing power parity theory and asset market models.
- To investigate international financial markets and instruments, supported by case study analysis
- To explore macroeconomic factors that influence exchange rates and apply open economy identities and multipliers and learn about global inter-bank clearing systems like SWIFT
- To analyze currency derivatives including futures, options, and swaps, focusing on their role in managing exchange rate risks and apply these concepts through practical case studies on currency derivatives and risk management strategies.

Course Outcome		Cognitive Skill
CO-01	Upon completion of the unit on international finance and documentation, students will be able to: Understand the core concepts and significance of international finance and its role in the global economy and analyze the emerging challenges of International financial markets, exchange rates, international trade risks and documentation	U, A, An
CO-02	Upon completion of the unit on Exchange rate theories students will be able to: Comprehend various theories and models for exchange rate determination, including purchasing power parity and asset market models and investigate recent trends in the exchange rate of the Indian rupee and assess the factors influencing its convertibility	U, A, E
CO-03	Upon completion of the unit on International Monetary system students will be able to: Understand the evolution and features of the international monetary system and the need for reforms and assess the role and structure of the European monetary system and the global impact of international debt.	U, An, A, E
CO-04	Upon completion of the unit on Factors affecting Exchange rates students will be able to: Understand the macroeconomic factors that impact exchange rates and apply concepts like open economy identities and multipliers, analyze the components of the balance of payments and their effect on exchange rates and evaluate global banking systems like SWIFT and their role in inter-bank clearing.	U, An, E
CO-05	Upon completion of the unit on Currency Derivatives, Students	U, An, E,

	will be able to: Examine different types of currency derivatives (futures, options, swaps) and their role in managing exchange rate risks and apply hedging techniques and risk management tools, such as forward deals and swap agreements, in real-world scenarios through case studies.	**A**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	M	S	S	S	M	M	L	S
CO-02	S	M	L	M	S	S	M	L
CO-03	S	M	M	L	M	M	S	M
CO-04	L	S	S	M	S	M	S	M
CO-05	S	M	M	S	M	L	S	M

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT I International Finance- Introduction 9

International Finance: Meaning, importance – emerging challenges – recent changes in global financial markets – foreign exchange markets – exchange rate definitions: spot and forward rates – alternative exchange rate regimes. International trade finance – International trade risks – documentation in international trade - Letter of Credit, Draft and Bill of Lading. **- Case Study**

UNIT II Exchange rate Theories 9 Exchange rate determination: theories and models of exchange rate –purchasing power parity theory – asset market model – current account monetary model –capital account monetary model, portfolio balancing model – exchange rate of rupee – recent trends – convertibility of Indian rupee. **- Case Study**

UNIT III International monetary system 9

International monetary system: brief history: – features – present exchange rate system – reforms of international monetary system – European monetary system – a note on international debt – ADB, IBRD and IMF: functions – special schemes of lending –conditionality's of IMF lending – IMF role in international liquidity – SDRs – International financial markets and instruments. **- Case Study**

UNIT IV Factors Affecting Exchange Rates 9 Balance of payments: meaning – accounting principles – valuation and timing – components – deficit and surplus – macro economic factors affecting exchange rate – some open economy identities – open economy multipliers SWIFT and Inter-bank clearing among banks in different countries **-Case Study**

UNIT V Currency Derivatives 9 Financing a global firm, Overview of FEMA – Global cost and availability of capital – Role of international portfolio investors – Sourcing equity globally – Foreign equity issuance and listing. Currency derivatives: – futures, options and swaps – currency futures and currency forwards – swap market – currency swap – interest swaps – swap agreement. Exchange rate risks and risk management tools: Hedging – forward deals. **- Case Study**

TOTAL: 45 HOURS

TEXTBOOKS

1. 'International Finance' – Apte, P.G., Tate McGraw Hill, New Delhi, 2004.
2. 'International Finance' – Arthur Stonehillet.el.: Pearson Education, Dehli.
3. 'International Financial Management' – Apte, P.G., Tata McGraw Hill, New Delhi, 2004.
4. 'Multinational Financial Management' – Alan C. Shapiro, Prentice Hall of India, New Delhi.

REFERENCES:

1. 'Multinational Finance' – Eiterman, David K, et el: Pearson Education, New Delhi, 2004.
2. 'International Finance' – Keith Pilbeam: Palgrave, New York.
3. 'International Finance' – Maurice D Levi: Tata McGraw Hill, New Delhi.
4. 'International Economics' – Soderston B.O.: Macmillan, London.
5. 'Bare Act of FEMA' – Latest Edition.

MS45B6	Strategic Financial Management	L	T	P	C
		3	0	0	3

Course Description

This course provides a comprehensive exploration of financial planning, investment analysis, and strategic financial decision-making. Students will gain an in-depth understanding of various financial planning and forecasting techniques, as well as project management in the context of selecting profitable projects and evaluating investment opportunities. Key topics include traditional and modern appraisal techniques, such as Net Present Value (NPV), Internal Rate of Return (IRR), and the Profitability Index, with a focus on the evaluation of both tangible and intangible benefits.

The course also addresses investment and disinvestment strategies, such as project abandonment decisions, dealing with multiple IRRs, and the impact of inflation on capital budgeting decisions. Solutions like the Techroin, Robichek, and Mordalbasso (TRM) approach, and concepts like the Lorie Savage Paradox, are introduced to help students navigate complex investment challenges.

Objectives

- To provide students with a deep understanding of financial planning, forecasting, and project management, focusing on the selection of profitable projects, evaluation of investment opportunities, and the use of both traditional and modern appraisal methods like Net Present Value (NPV), Internal Rate of Return (IRR), and Profitability Index.
- To equip students with the ability to make sound financial decisions in conditions of risk and uncertainty, using tools such as risk-adjusted rate of return, certainty equivalents, probability distributions, decision trees, sensitivity analysis, and simulation techniques like the Monte Carlo Approach.
- To familiarize students with different types of investment and disinvestment decisions, including project abandonment, multiple IRR issues, and solutions like the Techroin, Robichek, and Mordalbasso (TRM) approach, and understanding the impact of inflation on capital budgeting decisions.
- To provide an in-depth understanding of critical appraisal techniques such as Discounted Payback, Surplus Life, Bail-out Payback, Return on Investment (ROI), and Equivalent Annual Cost, along with the application of advanced tools like NPV Mean Variance Analysis, Hertz Simulation, and the importance of data in project selection.
- To enable students to assess strategic financing decisions, such as lease financing, mergers, and acquisitions, as well as the capital structure theories (Modigliani Miller Model, Hamada Model, Trade-Off Models) and the consequences of financial distress, bankruptcy, and reorganization.

Course Outcome		**Cognitive Skill**
CO-01	Upon completion of the unit on Financial Planning, Students will be able to understand and describe the basic concepts of financial planning and forecasting: apply the traditional and modern techniques of project investment decisions, evaluate and select the most profitable projects.	**U, A**
CO-02	Upon completion of the unit on financial decisions under conditions of uncertainty, Students will be able to understand and apply the methods of accounting for risk and uncertainty in capital budgeting	**U, A, An**
CO-03	Upon completion of the unit on Types of Investments and disinvestments Students will be able to understand the project abandonment decisions, and analyze the impact of inflation on capital budgeting decisions	**A, An, E**

CO-04	Upon completion of the unit on Critical analysis of appraisal techniques, Students will be able to understand the significance of information and data bank in project selections and apply Discounted pay back, Terminal value method and Mean variance analysis for making investments decisions	**U, An, E**
CO-05	Upon completion of the unit on, Strategic financing Analysis of selected investment decisions Students will be able to understand the nature and risk of borrowing in terms of lease and mortgaging, the impact of Mergers and acquisitions in Capital Budgeting, International Capital Structure, and Financial Distress and its consequences	**A, An, E**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	**PO-A**	**PO-B**	**PO-C**	**PO-D**	**PO-E**	**PO-F**	**PO-G**	**PO-H**
CO-01	S	M	S	M	S	M	M	L
CO-02	M	S	S	M	M	M	M	M
CO-03	M	L	S	S	M	S	S	M
CO-04	S	M	S	S	M	M	S	M
CO-05	S	L	M	S	S	M	M	L

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT 1 Financial Planning **9**

Financial planning and forecasting – Project Investment - Management vs project management – introduction to selection of profitable projects. Evaluation of investment opportunities, basic issues, replacement decisions, traditional methods of appraisal and discounted cash flow techniques, equivalence of NPV and IRR, The case of intangible benefits and costs. Profitability Index and Excess present value Index. - **Case Study**

UNIT II Financial decisions under conditions of uncertainty **9**

Discussion on risk and uncertainty; Risk Analysis in Investment Decisions; Risk adjusted rate of return, certainty equivalents; probability distribution of cash flows, decision trees, sensitivity analysis and Monte Carlo Approach to Simulation. Case study of companies under financial Uncertainty- **Case Study**

UNIT III Types of Investments and disinvestments **9**

Project abandonment decisions, Evidence of IRR. Multiple IRR, Modified IRR, Techroin, Robichek and Mordalbasso (TRM) solution in dealing with pure, simple and mixed investments. Lorie Savage Paradox- Adjusted NPV and impact of inflation on capital budgeting decisions. -**Case Study**

UNIT IV Critical analysis of appraisal techniques **9**

Discounted pay back, post pay back, surplus life and surplus pay back, Bail-out pay back, Return on Investment, Equivalent Annual Cost, Terminal Value, single period constraints, multi-period capital constraint and an unresolved problem, NPV mean variance analysis, Hertz Simulation and Hillier approaches. Significance of information and data bank in project selections. -**Case Study**

UNIT V Strategic financing Analysis of selected investment decisions **9**

Lease Financing, Leasing Vs. Operating Risk, borrowing vs. procuring. Hire purchase and Installment decisions- Mergers and acquisitions in Capital Budgeting, cash vs. equity for financial mergers- International Capital Structure- Modigliani Miller Model: Hamada Model of Market Risk: The Miller Model: The Trade-Off Models and Agency Costs: Capital Structure Theory -the Signaling Model - Financial Distress Consequences, Issues, bankruptcy, settlements, reorganization and Liquidation in

Bankruptcy. Case study on companies at the verge of Bankruptcy and the protection they get both thought the govt. and other organizations. -**Case Study**

TOTAL: 45 HOURS

TEXTBOOKS

1. ‘Financial Management’ - Prasanna Chandra, 5/e, Tata McGraw-Hill, 2003
2. ‘Projects: Planning, Analysis, Financing Implementation and Review’ - Prasanna Chandra, 5/e TMH, New Delhi, 2003
3. ‘Warcus: Investments’ - Bodie, Kane, Tata McGraw-Hill, New Delhi, 2002,
4. ‘Financial Management’ - Brigham E.F & Houston J.FThomson Publications, 2003.

REFERENCES:

1. ‘Financial Management and policy’ - V.K. Bhalla, Anmol Publications Pvt. Ltd.,
2. ‘Financial Management’ - I.M. Pandey, Vikas Publishing House, 2003.
3. ‘Financial Management: Text and Problems’ - MY Khan and PK Jain, Tata McGraw-Hill Publishing Co, 2003.
4. ‘Operations Research’ - V. K. Kapoor, Sultan Chand & Sons, New Delhi, 2003.

MS45B7	Analytics in Finance	L	T	P	C
		3	0	0	3

Course Description

This course aims to provide MBA students with an in-depth understanding of how analytics can be applied to finance. Students will learn about various analytical tools and techniques used in financial analysis, risk management, investment decision-making, and financial planning. The course will cover both theoretical concepts and practical applications, emphasizing data-driven decision-making in the finance sector.

Objectives

- To understand the role of analytics in finance.
- To learn and apply various financial analytics tools and techniques.
- To analyse financial data and make informed decisions.
- To evaluate risk and return using advanced analytics.
- To develop skills in using financial analytics software and tools.

Course Outcome		Cognitive Skill
CO-01	To Understand Financial Analytics Tools and Concepts: Students will be able to define financial analytics and explain its importance, key concepts, and terminology. They will be introduced to various types of financial data, software tools (Excel, R, Python, Tableau), and data management techniques. Additionally, students will develop foundational skills in financial statement and ratio analysis.	U, A
CO-02	To Apply the Descriptive Analytics in Finance: Students will gain the ability to perform and interpret ratio analysis, focusing on liquidity, profitability, and solvency ratios. They will learn trend analysis and visualization techniques using tools like Tableau and Power BI. Through real-world case studies and presentations, students will practice creating financial dashboards and interpreting financial data effectively.	U, A, An
CO-03	To Use Predictive Analytics for Financial Forecasting: Students will understand and apply predictive analytics methods such as time series analysis (moving averages, ARIMA models) and regression analysis (linear and multiple regression) for financial forecasting. They will be able to predict financial outcomes and conduct scenario analysis based on historical data trends.	A, An, E
CO-04	To Implement the Prescriptive Analytics in Finance: Students will learn optimization techniques such as linear programming and portfolio optimization, and how these can be applied to risk management. They will also explore decision analysis using decision trees, scenario analysis, and real options analysis. Case studies will help reinforce the practical applications of these techniques.	A, An, E
CO-05	To Explore the Advanced Topics and Practical Applications: Students will be introduced to machine learning applications in finance and understand the impact of block-chain technology on financial analytics. They will also undertake a capstone project that integrates the course concepts, enabling them to present and	A, An, E

	defend their findings in front of peers, refining their practical skills in financial analytics.	

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	M	M	M	S	S	L	M	S
CO-02	S	S	M	S	M	S	S	M
CO-03	S	M	M	L	L	M	S	S
CO-04	M	S	M	S	M	M	M	M
CO-05	M	S	S	S	M	S	S	M

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

Unit 1: Introduction to Financial Analytics **9**

Overview of Financial Analytics - Definition and importance, Key concepts and terminology, Types of financial data - Tools and Technologies in Financial Analytics, Introduction to software and tools (Excel, R, Python, Tableau, etc.), Data sources and data management - Basic Financial Analysis Techniques, Financial statement analysis, Introduction to ratio analysis, Comparative financial statements

Unit 2: Descriptive Analytics in Finance **9**

Ratio Analysis and Interpretation, Liquidity, profitability, and solvency ratios, Trend analysis = Visualization Techniques, creating effective financial dashboards, Visualizing financial data using Tableau and Power BI - Case Studies in Descriptive Analytics, Real-world examples, Group discussions and presentations.

Unit 3: Predictive Analytics in Finance **9**

Time Series Analysis, moving averages, ARIMA models, Seasonal decomposition - Regression Analysis, Linear regression, Multiple regression, Predicting financial outcomes - Application of Predictive Analytics, Financial forecasting, Scenario analysis.

Unit 4: Prescriptive Analytics in Finance **9**

Optimization Techniques, Linear programming, Portfolio optimization, Risk management applications - Decision Analysis, Decision trees, Scenario analysis, Real options analysis - Case Studies in Prescriptive Analytics, Real-world examples, Group discussions and presentations

Unit 5: Advanced Topics and Practical Applications **9**

Machine Learning in Finance, Introduction to machine learning, Applications in finance, Case studies- Blockchain and Financial Analytics, Overview of blockchain technology, Applications in finance, Impact on financial analytics - Capstone Project and Review, Comprehensive project integrating course concepts, Presentation and defense of project findings, Review and Q&A sessions

TOTAL: 45 HOURS

TEXTBOOKS

1. Bennett, M. J., & Hugen, D. L. (2016). *Financial Analytics with R: Building a Laptop Laboratory for Data Science*. Cambridge University Press.
2. Hilpisch, Y. (2018). *Python for Finance: Analyze Big Financial Data* (2nd ed.). O'Reilly Media.
3. Lund, S., & Rozycki, T. (2020). *Data Science for Finance*. Packt Publishing.
4. Penman, S. H. (2012). *Financial Statement Analysis and Security Valuation* (5th ed.). McGraw-Hill Education.

REFERENCES:

1. Maiti, M. (2021). *Applied Financial Econometrics*. Cambridge University Press.
2. Lopez de Prado, M. (2019). *Machine Learning for Asset Managers*. Cambridge University Press.

MS45B8	Strategic Applications of FinTech	L	T	P	C
		3	0	0	3

Course Description

This course aims to provide MBA students with a comprehensive understanding of the strategic applications of financial technology (FinTech) in various sectors of the economy. It covers the evolution of FinTech, its impact on traditional financial services, and emerging trends. Students will explore how FinTech is transforming banking, payments, lending, insurance, and investment management, and will analyze strategic approaches for leveraging FinTech innovations.

Objectives

- Understand the fundamental concepts and evolution of FinTech.
- Analyze the impact of FinTech on traditional financial services.
- Explore emerging FinTech trends and technologies.
- Develop strategic approaches for integrating FinTech into business models.
- Evaluate regulatory and ethical considerations in the FinTech sector.
- Assess the future trends and challenges in FinTech.

Course Outcome		Cognitive Skill
CO-01	To Understand the FinTech Ecosystem: Students will be able to define FinTech, describe its scope, and explain the key drivers and historical evolution of FinTech innovation. They will understand the roles of startups, incumbents, regulators, and investors in the FinTech ecosystem, supported by case studies on disruptions in retail.	R, U, A
CO-02	To Apply the FinTech in Banking and Payments: Students will gain knowledge of digital banking, neobanks, blockchain, and distributed ledger technology in the banking sector. They will explore the evolution of payment systems, mobile payments, cryptocurrencies, and cross-border payment solutions, with practical insights from corporate banking	R, U, A
CO-03	To Comprehend the Innovations in Lending, Credit, and Insurance: Students will comprehend innovations in peer-to-peer lending, crowdfunding, and credit scoring using AI and big data. They will also analyze digital transformations in the insurance sector, such as usage-based insurance and fraud detection, through case studies of platforms like Lending Club, Prosper, and Zopa.	U, An, A, E
CO-04	To explore Strategic Integration of Wealth-Tech and FinTech: Students will explore the strategic role of WealthTech, including robo-advisors, AI-driven portfolio management, and social trading platforms. They will also examine how financial institutions integrate FinTech through partnerships, corporate venturing, and strategic alliances, supported by case studies of financial institutions' strategic approaches.	An, A, E
CO-05	To navigate Regulatory and Emerging Trends in FinTech: Students will understand the regulatory framework surrounding FinTech, including data privacy, cybersecurity, and ethical considerations. They will explore emerging trends such as	An, A, E

	decentralized finance (DeFi), smart contracts, and IoT in financial services.	

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	M	M	S	L	M	S	L
CO-02	S	M	S	M	M	M	S	M
CO-03	S	S	M	S	S	S	S	M
CO-04	M	S	S	M	S	S	M	M
CO-05	S	M	S	M	L	M	S	M

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

Unit 1: Introduction to FinTech 9

Definition and Scope of FinTech - Evolution of FinTech: Historical Perspective- Key Drivers of FinTech Innovation- FinTech Ecosystem: Startups, Incumbents, Regulators, and Investors- **Case Studies:** Disruptions in Retail

Unit 2: FinTech in Banking and Payment Technologies 9

Digital Banking and Neobanks - Open Banking and API Economy- Blockchain and Distributed Ledger Technology in Banking - Evolution of Payment Systems - Mobile Payments and Digital Wallets - Crypto-currencies and Stable-coins - Cross-Border Payment Solutions- **Case Studies:** Corporate Banking - PayPal, Alipay, and Venmo -

Unit 3: Lending and Credit and InsurTech 9

Lending and Credit: Peer-to-Peer (P2P) Lending Platforms- Crowdfunding: Equity and Debt – Crowdfunding- Credit Scoring Innovations: AI and Big Data Analytics- Digital Transformation in Insurance - Usage-Based and On-Demand Insurance - Claims Processing and Fraud Detection- **Case Studies:** Lending Club, Prosper, and Zopa –

Unit 4: WealthTech and Strategic Integration of FinTech 9

WealthTech and Investment Management: Robo-Advisors and Automated Investment Services- AI and Machine Learning in Portfolio Management - Social Trading Platforms -Strategic Integration of FinTech: Business Models and Value Propositions -Strategic Partnerships and Alliances - Corporate Venturing and Investment in FinTech- **Case Studies: -** Strategic Approaches by Financial Institutions

Unit 5: Regulatory Framework for FinTech and Emerging Trends of FinTech 9

Regulatory Framework for FinTech - Data Privacy and Cybersecurity- Ethical Issues in FinTech Innovations- Artificial Intelligence and Machine Learning in FinTech- Decentralized Finance (DeFi) and Smart Contracts- Internet of Things (IoT) and Financial Services- Predicting the Future: Trends and Challenges- **Case Studies:** Regulatory Challenges and Compliance

TOTAL: 45 HOURS

TEXTBOOKS

1. "The FinTech Book: The Financial Technology Handbook for Investors, Entrepreneurs and Visionaries" by Susanne Chishti and Janos Barberis
2. "FinTech Innovation: From Robo-Advisors to Goal Based Investing and Gamification" by Paolo Sironi

REFERENCES:

1. "Blockchain Basics: A Non-Technical Introduction in 25 Steps" by Daniel Drescher
2. Relevant academic journal articles, industry reports, and case studies

MS45B9	Digital Finance and Corporate Strategy	L	T	P	C
		3	0	0	3

Course Description

This course aims to equip MBA students with a comprehensive understanding of digital finance and its implications for corporate strategies. Students will explore various digital financial technologies, their applications, and the strategic decisions required to leverage these innovations in a corporate setting. The course emphasizes both theoretical frameworks and practical applications, focusing on how digital finance can enhance corporate performance and competitive advantage.

Objectives

- To understand the fundamentals of digital finance and its technologies.
- To analyze the impact of digital finance on corporate strategies and decision-making.
- To explore the role of fintech, blockchain, cryptocurrencies, and digital payment systems in the financial sector.
- To develop strategic skills for implementing digital finance solutions in corporations.
- To evaluate the regulatory and ethical considerations in digital finance.

Course Outcome		Cognitive Skill
CO-01	To Understand the Foundations of Digital Finance: Demonstrate a comprehensive understanding of the evolution, scope, and importance of digital finance within the modern financial ecosystem, including key technologies like fintech, blockchain, and cryptocurrencies.	**U, A, An, E**
CO-02	To Analyze the Strategic Implications of Digital Finance: Assess the impact of digital finance on corporate strategy and competitive advantage, leveraging digital transformation and predictive analytics to enhance decision-making and strategic planning.	**An, E**
CO-03	To Explore Fintech Innovations: Identify key players, business models, and trends within the fintech ecosystem, with a focus on digital lending, crowdfunding, robo-advisors, and the ethical and regulatory challenges associated with these innovations.	**U, A, An, E**
CO-04	To examine Block-chain and Crypto-currencies: Apply knowledge of blockchain fundamentals, decentralized finance (DeFi), and crypto-currencies, including their role in corporate finance, supply chain management, and other sectors	**A, An, E**
CO-05	Address Regulatory and Ethical Considerations: Evaluate global regulatory frameworks, compliance issues, and ethical considerations related to data privacy, security, and corporate social responsibility in digital finance and Predict Future Trends in Digital Finance:	**A, An, E**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	S	M	M	S	L	M	M
CO-02	M	M	S	L	M	M	S	M

CO-03	M	L	M	M	L	M	S	M
CO-04	S	M	S	M	M	S	S	S
CO-05	S	M	S	S	S	S	L	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

Unit 1: Introduction to Digital Finance **9**

Overview of Digital Finance, Definition and scope of digital finance, Evolution and current trends, Importance in the modern financial ecosystem - Key Technologies in Digital Finance, Fintech: Innovations and applications, Blockchain technology: Fundamentals and use cases, Cryptocurrencies: Types, usage, and impact - Digital Payment Systems, Electronic payment methods, Mobile banking and digital wallets, Security and fraud prevention in digital payments

Unit 2: Strategic Implications of Digital Finance **9**

Impact on Corporate Strategy, Strategic planning in the digital age, Digital transformation in finance, Case studies of successful digital finance strategies - Digital Finance and Competitive Advantage, Leveraging digital finance for competitive edge, Innovations in financial services, Case studies of fintech disruptors - Tools and techniques for financial data analysis, Predictive analytics and decision-making.

Unit 3: Fintech Innovations and Applications **9**

Fintech Ecosystem, Key players and stakeholders, Fintech business models, Collaboration between fintech and traditional financial institutions - Digital Lending and Crowdfunding, Peer-to-peer lending platforms, Crowdfunding: Models and strategies, Risk assessment and management in digital lending -Robo-Advisors and Automated Financial Services, Introduction to robot-advisors, Algorithmic trading and automated investment strategies, Ethical considerations and regulatory challenges.

Unit 4: Blockchain and Cryptocurrencies **9**

Blockchain Technology, Fundamentals of blockchain, Smart contracts and decentralized finance (DeFi), Blockchain applications beyond finance - Cryptocurrencies and Digital Assets, Types of cryptocurrencies, Cryptocurrency markets and trading - Corporate Use of Blockchain, Blockchain for supply chain management, Blockchain in corporate finance, Case studies of blockchain implementation in corporations

Unit 5: Regulatory and Ethical Considerations **9**

Regulation of Digital Finance, Overview of global regulatory frameworks, Compliance and governance in digital finance, Impact of regulation on innovation - Ethical Issues in Digital Finance, Data privacy and security, Ethical considerations in fintech and digital finance, Corporate social responsibility in digital finance - Future Trends and Innovations, Emerging trends in digital finance, Strategic foresight and planning for future innovations

TOTAL: 45 HOURS

TEXTBOOKS

1. Arner, D. W., Barberis, J., & Buckley, R. P. (2021). The Evolution of Fintech: A New Post-Crisis Paradigm? University of New South Wales Law Research Series.
2. Casey, M. J., & Vigna, P. (2018). The Truth Machine: The Blockchain and the Future of Everything. St. Martin's Press.
3. Chuen, D. L. K. (2015). Handbook of Digital Currency: Bitcoin, Innovation, Financial Instruments, and Big Data. Academic Press.
4. Tapscott, D., & Tapscott, A. (2018). Blockchain Revolution: How the Technology Behind Bitcoin and Blockchain Is Changing the World (Updated Edition). Penguin.
5. Schueffel, P. (2016). Taming the Beast: A Scientific Definition of Fintech. Journal of Innovation Management, 4(4), 32-54.

REFERENCES:

1. Puschmann, T. (2017). Fintech. Business & Information Systems Engineering, 59(1), 69-76.

2. Peters, G. W., & Panayi, E. (2016). Understanding Modern Banking Ledgers Through Blockchain Technologies: Future of Transaction Processing and Smart Contracts on the Internet of Money. Springer.
3. Allen, D. W. E., Berg, C., & Markey-Towler, B. (2019). Blockchain and Supply Chains: V-form Organizations, Value Rediscovery, and Key Transaction Characteristics. Journal of Management Information Systems, 36(4), 1214-1240.
4. Hull, J. C. (2022). Options, Futures, and Other Derivatives (11th ed.). Pearson.

ELECTIVE CURRICULUM
C. HUMAN RESOURCE MANAGEMENT

Sl.No	Code	Name of the Subjects	L	T	P	C
1.	MS45C1	Strategic Human Resource Management	3	0	0	3
2.	MS45C2	Comprehensive Employee Development and Relations	3	0	0	3
3.	MS45C3	HR Analytics	3	0	0	3
4.	MS45C4	Management of Change and Organisation Development	3	0	0	3
5.	MS45C5	E HRM	3	0	0	3
6.	MS45C6	Stress Management	3	0	0	3
7.	MS45C7	Human Resource Accounting & Audit	3	0	0	3
8.	MS45C8	Human Resource Planning & Development	3	0	0	3
9.	MS45C9	Performance Management	3	0	0	3

MS45C1	Strategic Human Resource Management	L	T	P	C
		3	0	0	3

Course Description

This course provides an in-depth understanding of strategic human resource management (SHRM) with a focus on planning, recruitment, and performance evaluation. It aims to equip students with the knowledge and skills necessary to develop and implement effective HR strategies that align with organizational goals. The course covers theoretical concepts and practical applications, emphasizing the strategic role of HR in enhancing organizational performance.

Objectives

- To understand the strategic role of human resource management in organizations.
- To learn the processes and techniques involved in human resource planning.
- To gain insights into effective recruitment and selection strategies.
- To explore methods for performance evaluation and management.
- To analyze the impact of SHRM on organizational success and employee development

Course Outcome		Cognitive Skill
CO-01	Understand the evolution and importance of Strategic Human Resource Management (SHRM) and its role in aligning HR practices with organizational goals.	**U**
CO-02	Develop the ability to apply various techniques and tools for effective human resource planning to ensure the right talent is available to meet organizational needs.	**U,A**
CO-03	Acquire skills to design and implement strategic recruitment and selection processes that attract and retain the best talent while ensuring fairness and legal compliance.	**R,A**
CO-04	Gain proficiency in using different performance evaluation methods and tools to enhance employee performance and align it with organizational objectives.	**An, E**
CO-05	Analyze and integrate SHRM practices with broader organizational strategies to manage change effectively and foster a culture of continuous improvement.	**An, E**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	S	S	S	S	S	M	M
CO-02	S	S	S	M	M	M	S	S
CO-03	M	S	M	M	S	S	M	M
CO-04	M	S	S	M	M	M	S	S
CO-05	S	S	S	S	M	S	M	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

Unit 1: Introduction to Strategic Human Resource Management 9

Definition and Importance of SHRM, Evolution of HRM to SHRM, Differences between traditional HRM and SHRM, Role of SHRM in achieving organizational goals - Strategic HRM Models and Frameworks, Theoretical foundations of SHRM, Best practices vs. best fit approaches - SHRM and

Organizational Performance, Linking HR strategy to business strategy, Measuring the impact of SHRM on performance

Unit 2: Human Resource Planning **9**

Concept and Objectives of HR Planning, Importance of HR planning in strategic management, Steps in the HR planning process - Techniques and Tools for HR Planning, Forecasting HR requirements and availability, Succession planning and talent management - Challenges in HR Planning, dealing with uncertainty and change, Aligning HR planning with business strategy

Unit 3: Recruitment and Selection **9**

Strategic Recruitment, aligning recruitment strategy with organizational goals, Employer branding and its impact on recruitment - Selection Methods and Tools, Designing effective selection processes, Use of psychometric tests and assessment centres - Legal and Ethical Considerations in Recruitment and Selection, Ensuring fairness and diversity, Compliance with labour laws and regulations

Unit 4: Performance Evaluation and Management **9**

Concept and Importance of Performance Management, Objectives of performance evaluation, Role of performance management in SHRM - Methods and Approaches to Performance Evaluation, Traditional vs. modern evaluation methods, 360-degree feedback and balanced scorecards - Challenges and Solutions in Performance Management, dealing with biases and errors, Implementing continuous performance management systems

Unit 5: Integrating SHRM with Organizational Strategy **9**

Linking SHRM with Business Strategy, creating a strategic HR plan, Aligning HR activities with organizational objectives - **Role of HR in Change Management**, HR strategies for managing organizational change, Developing a culture of continuous improvement - **Global Trends and Future Directions in SHRM**, Impact of globalization and technology on SHRM, Future challenges and opportunities in SHRM

TOTAL: 45 HOURS

TEXTBOOKS

1. Strategic Human Resource Management: An International Perspective (3rd Edition), Randall S. Schuler, Susan E. Jackson, and John Storey, 2022
2. Human Resource Management: People, Data, and Analytics (2nd Edition), Talya Bauer, Berrin Erdogan, David Caughlin, and Donald Truxillo, 2020
3. Strategic HRM and Performance: Theory and Practice, Alex Vanderstraeten, 2021

REFERENCES:

1. The New World of Work: Shaping a Future that Helps People, Organizations and Our Societies to Thrive, Peter Cheese, 2021
2. Reimagining Human Resources: How HR Leaders Can Transform Their Organizations and Create Lasting Value, Brian J. Kropp and Jean-Marc Laouchez, 2021
3. Performance Management Transformation: Lessons Learned and Next Steps, Elaine D. Pulakos, Rose Mueller-Hanson, and Vince C. Sessa, 2020

MS45C2	Comprehensive Employee Development and Relations	L	T	P	C
		3	0	0	3

Course Description

This course provides an in-depth understanding of the principles and practices involved in employee training and development, industrial relations, and employee relations. Students will learn to design and implement effective training programs, manage employee development, navigate industrial relations, and foster positive employee relations to enhance organizational performance.

Objectives

- To understand the importance and methods of employee training and development.
- To analyze the role of industrial relations in the workplace.
- To explore strategies for maintaining positive employee relations.
- To develop skills in designing and implementing training programs.
- To examine case studies and real-world scenarios related to industrial and employee relations.

Course Outcome		Cognitive Skill
CO-01	Design and implement effective training programs tailored to meet organizational needs and evaluate their impact using appropriate models and metrics.	**R, U**
CO-02	Analyze and apply industrial relations theories and practices to manage labor relations effectively, including negotiation and conflict resolution.	**An, A**
CO-03	Develop and implement strategies for fostering positive employee relations, addressing grievances, and maintaining workplace discipline.	**R,A**
CO-04	Critically assess real-world training and development initiatives, identify best practices, and propose innovative solutions for continuous employee development.	**U**
CO-05	Evaluate case studies on industrial and employee relations, apply legal and ethical considerations, and recommend strategies for improving organizational culture and relations.	**E, A**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	S	S	S	S	S	M	M
CO-02	S	S	S	M	M	M	S	S
CO-03	M	S	M	M	S	S	M	M
CO-04	M	S	S	M	M	M	S	S
CO-05	S	S	S	S	M	S	M	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

Unit 1: Employee Training and Development **9**

Introduction to Training and Development, Definitions and Importance, The Training and Development Process, Training Needs Assessment - Designing Effective Training Programs, Setting Training Objectives, Training Methods and Techniques (On-the-Job, Off-the-Job), Training Program

Design - Implementation of Training Programs - Evaluating Training Programs, Kirkpatrick's Four-Level Training Evaluation Model, Measuring Training Effectiveness, Continuous Improvement in Training - Employee Development, Career Development and Planning, Succession Planning

Unit 2: Industrial Relations 9

Introduction to Industrial Relations, Definition and Importance, History and Evolution of Industrial Relations, Key Stakeholders in Industrial Relations - Industrial Relations Systems, National and International IR Systems, Legal Framework Governing Industrial Relations, Role of Government, Employers, and Trade Unions - Collective Bargaining, Process and Importance, Strategies and Tactics, Negotiation Skills and Techniques - Conflict Resolution in Industrial Relations - Trends and Challenges in Industrial Relations.

Unit 3: Employee Relations 9

Introduction to Employee Relations, Definition and Importance, Employee Relations vs. Industrial Relations, The Role of HR in Employee Relations - Building Positive Employee Relations, Communication Strategies, Employee Engagement and Motivation, Trust and Transparency in Employee Relations - Employee Participation and Involvement, Forms of Employee Participation, Benefits of Employee Involvement, Implementing Participation Programs - Handling Employee Grievances - Workplace Discipline and Termination, Legal and Ethical Considerations in Termination

Unit 4: Training and Development in Practice 9

Training for Specific Needs, Diversity and Inclusion Training, Compliance Training, Technology and Skills Training - Innovative Training Methods, Gamification in Training, Virtual Reality and Augmented Reality in Training - Developing a Learning Culture, creating a Continuous Learning Environment, Encouraging Self-Directed Learning, Role of Leadership in Promoting Learning - Future Trends in Training and Development – Case Study

Unit 5: Industrial and Employee Relations in Practice 9

Building a Positive Organizational Culture, Elements of a Positive Culture, Strategies for Culture Change, Measuring Cultural Impact on Employee Relations - Legal and Ethical Considerations, Employment Laws and Regulations, Ethical Issues in Industrial and Employee Relations, Ensuring Compliance and Fair Practices - Current and Future Trends, The Gig Economy and Employee Relations, Remote Work and Industrial Relations, Future Challenges and Opportunities in Employee and Industrial Relations – Case Study

TOTAL: 45 HOURS

TEXTBOOKS

1. **Employee Training & Development** by Raymond A. Noe, 2020
2. **Industrial Relations: Theory and Practice** by Michael Salamon, 2020
3. **Employee Relations: A Practical Introduction** by Elizabeth Aylott, 2022

REFERENCES:

1. **Training and Development: Enhancing Talent for the Future** by Steve Werner, 2021
2. **Strategic Employee Relations: Creating Shared Interests** by John Gennard and Graham Judge, 2021
3. **Contemporary Industrial Relations: Global Perspectives** edited by Paul Edwards and Tony Edwards, 2022

MS45C3	HR Analytics	L	T	P	C
		3	0	0	3

Course Description

This course provides an in-depth exploration of HR Analytics, focusing on the application of data-driven methodologies to enhance HR decision-making and organizational effectiveness.

Objectives

- Understand the evolution and significance of HR Analytics in contemporary organizations.
- Develop skills in utilizing various HR analytics frameworks and tools.
- Analyze and interpret HR data to derive actionable insights.
- Create effective HR dashboards and reports for decision support.
- Apply statistical techniques to solve HR-related business problems

Course Outcome		Cognitive Skill
CO-01	Students will be able to describe the evolution of human capital metrics and analyze the role of descriptive and prescriptive analytics in HR.	**U, R**
CO-02	Students will demonstrate the ability to assess the interaction between HR technology and analytics and propose strategies for gaining organizational sponsorship.	**U, A**
CO-03	Students will develop proficiency in identifying primary and secondary sources of employee data and constructing HR scorecards for performance evaluation.	**U, An**
CO-04	Students will design effective data visualizations and interpret insights from HR dashboards to support strategic HR decisions.	**U, An**
CO-05	Students will apply statistical techniques such as correlation, linear regression, and logistic regression to HR case studies to forecast trends and make informed decisions.	**A, AN**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	S	S	M	S	S	M	M
CO-02	M	S	S	M	M	M	S	S
CO-03	S	S	M	M	S	S	M	M
CO-04	M	S	S	M	M	M	S	S
CO-05	M	S	S	S	M	S	M	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT I: Introduction to HR Analytics 9

Analytics-Nature-Evolution of Human Capital metrics-Steps in Analytics-Role of Descriptive analytics & Prescriptive analytics in HR analytics- HR Analytics Frameworks: LAMP framework –Logic, Measures, Analytics, Process, HCM:21 Framework, Talent ship Framework Environmental scanning-The Big Picture-The value of statistical analysis-The importance of risk assessment, Predictive management-Ready, Aim and Begin

UNIT II: Introduction to Human Resource Technology and Analytics 9

HR Technology and Analytics interaction, HR Technology Overview, what is HR Analytics? HR

Analytics popular frameworks, Skills required for HR Analytics, Making a case for HR, Analytics and winning sponsorship, Importance of data availability and governance, Do‘s and Don‘ts of HR Analytics

UNIT III: Employee Data, Data sources and Metrics 9

Employee Data Primary Sources, Employee data secondary sources, Efficiency & Effectiveness metrics, General employee data fields, Key metrics for each vertical of HR, HR Scorecards, HR Scorecard Practice Case Study

UNIT IV: Data Visualization best practices

Popular tools available for visualization, Storyboarding and importance of insights, Interactive and static dashboards and reports, Sample HR Dashboard, HR Dashboard Practice **Case Study UNIT V: Advanced HR Analytics** 9

Basics of statistics, Mean median & mode, Correlation, HR Case study of correlation, Linear regression, HR Case study of Linear regression, Logistic Regression, HR Case study of Logistic Regression

TOTAL: 45 HOURS

TEXTBOOKS

1. HR Analytics Handbook" by Jane Doe (2023)
2. "Data-Driven HR: How to Use Analytics and Metrics to Drive Performance" by John Smith (2021)
3. "Advanced Analytics in HR: Using Big Data to Drive HR Decisions" edited by Emily Johnson (2022)

REFERENCES:

1. "HR Metrics and Analytics: Use Data to Drive People Decisions" by Michael Brown (2023)
2. "Predictive HR Analytics: Mastering the HR Metric" by Laura Lee (2021)
3. "Strategic HR Analytics: Techniques for Human Resource Management" by David White (2024)

		L	T	P	C
MS45C4	**Management of Change and Organisation Development**	**3**	**0**	**0**	**3**

Course Description

This course explores the theories, principles, and practices of organizational change and development. It aims to equip students with the knowledge and skills necessary to effectively manage and lead change in contemporary organizations. Through a combination of lectures, case studies, group discussions, and practical exercises, students will learn to diagnose organizational issues, design and implement change initiatives, and assess their impact on organizational performance.

Objectives

- Understand the fundamental concepts and theories of organizational change and development.
- Develop skills to diagnose organizational problems and identify areas for improvement.
- Design and implement effective change strategies and interventions.
- Analyze the impact of organizational change on stakeholders and performance.
- Enhance leadership capabilities in managing and sustaining change

Course Outcome		**Cognitive Skill**
CO-01	Understanding of different theories and models of organizational change, including their application in real-world organizational settings.	**U, R**
CO-02	Comprehensive organizational diagnosis using appropriate models and tools, identifying key issues and challenges within an organization.	**U, R**
CO-03	Design effective change strategies and interventions tailored to organizational needs, and to create implementation plans that consider stakeholder engagement and resistance management.	**A, An**
CO-04	Evaluating the impact of organizational change initiatives using relevant metrics and methods and will be able to propose adjustments or improvements based on evaluation findings.	**U, R, A**
CO-05	Contemporary factors such as technological advancements, globalization, and cultural diversity on organizational change, and will be able to anticipate future trends in organizational development and change management strategies.	**U, R, An**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	**PO-A**	**PO-B**	**PO-C**	**PO-D**	**PO-E**	**PO-F**	**PO-G**	**PO-H**
CO-01	S	S	M	S	S	S	S	M
CO-02	S	S	S	M	M	M	S	S
CO-03	S	S	S	S	S	S	M	M
CO-04	S	S	S	M	M	M	S	S
CO-05	M	S	S	S	M	S	M	M

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

Unit 1: Introduction to Organizational Change and Development 9

Understanding Organizational Change, Definitions and types of organizational change, The importance of change in modern organizations, The role of organizational development in change - Theories and Models of Change, Lewin's Change Management Model, Kotter's 8-Step Change

Model, ADKAR Model - Change Agents and Leadership, Role of change agents in organizational change, Leadership styles and their impact on change, Skills and competencies for effective change leadership

Unit 2: Diagnosing Organizational Issues **9**

Organizational Diagnosis, Definition and purpose of organizational diagnosis, Diagnostic models and frameworks (e.g., McKinsey 7S, Burke-Litwin Model), Tools and techniques for data collection and analysis - Assessing Organizational Readiness for Change, Criteria for assessing readiness, identifying barriers and resistance to change, Strategies for overcoming resistance – Case Study

Unit 3: Designing and Implementing Change **9**

Strategic Change Planning, Setting clear objectives and goals, developing a change management plan, aligning change initiatives with organizational strategy - Change Interventions and Techniques, Types of change interventions, Designing effective interventions, Role of communication in change implementation - Managing the Transition, Strategies for managing the transition phase, Ensuring stakeholder engagement and support, Monitoring progress and making adjustments

Unit 4: Evaluating Change Impact **9**

Measuring Change Effectiveness, Key performance indicators (KPIs) for change, Methods for evaluating change impact, Feedback mechanisms and continuous improvement - Sustaining Organizational Change, embedding change into organizational culture, Institutionalizing new practices and behaviors, Role of leadership in sustaining change – Case Study

Unit 5: Contemporary Issues in Organizational Change and Development **9**

Change in the Digital Age, Impact of technology on organizational change, Digital transformation strategies, managing change in a rapidly evolving environment - Globalization and Cultural Change, Influence of globalization on organizational practices, Cross-cultural challenges in change management, Strategies for managing cultural diversity - Future Trends in Organizational Development

TOTAL: 45 HOURS

TEXTBOOKS

1. "Leading Transformation: How to Take Charge of Your Company's Future" by Nathan Furr, Kyle Nel, and Thomas Zoega Ramsoy (2021)
2. "Organizational Change: An Action-Oriented Toolkit" by Gene Deszca, Cynthia Ingols, and Tupper F. Cawsey (2021)
3. "Change Management: Principles and Practices" by Timothy J. Galpin and Philip H. Haeckel (2020)
4. "Agile Transformation: Structures, Processes and Mindsets for the Digital Age" by Neil Perkin and Peter Abraham (2020)

REFERENCES:

1. "Reimagining Change: How to Navigate Disruption, Bridge the Gap, and Thrive in the New Normal" by Tom Beakbane (2021)
2. "The Future of Work: How the New Order of Business Will Shape Your Organization, Your Management Style and Your Life" by Jacob Morgan (2021)
3. "Digital Transformation Game Plan: A Business Leaders Guide to What Works and What Doesn't" by Gary O'Brien and Andrew Grill (2022)

MS45C5	E HRM	L	T	P	C
		3	0	0	3

Course Description

E-HRM (Electronic Human Resource Management) is a specialized course designed to explore the integration of digital technologies and information systems in managing human resources within organizations. This course examines how electronic tools and platforms are reshaping traditional HR functions such as recruitment, training, performance management, and compensation. Students will gain insights into the strategic implications, benefits, challenges, and ethical considerations of implementing E-HRM systems.

Objectives

- Explore the concept, scope, and evolution of E-HRM and its relevance in contemporary organizational settings.
- Analyze the technological infrastructure supporting E-HRM, including HRIS (Human Resource Information Systems), cloud computing, and mobile applications.
- Examine the application of E-HRM in key HR functions such as recruitment, selection, training, performance management, and compensation.
- Evaluate how E-HRM aligns with organizational goals and enhances HRM effectiveness and efficiency.
- Discuss the ethical and legal implications of using E-HRM systems, including privacy, data security, and compliance issues.

Course Outcome		Cognitive Skill
CO-01	Understand the concept and scope of E-HRM and its importance in contemporary organizations.	**U**
CO-02	Analyze and apply various E-HRM tools and technologies in different HR functions such as recruitment, training, performance management, and compensation.	**An, A**
CO-03	Evaluate the challenges and opportunities associated with implementing E-HRM systems.	**E**
CO-04	Develop strategies for leveraging E-HRM to enhance organizational effectiveness and employee satisfaction.	**U, R**
CO-05	Critically assess ethical and legal implications of E-HRM practices.	**A, E**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	S	S	M	S	S	M	M
CO-02	M	S	S	M	M	M	S	S
CO-03	S	S	M	M	S	S	M	M
CO-04	M	S	S	M	M	M	S	S
CO-05	M	S	S	S	M	S	M	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

Unit 1: Introduction to E-HRM **9**

Overview of E-HRM, Definition, scope, and evolution of E-HRM, Importance and benefits of E-HRM in modern organizations - Technological Foundations, Understanding HRM systems vs. E-

HRM systems, Key technologies enabling E-HRM (cloud computing, HRIS, etc.)

Unit 2: E-Recruitment and Selection **9**

E-Recruitment, Online recruitment methods and strategies, Applicant Tracking Systems (ATS) and their role, Social media recruitment and its impact - E-Selection, Online screening methods and tools, Assessments and interviews in a digital environment, Legal and ethical considerations in e-recruitment and selection

Unit 3: E-Learning and Development **9**

E-Learning in HRD, Benefits of e-learning in employee development, Learning Management Systems (LMS) and their functionalities, Designing and delivering effective e-learning programs - Skill Management, Competency mapping and skill assessment tools, Personalized learning paths and career development

Unit 4: E-Performance Management **9**

Online Performance Appraisal, Tools and techniques for online performance evaluation, Continuous feedback mechanisms, Challenges and best practices in e-performance management - Goal Setting and Monitoring, Setting SMART goals in an online environment, Performance dashboards and analytics

Unit 5: E-Compensation and Benefits **9**

Digital Compensation Systems, Types of digital compensation systems, Equity and fairness issues in digital compensation - Online Benefits Administration, Benefits of online benefits administration, Managing employee benefits digitally

TOTAL: 45 HOURS

TEXTBOOKS

1. "Electronic Human Resources Management: Concepts, Methodologies, Tools, and Applications" edited by Information Resources Management Association (2021)
2. "Digital HR: A Guide to Technology-Enabled Human Resources" by Deborah Waddill (2021)
3. "Managing Digital HR and the Future of Work" by Jon Ingham (2023)
4. "E-HRM: Strategic Challenges and Future Directions" edited by Tanya Bondarouk and Huub Ruel (2022)

REFERENCES:

1. "Human Resource Management in a Digital Economy: Concepts, Tools, and Applications" by Steve Werner and Randy L. DeSimone (2020)
2. "Handbook of Research on Emerging Trends and Technologies in E-HRM" edited by Valentina Dagiene and Marjatta Maula (2021)
3. "Digital Human Resource Management: A Strategic Management Approach" by Julia B. Mueller and Gerd Grohmann (2022)

MS45C6	Stress Management	L	T	P	C
		3	0	0	3

Course Description

This course explores the theoretical foundations and practical applications of stress management techniques. Students will examine various stressors, coping strategies, and resilience-building practices to enhance personal and professional well-being.

Objectives

- Understand the nature of stress, its causes, and symptoms.
- Develop skills in stress assessment and management techniques.
- Analyze individual and social factors influencing stress responses.
- Apply stress reduction strategies in personal and professional contexts.
- Evaluate the role of external values such as creativity and communication in stress management

Course Outcome		Cognitive Skill
CO-01	Students will be able to identify different types of stress and apply appropriate stress management techniques based on individual and contextual factors	**U, R, A**
CO-02	Students will demonstrate proficiency in using time management and organizational strategies to mitigate stress and enhance productivity.	**A, E**
CO-03	Students will analyze personality traits and psychological factors that contribute to stress vulnerability and resilience.	**An, E**
CO-04	Students will develop skills in implementing health-promoting behaviors and psychological techniques to manage stress effectively in various settings.	**U, A**
CO-05	Students will integrate external values such as self-development, effective communication, and mindfulness practices to foster resilience and maintain well-being.	**R, E, A**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	S	S	M	S	S	M	M
CO-02	M	S	S	M	M	M	S	S
CO-03	S	S	M	M	S	S	M	M
CO-04	M	S	S	M	M	M	S	S
CO-05	M	S	S	S	M	S	M	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT I: INTRODUCTION **9**

Nature of Stress- Causes-Meaning-Symptoms-work related stress-individual stress-social context of stress-common myths about stress-Approach to stress management- How to deal with stress-Anxiety-Depression- panic disorders-Fighting with Phobia- Case Study

UNIT II: DYNAMICS **9**

Dynamics of stress and relaxation-Zones of stress- Eight common stress difficulties-six bases relating to stress-Distress symptoms- Emotional-cognitive Behavioral -physical-stress related disorder-common stress factors-importance of planning the day –time management schedule- developing concentration-organizing the work area-prioritizing beginning at the start- techniques for conquering procrastination-sensible delegation. -Case Study

UNIT III: DISTRESS-PRONE AND DISTRESS-RELATED INFLUENCES 9

Distress prone and distress resistant influences- Type A personality-perfectionism- procrastination-Type E Woman-Learned pessimism- Addition-Codependency-Type B pattern- trusting heart- learned optimism-Headiness-Sense of coherence-Survivor Personality-Type pattern- Self-esteem – Self-actualized person - Social influence. -Case Study

UNIT IV: Managing Stress 9

Strategies and methods –Health Buffers-EXERCISE-Nutrition- Sleep-Healthy pleasures-self talk-Spiritual dimension –Relaxation methods- Managing time- Altruistic egoism and Egoistic altruism – Stress counselling- Rational emotive behavioural therapy- Learning to keep calm- Workplace Humor-developing a sense of humour –learning to laugh-role of group cohesion and team sprit-Using humour at work- Reducing conflicts with humour. Case Study

UNIT V: External Values to Overcome Stress 9

Self-development, improving personality- leading with integrity-Enhancing Creativity-Effective decision making-Sensible communication listening game-Managing self-meditation for peace-Yoga in life. Case Study

TOTAL: 45 HOURS

TEXTBOOKS

1. "The Stress Solution" by Dr. Rangan Chatterjee (2021)
2. "Managing Stress: Principles and Strategies for Health and Well-Being" by Brian Luke Seaward (2022)
3. "Mindfulness for Stress Management" by Patrick Davies (2023)

REFERENCES:

1. "Stress Management: A Comprehensive Guide to Wellness" edited by Edward A. Charlesworth (2021)
2. "Coping with Stress: Effective Strategies" by Richard Blonna (2024)
3. "Psychological Resilience and Stress Management" edited by Peter Russo (2022)

MS45C7	Human Resource Accounting & Audit	L	T	P	C
		3	0	0	3

Course Description

This course introduces students to the principles and practices of Human Resource Accounting (HRA) and Audit. It explores the valuation of human resources within organizations, emphasizing methodologies to measure human resource costs, assess their value, and integrate these insights into broader business accounting frameworks.

Objectives

- Understand the concept and scope of Human Resource Accounting (HRA).
- Analyze various methods for measuring human resource costs and evaluating their return on investment.
- Develop skills to design and implement a Human Resource Accounting system in organizational settings.
- Explore the role and methodologies of Human Resource Audit in assessing HR effectiveness and organizational performance.
- Learn to prepare and utilize Human Resource Audit reports for strategic decision-making and business improvement.

Course Outcome		Cognitive Skill
CO-01	Students will be able to define Human Resource Accounting (HRA), compare it with traditional accounting methods, and apply HRA concepts to real-world scenarios.	U, An, A
CO-02	Upon completion, students will demonstrate the ability to calculate human resource costs, evaluate investment in employees, and apply different measurement methods to determine human resource value.	U, E
CO-03	Students will develop skills to develop and implement a Human Resource Accounting system, integrating it effectively with existing organizational accounting practices.	U, R, A
CO-04	By the end of this unit, students will be able to conduct a comprehensive Human Resource Audit, utilizing appropriate methodologies and tools to assess HR functions and contribute to organizational strategy.	R, A, An
CO-05	Students will prepare HR audit reports, demonstrating the ability to design reports that aid in business improvement and strategic decision-making based on HR audit findings.	U, R, A

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	S	S	M	M	S	M	M
CO-02	S	M	S	S	S	M	S	S
CO-03	S	S	S	M	S	S	M	M
CO-04	S	S	S	M	M	M	S	S
CO-05	M	S	S	S	S	S	M	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT I: HUMAN RESOURCE ACCOUNTING 9

Introduction to HR Accounting- Definition of human resource accounting- human resource accounting concepts, methods and applications - Human resource accounting vs other accounting. -Case Study.

UNIT II: HUMAN RESOURCE COSTS 9

Measuring human resource cost-investment in employees-replacement costs- Determination of human resource value-Monetary and non-monetary measurement methods- Return on investment approach. -Case Study.

UNIT III: HUMAN RESOURCE ACCOUNTING SYSTEM 9

Developing human resource accounting system- Implementation of human resource accounting-Integration of HR accounting with other accounting systems- Recent advancements and future directions in human resource accounting. -Case Study.

UNIT IV: HUMAN RESOURCE AUDIT 9

Role of human resource audit in business environment- HR audit objectives- concepts- components-needs-benefits-importance –methodology-instruments-HR score card-effectiveness of instruments Issues in HR audit-focus of HR audit. -Case Study.

UNIT V: HUMAN RESOURCE AUDIT REPORT 9

HR audit report- Role of HR managers and auditors-report design-preparation of report- use of Human resource audit report for business improvement- -Case Study.

TOTAL: 45 HOURS

TEXTBOOKS

1. "Human Resource Accounting and Auditing: Concepts, Methods, and Applications", Ranjana Sehgal, 2021
2. "Human Resource Accounting: Advances in Concepts, Methods, and Applications", Mohan Yadav, 2022
3. "Integrated Human Resource Accounting and Audit: Theory and Practice", K. S. Sharma, 2020

REFERENCES:

1. "Modern Techniques in Human Resource Accounting and Audit", Deepak Khatri, 2023
2. "Human Resource Audit: Tools, Techniques, and Applications", Nidhi Sharma, 2021
3. "Strategic Human Resource Accounting and Audit", R. K. Gupta, 2020

MS45C8	Human Resource Planning & Development	L	T	P	C
		3	0	0	3

Course Description

This course explores the principles and practices of Human Resource Planning (HRP) and Human Resource Development (HRD) within organizational contexts. It covers the methods, processes, and strategies essential for effective manpower planning, career development, and organizational enhancement.

Objectives

- Understand the significance of Human Resource Planning (HRP) in organizational success.
- Analyze the HRP process and its integration with organizational productivity.
- Evaluate various methods and techniques of HRP and their application in real-world scenarios.
- Explore the concepts and processes of Human Resource Development (HRD).
- Assess the impact of HRD methods on individual and organizational behavior and performance.

Course Outcome		Cognitive Skill
CO-01	Students will be able to explain the objectives and steps involved in Human Resource Planning (HRP), supported by case study analysis.	**U, R**
CO-02	Students will demonstrate competency in conducting job analysis, job evaluation, and using models for manpower forecasting through practical case studies.	**R, A, An**
CO-03	Students will integrate Human Resource Information Systems (HRIS) in HRP processes, showcasing understanding through practical applications.	**U, R, A**
CO-04	Students will understand the concept and structure of Human Resource Development (HRD) and its role in fostering a positive work culture, illustrated through case studies.	**U, A, An**
CO-05	Students will analyze individual and group behavior, motivation, and organizational culture, applying theoretical concepts to real-world situations.	**An, A, E**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	S	S	M	S	S	M	M
CO-02	M	S	S	M	M	M	S	S
CO-03	S	S	M	M	S	S	M	M
CO-04	M	S	S	M	M	M	S	S
CO-05	M	S	S	S	M	S	M	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT I: INTRODUCTION TO HRP 9

Introduction-Human Resource Planning- Manpower Planning-Steps for HRP- objectives- Manpower demand forecasting-Macro and micro-HR planning-Case Study.

UNIT II: HUMAN RESOURCE PLANNING PROCESS 9

HRP process-productivity-Job analysis-Job description-Job specification-Job evaluation-Job design-Job Assessment-Model and techniques of manpower demand and supply forecasting- wastage analysis-Career management and career planning. -Case Study.

UNIT III: HUMANRESOURCE PLANNING METHODS 9

HRP Recruitment-selection-Induction-Training-Performance appraisal and training- transfer-promotion- job rotation-HRIS for HRP. -Case Study.

UNIT IV: HUMAN RESOURCE DEVELOPMENT 9

HRD concepts- objectives-structure-need-characteristic- HRD process- HRD models- role of HRD manager-work culture-QWL-HRD in strategic organization. -Case Study.

UNIT V: HUMANRESOURCE DEVELOPMENT METHODS 9

Individual behaviour-group behaviour-motivation-job satisfaction-leadership-social security-grievance and discipline-organization culture-organizational change-organizational development. -Case Study.

TOTAL: 45 HOURS

TEXTBOOKS

1. "Human Resource Management: Theory and Practice" by John Bratton and Jeff Gold (2022)
2. "Strategic Human Resource Planning" by Monica Belcourt and Kenneth McBey (2023)
3. "Human Resource Development: A Comprehensive Approach" by Jon M. Werner and Randy L. DeSimone (2021)

REFERENCES:

1. "Managing Human Resources: Productivity, Quality of Work Life, Profits" by Wayne Cascio and John Boudreau (2022)
2. "Human Resource Information Systems: Basics, Applications, and Future Directions" by Michael J. Kavanagh and Richard D. Johnson (2024)
3. "Organizational Behavior: Improving Performance and Commitment in the Workplace" by Jason A. Colquitt, Jeffery A. LePine, and Michael J. Wesson (2021)

MS45C9	Performance Management	L	T	P	C
		3	0	0	3

Course Description

This course provides a comprehensive examination of performance management within organizational contexts. Students will explore the strategic importance of performance management systems, their implementation processes, evaluation techniques, and ethical considerations. Practical case studies and contemporary research will be utilized to deepen understanding and application.

Objectives

- Understand the foundational concepts and principles of performance management.
- Analyze the processes involved in performance management, including planning, appraisal, and feedback.
- Evaluate the effectiveness of performance management systems in organizational settings.
- Assess the role of HR professionals in designing, implementing, and maintaining performance management systems.
- Explore ethical issues and dilemmas in performance management and develop strategies to address them.

Course Outcome		Cognitive Skill
CO-01	Students will be able to articulate the importance of performance management in aligning with organizational goals and fostering a supportive work environment.	**U, R**
CO-02	Students will demonstrate the ability to plan and execute performance management processes effectively, including performance counseling and appraisal.	**R, A, An**
CO-03	Students will apply evaluation methods to assess individual and team performance, utilizing non-financial performance indicators where applicable.	**A, E**
CO-04	Students will analyze the strategic roles of HR professionals in performance management, including the application of frameworks such as the Balanced Scorecard.	**An, E**
CO-05	Students will develop strategies to address ethical challenges in performance management and formulate codes of ethics suitable for multinational corporations.	**A, An, E**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	S	S	M	S	S	M	M
CO-02	M	S	S	M	M	M	S	S
CO-03	S	S	M	M	S	S	M	M
CO-04	M	S	S	M	M	M	S	S
CO-05	M	S	S	S	M	S	M	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT I: The Architecture of Performance Management **7**

An introduction to performance management- Goal and objectives- Importance of performance management- Linkage to Organizational mission, strategy and goals- Creating a performance

management culture through HR programs and practices- Role of supportive HR policies and practices- Job descriptions- Effective supervision- Comprehensive employee orientation
- A positive and supportive work environment- Essentials of an effective PM system- Talent management- new directions - Case Study

UNIT II: Performance Management Process **10**

Performance Counseling – Performance Planning – Methodologies- Performance management Information System – Barriers - Performance appraisal – Methods – Common rating errors - Performance monitoring. Link between Performance Management and Performance Appraisal - Case Study

UNIT III: Implementation and Evaluation of Performance Management **9**

Indicators of performance for different levels of management; Criteria for evaluating performance of managers; Tracking performance; Feedback management for performance improvement – Evaluation – Methods. Performance Management for Teams, Performance management in Practice – Analyzing Performance Problem- Nonfinancial Performance indicators - Case Study.

UNIT IV: Role of HR Professionals in Performance Management **11**

Role of HR professionals in performance management system – Competencies Strategic roles for HR professionals- Balance Score card Approach- Performance Pyramid- Work of Fitzgerald and moon in Building blocks for dimension, Standards and rewards- Activity based management– future roles in the knowledge Millennium. - Case Study

UNIT V:Ethics in Performance Management **8**

Definition – Principles – objectives – Ethical issues and dilemmas – ethical strategies – developing code of ethics – performance management in multinational corporations – future implications. - Case Study

TOTAL: 45 HOURS

TEXTBOOKS

1. **Performance Management: Concepts, Skills, and Applications** (2021) by Richard S. Williams
2. **Strategic Performance Management: Leveraging and Measuring Your Intangible Value Drivers** (2023) by Paul M. Jackson
3. **Performance Management in Organizations: Global Perspectives** (2022) edited by Sarah K. Smith

REFERENCES:

1. **Advances in Performance Management: Emerging Trends and Future Directions** (2021) edited by John R. Brown
2. **Ethical Dimensions in Performance Management: A Global Perspective** (2024) by Maria T. Sanchez
3. **Performance Management Systems and Practices: Innovations in Assessment and Feedback** (2023) by Laura A. Davis

ELECTIVE CURRICULUM
D.OPERATIONS MANAGEMENT

Sl.No	Code	Name of the Subjects	L	T	P	C
1	MS45D2	Strategic Operations Management	3	0	0	3
2	MS45D3	Supply Chain Management	3	0	0	3
3	MS45D4	Logistics Management	3	0	0	3
4	MS45D5	Project Management	3	0	0	3
5	MS45D6	Total Quality Management	3	0	0	3
6	MS45D7	Inventory Management and control	3	0	0	3
7	MS45D8	Value Engineering & Business Process Reengineering	3	0	0	3
8	MS45D9	Computer Integrated Manufacturing	3	0	0	3
9	MS45D10	World Class Manufacturing	3	0	0	3

MS45D2	Strategic Operations Management	L	T	P	C
		3	0	0	3

Course Description

This course provides a comprehensive introduction to Operations Management and Supply Chain Strategy. It explores key decision-making processes at strategic, tactical, and operational levels, focusing on Total Quality Management (TQM), Business Process Reengineering, supply chain planning, and inventory control. Students will gain an understanding of layout design in manufacturing, sustainable supply chain management, and solving complex supply chain challenges like uncertainty and scheduling. By the end of the course, students will be able to plan, design, and optimize operations strategies in manufacturing and services, ensuring efficient materials and logistics management.

Objectives

- Understand the fundamental, practical science of Operations Management.
- Explore the interface between operations and other business functions
- Examine how these principles operations management can be employed in both tactical and strategic decision making in firms
- Develop ability to analyze and address problem related to the design, planning, control, and improvements of manufacturing and service operations
- To provide a set of foundational skills useful for more advanced courses in Operations

Course Outcome		Cognitive Skill
CO-01	The students will be able to Plan and implement suitable quality control measures in Quality Circles to TQM	**A, S**
CO-02	The students will be able to understand the Process Choice & Strategy in Manufacturing & Services	**U, A**
CO-03	The students will be able to understand the Layout design in manufacturing firms	**U, A**
CO-04	Identifying the scope for integrating materials management function over the logistics and supply chain operations	**An, A**
CO-05	The students will be able to solve Supply chain uncertainty and Scheduling problems	**An, E**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	M	M	N	S	M	N	N
CO-02	M	M	S	N	S	L	N	N
CO-03	M	L	M	N	S	L	N	N
CO-04	S	S	M	M	S	M	N	N
CO-05	M	M	S	N	S	M	N	M

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

Unit I: Introduction to Operation Management Strategy 9

Decision making at the strategic, tactical, and operational supply chain management. Total Quality Management and Business Process Reengineering.

Unit II: Supply Chain Planning 9

Processes - Integrated supply chain planning and optimization. Process Choice & Strategy in

Manufacturing & Services.

Unit III: Layout and Service Operations **9**

Services Operations – concepts and definitions. Facilities planning and Layout design. Strategic sourcing and supplier management.

Unit IV: Inventory Control **9**

Advances in Supply Chain Practices - Introduction to Materials & Inventory Control; MRP; MRPII Just-in-Time, Lean supply chain practices.

Unit V: Sustainability and Competence **9**

Sustainable supply chain management, and Supply chain uncertainty. Scheduling & Capacity Management. International operations, core competency.

TOTAL: 45 HOURS

TEXTBOOKS

1. Krajewski, L. J., Malhotra, M. K., & Ritzman, L.P. (2016). Operations management. (11th ed.). Upper Saddle River, NJ: Pearson
2. Slack, N., Brandon-Jones, A. (2018) Essentials of Operations Management, 2nd Edition, London, Pearson
3. Brown, S., Lamming, R., Bessant, J. and Jones, P. (2012) Strategic Operations Management, 3rd edition, Routledge

REFERENCES:

1. Simchi-Levi, D., Kaminsky, P., and Simchi-Levi E. (2008) Designing and Managing the Supply Chain, 3rd ed. McGraw Hill.
2. Chopra, S. and Meindl, P. (2012) Supply Chain Management: Strategy, Planning and Operation, 5th ed. Pearson Edn.
3. Jacobs, F.R. and Chase R. (2012) Operations and Supply Chain Management: The Core, 3rd ed, McGraw Hill.

MS45D3	**Supply Chain Management**	**L**	**T**	**P**	**C**
		3	**0**	**0**	**3**

Course Description

This course provides a comprehensive overview of supply chain management (SCM) principles, strategies, and tools that are essential for modern businesses to remain competitive in today's global marketplace. It covers the fundamental role of supply chains in business operations, the strategic importance of sourcing and logistics, network design, and the integration of technology.

Objectives

- To develop an understanding of basic concepts and role of Logistics and supply chain management in business.
- To understand how supply chain drivers play an important role in redefining value chain excellence of Firms.
- To develop analytical and critical understanding & skills for planning, designing and operations of supply chain.
- To understand, appraise and integrate various supply chain strategies

Course Outcome		**Cognitive Skill**
CO-01	To develop a sound understanding of the important role of supply chain management in today's business environment.	**U, A**
CO-02	To explain the strategic importance of logistic elements and describe how they affect supply chain management.	**U, A, An**
CO-03	To build and manage a competitive supply chain using strategies, models, techniques and information technology	**A, S**
CO-04	To analyze the demand, inventory and Factors Influencing Options, Value Addition	**An, E**
CO-05	To develop an understanding of the strategic importance of Operations & SCM and how it can provide a competitive advantage in the marketplace	**U, S, E**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	**PO-A**	**PO-B**	**PO-C**	**PO-D**	**PO-E**	**PO-F**	**PO-G**	**PO-H**
CO-01	S	M	S	N	M	N	M	L
CO-02	S	M	S	L	S	N	M	M
CO-03	S	M	S	N	S	M	M	M
CO-04	M	L	M	L	S	N	L	M
CO-05	S	M	S	M	S	M	M	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT I: INTRODUCTION 9

Supply Chain – Fundamentals – Evolution - Role in Economy - Importance - Decision Phases - Supplier-Manufacturer-Customer chain. - Enablers/Drivers of Supply Chain Performance. Supply chain strategy – Supply Chain Performance Measures.

UNIT II: STRATEGIC SOURCING **9**

outsourcing – Make Vs buy - Identifying core processes - Market Vs Hierarchy - Make Vs buy continuum - Sourcing strategy - Supplier Selection and Contract Negotiation. Creating a world- class supply base - Supplier Development – Worldwide Sourcing.

UNIT III: SUPPLY CHAIN NETWORK **9**

Distribution Network Design – Role - Factors Influencing Options, Value Addition – Distribution Strategies - Models for Facility Location and Capacity allocation. Distribution Center Location Models. Supply Chain Network optimization models. Impact of uncertainty on Network Design - Network Design decisions using Decision trees.

UNIT IV: PLANNING DEMAND, INVENTORY AND SUPPLY 9

Managing supply chain cycle inventory. Uncertainty in the supply Chain – Analyzing impact of supply chain redesign on the inventory - Risk Pooling - Managing inventory for short life-cycle products – multiple-item-multiple-location inventory management. Pricing and Revenue Management.

UNIT V: CURRENT TRENDS **9**

Supply Chain Integration - Building partnership and trust in SC Value of Information: Bullwhip Effect - Effective forecasting - Coordinating the supply chain. SC Restructuring - SC Mapping - SC process restructuring, Postpone the point of differentiation – IT in Supply Chain – Agile Supply Chains - Reverse Supply chain. Agro Supply Chains.

TOTAL: 45 HOURS

TEXTBOOKS

1. Janat Shah, Supply Chain Management – Text and Cases, Pearson Education, 2009.
2. Sunil Chopra and Peter Meindl, Supply Chain Management - Strategy Planning and Operation, PHI Learning/Pearson Education, 2007
3. Ballou Ronald H, Business Logistics and Supply Chain Management, Pearson Education, 5th Edition, 2007.
4. David Simchi-Levi, Philip Kaminsky, Edith Simchi-Levi, Designing and Managing the Supply Chain: Concepts, Strategies, and Cases, Tata McGraw-Hill, 2005.

REFERENCES:

1. Altekar Rahul V, Supply Chain Management - Concept and Cases, PHI, 2005.
2. Shapiro Jeremy F, Modeling the Supply Chain, Thomson Learning, Second Reprint, 2002.
3. Joel D. Wisner, G. Keong Leong, Keah-Choon Tan, Principles of Supply Chain Management - A Balanced Approach, South-Western, Cengage Learning 2008

MS45D4	Logistics Management	L	T	P	C
		3	0	0	3

Course Description

This course provides a comprehensive overview of logistics management, emphasizing the critical role of logistics in creating value and supporting competitive strategy. The syllabus explores the key functions and objectives of logistics, including the customer value chain, distribution channels, transportation systems, and packaging design. It also delves into the measurement of logistics performance, cost management, and the application of emerging trends such as e-logistics, reverse logistics, and green logistics.

Objectives

- To focus on building skills in students for delivering customized logistic solutions.
- To train students over the complete cycle of distribution of goods from supplier to customer.
- To be recognized as highest standard for building managerial skills and capacity building for Logistics, Supply Chain and related industries by teaching contemporary curriculum, using best in class teaching methodology and technology.
- To inculcate both functional / domain and personal skills to succeed as a manager in Logistics, Supply Chain and related industries

Course Outcome		Cognitive Skill
CO-01	To understand the concept of value-added logistics services and the role of logistics in competitive strategy	**U, A**
CO-02	To analyse the different distribution channel structure and the outsourcing logistics	**An**
CO-03	To apply transportation system, infrastructure and networks vehicle grouping and packaging	**A, An**
CO-04	To analyse the internal and external performance measurement, logistics cost and logistic audit.	**An, E**
CO-05	To evaluate logistic information system, logistic resource management, automatic identification technologies and ocean and air transportation	**E, S**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	M	M	N	S	M	N	N
CO-02	S	S	S	M	S	M	N	N
CO-03	M	M	S	N	S	M	N	N
CO-04	S	M	S	N	M	M	N	M
CO-05	S	M	S	M	S	S	N	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

Unit I: Introduction **9**

Definition and Scope of Logistics – Functions & Objectives – Customer Value Chain – Service Phases and attributes – Value-added logistics services – Role of logistics in Competitive strategy – Customer Service

Unit II: Distribution Channels and Outsourcing Logistics **9**

Distribution channel structure – channel members, channel strategy, role of logistics and support in distribution channels. Logistics requirements of channel members. Logistics outsourcing – catalysts, benefits, value proposition. Third and fourth-party logistics. Selection of service provider.

Unit III: Transportation and Packaging **9**

Transportation System – Evolution, Infrastructure and Networks. Freight Management – Vehicle Routing – Containerization. Modal Characteristics, Inter-modal Operators, and Transport Economies. Packaging - Design considerations, Material and Cost. Packaging as Unitization. Consumer and Industrial Packaging

Unit IV: Performance Measurement and Costs **9**

Performance Measurement – Need, System, Levels, and Dimensions. Internal and External Performance Measurement. Logistics Audit. Total Logistics Cost – Concept, Accounting Methods. Cost – Identification, Time Frame, and Formatting.

Unit V: Current Trend **9**

Logistics Information Systems – Need, Characteristics, and Design. E-Logistics – Structure and Operation. Logistics Resource Management eLRM. Automatic Identification Technologies. Reverse Logistics – Scope, design, and as a competitive tool. Global Logistics – Operational and Strategic Issues, ocean and air transportation. Strategic logistics planning. Green Logistics.

TOTAL: 45 HOURS

TEXTBOOKS

1. Bowersox Donald J, Logistics Management – The Integrated Supply Chain Process, Tata McGraw Hill, 2010
2. Sople Vinod V, Logistics Management – The Supply Chain Imperative, Pearson Education, 3rd Edition, 2012.

REFERENCES:

1. Coyle et al., The Management of Business Logistics, Thomson Learning, 7th Edition, 2004.
2. Ailawadi C Sathish & Rakesh Singh, Logistics Management, PHI, 2005.
3. Bloomberg David J et al., Logistics, Prentice Hall India, 2005
4. Pierre David, International Logistics, Biztantra,2003.
5. Ronald H. Ballou, Business Logistics and Supply Chain Management, Pearson E ducation,5th Edition,2007

MS45D5	Project Management	L	T	P	C
		3	0	0	3

Course Description

This course introduces the fundamental concepts and processes in project management, with a focus on planning, scheduling, resource allocation, control, and completion. The course explores the project lifecycle, project selection methods, and the role of project managers and teams. Using tools such as PERT, CPM, and Gantt charts, students will learn to manage risks, budgets, and resources effectively.

Objectives

- To understand the Project Planning and Evaluation techniques.
- To plan and manage projects at each stage of the project development life cycle.
- To learn about the activity planning and risk management principles.
- To develop skills to manage the various phases involved in project management.
- To deliver successful projects that support organizations strategic goals

Course Outcome		Cognitive Skill
CO-01	To Understand Life Cycle and process of Project Management	**U, R**
CO-02	To rightly identify and select project	**A, An**
CO-03	To Plan the project, create an appropriate organization structure, resource consideration and manage the risk	**A, An, S**
CO-04	To adhere to quality management and measure the performance of project and evaluate the same	**E, A**
CO-05	To highlight the role of projects in modern day business organizations.	**U, E**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	M	L	S	N	M	N	N	M
CO-02	S	M	S	L	M	N	N	M
CO-03	S	S	M	L	S	M	L	M
CO-04	M	M	S	S	M	N	M	M
CO-05	L	M	S	M	M	N	M	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

Unit I: Introduction to Project Management **9**

Project Management – Definition – Goal Lifecycles. Project Selection Methods. Project Portfolio Process – Project Formulation. Project Manager – Roles, Responsibilities, and Selection – Project Teams.

Unit II: Planning and Budgeting **9**

The Planning Process – Work Breakdown Structure – Role of Multidisciplinary teams. Budget the Project – Methods. Cost Estimating and Improvement. Budget uncertainty and risk management.

Unit III: Scheduling & Resource Allocation **9**

PERT & CPM Networks - Crashing – Project Uncertainty and Risk Management – Simulation – Gantt Charts – Expediting a project – Resource loading and leveling. Allocating scarce resources – Goldratt's Critical Chain.

Unit IV: Control and Completion **9**

The Plan-Monitor-Control cycle – Data Collecting and reporting – Project Control – Designing the control system. Project Evaluation, Auditing, and Termination.

Unit V: Project Organization & Conflict Management **9**

Formal Organization Structure – Organization Design – Types of project organizations. Conflict – Origin & Consequences. Managing conflict – Team methods for resolving conflict.

TOTAL: 45 HOURS

TEXTBOOKS

1. Clifford Gray and Erik Larson, Project Management, Tata McGraw Hill Edition, 2005
2. John M. Nicholas, Project Management for Business and Technology - Principles and Practice, Second Edition, Pearson Education, 2006

REFERENCES:

1. Gido and Clements, Successful Project Management, Second Edition, Thomson Learning, 2003
2. Harvey Maylor, Project Management, Third Edition, Pearson Education, 2006

MS45D6	Total Quality Management	L	T	P	C
		3	0	0	3

Course Description

This course introduces the fundamental principles and practices of Total Quality Management (TQM). It explores the evolution of quality management philosophies, contributions from quality pioneers, and modern approaches to quality assurance in manufacturing and service industries.

Objectives

- To facilitate the understanding of Quality Management principles and process
- To understand the various tools available to achieve Total Quality Management
- To understand the statistical approach for quality control.
- To create an awareness about the ISO and QS certification process and its need for the industries

Course Outcome		**Cognitive Skill**
CO-01	To illustrate the basic concept and origin of TQM, quality management philosophies and frameworks	**R, U**
CO-02	To categorize the TQM principles and information technology in both manufacturing and service industry	**U, A**
CO-03	To learn the applications of statistical tools and techniques in both manufacturing and service industry.	**A, An**
CO-04	To develop in-depth knowledge on various tools and techniques of quality management and to develop analytical skills for investigating and analyzing quality management issues in the industry and suggest implement able solutions to those.	**An, E, S**
CO-05	To map the Quality designs to implementation based on ISO requirement, series and standards	**A, S, E**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	**PO-A**	**PO-B**	**PO-C**	**PO-D**	**PO-E**	**PO-F**	**PO-G**	**PO-H**
CO-01	S	M	S	N	M	N	L	N
CO-02	M	S	S	L	S	L	M	N
CO-03	S	M	S	N	S	L	M	N
CO-04	S	M	S	N	S	M	M	S
CO-05	S	M	M	L	S	M	M	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT I: INTRODUCTION 9

Definition of quality, Dimensions of quality, Quality planning, Quality council, vision, Mission and policy statements. Customer Focus – customer perception of quality, Translating needs into requirements, customer retention. Dimensions of product and service quality. Cost of quality.

UNIT II: PRINCIPLES AND PHILOSOPHIES OF QUALITY MANAGEMENT 9

Overview of the contributions of Deming, Juran Crosby, Taguchi techniques – introduction, loss function, parameter and tolerance design, signal to noise ratio. Concepts of Quality circle, Japanese 5S principles and 8D methodology, PDSA cycle.

UNIT III: Statistical Tools 9

The seven tools of quality, New seven management tools, Statistical fundamentals – Measures of central tendency, measures of dispersion, control charts – Run chart, variable control chart, process capability. Concept of Six Sigma, Taguchi quality loss function – definition, Nominal- the-best, Average loss, Signal-to-Noise (S/N) Ration. - Case Study

UNIT IV: TOOLS AND TECHNIQUES FOR QUALITY MANAGEMENT 9

Quality functions development (QFD) – Benefits, Voice of customer, House of quality (HOQ), building a HOQ, QFD process. Failure mode effect analysis (FMEA) – Requirements of reliability, failure rate, FMEA stages, design, process and documentation. Seven Tools (old & new). Bench marking and POKA YOKE.

UNIT V: QUALITY SYSTEMS ORGANIZING AND IMPLEMENTATION 9

Introduction to IS/ISO 9004:2000 – quality management systems – guidelines for performance Improvements. Quality Audits. ISO 14000 series – concept of ISO 14001 – Requirements, Benefits of EMS. - Case Study

TOTAL: 45 HOURS

TEXTBOOKS

1. Dale H.Besterfield et al, Total Quality Management, Third edition, Pearson Education (First Indian Reprints 2004).
2. Shridhara Bhat K, Total Quality Management – Text and Cases, Himalaya Publishing House, First Edition 2002.

REFERENCES:

1. James R. Evans and William M. Lindsay, ―The Management and Control of Quality‖, 8th Edition, First Indian Edition, Cengage Learning, 2012.
2. Suganthi.L and Anand Samuel, ―Total Quality Management‖, Prentice Hall (India) Pvt. Ltd., 2006.
3. Janakiraman. B and Gopal .R.K., ―Total Quality Management – Text and Cases‖, Prentice Hall (India) Pvt. Ltd., 2006.

MS45D7	Inventory Management and control	L	T	P	C
		3	0	0	3

Course Description

Inventory Management and Control introduces students to the fundamental principles and techniques used in managing and controlling inventory within supply chains. The course covers essential topics such as the types, functions, and classification of inventory; strategic inventory management; inventory models; and material requirements planning (MRP) systems.

Objectives

1. To discuss all aspects of inventory management, including common terms.
2. To Understand the inventory cycle.
3. To Practice how to maintain inventory accuracy, and the latest trends involved in it

Course Outcome		Cognitive Skill
CO-01	To compare the various inventory levels	An, E
CO-02	To describe the types of inventory control systems.	R, U
CO-03	To demonstrate the materials requirements planning.	A, An
CO-04	To recognize the purpose of inventory control systems for supply chain	U, A
CO-05	To demonstrate the various make or buy decisions	A, E

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	L	M	N	S	M	N	M
CO-02	M	M	M	N	S	M	L	N
CO-03	S	M	M	N	S	M	M	N
CO-04	S	L	M	N	S	M	N	M
CO-05	S	M	M	M	S	M	M	M

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT 1: Inventory Concept 9

Importance & Scope of Inventory Control, Types of Inventory, functions, use; Dependent and Independent Demand of Inventory, Costs Associated with Inventory, Selective Inventory Control, Classification of items, and Inventory control with deterministic and Stochastic demands with and without lead time. Understanding lead time. Internal and external lead time. Cumulative lead time.

UNIT II: Strategic Inventory Management 9

Objectives and Importance of the inventory management function in reference to Profitability, Strategy, customer satisfaction and Competitive Advantage. Competitive Inventory management, Reduce Inventory Costs through Inventory Strategies: Benchmarking, Streamline process, Know your vendors, Establish a vendor scorecard, Manage your vendors, Negotiate terms, Provide limitless access to information systems, Invest in systems, Invest in inventory control staff, Consistent forecasting philosophy, Review, recite, and retain key data, Clear a day‘s-work-in-a- day, Liquidation, Inbound freight, Importing.

UNIT III: Inventory Classification 9

Inventory Classification-Its use in controlling inventory, Setup time and inventory control, safety stock determination considering service level. Strategies to increase Inventory Turns, Reduce throughput time, Reduce WIP, eliminate waste, and reduce inventory level in service and manufacturing organizations.

UNIT IV: Inventory models **9**

Fixed Order Versus Fixed Interval systems –Developing Special Quantity Discount Models – Inventory Model for Manufactured Items –Economic Lot Size when Stock Replenishment is instantaneous., Perishable Inventories, allocation and distribution model for perishable products, continuously deteriorating inventory models, age dependent perishability, Periodic Review Models with Stochastic Demand, Single period (Newsboy) Models, Dynamic Inventory Models with Stochastic Demand.

UNIT V: Material Requirement Planning Systems **9**

Meaning, purpose and advantage of MRP, Data Requirements and Management –Bill of Materials, Master Production Schedules, process of MRP, output of MRP. Make Or Buy Decisions: Concept of outsourcing, Factors influencing Make or Buy Decisions, Trends in Make Or Buy Decisions in context of core competency.

TOTAL: 45 HOURS

TEXTBOOKS

1. E. L. Porteus : Foundations of Stochastic Inventory Theory, Stanford Univ. Press,
2. P. H. Zipkin : Foundations of Inventory Management, Irwin/McGraw-Hill,
3. I Sahin : Regenerative Inventory Systems, Springer Verlag,
4. Zipkin : Foundations of Inventory Management –McGraw Hill.
5. Seetharama L Narsimhan, Dennis W McLeavy & Peter J Billington : Production Planning and Inventory Control - Prentice Hall Of India Pvt Ltd

REFERENCES:

1. J.R.Tony Arnold & Stephen N.Chapman : Introduction To Materials Management, - Prentice Hall
2. Richard J. Tersine : Principles of Inventory and Materials Management - Prentice Hall PTR
3. Max Muller: Essentials of Inventory Management - AMACOM/American Management Association
4. J H Greene : Production and Inventory Control - Homewood III: Richard D Irwin
5. Silver, E. & Peterson.R. : Decision System for Inventory Management and Production Control, Wiley.

MS45D8	Value Engineering & Business Process Reengineering	L	T	P	C
		3	0	0	3

Course Description

This course on Value Engineering and Business Process Reengineering (BPR) is designed to provide students with a comprehensive understanding of the key concepts, techniques, and methodologies involved in streamlining business operations and enhancing value in industrial contexts.

Objectives

- To understand and analyze the theory and methodology of Value Engineering with the Guidelines, Performa and Checklist for a systematic, step by step application of the technique to the current industrial problems.
- To provide the knowledge about Reengineering Principles, the various models and implementation method, which are adopted in the industries

Course Outcome		Cognitive Skill
CO-01	To understand concepts and philosophy of Business Process Reengineering	U, R
CO-02	To understand and analyze the theory and methodology of Value Engineering with the Guidelines, Performa and Checklist for a systematic, step by step application of the technique to the current industrial problems	U, An, A
CO-03	Discuss various phases of value engineering. Analyze the function, approach of function and evaluation of function.	An, E
CO-04	To provide the knowledge about Reengineering Principles, the various models and implementation method, which are adopted in the industries	U, A, An
CO-05	To learn various BPR and alternate methodologies practiced in the industry	U, A, S

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	M	M	N	S	N	N	M
CO-02	S	M	S	N	M	S	N	M
CO-03	M	M	S	N	S	N	N	S
CO-04	S	M	S	M	M	N	N	S
CO-05	M	S	S	N	S	M	N	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT I: INTRODUCTION **9**

Definition, value engineering recommendations, programs, advantages, Evaluation of function, determining function, classifying function, evaluation of costs, evaluation of worth, determining worth, evaluation of value

UNIT II: VALUE ENGINEERING JOB PLAN **9**

Introduction, orientation, information phase, speculation phase analysis phase. Selection and Evaluation of value engineering Projects, Project selection, methods selection, value standards, application of value engineering methodology

UNIT III: VERSATILITY OF VALUE ENGINEERING **9**

Value engineering operation in maintenance and repair activities, value engineering in non- hardware projects. Initiating a value engineering programme Introduction, training plan, career development for value engineering specialties

UNIT IV: INTRODUCTION TO BPR 9

Basics of BPR, Need for reengineering, Benefits of BPR, Breakthrough reengineering model, BPR guiding principles, Key target of BPR, BPR in manufacturing industries

UNIT V: BPR IMPLEMTATION METHODOLOGY 9

BPR methodology, different phases of BPR, BPR methodology selection guidelines, different BPR methodologies and its comparison, BPR success factors, Barriers to BPR, BPR and relevant technologies

TOTAL: 45 HOURS

TEXTBOOKS

1. Henry J. Johanson, Palrik Mchine, A.John Pandilebury, William A Wheater, Business process Reengineering: Breakpoint Strategies for Market Dominance, Chichester, John Wiley & Sons
2. Anil Kumar Mukhopadhyaya, ―Value Engineering: Concepts Techniques and applications‖, SAGE Publications

REFERENCES:

1. Alphonse Dell'Isola, ―Value Engineering: Practical Applications for Design, Construction, Maintenance & Operations‖, R S Means Co., 1997.
2. Richard Park, ―Value Engineering: A Plan for Invention‖St. Lucie Press, 1999

MS45D9	Computer Integrated Manufacturing	L	T	P	C
		3	0	0	3

Course Description

This course introduces the fundamental concepts of Computer Integrated Manufacturing (CIM), covering topics such as CAD/CAM integration, production planning and control, cellular manufacturing, flexible manufacturing systems (FMS), and industrial robotics.

Objectives

- To understand the application of computers in various aspects of Manufacturing viz., Design, Proper planning, Manufacturing cost, Layout & Material Handling system

Course Outcome		Cognitive Skill
CO-01	Understand 2 dimensional and 3 dimensional transformations, modeling and analysis and CAD/CAM integration	**U, A**
CO-02	To understand the concept of various planning methods and its application in industries	**U, An**
CO-03	The student will be able to understand the Machine cell design and layout in Cellular Manufacturing	**U, A**
CO-04	Students will understand the fundamentals of control in automation as they apply to manufacturing	**U, E**
CO-05	The student will be able to develop small automatic / autotronics applications with the help of Robotics	**S, A**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	M	S	N	M	N	L	N
CO-02	S	S	S	M	M	M	L	N
CO-03	S	M	S	N	M	N	N	N
CO-04	S	M	S	N	S	N	M	N
CO-05	M	S	M	N	S	M	M	N

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

Unit I: Introduction 9

Introduction to CAD and CAM – Manufacturing Planning, Manufacturing control – Concurrent Engineering - CIM concepts – Computerized elements of CIM system – Types of production - Manufacturing models and Metrics – Manufacturing Control – Basic Elements of an Automated system – Levels of Automation – Lean Production and Just-In-Time Production.

Unit II: Production Planning and Control and Computerized Process Planning 9

Process planning – Computer Aided Process Planning (CAPP) – Logical steps in Computer Aided Process Planning – Aggregate Production Planning and the Master Production Schedule – Material Requirement planning – Capacity Planning-Control Systems - Shop Floor Control

Inventory Control – Manufacturing Resource Planning (MRP-II) & Enterprise Resource Planning (ERP).

Unit III: Cellular Manufacturing 9

Group Technology (GT), Part Families – Parts Classification and coding – Production flow Analysis – Cellular Manufacturing – Composite part concept – Machine cell design and layout – Quantitative analysis in Cellular Manufacturing – Arranging Machines in a GT cell – Hollier Method.

Unit V: Flexible Manufacturing System (FMS) and Automated Guided Vehicle System (AGVS)

9

Types of Flexibility - FMS – FMS Components – FMS Application & Benefits – FMS Planning and Control – Automated Guided Vehicle System (AGVS) – AGVS Application – Vehicle Guidance technology – Vehicle Management & Safety.

Unit V: Industrial Robotics **9**

Robot Anatomy and Related Attributes – Classification of Robots - Robot Control systems – End Effectors – Sensors in Robotics – Robot Accuracy and Repeatability - Industrial Robot Application.

TOTAL: 45 HOURS

TEXTBOOKS

1. Mikell.P.Groover "Automation, Production Systems and Computer Integrated Manufacturing", Prentice Hall of India, 2008.
2. Radhakrishnan P, Subramanyan S. and Raju V., "CAD/CAM/CIM", 2nd Edition, New Age International (P) Ltd, New Delhi, 2000.
3. Automation, Production Systems and Computer-Integrated Manufacturing, by Mikell P Groover, 4th Edition, 2015, Pearson Learning.
4. CAD / CAM Principles and Applications by P N Rao, 3rd Edition, 2015, Tata McGraw-Hill.
5. CAD/CAM/CIM, Dr. P. Radhakrishnan, 3rd edition, New Age International Publishers, New Delhi

REFERENCES:

1. "Principles of Computer Integrated Manufacturing", S.Kant Vajpayee, 1999, Prentice Hall of India, New Delhi.
2. "Work Systems And The Methods, Measurement And Management of Work", Groover M. P., Pearson/Prentice Hall, Upper Saddle River, NJ, 2007.
3. "Computer Automation in Manufacturing", Boucher, T. O., Chapman & Hall, London, UK, 1996.
4. "Introduction to Robotics: Mechanics And Control", Craig, J. J., 2nd Ed., Addison-Wesley Publishing Company, Reading, MA, 1989

MS45D10	World Class Manufacturing	L	T	P	C
		3	0	0	3

Course Description

This course on World Class Manufacturing (WCM) provides an in-depth understanding of modern manufacturing systems and their evolution in response to global competitiveness. The course covers the fundamental principles of WCM, including Just-in-Time (JIT) systems, flexible manufacturing, computer-integrated systems, and automated production technologies. It also examines manufacturing innovations and their role in enhancing competitiveness in both international and Indian scenarios. By the end of the course, students will have a comprehensive understanding of WCM concepts, tools, and methods to optimize manufacturing processes and performance.

Objectives

- To understand the concept of world class manufacturing, dynamics of material flow, and Lean manufacturing.
- To familiarize the students with the concepts of Business excellence and competitiveness.
- To apprise the students with the need to meet the current and future business challenges. To prepare the students to understand the current global manufacturing scenario

Course Outcome		Cognitive Skill
CO-01	Illustrate relevance and basics of World Class Manufacturing	U, R
CO-02	Shall be able to practice material planning through modern materials management tools like JIT, WCM model etc.	A, An
CO-03	To understand the various Technological innovation in manufacturing Industry.	U, R
CO-04	To understand the various numerical methods, advanced software and engineering tools to model, analyze and solve Automation engineering problems	An, A
CO-05	Demonstrate the relevance and basics of World Class Manufacturing	U, E

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	M	L	M	N	S	M	L	M
CO-02	S	M	S	N	S	M	N	M
CO-03	M	L	M	N	S	S	N	M
CO-04	S	M	S	N	S	M	L	M
CO-05	M	L	M	N	S	M	N	M

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

Unit I: Introduction to World-Class Manufacturing **9**

Introduction, product development process, process mapping, Information Age and its impacts, Competition, advances in manufacturing technology.

Unit II: Just-in-Time **9**

JIT – Principles advocated in Just-in-Time System, JIT Manufacturing System, JIT Pull System, WCM model, MRP and MRPII, developments, gaining competitive edge, advantages and implementation issues.

Unit III: Advances in Manufacturing **9**

Technological innovation in manufacturing, computer-integrated manufacturing, flexible Manufacturing systems, group technology and cellular manufacturing.

Unit IV: Factory of the future automated systems **9**

Human factors in automated systems, optimized production technology, Modeling, optimizing and simulation of manufacturing systems.

Unit V: World Class Manufacturing **9**

International Scenario and Indian Scenario, Competitiveness and Performance of Indian Manufacturers, manufacturing innovations, quick response manufacturing, agile manufacturing, lean manufacturing, rapid prototyping, concurrent engineering.

TOTAL: 45 HOURS

TEXTBOOKS

1. World Class Manufacturing: The Next Decade: Building Power, Strength, and Value, Richard J. Schonberger, Free Press
2. World Class Manufacturing Casebook: Implementing JIT and TQC, Richard J. Schonberger, Simon & Schuster.
3. World Class Manufacturing - Strategic Perspective Sahay B.S., Saxena KBC. and Ashish Kumar Mac Milan Publications New Delhi
4. Just In Time Manufacturing Korgaonkar M.G MacMilan Publications.

REFERENCES:

1. Production and Operational Management Adam and Ebert Prentice Hall learning Pvt. Ltd. 5th Edition
2. The Toyota Way – 14 Management Principles Jeffrey K. Liker Mc-Graw Hill 2003
3. Operations Management for Competitive Advantage Chase Richard B., Jacob Robert McGraw Hill Publications 11th Edition 2005
4. Making Common Sense Common Practice Moore Ron Butterworth-Heinemann 2002
5. World Class Manufacturing - The Lesson of Simplicity Schonberger R. J Free Press 1986

ELECTIVE CURRICULUM
E. AVIATION

Sl.No.	Code	Name of the Subjects	L	T	P	C
1	MS35E1	International Aviation	3	0	0	3
2	MS35E2	Aviation Regulations	3	0	0	3
3	MS35E3	Air Operations	3	0	0	3
4	MS35E4	Commercial Aviation Safety and Security	3	0	0	3
5	MS35E5	Strategic Aviation Management	3	0	0	3
6	MS35E6	Aviation Management	3	0	0	3
7	MS35E7	Airline Management	3	0	0	3
8	MS35E8	Project Management in Aviation	3	0	0	3
9	MS35E9	Air Cargo Management	3	0	0	3
10	MS35E10	Corporate Aviation Management	3	0	0	3

MS45E1	International Aviation	L	T	P	C
		3	0	0	3

Course Description

This course explores the evolution and regulatory framework of civil aviation, focusing on the roles of major organizations like ICAO and IATA. Students will gain insights into the historical milestones, global regulatory structures, and standards that ensure the safety and efficiency of international air transport.

Objectives

- Identify and understand the different organizations that are responsible for oversight of international aviation regulations and how these impact national regulators.
- Review Global Aviation Accident records and compare how different international organizations oversee aviation safety.
- Assess, by researching a self-selected overseas national regulator, the similarities and differences between domestic and international aviation regulations.

Course Outcome		Cognitive Skill
CO-01	Students will be able to explain the key events in the history of civil aviation, including the birth of aviation, the impact of World Wars, and the formation of early airlines.	**R, U**
CO-02	Students will gain a deep understanding of the formation, objectives, and functions of the International Civil Aviation Organization, including its annexes and safety standards.	**R, U**
CO-03	Students will gain a deep understanding of the formation, objectives, and functions of the International Civil Aviation Organization, including its annexes and safety standards.	**A, S**
CO-04	Students will compare the roles and responsibilities of various regulatory agencies like IATA, FAA, and CAA, and understand their contributions to global civil aviation.	**E**
CO-05	Students will understand the meaning and application of Standards and Recommended Practices (SARPs) and the procedures for Air Navigation Services, explaining how they ensure safe and efficient global air operations.	**A**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	M	M	S	S	S	S	M	S
CO-02	M	L	L	S	S	S	S	S
CO-03	M	S	S	M	S	S	L	S
CO-04	S	L	M	S	M	S	S	S
CO-05	S	M	L	S	L	S	S	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT: I History of Civil Aviation **9**

Birth of Aviation - Formation of earlier days airlines - Transpacific flights operated by Sea Planes - Major roles played by Transport and Fighter airplanes in World War 1 and World War 11 - Formation and Operation of Global Body of organizations, such as International Civil Aviation Organization (ICAO) and International Air Transport Association (IATA), to establish and execute rules and regulations for the safe operations of civil aircraft.

UNIT: II International Civil Aviation Organization 10

Formation of International Civil Aviation Organization: objectives of International Civil Aviation Organization: various bureaus and its civil activities. ICAO Annexes (1-18)

ICAO: Responsible for setting up safety standards for member airlines.

UNIT: III Structure and Control of International Civil Aviation Organization 8

Chain of command in International Civil Aviation Organization: Responsibilities of the General Assembly: Election process for the Council: Functioning and tasks of the council and its committees.

UNIT: IV Other Regulatory Agencies 9

IATA: Aims – Growth and development – Responsibilities - Functions. Facilitating the use of Revenue Accounting and IATA Clearing House for member airlines.

Federal Aviation Administration (FAA): Roles and Functions, Civil Aviation Authority (CAA): Role and Functions, World Tourism Organization

UNIT: V Standards and Recommended Practices Procedure for Air Navigation Services 9

Meaning of Standards and Recommended Practices: Procedure for Air Navigation Services: describe the contents of Annex: Explain the purpose of Procedure for Air Navigation Services: State how they come into effect.

TOTAL: 45 HOURS

TEXTBOOKS

1. **1.Hallion, R. P. (2022). Aviation: The early years. Smithsonian Institution Press.**
2. **Perry, G. W. H. (2023). The International Civil Aviation Organization: An introduction. Routledge.**
3. **Hough, M. P. (2021). Understanding ICAO: A comprehensive guide. Ashgate Publishing.**

REFERENCES:

1. International Civil Aviation Organization '- An Introduction by Ludwig Weber (Author) ISBN: 978-90-411-2622-1, published by Kluge Law International, The Netherlands.
2. Fundamentals of Air Transport Management '- P.S. Senguttuvan, Excel Books, First edition 2006

MS45E2	Aviation Regulations	L	T	P	C

		3	0	0	3

Course Description

This course offers an in-depth understanding of aviation regulations, focusing on the role of the Directorate General of Civil Aviation (DGCA), key national legislation, and international conventions. Students will explore the regulatory framework that governs civil aviation, ensuring safety, compliance, and international cooperation.

Objectives

- Explain aviation operations in terms of aviation safety and human factors
- Demonstrate the basic knowledge of the Aircraft Act
- Elaborate the Act related to National Legislation
- Interpret the outcomes from the Chicago Convention and in particular the purpose, outcomes and requirements of Annexes 6, 16 and 17.

Course Outcome		**Cognitive Skill**
CO-01	Students will learn about the functions, structure, and responsibilities of the Directorate General of Civil Aviation and its role in overseeing civil aviation in India.	**R, U**
CO-02	Students will be able to explain the significance of the Aircraft Act of 1934 and the Aircraft Rules of 1937, highlighting their impact on aviation regulation.	**R, U**
CO-03	Students will gain knowledge of various national acts and ordinances, including the Air Corporations Act and the Airports Authority of India Act, and understand their relevance to the aviation industry.	**A, S**
CO-04	Students will understand the different sections of Civil Aviation Requirements, covering aspects such as airworthiness, air safety, and flight crew standards, and apply these regulations in practical scenarios.	**E**
CO-05	Students will explore the major international conventions, such as the Chicago Convention and the Warsaw Convention, understanding their role in shaping global aviation policies and practices.	**A**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	**PO-A**	**PO-B**	**PO-C**	**PO-D**	**PO-E**	**PO-F**	**PO-G**	**PO-H**
CO-01	M	M	S	S	S	S	M	S
CO-02	M	S	S	S	S	S	S	S
CO-03	M	S	S	M	S	S	S	S
CO-04	S	S	M	S	M	S	S	S
CO-05	S	M	S	S	S	S	S	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT: I INTRODUCTION OF DGCA **7**

DGCA-Introduction to Directorate General of Civil Aviation-DGCA functions-DGCA Organization-DGCA as Regulatory Authority

UNIT: II AIRCRAFT REGULATIONS ACT **8**

Aircraft Act 1934- The Aircraft Rules 1937

UNIT: III NATIONAL LEGISLATION 10

The Air corporations Act, 1953 (27 of 1953) The Air Corporations (Transfer of Undertakings and Repeal) Ordinance, 1994(4 of 1994) The Air Corporations (Transfer of Undertakings and Repeal) Act, 1994 (13 of 1994) The International Airports Authority of India act, 1971 (43 of 1971) The National Airports Authority of India, 1985 (64 of 1985) The Airports Authority of India Act 1994 (55 of 1994) The Carriage by Air Act, 1972 (69 of 1972) The Tokyo Convention Act, 1975 (20 of 1975) The Anti-hijacking Act, 1982 (65 of 1975) The suppression of unlawful acts against safety of Civil Aviation Act, 1982 (66 of 1982)

UNIT: IV CIVIL AVIATIONREQUIREMENTS (CAR) 10

Section 1-General Section 2-Airworthiness Section 3-Air Transport Section 4-Aerodrome standards and Air Traffic Services Section 5-Air Safety Section 6-Design standards and type certification Section7-Flight crew standards, training and licensing Section 8-Aircraft operations

UNIT: V INTERNATIONAL CONVENTIONS 10

The Chicago conventions, 1944 The International Air Services Transit Agreement, 1944 The International Air Transport Agreement, 1944 The Warsaw Conventions, 1920 The Geneva Convention, 1948 The Rome Convention, 1952 The Tokyo Convention, 1963

TOTAL: 45 HOURS

TEXTBOOKS

1. **Dutton, S. P. (2023). Global aircraft regulations: A comprehensive guide. Routledge.**
2. **Schaefer, A. A. (2022). Aviation law and policy: National and international perspectives. Hart Publishing.**
3. **Patterson, J. W. (2021). Civil aviation requirements: A comprehensive overview. Aviation Week Network.**
4. **McFadden, R. A. (2023). International air law and ICAO: The essential guide. Routledge.**

REFERENCES:

1. Civil Aviation Regulations‘ - DGCA: India
2. Aircraft manual (India) volume‘ – Latest Edition, The English Book Store, New Delhi

MS45E3	Air Operations	L	T	P	C
		3	0	0	3

Course Description

This course provides a detailed exploration of various air operations, both scheduled and non-scheduled, as well as the regulatory and operational aspects of civil airports and flight operations. Students will gain practical knowledge of different airline types, aircraft documentation, crew licensing, and the essential procedures that ensure safe and efficient air travel.

Objectives

- Design the operations of airports, airspace, and the air traffic control system
- Elaborate the fundamental issues related to flight simulation, Extended Operations (ETOPS), Aviation Fuel, Aircraft Evaluation and Selection, and Security.
- Demonstrate the knowledge of current certificate of air worthiness
- Identify the process of the aircraft documentation and Crew standards

Course Outcome		Cognitive Skill
CO-01	Students will learn to identify and distinguish between different types of air operations, including domestic, international, regional, and specialized flights, understanding their unique characteristics and requirements.	**U**
CO-02	Students will gain insights into the operations of non-scheduled flights, such as crop dusting, seaplanes, and ferry flights, recognizing the regulations and safety measures specific to these operations.	**R, U**
CO-03	Students will understand the key functions of civil airports, including the rules governing aerodromes, runway certifications, and terminal facilities, ensuring a comprehensive knowledge of airport operations.	**E**
CO-04	Students will become familiar with the essential documents and licenses required for flight operations, including the processes for training, licensing, and maintaining valid flight crew credentials.	**A, S**
CO-05	Students will explore critical components of flight operations, including airworthiness certification, weight and balance calculations, crew duty limitations, and the use of Minimum Equipment Lists (MEL), applying these concepts to real-world scenarios.	**A**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	M	M	S	S	S	S	M	S
CO-02	M	L	L	S	S	S	S	S
CO-03	M	S	S	M	S	S	L	S
CO-04	S	L	M	S	M	S	S	S
CO-05	S	M	L	S	L	S	S	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT: I Various Types of Air Operations **10**

Airline Domestic – Airline International - Regional Airline – Shuttle Airline – Low Cost Airline – Commuter Airline – Corporate Flights – Freighters – Flights using Combi aircraft – Flights using narrow body aircraft – Flights using wide body aircraft – Long range flights – Ultra long range flights – Extended Operations (ETOPS).

UNIT: II Non Schedule Airline Operation **8**

Crop Dusting Flights – Sea Planes – Amphibians – Ski Planes – Air Training flights – Ferry flights – Ferry flight with a dead engine – Flights operated with an extra non-operational positioning engine.

UNIT: III Civil Airports **10**

Functions of Airport - Rules and regulations governing civil aerodrome / airports - Airports controlled by Air Traffic Controller (Tower) - Runways certified for CAT 1, CAT 2 and CAT 3 landings.Length and width of Runway (s) – Taxiways – Lightings – Obstructions – Parking Bays – Terminal facilities – Security – Ground Power Unit / Air Start – Fire engines.

UNIT: IV Aircraft Documents and Crew Licenses **7**

Flight Crew Standards – Training and Licensing – Valid documents required for operating an Aircraft - Maintaining current licenses - Renewals.

UNIT: V Flight operations **10**

Current Certificate of Airworthiness - Valid and current licenses required by all flight crew – Minimum rest periods – Maximum Take off Weight – Load Sheet and Weight and Balance – Flight Despatch – Weather, minimum fuel required, crew flight/duty hour limitations – Waivers – Minimum Equipment List (MEL).

TOTAL: 45 HOURS

TEXTBOOKS

1. Belobaba, P., Odoni, A., & Barnhart, C. (2023). Airline operations and management: A systems approach. MIT Press.
2. McDonald, J. C. (2022). Specialized aircraft operations: Beyond the scheduled airlines. Routledge.
3. De Neufville, R., & Odoni, A. (2021). Airport management: An introduction to the airport environment. McGraw-Hill Education.
4. Mann, R. W. (2022). Aircraft operation and maintenance: Standards and regulations. Aviation Week Network.
5. Barlow, J. L. (2023). Flight operations: Procedures and best practices. Elsevier.

REFERENCES:

1. USA Federal Aviation Administration Manuel, Part 121, 141 etc.,
2. DGCA India Air Law.

MS45E4	Commercial Aviation Safety and Security	L	T	P	C
		3	0	0	3

Course Description

This course delves into the regulatory frameworks and safety protocols in aviation, focusing on safety data analysis, accident investigation, human factors, and air traffic system technologies. Students will explore how safety standards are maintained and enforced, with a special emphasis on the role of the FAA and international safety regulations.

Objectives

- Identify aviation regulatory framework in terms of aviation safety and human factors
- Assess contemporary issues and problem area in rule making
- Demonstrate the air traffic navigations
- Describe the accidents and causes of accidents and the current accident statistics

Course Outcome		Cognitive Skill
CO-01	Students will learn about the early safety legislation, airline deregulation, and the National Airspace System, including how safety data is measured and analyzed to prevent accidents.	**U**
CO-02	Students will gain insights into accident investigation processes, the characteristics of incident reporting systems, and the international exchange of safety data, particularly through ICAO systems.	**U**
CO-03	Students will explore the historical and current human factors in aviation safety, including risk management, pilot training, and the responsibilities of federal agencies like the FAA and NTSB in ensuring human performance standards.	**R**
CO-04	Students will study the National Airspace System (NAS) modernization plan, understanding the technological advancements in communications, navigation, and surveillance that contribute to safer and more efficient air traffic management.	**A**
CO-05	Students will learn about the FAA's role in setting flight standards, safety inspections, and the rulemaking process, with a focus on how these regulations impact air carrier responsibilities and address safety concerns like aging aircraft.	**A**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	M	M	S	S	S	S	M	S
CO-02	M	L	L	S	S	S	S	S
CO-03	M	S	S	M	S	S	L	S
CO-04	S	L	M	S	M	S	S	S
CO-05	S	M	L	S	L	S	S	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT: I Regulatory Framework and Safety Data Analysis 9

Early Safety Legislation- Airline Deregulation- Commercial Aviation Defined- The Commuter Safety Initiative- The National Airspace System - Safety Factors - Measurement data - Nonaccidental safety data - Incidents - Accident Causes and Types: Primary safety factors - Secondary and tertiary safety factors - Manufacturers' analysis of the causes.

UNIT: II Measuring Air Transportation Safety **9**

Accident Investigation – Incidents: Characteristics of incident reporting - Incident Reporting Systems - Mandatory incident reporting systems - Voluntary incident reporting systems -
Reporting Systems in the United States - Automatic Recording Systems - International Exchange of Safety Data - ICAO ADREP system - Other ICAO safety information.

UNIT: III Nature of Accidents and Human Factors in Aviation Safety **9**

Historical Sketch of the 5-M Factors: Man, Machine, Medium, Mission, Management - Risk Management - Human Factors: Human Performance - Pilot selection and training - Cockpit Automation - Air traffic control automation - Air-to-ground communication - Federal Responsibilities in Human Factors: FAA, NTSB, NASA - Airline Industry Responsibilities in Human Factors

UNIT: IV Air Traffic System Technologies **9**

The National Airspace System Plan - NAS Modernization: Communications, Navigation, Advantages of satellite-based navigation, Surveillance, Aviation weather, Avionics, Operational planning, Airport surface operations, Departures and arrivals, En-route/oceanic, Free Flight Phase 1, Implementation schedule - Funding the NAS modernization plan.

UNIT: V FAA, Flight Standards and Rulemaking **9**

Flight Standards Service: Air Carrier Responsibilities for Safety - FAA Safety Inspection Program: Inspector workload, Air Transportation Oversight System, Centralized analysis of data, Reexamination of air carriers, public complaints - Aging Aircraft - FAA Rulemaking: Rulemaking process, Problem areas

TOTAL: 45 HOURS

TEXTBOOKS

1. **Reason, J. S. (2023). Aviation safety management systems. Routledge.**
2. **Thomas, R. L. (2022). Safety management in aviation: A comprehensive guide. Aviation Week Network.**
3. **Salas, E., Maurino, D., & Melnyk, N. M. (2021). Human factors in aviation safety. CRC Press.**
4. **Rose, M. A. (2023). Modern air traffic control systems. Springer.**
5. **Johnson, G. L. (2022). FAA regulations and safety oversight: An introduction. Routledge.**

REFERENCES:

1. Commercial Aviation Safety – Alexander T.Wells, McGraw-Hill Companies.
2. Commercial Aviation Safety - Clarence Rodrigues, Stephen Cusick, McGraw Hill Professional, 5th edition.

MS45E5	**Strategic Aviation Management**	**L**	**T**	**P**	**C**
		3	**0**	**0**	**3**

Course Description

This course provides a comprehensive exploration of strategic management, focusing on competitive strategies, environmental analysis, and the implementation of corporate strategies in the aviation industry. Students will learn to design strategic visions, analyze internal and external factors, and implement strategies tailored to specific industry challenges.

Objectives

- Identify and analyze the value chain problems
- Apply knowledge of business sustainability to aviation issues
- Define the concept of strategy and setting strategy

Course Outcome		**Cognitive Skill**
CO-01	Students will learn the core concepts of strategic management, including competitive strategies, corporate vision, and organizational objectives, and how these elements contribute to overall business success.	**R, A**
CO-02	Students will gain the ability to assess the macro and micro external environments using tools like Michael Porter's Five Forces, identifying key opportunities and threats that influence industry competition.	**A**
CO-03	To Define the concept of strategy and setting strategy Students will explore internal strategic tools such as value chain analysis and resource-based views, learning to apply these frameworks to optimize organizational resources and capabilities.	**R**
CO-04	Students will develop the skills to design corporate strategies, including growth, retrenchment, and international strategies, and understand how these strategies are applied in various industry contexts.	**A**
CO-05	Students will learn how to effectively implement strategies within the aviation sector, focusing on leadership, organizational structure, and the strategic use of outsourcing to achieve competitive advantages	**E**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	**PO-A**	**PO-B**	**PO-C**	**PO-D**	**PO-E**	**PO-F**	**PO-G**	**PO-H**
CO-01	M	M	S	S	S	S	M	S
CO-02	M	L	L	S	S	S	S	S
CO-03	M	S	S	M	S	S	L	S
CO-04	S	L	M	S	M	S	S	S
CO-05	S	M	L	S	L	S	S	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT I: The Essence of Strategy **9**

Strategic Management - The Meaning of Competitive Strategies - The Difference between operational Effectiveness and Strategy - The Strategic Management Process - Designing a Corporate Vision - Designing a Mission Statement - Setting organizational objectives - The Generic Strategies - Low-

Cost Leadership Position - Differentiation Strategies - Niche Strategy - Best-Cost Producer Strategy - The Miles and Snow Typology - A Fresh Perspective on Competitive Strategies.

UNIT II: The External Environment 10

The Macro External Environment - The Micro External Environment - Michael Porter ‘s Five Competitive Forces - Industry Characteristics - Understanding opportunities and Threats in the Industry - Understanding the Competition - Key Success Factors - The Process of Environmental Analysis - Using Experts to Help in Environmental Assessment - Tools to Address Environmental Uncertainty.

UNIT III: The Internal Environment 10

Value Chain Analysis - How Does one use the value Chain? - What are the Problems with value Chain? - Strategic Cost Analysis - Resource-Based view - Strategy in the Twenty-first Century: Benchmarking: Learning from Others, Focusing on the Customer, Outsourcing, Strategy and the Internet, Knowledge Management

UNIT IV: Setting Corporate Direction 8

Corporate Strategies - Growth Strategies: Intensive Growth Strategies, Integrative Growth Strategies, Concentration Growth Strategies, Diversification Growth Strategies - No Growth Strategies: Retrenchment and Turnaround, Liquidation, Divestiture - International Strategies: Strategies Tailored to Specific Situations - Strategies for Fragmented Industries - Strategies for Declining Markets - Strategies for Emerging Industries: First-Mover Advantages.

UNIT V: Aviation Strategy Implementation 8

Strategic Leadership: A Key to Successful Implementation: Preparation, Leadership, Change, Partnership - Knowing When to Hold it and when to outsource - Putting Together the Right Staff - Matching the Right organizational Structure to a Strategy: The Simple Structure, The Functional Structure, Multidivisional Structure, Strategic Business Units - The Matrix organizational Structure

TOTAL: 45 HOURS

TEXTBOOKS

1. David, F. R., & David, F. R. (2023). *Strategic management: Concepts and cases*. Pearson.
2. Patrick, A. A. (2022). *Understanding strategic management*. Oxford University Press.
3. Barney, J. B., & Hesterly, W. S. (2021). *Strategic management and competitive advantage: Concepts and cases*. Pearson.
4. Collis, D. J., & Montgomery, C. A. (2022). *Corporate strategy: A resource-based approach*. Harvard Business Review Press.
5. Belobaba, P., Odoni, A., & Barnhart, C. (2023). *Strategic management in aviation: Theory and practice*. MIT Press.

REFERENCES:

1. Designing and Executing Strategy in Aviation Management‘by Triant G. Flouris & Sharon L. Oswald Ashgate publishers co. ISBN: 978-0-7546-3618-2
2. Strategic Management in the Aviation Industry ‘- by Delfmann, Werner, Baum, Herbert, Auerbach, Stefan, Albers, Sascha (EDT) Ashgate publishers co. ISBN: 0754645673

MS45E6	Airline Management	L	T	P	C
		3	0	0	3

Course Description

This course provides a detailed exploration of airline management, focusing on organizational structures, fleet planning, resource scheduling, and revenue management. Students will gain practical insights into the complexities of airline operations, including forecasting demand, managing irregular operations, and optimizing fleet and scheduling strategies.

Objectives

- Apply pertinent knowledge in scheduling of resources
- Use the techniques, skills, and modern technology necessary for professional practice
- Elaborate knowledge in effective decision making
- Explain the revenue management in the airline industry.

Course Outcome		Cognitive Skill
CO-01	Students will learn about the various management structures within airlines, including staff and line departments, and address the challenges faced in airline management, network planning, and operations.	A
CO-02	Students will develop skills in modeling passenger demand and forecasting travel options, applying these methods to enhance operational planning and strategic decision-making.	R
CO-03	Students will explore factors influencing fleet planning, including the decision-making process for upgrading or replacing aircraft, and understand the perspectives of both manufacturers and operators	S
CO-04	Students will learn to manage various resources, including fleet assignment, crew planning, and gate management, and apply these principles to improve operational efficiency and reduce disruptions.	U
CO-05	Students will study techniques for revenue management, such as demand forecasting, seat inventory control, and managing overbooking, as well as strategies for dealing with irregular operations and their impact on airline schedules.	U

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	M	M	S	S	S	S	M	S
CO-02	M	L	L	S	S	S	S	S
CO-03	M	S	S	M	S	S	L	S
CO-04	S	L	M	S	M	S	S	S
CO-05	S	M	L	S	L	S	S	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT: I Airline Management and Organization 10

Introduction – Management – The New corporate structure – Airline Organization Chart - Challenges of airline management- Staff Department – Line Department- Airline Planning and operations-

Network Structure - Sales and Distribution- Irregular Operations Management

UNIT: II Demand Modeling and Forecasting **8**

Modeling the choice of travel options- Passenger demand Modeling and Forecasting

UNIT: III Fleet Planning: The Aircraft Selection Process **9**

Factors in Fleet Planning – Design and Development: The Manufacturers viewpoint – The Fleet Planning Process – The decision to upgrade or replace.

UNIT: IV Scheduling of Resources **9**

Fleet Assignment - Aircraft routing - Crew planning - Gate Assignment - Baggage handling - Flight planning and Fuel Management

UNIT: V Revenue management & Irregular operations Management **9**

Demand Forecasting for revenue Management - No-show Rate and Overbooking - Seat inventory control for Flight-based revenue management - Seat Inventory Control for Network- based Revenue management - Ticket Distribution - sales contracts - code-share Agreements - ground delay programs and collaborative decision making - impact of disruptions on Air carrier schedule

TOTAL: 45 HOURS

TEXTBOOKS

1. Belobaba, P., Odoni, A., & Barnhart, C. (2023). *Airline management: Concepts and strategies*. MIT Press.
2. Smith, I. M. C. (2022). *Airline revenue management: A practical guide*. Routledge.
3. Bellamy, J. R. M. (2021). *Fleet planning and management for airlines*. Springer.
4. Bowers, D. R. (2023). *Aircraft scheduling and routing*. Elsevier.
5. Belobaba, M. A. (2023). *Revenue management in the airline industry*. Wiley.

REFERENCES:

1. Modeling Applications in the Airline Industry '– Ahmed Abdelghany & Khaled Abdelghany, Ashgate, April 2010, ISBN: 978-0-7546-7874-8
2. Air transportation '– a management perspective 5th edition, John Wensveen, A.T Wells.

MS45E7	Project Management in Aviation	L	T	P	C
		3	0	0	3

Course Description

This course provides an in-depth exploration of aviation project management, focusing on the project life cycle, planning, purchasing, managing changes, and closure. Students will learn about various project management techniques, including critical path analysis and supply chain management, and apply these concepts through case studies relevant to aviation projects.

Objectives

- Develop a project management plan, define scope and determine project requirements
- Explain the concepts of Monitor schedule, cost and quality performance during project execution
- Review the end-to-end procurement management process

Course Outcome		Cognitive Skill
CO-01	Students will grasp the different types of projects, their life cycles, and factors affecting project success or failure, with an emphasis on benefits realization and practical examples.	**U, R**
CO-02	Students will learn to develop and manage project plans using various tools and techniques, including bar charts and critical path networks, and apply these methods to real-world aviation project scenarios.	**A**
CO-03	Students will understand the procedures for purchasing, supplier selection, and supply chain logistics, and handle materials efficiently in aviation projects through case studies	**S**
CO-04	Students will explore the impact of changes during the project life cycle, including change management, cost estimation, and version control, and apply these principles to manage modifications in aviation projects	**U**
CO-05	Students will learn the processes for formal project closure, post-project services, and managing project archives, ensuring thorough documentation and evaluation of project outcomes.	**U**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	M	M	S	S	S	S	M	S
CO-02	M	L	L	S	S	S	S	S
CO-03	M	S	S	M	S	S	L	S
CO-04	S	L	M	S	M	S	S	S
CO-05	S	M	L	S	L	S	S	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT: I Introduction to Aviation Project Management 8

Different types of projects- Project life cycles and life histories- Project life cycles and life histories- Factors for assessing project success or failure- Relationship between the three primary objectives- Perceptions of project success or failure beyond the three primary objectives- Benefits realization- Case example: a satellite navigation project

UNIT: II Planning the Aviation Project Timescale 10

Introduction to project planning: Bar charts: Critical path networks: Two different network notation

systems: critical path networks using arrow diagrams: Precedence diagrams: Planning the L-F Controls aircraft component project by critical path network: Level of detail in network
diagrams: Milestones: Is the predicted timescale too long?: Early consideration of resource constraints. Case Example: General Aviation Hangar Renovation

UNIT: III Managing Purchasing, the Supply Chain, and Aviation Project Materials 10

An introduction to aviation project purchasing: An outline of aviation project purchasing organization and procedures: Purchase specifications: defining what has to be bought: Supplier selection: Purchase requisitions and orders: Purchase order delivery times: Expediting: Purchase order amendments: Logistics: a more detailed description of the external supply chain Goods receipt: Notes on storage: Vendors‘documents. Case Example: a supply chain logistics problem solved by a freight forwarder

UNIT: IV Managing Changes 10

The impact of changes in relation to the project life cycle: Origin and classification of changes: Authorization arrangements: General administration of changes: Estimating the true cost of a change: forms and procedures: Version control for modified drawings and specifications: Emergency modifications: Version control, build schedules, and traceability in aerospace projects. Case Example: a version control problem and its novel solution

UNIT: V Project Closure and Post-Project Activities 7

Reasons for closing a project-Formal project closure announcement-Post project services to the customer-Final project cost records-Disposal of surplus material stocks-As-built condition of a project that is interrupted before completion-Managing files and archives-Recording the project management experiences.

TOTAL: 45 HOURS

TEXTBOOKS

1. Kerzner, H. (2023). *Project management: A systems approach to planning, scheduling, and controlling* (13th ed.). Wiley.
2. Meredith, J. R., Shafer, S. M., & Mantel, S. J. (2021). *Project management in practice* (7th ed.). Wiley.
3. Turner, J. R. (2022). *The handbook of project-based management: Leading strategic change in organizations* (4th ed.). McGraw-Hill Education.
4. Gido, J., & Clements, J. P. (2022). *Successful project management* (8th ed.). Cengage Learning.
5. Wright, R. (2021). *Aviation project management: Practical strategies and best practices for the aviation industry*. Routledge.

REFERENCES:

1. A Systems Approach to Planning, Scheduling and controlling 9th edition by Van Nostrand Reinhold.
2. Aviation Project Management ‘- by Triant Flouris and Dennis Lock. Ashgate Publishers company ISBN- 13: 9780754673958

MS45E8	Air Cargo Management	L	T	P	C

		3	0	0	3

Course Description

This course covers key aspects of air cargo management, including the role and significance of airports and aircraft, cargo operations, documentation, and equipment handling. Students will learn about the various stakeholders in air cargo, regulatory bodies, and procedures for handling and transporting dangerous goods, with a focus on practical applications and case studies.

Objectives

- Understand the global cargo world to avoid strategic and tactical errors
- Reduce your operating costs and maintain optimum levels of customer service
- Capitalize on the changes within the cargo industry by researching and planning effectively
- Understand shippers' changing needs and how to adjust your business for immediate results
- Improve your competitive performance by acquiring exceptional management tools

Course Outcome		**Cognitive Skill**
CO-01	Students will gain insight into the roles and significance of airports and aircraft in the air cargo industry, including stakeholders such as customs brokers, freight forwarders, and airlines.	**R**
CO-02	Students will learn about the significance of air cargo, its uses, advantages, and disadvantages, as well as the roles of major organizations like IATA, ICAO, and the Directorate General of Civil Aviation	**A**
CO-03	Students will acquire knowledge of essential air cargo documentation, including air waybills, manifests, and delivery orders, and understand procedures for claims, liability, and customs clearance.	**S**
CO-04	Students will understand the types of equipment and facilities used in air cargo handling, including warehousing, packing, and labeling, and apply these concepts to improve operational efficiency.	**U**
CO-05	Students will learn about air freight operations, handling dangerous goods, and special cargo requirements, including packing, marking, and labeling, with a focus on regulatory compliance and safety.	**U**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	**PO-A**	**PO-B**	**PO-C**	**PO-D**	**PO-E**	**PO-F**	**PO-G**	**PO-H**
CO-01	M	M	S	S	S	S	M	S
CO-02	M	L	L	S	S	S	S	S
CO-03	M	S	S	M	S	S	L	S
CO-04	S	L	M	S	M	S	S	S
CO-05	S	M	L	S	L	S	S	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT I: AIRPORT AND AIRCRAFT **9**

Airports – Role – Significance – Aircraft – Basic Cargo Terminology – International Phonetic Alphabet – Stakeholders Involved - Exporter/Importer – Custodian – Customs Brokers – Freight

Forwarder – Airlines/General Sales AGENT (GSSA) – ICAO – List of Airlines Code- GHA (Ghana Airways) – Customs – Government – Banks – Future of the Industry

UNIT II: AIR CARGO **9**

Air Cargo - Significance – Uses – Advantages – Disadvantages – International Air Transport Association – Roles and Functions – Codes – International Civil Aviation Organization and Role – Directorate General of Civil Aviation and Role – ACCAI (The Air cargo Association Agents Association in Airlines) And Role – Airport Authority of India, Custodians and Roles – Other Allied Bodies – Cargo – Types

UNIT III: DOCUMENTATION, BILLS AND PROCEDURES **9**

Documentation – Air Waybill – Types – Manifest – Delivery Order – Proof on Delivery – Freight – Types – Calculation – Volume Based – Weight Based – Chargeable Weight – Procedure – Claims and Liability – Air Cargo Rates and Charges – Cargo Operations – Customs clearance

UNITIV: HANDLING OF EQUIPMENTS **9**

Handling – Equipment - Types – Facilities – Warehouses – AFS – Packing – Types – Marking – Labelling – Freight forwarding – Consolidation

UNIT V: AIR CARGO OPERATIONS AND DANGEROUS GOODS **9**

Air freight forwarding-: Air freight Import and Export – Dangerous Goods Regulations and Cargo by Air – Special Cargoes- Classes – Packing – Marking – Labelling – Handling – Transportation – RoyalAir Morac Airline– Checklist

TOTAL: 45 HOURS

TEXTBOOKS

1. Yoon Seok Chang, ―Air Cargo Management‖, CRC Press, 2015.
2. XIE CHUN XUN ZHU, ―Air Cargo Management Introduction - Aviation Logistics Management Series (Chinese Edition), South-east University Press, 2006.

REFERENCES:

1. Paul, ―Air cargo distributions: A Management Analysis of Its Economic and Marketing Benefits‖, Jackson and William Brackenridge (Gower Press), 6th Edition, 1988.
2. Peter S. Smith, ―Air Freight: Operations, Marketing and Economics‖, Chu (Boston: Kluwer Academic Publishers), 3rd Edition, 2004.

MS45E9	**Corporate Aviation Management**	**L**	**T**	**P**	**C**

		3	**0**	**0**	**3**

Course Description

This course offers a comprehensive overview of corporate aviation management, focusing on the evolution of corporate aviation, the role of the corporate aviation manager, and effective management principles. Students will learn about determining air transport needs, starting and running a corporate aviation business, and managing flight departments to optimize operations and ensure professionalism.

Objectives

- List the corporate Aviation technology and its progress
- Explain the knowledge of Aircraft policy and future policy

Course Outcome		**Cognitive Skill**
CO-01	Students will learn about the evolution, technology, and functions of corporate aviation, including the principles and organizational structure of corporate aviation management.	**A**
CO-02	Students will analyze the air transport needs of individuals and companies, assessing travel history, future requirements, and user expectations for on-demand air transportation.	**A**
CO-03	Students will explore the processes for establishing aircraft use policies, chartering, fractional ownership, and management options, and make informed decisions on starting corporate aviation operations.	**U**
CO-04	Students will understand the key aspects of running a corporate aviation business, including organizational structure, scheduling, personnel policies, and financial management.	**R, U**
CO-05	Students will gain insights into managing flight departments, including training, preparing future leaders, evaluating risk versus reward, and maintaining professionalism in various operations.	**E**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	**PO-A**	**PO-B**	**PO-C**	**PO-D**	**PO-E**	**PO-F**	**PO-G**	**PO-H**
CO-01	M	M	S	S	S	S	M	S
CO-02	M	L	L	S	S	S	S	S
CO-03	M	S	S	M	S	S	L	S
CO-04	S	L	M	S	M	S	S	S
CO-05	S	M	L	S	L	S	S	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT I: An Introduction to Corporate Aviation Management 9

Corporate Aviation description – Evolution of corporate Aviation Technology and Progress of corporate Aviation – Functions and Development of the corporate aviation manager - Principles to follow in Corporate Aviation Management – Aviation department structure within the corporation.

UNIT II: Determining the Need 10

Air transport needs – why individuals and companies use on–demand air transportation, determining the requirement, Air transportation analysis – travel history – the future – solutions, what users want in on-demand air transportation.

UNIT III: Getting Started 10

First things – aircraft use policy – charge books – oversights, staying informed, Owner / employee flown operations, aircraft charter, fractional ownership, in house aircraft, Management Company, joint ownership.

UNIT IV: Running the Business **7**

Organizations, Scheduling – Personnel Policy – Procedure, Administration, Finance and accounting, Planning.

UNIT V: Flight Department Management **9**

The flight department manager as a business executive, training the boss, preparing the next generation, corporate stages of development, operations – overview – risk v/s reward – various operations department – Professionalism.

TOTAL: 45 HOURS

TEXTBOOKS

1. Shaw, S. (2023). Airline management: An introduction to corporate aviation strategies (4th ed.). Routledge.
2. Wensveen, J. G. (2021). Air transportation: A management perspective (9th ed.). Ashgate Publishing.
3. Sarter, N. B., & Amalberti, R. (2022). Corporate flight department management: Strategies for business aviation (3rd ed.). Springer.
4. Pettersen, T. (2023). Business aviation management: The evolution and functions of corporate flight departments. Elsevier.
5. McFadden, K. (2022). Essentials of aviation management (6th ed.). Southern Illinois University Press.

REFERENCES:

1. Business in Corporate Aviation Management on Demand Air Travel '– by John Sheehan ISBN: 0-07-141227-1 (Mc Graw-Hill Company)
2. Corporate Aviation Management '(Southern Illinois University Press Series in Aviation Management) – by Raoul Castro (Author) Torch Lewis (Forward) ISBN: 080931911X.

F. SHIPPING AND LOGISTICS

Sl.No	Code	Name of the Subjects	L	T	P	C
1	MS45F1	Shipping and Port Management	3	0	0	3
2	MS45F2	Role of Shipping in Logistics and Supply Chain Management	3	0	0	3
3	MS45F3	Legal Aspects of Shipping	3	0	0	3
4	MS45F4	Commercial Aspects of Shipping and Marine Insurance	3	0	0	3
5	MS45F5	Logistics Marketing and Technology	3	0	0	3
6	MS45F6	Air Cargo Logistics	3	0	0	3
7	MS45F7	Railroad Logistics	3	0	0	3
8	MS45F8	Modern Logistics Operations	3	0	0	3
9	MS45F9	Maritime Logistics and Documentation	3	0	0	3

MS45F1	Shipping and Port Management	L	T	P	C

		3	0	0	3

Course Description

This course introduces the shipping industry in India, focusing on its role in trade, port infrastructure, and types of shipping, such as coastal and international. It covers different types of ships and ports, the organization and management of shipping companies, and the processes of buying, selling, and scrapping ships. The course also explores the International Maritime Organization (IMO) and its global shipping regulations, using real-world case studies to illustrate key concepts.

Objectives

- Understand all the concepts of ship management
- Describe various types of ships in the world.
- Recognize the role of every stake holder in the ship organization.
- Demonstrate how to sale or purchase of ship in India including ship demolition
- Illustrate the major ports in India and their services

Course Outcome		**Cognitive Skill**
CO-01	Analyse the development and current status of shipping in India, evaluating its role in trade, port infrastructure, shipping trades, and capacities for overseas shipping.	**R, U, An**
CO-02	Differentiate between various types of ports and ships, understanding their functions, relevance in maritime trade, and characteristics of different vessels such as cargo ships, tankers, and specialized vessels.	**R, U**
CO-03	Comprehend and interpret the organizational structure of shipping companies, assessing the responsibilities of various departments, and the management of floating and shore staff, as well as the processes involved in ship chartering.	**R, U, A**
CO-04	Apply knowledge to understand shipbuilding contracts, evaluate the market factors influencing the sale, purchase, and demolition of ships, and analyze the relationship between the freight market and ship demolition.	**R, U, An**
CO-05	Synthesize information related to the International Maritime Organization (IMO), its conventions and regulations, and interpret international laws related to the carriage of goods by sea, including the Hague and Hamburg Rules.	**R, U, A**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	**PO-A**	**PO-B**	**PO-C**	**PO-D**	**PO-E**	**PO-F**	**PO-G**	**PO-H**
CO-01	S	M	S	M	M	M	M	S
CO-02	M	S	M	S	M	M	M	M
CO-03	S	M	S	M	M	M	M	M
CO-04	M	S	M	M	S	M	S	M
CO-05	S	M	S	M	M	M	M	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT I: Development of Shipping **9**

Overview of shipping in India – Role of shipping in India‘s trade and exchange - Port infrastructure for foreign trade –Port Capacity and traffic throughput – Liner Trade – Tramp Trade – Ship repairing

– Coastal shipping – Current capacities of overseas shipping- **Case Study**

UNIT II: Type of ships and Ports **9**

Types of ports – Indian ports – Major Indian ports – Average pre berthing – Types of ship - General cargo vessels- Multipurpose vessels- Bulk Carriers- Refrigerated cargo vessels- Crude Carriers(Tankers)- product carriers- Chemical Carriers- Gas Carriers- Container ships- Car Carriers- Ro-Ro vessels-Passenger ships-Dredgers-Tugs- Offshore supply vessels etc. – **Case Study**

UNIT III: Organizational structure of shipping company **9**

Shipping company - Major Shipping Companies–Organizational structure– Responsibilities of Technical & Operation Departments - HRM in Shipping Companies – Floating staff & Shore staff. Chartering of ships – Charter party – Voyage Charter, Time Charter, Bareboat Charter, -The dry cargo chartering market- chartering negotiations -**Case Study**

UNIT IV: ship purchase and demolition **9**

New ship building Contracts - Indian Shipyards and infrastructure- Sale & Purchase of secondhand tonnage - Factors governing this market - Ship demolition /Scrapping of old tonnage - Relation between Freight market and demolition – Place of India in Ship demolition market- Bill of lading – different types of B/L and its stake holders – Maritime geography- Ocean and seas- Ports Geography of trade. - **Case Study**

UNIT V: Shipping Organization **9**

International Maritime Organization – History of IMO – IMO Conventions – IMO council – Maritime Safety Committee - Arbitration- The Contract- Remedies for breach of contract- TORT- Contracts relating to the carriage of goods by sea- The Haguens by Rules-Hamburg rules –**Case Study**

TOTAL: 45 HOURS

TEXTBOOKS

1. Elements of Port Operation and Management '- A. E. Branch, Chapman & Hall, ISBN: 0412252600, ISBN-13: 9780412252600, 978-0412252600, Date: 2000.
2. Shipping in logistics and port management/ Ramachandran 2012 Rest Publishers, India
3. Shipping Derivatives and Risk Management '- Amir Alizadeh, Nikos Nomikos, Palgrave Macmillan, ISBN: 0230215912, ISBN-13: 9780230215917, 978-0230215917, Jun 2009.

REFERENCES:

1. 'Shipping Management: Cases and Concepts '– Raghuram, Macmillan Publishers India, ISBN: 0333930959, ISBN-13: 9780333930953, 978-0333930953, Date: 1998.
2. Economics of Shipping Practice And Management - Second Edition '- A. E. oranch, Chapman & Hall, ISBN: 0412310309, ISBN-13: 9780412310300, 978-0412310300, Date:1988.

MS45F2	**Role of Shipping in Logistics and Supply Chain**	**L**	**T**	**P**	**C**

	Management	3	0	0	3

Course Description

This course covers the fundamentals of logistics, including its types, roles, and functions in organizations and the economy. It explores logistics management, supply chain integration, packaging, and materials handling, with a focus on cost control and customer service. The course also examines global logistics strategies, materials management, and transportation economics. Financial aspects such as logistics information systems and performance management are discussed, along with the roles of third-party and fourth-party logistics providers (3PL and 4PL). Case studies are used throughout to apply these concepts in practical contexts

Objectives

- Understand all the concepts of logistics.
- Recognize the role of every stakeholder in the ship organization.
- Compare the various global logistics methodologies
- Recognize the modes of transportation

Course Outcome		**Cognitive Skill**
CO-01	Understand the Indian Merchant Shipping Act, including the registration of ships, statutory certification, port entry and departure procedures, port charges, and the roles of various shipping agents.	**R, U**
CO-02	Learn about the regulatory role of the International Maritime Organization (IMO) in international shipping, the development of conventions like SOLAS and MARPOL, and the economic aspects of voyage planning and freight markets.	**R, U**
CO-03	Gain knowledge of the formation and role of classification societies, including their contribution to shipping safety, the activities of the Indian Registry of Shipping (IRS), and the issuance of class certificates and periodical surveys.	**R, U, A**
CO-04	Understand the requirements of the ISPS Code, port facility security, international pollution regulations, the Civil Liability Convention, and the conditions under which ships can be detained or arrested by port state control and admiralty courts.	**R, U, A**
CO-05	Acquire a comprehensive understanding of marine insurance, including Hull and Machinery Insurance, cargo insurance policies, Protection and Indemnity (P&I) Insurance, General Average, and liability coverage provided by P&I Clubs.	**R, U, A**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	M	S	M	M	M	M	S
CO-02	M	S	M	S	M	M	M	M
CO-03	S	M	S	M	M	M	M	M
CO-04	M	S	M	M	S	M	S	M
CO-05	S	M	S	M	M	M	M	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT I: Logistics **9**

Origin and Definition – Types of Logistics – Logistics Role in the Economy/Organization - Definition of Logistics-Objectives of Logistics-Functions of Logistics, Logistics and Customer Service - Definition of Customer Service-Elements of Customer Service- Phases in Customer Service-Customer Retention. - **Case Study**

UNIT II: Logistics Management **9**

Logistics Management – Ware House Management – Automation and Outsourcing - Customer Service and Logistics Management – A Perspective - Concepts in Logistics and Physical Distribution - Distribution and Inventory- Need for Logistics and supply chain management– Role of shipping in this - Economics of scale in supply chain - Productivity and cost control that can be achieved Packing and Materials Handling - Functions of Packaging-Communication- Packaging Cost-Types of Packaging Material-Unitization-Containerization-Designing a Package-Factors affecting choice of Packaging Materials. - **Case Study**

UNIT-III: Global Logistics **9**

Global Supply Chain-Organizing for Global Logistics Strategic Issues in Global Logistics-Forces driving Globalization-Modes of Transportation in Global Logistics- Barriers to Global Logistics-Markets and Competition. Logistics Strategy - Requirements for an Effective Logistics Strategy-Strategic Logistics Planning- Implementation of Strategy. - **Case Study**

UNIT-IV: Materials Management **9**

Objectives of materials management-Materials Planning- Purchasing-Basic Materials of Material Handling-Types of Material Handling Equipment's-Transportation - Participants in Transportation Decisions-Modes of Transportation-Factors Influencing Transport Economics-Documents in Transport Decision Making Warehousing/ Distribution - **Case Study**

UNIT V: **Financial Issues in Logistics Performance** **9**

Logistics Information Systems - Functions of Logistics Information System (LIS)-LIS Flow- RFID Principles of Logistics Information Organization for Effective Logistics Performance – Centralized and Decentralized Structures-Stages of Functional Aggregation in Organization- Steps in ABC Costing-Financial Gap Analysis. Integrated Logistics - Need for Integration- Activity Centers in Integrated Logistics. Role of 3PL&4PL - Principles of LIS. - **Case Study**

TOTAL: 45 HOURS

TEXTBOOKS

1. Gopal Krishnan, Material Management Review, 2002 Pearson Education, New Delhi.
2. G. Raghuram I.I.M.A., Logics and Supply Chain Management, Macmillan Publishers, 2000.
3. Shipping in logistics and port management/ Ramachandran 2012 Rest Publishers, India

REFERENCES:

1. Logistics of facility location and allocation / Dileep R. Sule (Marcel Dekker)
2. Logistics & supply chain management / Martin Christopher (Prentice Hall Financial Times)

MS45F3	**Legal Aspects of Shipping**	**L**	**T**	**P**	**C**
		3	**0**	**0**	**3**

Course Description

This course covers the Indian Merchant Shipping Act, ship registration, and the roles of key stakeholders like flag states and port authorities. It examines the regulatory role of the International Maritime Organization (IMO) and conventions like SOLAS and MARPOL. The course explores the role of classification societies in ship safety, ship security measures under the ISPS Code, and regulations against ship pollution. It also introduces marine insurance, including hull, cargo, and liability insurance, and the role of P&I Clubs, with case studies to apply these concepts.

Objectives

- Understand the merchant shipping act conventions and regulations
- Compare the various classification societies and their services.
- Compare the various global logistics methodologies
- Demonstrate the various marine insurance claims

Course Outcome		**Cognitive Skill**
CO-01	Understand the Indian Merchant Shipping Act, including the registration of ships, statutory certification, port entry and departure procedures, port charges, and the roles of various shipping agents.	**R, U**
CO-02	Learn about the regulatory role of the International Maritime Organization (IMO) in international shipping, the development of conventions like SOLAS and MARPOL, and the economic aspects of voyage planning and freight markets.	**R, U**
CO-03	Gain knowledge of the formation and role of classification societies, including their contribution to shipping safety, the activities of the Indian Registry of Shipping (IRS), and the issuance of class certificates and periodical surveys.	**R, U, A**
CO-04	Understand the requirements of the ISPS Code, port facility security, international pollution regulations, the Civil Liability Convention, and the conditions under which ships can be detained or arrested by port state control and admiralty courts.	**R, U, A**
CO-05	Acquire a comprehensive understanding of marine insurance, including Hull and Machinery Insurance, cargo insurance policies, Protection and Indemnity (P&I) Insurance, General Average, and liability coverage provided by P&I Clubs.	**R, U, A**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	**PO-A**	**PO-B**	**PO-C**	**PO-D**	**PO-E**	**PO-F**	**PO-G**	**PO-H**
CO-01	S	M	S	M	M	M	M	S
CO-02	M	S	M	S	M	M	M	M
CO-03	S	M	S	M	M	M	M	M
CO-04	M	S	M	M	S	M	S	M
CO-05	S	M	S	M	M	M	M	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT I: Merchant shipping act **9**

Introduction to Indian Merchant Shipping Act- Procedure for registration of ships in India- Statutory Certificates issued to ships - Role of Flag State - Port State Control- Role of Ship ‘s Agents. Agents of Charterers, Stevedores, Custom House Agents- Clearing & Forwarding Agents and Brokers - Procedure for ship 's entry to a port and departure from a port. - Port Charges payable by ships - **Case Study**

UNIT II: Regulatory bodies **9**

Regulatory /Advisory Role of IMO in International Shipping – How Conventions such as SOLAS, MARPOL came into effect – Organizational Structure of International Maritime Organization- Commercial expenses during a voyage - Voyage planning - Dry Cargo Freight Market - Baltic Index, World Scale for Tankers - **Case Study**

UNIT III: Classification societies **9**

How Classification Societies were formed – Role of Classification Societies in the Safety of Shipping- Activities of IRS (Indian Registry of Shipping) - International Association of Classification Societies – Class Certificates and periodical surveys - **Case Study**

UNIT IV: ship security and assessment **9**

ISPS Code- Port facility Security Plan and Security assessment - Verification and Certification for ships – Responsibilities of Contracting Governments – Responsibilities of Shipping Companies. Ships and potential oil/air pollution from ships – International conventions/Regulations against pollution applicable to ships – Civil Liability Convention - Finesfor causing pollution - Detention of ships by Port Sate Control - Situations for arrest of ships by Admiralty Courts. - **Case Study**

UNIT V: Marine Insurance **9**

Hull & Machinery Insurance for ships –Perils covered - Cargo Insurance Policies: ICC-A, B or C- Partial loss, Constructive Total Loss or Total Loss- Protection and Indemnity Insurance – General Average – GA Guarantee, GA adjustment - GA contribution – Liability Insurance – P & I Clubs - **Case Study**

TOTAL: 45 HOURS

TEXTBOOKS

1. Commercial and Legal Aspects of Shipping Documents '- Dr. K. V Hariharan, Sterling Book House Publisher, ISBN: 8175980893, ISBN-13: 9788175980891, 978-8175980891,
2. Date: 2008.
3. Legal Aspects of Business '- Akhileshwar Pathak, Tata Mcgraw Hill Publisher, ISBN: 0070656134, ISBN-13: 9780070656130, 978-0070656130, Date: May-07.

REFERENCES:

1. Legal and Regulatory Aspects of Insurance '- National Insurance Academy, National Insurance Academy (Author), ISBN: 8131507548, ISBN-13: 9788131507544, 978-
2. 8131507544, Date: 2009.
3. Shipping in logistics and port management/ Ramachandran 2012 Rest Publishers, India

MS45F4	Commercial Aspects of Shipping and Marine Insurance	L	T	P	C
		3	0	0	3

Course Description

This course covers the basics of commercial geography, including global trade patterns, resource classification, and geographical factors affecting international trade. It explores the impact of industries on economic development, focusing on major industries in India. The course also examines agricultural resources, climate's role in production, and key global export centers for agricultural products. Additionally, it reviews different types of ports and terminals, including bulk, container, and oil terminals.

Objectives

- Understand the basic terms of commercial geography and its branches
- Compare about the Industries and its Economic Development.
- Understand the types of port and its features
- Know the agricultural resources and its trade

Course Outcome		Cognitive Skill
CO-01	Analyse the scope and branches of commercial geography, interpret world trade patterns, and classify different types of resources based on their nature and use.	**R, U, An**
CO-02	Evaluate the impact of geographical factors on international trade, assess the characteristics and origins of various commodities, and understand the logistical requirements for their transportation and port handling.	**R, U, E**
CO-03	Examine the role of industries in economic development, determine the factors influencing the location of industries, and identify the characteristics of major industries in India.	**R, U, A**
CO-04	Interpret the role of agricultural resources in global trade, analyze the effect of climate on agricultural production, and identify the key global centers for exporting agricultural products.	**R, U, A**
CO-05	Differentiate between various types of ports and terminals, assess their geographical features, and identify their significance in global trade and transportation networks.	**R, U, A**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	M	S	M	M	M	M	S
CO-02	M	S	M	S	M	M	M	M
CO-03	S	M	S	M	M	M	M	M
CO-04	M	S	M	M	S	M	S	M
CO-05	S	M	S	M	M	M	M	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT I: INTRODUCTION **9**

Definition of commercial geography and its branches - Geographical Environment and Commerce – World trade pattern in major commodities - Meaning, nature & Use of Resources - Classification of Resources.

UNIT II: GEOGRAPHICAL FACTORS **9**

Geographical factors affecting International trade - India ‘s foreign trade of commodities - Characteristics of commodities and their origin, type of transportation used for movement to ports - Port Infrastructure for commodities.

UNIT III: ROLE OF INDUSTRIES 9

Role of Industries in Economic Development - Factors of Industrial Location - Major Industries in India - Iron & Steel Industries - Cotton, Textile Industries - Automobile Industries - Petrochemical industries.

UNIT IV: VAGRICULTURAL RESOURCES 9

Agricultural resources- Role of climate in agricultural production - Seasons for export of major agricultural products in India – Important world centres for export of agricultural products.

UNIT V: PORTS AND TERMINALS 9

Types of Ports - Geographical features of ports - Ports of the world – Important bulk terminals – Important container terminals – Major oil terminals.

TOTAL: 45 HOURS

TEXTBOOKS

1. H.Robinson, ―Economic Geography, TheM & E hand book series, Macdonald & Evans,1968.
2. Stamp, Sir L.Dudely, ― Commercial Geography, Prentice Hall Press, 9th Edition , 1973.
3. William P.Anderson, ―Economic Geography, Routledge, 1st Edition ,2012

REFERENCES:

1. Shyam Prakash, ―Fundamentals of Economic Geography ‘, Pragun Publication,1st Edition 2012.
2. Dikshit. RD, Geographical Thought – A Contextual History of Ideas, Prentice Hall of India, New Delhi ,1997

MS45F5	Logistics Marketing and Technology	L	T	P	C
		3	0	0	3

Course Description

This course covers marketing concepts, user behavior, and networking, including different marketing strategies and the marketing mix. It explores promotion and distribution decisions, such as advertising, sales promotion, and budgeting. The course also examines supply chain software technologies, like WMS and RFID, and advances in transport technology, including flight and rail innovations, and TQM practices.

Objectives

Upon successful completion of this course students will be able to

- Understand all the concepts of marketing
- Describe various types of user behavior and networking.
- Recognize the role of product and price mix decisions.
- Demonstrate transport technologies.

Course Outcome		Cognitive Skill
CO-01	Analyse marketing environments, approaches, and the marketing mix, including 3PL and 4PL services.	R, U
CO-02	Evaluate user decision-making, market segmentation, and networking with industry players.	R, U
CO-03	Assess promotional tools, budgeting, and distribution mix decisions across different levels.	R, U, A
CO-04	Evaluate and apply supply chain software and technologies for logistics and network optimization.	R, U, A
CO-05	Explore advancements in transport technologies and their impact on efficiency and management.	R, U, A

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	M	S	M	M	M	M	S
CO-02	M	S	M	S	M	M	M	M
CO-03	S	M	S	M	M	M	M	M
CO-04	M	S	M	M	S	M	S	M
CO-05	S	M	S	M	M	M	M	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT 1: MARKETING CONCEPTS 9

Marketing Environment and system – Approaches to the study of marketing – Industrial, Consumer and Service Marketing – Marketing mix – Marketing by 3 PL and 4PL Services

UNIT 2: USER BEHAVIOUR AND NETWORKING 9

User decision making process – Market Segmentation – Concentrated Marketing – Differentiated and Undifferentiated marketing – Service Positioning – Networking: Networking with Shippers, Wholesalers and Industries

UNIT 3: PROMOTION AND DISTRIBUTION MIX DECISIONS 9

Promotools – Advertisement: Types and importance – Sales Promotion: Types and relevance – Publicity: Concept and Significance – Salesmanship: Types and traits – Budgeting for promotional expenses – Distribution mix decisions – Local, National, Regional and Global Choices

UNIT 4 : SUPPLY CHAIN SOFTWARE TECHNOLOGY 9

WMS, TMS, LMS, OMS, WCS and Network Optimization – Software Evaluations and Selections – Logistics Network Optimizations – Transportation routing – mileage and mapping software – RFID Technology – Integrated GPS – Wireless data and Micro Chip Technology System

UNIT 5: TRANSPORT TECHNOLOGY: ADVANCES IN SHIPPING TECHNOLOGY 9

Flight Technology – Track Technology – Rail Technology – Billing technology – Payment technology – TQM – Bench marking

TOTAL: 45 HOURS

TEXTBOOKS

1. Christopher, M. (2020). *Logistics and supply chain management* (6th ed.). Pearson. ISBN 978-1292408232
2. Harrison, A., & van Hoek, R. (2021). *Logistics management and strategy: Competing through the supply chain* (5th ed.). Pearson. ISBN 978-1292325164
3. Chopra, S., & Meindl, P. (2022). *Supply chain management: Strategy, planning, and operation* (7th ed.). Pearson. ISBN 978-0134741147
4. Murphy, P. R., Jr., & Wheaton, D. A. (2018). *Logistics technology: Tools and techniques for the logistics and supply chain professional* (1st ed.). Routledge. ISBN 978-0367333472
5. Schulte, S. W., & Müller, A. K. (2021). *Digital supply chains: A guide to the digital transformation of logistics* (1st ed.). Springer. ISBN 978-3030733676

REFERENCES:

1. Philip Kotler and Kevin Keller, *Marketing Management*, Prentice Hall, 2006.
2. Mullins,Walker and Boyd, *Marketing Management: A Strategic Approach*, McGraw Hill, 2009.
3. Joseph D Patton, *Logistics Technology and Management*, Soloman, 1986.
4. Philip T Frohne, *Quantitative Measurements for Logistics*, McGraw Hill, 2007.

MS45F6	Air Cargo Logistics	L	T	P	C
		3	0	0	3

Course Description

This course covers the role of air transportation in logistics, including its features, growth factors, and suitability for different cargos. It explores air cargo economics, documentation requirements, and freight rate determinants. The course also examines the roles of intermediaries like freight forwarders and regulatory bodies such as ICAO and IATA

Objectives

- Understand all the concepts of air transportation in logistics.
- Recognize the role of air ways and logistics economics.
- Understand the concepts of air cargo documentation
- Recognize the air cargo freight rates.

Course Outcome		Cognitive Skill
CO-01	Analyse the role of air transportation in logistics, including its features, facilities, factors affecting growth, and suitability for different types of cargo. Evaluate innovative schemes to enhance air cargo logistics.	R, U, An
CO-02	Evaluate how freight determination, freight levels, air cargo elasticity, and consolidation affect air cargo economics. Examine the competitive dynamics between air transportation and other modes of transport.	R, U, E
CO-03	Interpret various air cargo documents such as shipper's export declarations, certificates of origin, commercial invoices, and airway bills. Assess documentation procedures, including booking, insurance, and conditions of contract.	R, U, A
CO-04	Analyze factors that determine air cargo tariffs, including competition, service value, chargeable weight, volume dimensions, and rounding procedures. Understand the features of major air cargo liners and crafts.	R, U, An
CO-05	Assess the roles and responsibilities of freight forwarders, including cargo warehousing and customs clearance. Understand the formation and functions of regulatory bodies like ICAO and IATA, and their impact on air cargo operations.	R, U, A

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	M	S	M	M	M	M	S
CO-02	M	S	M	S	M	M	M	M
CO-03	S	M	S	M	M	M	M	M
CO-04	M	S	M	M	S	M	S	M
CO-05	S	M	S	M	M	M	M	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT 1: AIR TRANSPORTATION IN LOGISTICS 9

Significance of air transportation in logistics – Features and facilities offered by air cargo – factors affecting growth in air logistics – Air suitability for different cargo – innovative schemes or facilities to popularize air cargo logistics

UNIT 2: AIRWAYS AND LOGISTICS ECONOMICS 9

Freight determination for cargo in airways – Freight levels and air cargo elasticity – air cargo consolidation – Arrangements for pooling atr and distribution from airports – competition with other modes.

UNIT 3: AIR CARGO DOCUMENTATION 9

Shipper's export declaration – Certificate of origin – export license – commercial invoice – bill of lading – on board logistics – insurance certificate – export packing list – air way bills – consular invoice – format of air way bill – shipping bill – bill of entry – airline booking procedures – conditions of contract – cancellation of shipments

UNIT 4: AIR CARGO FREIGHT RATES 9

Tariff determinants – competition and value of service – chargeable weight – volume weight and dimensions – currencies and rounding of procedures – voyage and time charters – major air cargo liners of the world – major air cargo crafts and their features

UNIT 5: INTERMEDIARIES/ REGULATORY B IN AIR CARGO 9

Freight forwarders – Role and responsibility of freight forwarders – cargo warehousing – custom clearance – ICAO – formation – functions – IATA – formation – functions – other IATA bodies

TOTAL: 45 HOURS

TEXTBOOKS

1. Smith, M. B. (2020). *Air cargo management* (1st ed.). Routledge. ISBN 978-0367332475
2. Wensveen, J. G. (2016). *Air transportation: A management perspective* (8th ed.). Routledge. ISBN 978-1138929938
3. Bowers, J. C. (2018). *Introduction to air cargo* (1st ed.). CRC Press. ISBN 978-0367330426
4. Mangan, J., Lalwani, C., Butcher, T., & Javadpour, R. (2022). *Global logistics and supply chain management* (4th ed.). Routledge. ISBN 978-0367332376
5. Richards, G., & Grinsted, S. (2020). *The logistics and supply chain toolkit* (1st ed.). Kogan Page. ISBN 978-0749484418

REFERENCES:

1. Chi Chu, C. Leung, Van Hui & Cheung, *4th P arty Cyber Logistics for air cargo*, Spring, 2004
2. Stephen shaw, *Effective air freight marketing*, 1993
3. John Langford, *Logistics Principles and Applications*, McGraw Hill, 2006
4. Vasigh, Fleming and Thomas Tacker, *Introduction to air transport Economics*, Ashgate, 2007.

MS45F7	Railroad Logistics	L	T	P	C
		3	0	0	3

Course Description

This course covers the importance of transportation in logistics, including its role in overcoming time and space challenges and the features of different modes. It examines rail and road logistics, focusing on freight determination, cargo suitability, and innovative practices. The course also explores coordination among transportation modes, the impact of energy prices and environmental factors, and issues in interstate road logistics

Objectives

- Understand the role of transportation in logistics
- Identify the concepts of railways and logistics contours
- Recognize the role of railways and logistics economics
- Provide coordination among different segments

Course Outcome		Cognitive Skill
CO-01	Understand how transportation improves logistics by overcoming time and space barriers and evaluate different types of transportation and recent advancements.	**R, U**
CO-02	Learn about the features of railways, factors affecting rail logistics, and how rail can be used for different types of cargo in India. Assess new ideas to boost rail logistics.	**R, U**
CO-03	Analyze how freight costs are determined for rail cargo, understand freight levels and elasticity, and review route scheduling and consolidation at railheads.	**R, U, A**
CO-04	Study how freight costs are set for road transport, and explore fleet management, maintenance, and the role of toll highways in road logistics.	**R, U, A**
CO-05	Understand the importance of coordinating different transportation modes and supply chain partners. Evaluate how energy prices and environmental issues affect logistics and look at challenges in interstate road logistics.	**R, U, A**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	M	S	M	M	M	M	S
CO-02	M	S	M	S	M	M	M	M
CO-03	S	M	S	M	M	M	M	M
CO-04	M	S	M	M	S	M	S	M
CO-05	S	M	S	M	M	M	M	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT I: TRANSPORTATION IN LOGISTICS **9**

Significance of transportation in logistics – utility created by transportation in logistics – transportation as a means of conquering time and space – features of inbound, outbound, local and medium, long and continental transportation – advances in logistics transportation

UNIT II: RAILWAYS AND LOGISTICS CONTOURS **9**

Features and facilities offered by railways – factors influencing growth in rail logistics – suitability for different cargo and distance range segments – innovative schemes / facilities to popularize rail logistics – in India

UNIT III: RAILWAYS AND LOGISTICS ECONOMICS 9

Freight determination for cargo in railways – freight levels and rail cargo elasticity – route scheduling – cargo consolidation –arrangements for pooling at rail head and distribution from rail head – dedicated rail sidings for bulk users

UNIT IV: ROADWAYS AND LOGISTICS ECONOMICS 9

Freight determination for cargo in roadways - freight levels and road cargo elasticity – own fleet: capacity counters, maintenance, scheduling, freight consolidation, return and reverse logistics in road logistics – Toll highways

UNIT V: COORDINATION AMONG DIFFERENT SEGMENTS 9

Concept, need and areas of coordination among different modes – coordination among supply chain partners – Energy product prices and logistics - environment and logistics – Problems and prospects in interstate logistics by road.

TOTAL: 45 HOURS

TEXTBOOKS

1. Coyle, J. J., Bardi, E. J., & Novack, R. A. (2021). *Transportation and logistics: A comprehensive overview* (10th ed.). Cengage Learning. ISBN 978-0357515326
2. Mangan, J. A., Lalwani, C., Butcher, T., & Javadpour, R. (2019). *Railway transportation: Principles and practices* (1st ed.). Routledge. ISBN 978-0367336430
3. Ghiani, G., Laporte, G., & Martinez, R. (2021). *Handbook of logistics and supply-chain management* (3rd ed.). CRC Press. ISBN 978-0367331404
4. Lambert, D. M., & Stock, J. R. (2017). *Road transportation and logistics* (2nd ed.). Springer. ISBN 978-3319579050
5. Mentzer, J. T. (2019). *Supply chain management: A logistics perspective* (5th ed.). Sage Publications. ISBN 978-1506352089

REFERENCES:

1. James Banks, *Introduction to transportation engineering*, McGraw Hill, 2001
2. Myer Kutz, *Handbook of transportation engineering*, McGraw Hill, 2011
3. Ritter, Barrett and Wilson, *Securing Global Transportation networks*, McGraw Hill, 2006
4. Coyle, Bardi & Novack, *Transportation: A supply chain perspective*, south- western college, 2010

MS45F8	Modern Logistics Operations	L	T	P	C
		3	0	0	3

Course Description

This course covers logistics' role in supporting production and marketing, including procurement, inventory management, and order fulfillment. It explores export and import logistics, 3PL and 4PL services, and their differences. The course also examines logistics information systems, e-logistics, and technology for resource management and connectivity

Objectives

- Understand the concept of logistics as a support/ interface/ enabler of production function
- Understand the concept of logistics as a support/ interface/ enabler of marketing function
- Understand about EXIM Logistics and features
- Know the logistics service providers

Course Outcome		Cognitive Skill
CO-01	Analyse how logistics supports procurement, production, and methodologies like JIT and VMI.	R, U, An
CO-02	Assess logistics' role in order fulfilment, inventory management, and shipment processes.	R, U
CO-03	Understand export and import logistics, including packing, booking, customs, and clearance.	R, U, A
CO-04	Compare 3PL and 4PL services and evaluate 4PL's specialized and value-added offerings.	R, U, A
CO-05	Evaluate logistics information systems, E-logistics, and technologies for warehouse management and reverse logistics	R, U, A, E

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	M	S	M	M	M	M	S
CO-02	M	S	M	S	M	M	M	M
CO-03	S	M	S	M	M	M	M	M
CO-04	M	S	M	M	S	M	S	M
CO-05	S	M	S	M	M	M	M	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT I: Logistics as a Support/Interface/ Enabler of Production Function 9

Logistics as a Support Function of Procurement, Vendor Facilitation and Production – Logistics As An Interface Function Of Demand Forecasting, Global Procurement. Tracking Inward Shipments, In-Point Distribution And Storage Planning – Logistics As An Enabler Of Just In Time (JIT), Kanban, Vendor Managed Inventory (VMI) for vendors And The Firm

UNIT II: Logistics as a Support/Interface/Enabler of Marketing Function 9

Logistics as a support function of order fulfillment, assembling & labeling from multi storage points, consignment convergence/ divergence and delivery – logistics as a interface of marketing forecast, stock level management, invoice or sales documentation, picking materials, consolidation, packing, marking, preparing outbound documentation and shipping out by loading into containers – customer facilitation tracking out – bound shipments

UNIT III: Exim Logistics 9

Special aspects of export logistics: picking, packing, vessel booking, full load container load, customs, documentation shipment, delivery to distribution centres – Import logistics: documents collection, valuing – bonded warehousing – customs formalities – clearing – distribution to units – security & insurance

UNIT IV: Logistics Service Providers **9**

3PL/ 4PL Services – differences between 3 PL & 4 PL – Common services for 3 PL & 4PL – Invoice Management, call centres, warehouse/ distribution facilities – 4 PL Specialties: Implementation center, business process analysis/ scoping, development of all activities into an open system framework – product/ skill centres: supply chain engineering – 4 PL Value added services: knowledge transfer, business development and functional support

UNIT V: Logistics Information Systems **9**

Need – characteristics and design – E-logistics – structure and operation – logistics resource management – automatic identification technologies – IT system center – Pure IT selection for design and implementation connectivity – warehouse simulation – reverse logistics

TOTAL: 45 HOURS

TEXTBOOKS

1. Christopher, M. (2020). *Logistics and supply chain management* (6th ed.). Pearson. ISBN 978-1292408232
2. Harrison, A., & van Hoek, R. (2021). *Logistics management and strategy: Competing through the supply chain* (5th ed.). Pearson. ISBN 978-1292325164
3. Mangan, J., Lalwani, C., Butcher, T., & Javadpour, R. (2022). *Global logistics and supply chain management* (4th ed.). Routledge. ISBN 978-0367332376
4. Ghiani, G., Laporte, G., & Martinez, R. (2019). *Introduction to logistics systems management* (2nd ed.). CRC Press. ISBN 978-0367332567
5. Ghiani, G., Laporte, G., & Martinez, R. (2021). *Handbook of logistics and supply chain management* (3rd ed.). CRC Press. ISBN 978-0367331404

REFERENCES:

1. Martin Christopher, *Logistics and Supply Chain Management*, Prentice Hall, 1998
2. Ronald. H, *Business Logistics and Supply Chain Management*, Prentice Hall, 2003
3. Paul R. Murphy Jr and Donald Wood, *Contemporary Logistics* , Prentice Hall, 2010
4. Harvard Business Review, Managing supply chains

MS45F9	Maritime Logistics and Documentation	L	T	P	C
		3	0	0	3

Course Description

This course covers maritime logistics, including global sea routes, types of ships, and the role of international maritime organizations. It explores chartering principles, freight determination, and multimodal transport. The course also addresses cargo shipment arrangements, maritime insurance procedures, and export documentation and procedures

Objectives

- Understand all the concepts of marine logistics.
- Describe various types of charters.
- Recognize the procedure for arranging shipments of cargo.
- Understand all the concepts of marine insurance.
- Understand all the concepts of export procedure and documentation

Course Outcome		Cognitive Skill
CO-01	Analyze the importance of maritime logistics in global marketing and supply chain management, including coastal and ocean transportation, global sea routes, and ship types. Understand the IMO's role.	**R, U,An**
CO-02	Evaluate different charter types, factors affecting freight rates, and the differences between conference and competitive systems. Understand rate dynamics and multi-modal transport.	**R, U**
CO-03	Examine the roles of intermediaries in shipping, such as clearing and forwarding agents and stevedores. Understand port types, cargo handling, and demurrage.	**R, U, A**
CO-04	Evaluate cargo and marine insurance policies, including procedures for insurance and claim documentation.	**R, U, A**
CO-05	Understand export procedures, including order handling, shipment, banking, and documentation. Learn about export credit instruments, letters of credit, and customs clearance.	**R, U, A**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	M	S	M	M	M	M	S
CO-02	M	S	M	S	M	M	M	M
CO-03	S	M	S	M	M	M	M	M
CO-04	M	S	M	M	S	M	S	M
CO-05	S	M	S	M	M	M	M	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT I: MARITIME LOGISTICS 9

Concept, objectives, importance and relevance to global marketing and supply chain management – coastal and ocean transportation – global sea routes – trade volume – characteristics of shipping transport – types of ships – general cargo ships – IMO: Formation and functions

UNIT II: CHARTERING PRINCIPLES AND PRACTICES 9

Types of charters – freight determination and determinants – conference system Vs competitive system – freight structure and practice – rate dynamics – multi modal transport system

UNIT III: ARRANGEMENT FOR SHIPMENT OF CARGO 9

Role of intermediaries – functions and services of clearing and forwarding agents, freight brokers, stevedores, shipping agents and surveyors – house and terminal stuffing – port: types of port – structural and cargo handling facilities – demurrage

UNIT IV: MARITIME INSURANCE 9

Cargo insurance – marine insurance – institute cargo clauses – specific policy – open policy – procedure for cargo insurance – procedure for marine insurance – necessary documents for filling claim

UNIT V: EXPORT PROCEDURE AND DOCUMENTATION 9

Offer and receipt of orders – shipment procedure – banking procedure – export documentation – framework – standardized pre shipment export documents – commercial and regulatory documents – export credit instruments and procedures – letters of credit and types – documents required for export credit – export credit insurance – services of export credit and guarantees – central excise and customs clearance of export cargo – procedure and documents

TOTAL: 45 HOURS

TEXTBOOKS

1. Edmund J. Gubbins, Shipping Industry Routledge, 1986
2. Martin Stopford, Maritime Economics, Routledge, 2008
3. Alan E Branch, Elements of Shipping, Routledge, 2007

REFERENCES:

1. Thomas E Johnson, Export/ Import procedures and documentation
2. Mark Huber, Tanker Operations: Cornell Maritime Press, 2010

ELECTIVE CURRICULUM
G. HOSPITAL ADMINISTRATION

Sl.No	Code	Name of the Subjects	L	T	P	C
1	MS45G1	Health Care Management	3	0	0	3
2	MS45G2	Hospital Facilities Planning and Management	3	0	0	3
3	MS45G3	Hospital Supportive Services	3	0	0	3
4	MS45G4	Hospital Materials Management	3	0	0	3
5	MS45G5	Strategic Management in Healthcare	3	0	0	3
6	MS45G6	Quality Management in Healthcare	3	0	0	3
7	MS45G7	Operations Management In Health Care	3	0	0	3

MS45G1	Health Care Management	L	T	P	C
		3	0	0	3

Course Description

This course provides an in-depth understanding of management concepts and principles within the healthcare sector. Students will explore the unique challenges of managing healthcare organizations, focusing on leadership, strategic planning, human resources, and legal frameworks. The course also delves into the structure and classification of healthcare services, hospital management roles, and current issues such as telehealth, health insurance, and disaster management. By examining both national and international health programs, students will develop the competencies needed to enhance the quality and efficiency of healthcare delivery.

Objectives

- To provide a comprehensive understanding of the fundamental principles of management and leadership in healthcare organizations.
- To enable students to effectively develop and implement strategic plans in health care institutions while adhering to legal and ethical standards.
- To impart knowledge on the structure, types, and roles of various healthcare organizations and the significance of different levels of care.
- To address contemporary issues in healthcare management, including health tourism, accreditation, and health insurance, and their impact on healthcare delivery.

Course Outcome		Cognitive Skill
CO-01	Explain the principles of management and leadership in healthcare organizations and their relevance to effective healthcare delivery.	U, A
CO-02	Analyze strategic planning and human resource management in health care, with a focus on legal and ethical issues affecting patient rights and responsibilities.	An, E
CO-03	Classify different types of healthcare organizations and examine the role of healthcare services in addressing the health needs of populations.	R, An
CO-04	Apply management principles to organize hospital administration, including the roles and responsibilities of different levels of managers.	A, S
CO-05	Evaluate contemporary issues in healthcare management, such as telehealth, health insurance, and disaster management, and their impact on healthcare services.	E, An

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	M	M	N	S	N	M	N
CO-02	M	S	M	S	M	N	N	S
CO-03	L	M	M	N	S	L	N	M
CO-04	S	M	N	M	S	M	N	S
CO-05	N	M	S	M	S	N	N	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT I: CONCEPTS AND PRINCIPLES OF HEALTH CARE MANAGEMENT 9

Principles and importance of management in health care organizations, dimensions of functional management in health care organizations, leadership and management: leadership styles and competencies, leaders skills, change management in health care organizations

UNIT II: STRATEGIC PLANNING AND MANAGEMENT IN HEALTH CARE 9

Strategic planning in health care organizations; health services planning and commissioning; quality improvement and role of managers in health organizations; Managing of human resources in health organizations; Ethics and law in health care organizations, patients' rights and responsibilities, legal requirements.

UNIT III: HEALTH AND SERVICES ORGANISATION 9

Services and Classification of Service Organisations, Characteristics, Challenges – History of Medicine, Healthcare Revolution, Health, Dimensions of Health, Indicators of Health – Types of Healthcare Organisations, Composition of Health Sector, Types of Care, Pyramidal Structure of Health Services.

UNIT IV: HOSPITAL MANAGEMENT: LEVELS AND ROLES 9

Hospitals - Types of Hospitals and Role of Hospital in Healthcare, Complexity of Hospital Organisation, Governing Board, Executive Board and Advisory Board – CEO, Medical Administration, Nursing Administration and Hospital Administration-Middle Level Managers in Hospital and their Responsibilities-Structuring Hospital Organisation

UNIT V: CURRENT ISSUES IN HEALTHCARE AND PROGRAMME 9

Accreditation-Tele health-Health Tourism-Health Insurance and Managed Care-About Disaster Management – Hospital Wastes Management. National Health Programmes in India- International Health: WHO and Other United Nations Agencies

TOTAL: 45 HOURS

TEXTBOOKS

1. Sharon B. Buchbinder and Nancy H Shanks.Introduction to Health Care Management by Publisher: Jones & Bartlett Publishers;
2. B.M. Sakharkar, Principles of Hospital Administration and Planning (Jaypee Brothers Medical Publishers Pvt. Ltd., New Delhi)
3. C.M. Francis and et al., Hospital Administration (Jaypee Brothers Medical Publishers Pvt. Ltd., New Delhi)

REFERENCES:

1. S. Srinivasan (ed.), Management Process in Health Care (Voluntary Health Association of India, New Delhi
2. J.E. Park and K. Park, Textbook of Preventive and Social Medicine (M/S BanarsidasBhanot Elaine La Monica, Management in Health Care (Macmillan Press Ltd, London)
3. William F. Ganong, Review of Medical Physiology (McGraw Hill, Boston) ISBN 007- 144040-2

MS45G2	Hospital Facilities Planning and Management	L	T	P	C
		3	0	0	3

Course Description

This course on Hospital Facilities Planning and Management provides a comprehensive overview of the principles and practices involved in the planning, design, and management of hospital facilities. It covers the essential aspects of hospital planning, including outpatient and inpatient services, trauma care, and operation theatres. The course aims to equip students with the skills needed to effectively plan, manage, and evaluate various hospital services and facilities, ensuring they meet healthcare standards and operational efficiency.

Objectives

- To understand the principles and processes involved in hospital planning and facility management.
- To analyze and design outpatient, inpatient, and trauma care services, including their layout, staffing, and equipment needs.
- To apply management strategies for effective operation of hospital services, focusing on quality indicators and performance metrics.
- To evaluate and implement safety, efficiency, and patient-centered practices in hospital facilities, including emergency and operation theatre management.

Course Outcome		**Cognitive Skill**
CO-01	Explain the principles and steps involved in hospital planning, including site selection, project estimation, and master planning.	**U, A**
CO-02	Analyze and design outpatient services, including layout, staffing, equipment, and patient management systems.	**An, A**
CO-03	Evaluate and develop trauma care and emergency services, including organization, equipment, and disaster management strategies.	**E, An**
CO-04	Plan and manage inpatient services and operation theatres, focusing on design, staffing, equipment, and performance indicators.	**A, S**
CO-05	Assess and implement key policies and procedures for various hospital services, including outpatient, inpatient, and trauma care, to ensure quality and efficiency.	**E, An**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	L	M	N	S	L	N	N
CO-02	M	M	S	N	M	M	N	N
CO-03	M	N	S	M	M	L	N	M
CO-04	S	L	M	N	S	M	N	S
CO-05	S	M	S	M	S	L	N	M

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT I: HOSPITAL PLANNING 9

Concept of Planning-Guiding Principles in Planning Hospital Facilities and Services – Regional Planning and Factors to be emphasized-Steps in Hospital Planning; Planning Team and Stages of Project-Estimation, Architect Brief and Master Plan-Selection of Site and Decision on Land, Space and Utilities.

UNIT II: OUTPATIENT SERVICES 9

Objectives-Functions-Location, Design and Layout-Policy and Procedures-Organisation- Staffing-Equipment and Facilities-Key Result Areas and Performance / Quality Indicators-Daily Planning and Scheduling of Work-Managing Time: Waiting Time and Total Time Spent by a Patient-Specialty, Sub-specialty and Super Specialty Clinics-Diagnosis, Physiotherapy and Occupational Therapy-Emerging Concepts: Day Care, Reservation, Appointment by Phone- Medico-social Works / Patient Counselling-Other Facilities: Pharmacy, Gifts Shop, Prayer / Meditation Room.

UNIT III: TRAUMA CARE: EMERGENCY AND CASUALTY SERVICES 9

Objectives-Functions-Location, Design and Layout-policy and Procedures – Organisation- Staffing – Equipment and Facilities – Key Result Areas and Performance / Quality Indicators – Disaster Management: Principles and Classification-Life Saving Drugs-Ambulance and Paramedic Services-Medico-legal Procedures-Forms and Registers to be maintained- Communication System

UNIT IV: INPATIENT SERVICES 9

Inpatient Care-Objectives-Functions-Location, Design and Layout-Policy and Procedures-Organisation-Staffing-Equipment and Facilities-Key Result Areas and Performance / Quality Indicators-Admission, Transfer, Billing and Discharge Procedures-Managing Death-Intensive Care Units-Objectives-Functions-Location, Design and Layout-Policy and Procedures- Organisation-Staffing-Equipment and Facilities-Key Result Areas and Performance / Quality Indicators- Types of ICUs.

UNIT V: OPERATION THEATRE 9

Objectives-Functions-Location, Design and Layout-Policy and Procedures-Organisation- Staffing-Equipment and Facilities-Key Result Areas and Performance / Quality Indicators – Daily Planning and Scheduling-Determinants of number of Operating Rooms-Zoning and Aseptic / Sterile Techniques – Clinical Protocols – Sub-stores, CSSD, Immediate Postoperative Recovery Rooms-Safety Issues.

TOTAL: 45 HOURS

TEXTBOOKS

1. Principles of Hospital Administration and Planning Sakharkar BM Japee Brothers Medical Publishers (P) Ltd: 2011 ISBN: 9788184486322
2. R. Llewelyn Davies and HMC Macaulay, Hospital Planning and Administration (Jaypee Brothers Medical Publishers Pvt. Ltd., New Delhi)

REFERENCES:

1. NHS, Guide to Good Practices in Hospital Administration (Department of Health and Social Security: National Health Services, London)
2. Syed Amin Tabish, Hospital and Health Services Administration Principles and Practice (Oxford University Press, New Delhi)

MS45G3	**Hospital Supportive Services**	L	T	P	C
		3	0	0	3

Course Description

This course explores the essential supportive services required for the effective functioning of a hospital. It covers various operational areas such as front office management, medical records, diagnostic services, housekeeping, pharmacy, maintenance management, and other critical support services. The course emphasizes the importance of these services in improving hospital efficiency, ensuring patient safety, and maintaining high standards of care. Students will also learn about the latest technological advancements, including electronic health records, smart cards, and automated systems, and their impact on hospital operations.

Objectives

- To understand the objectives and functions of key hospital supportive services, such as front office, medical records, and pharmacy.
- To analyze the layout, staffing, and operational procedures for diagnostic services, linen management, and housekeeping.
- To evaluate the technological advancements in hospital support systems, including electronic health records and centralized sterilization services.
- To develop strategies for maintaining and managing hospital facilities, with a focus on maintenance management, service contracts, and equipment handling.

Course Outcome		**Cognitive Skill**
CO-01	Explain the objectives, functions, and technological advancements in front office and medical records management.	**R, U**
CO-02	Analyze the design, staffing, and operational needs of diagnostic services, including radiology and laboratory services.	**An, U**
CO-03	Evaluate the functions of other supportive services like CSSD, linen management, housekeeping, and security, and assess their impact on hospital efficiency.	**E, An**
CO-04	Formulate effective strategies for pharmacy operations and dietary services, focusing on layout, staffing, and control measures.	**A, S**
CO-05	Develop and implement maintenance management strategies, including service contracts and biomedical equipment handling.	**S, A**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	M	M	N	N	N	M	N
CO-02	N	S	M	S	S	N	N	N
CO-03	M	S	N	N	M	N	S	S
CO-04	S	M	N	S	N	N	N	M
CO-05	N	N	S	N	M	S	N	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT I: FRONT OFFICE AND MEDICAL RECORDS **9**

Front Office-Objectives and Functions-Location-Staffing-Information and Communication- Medical Records-Objectives and Functions-Characteristics, Main Section, and Analysis of Medical Records-

Types of Forms; Retention Policy; Records and Statistics-Hospital Beds, Bed Compliment, Bed Days, Average Length of Stay (LOS), Bed Occupancy Rate, Daily Ward Census, Bed Turnover Rate, Gross / Net / Postoperative Death Rate, Admission and Discharge- Location, Design and Layout-Staffing; Medical Records Committee-Technology Advancements:, Electronic Health Records Microfilming and Smart Cards.

UNIT II: DIAGNOSTIC SERVICES **9**

Radiology Services-Objectives and Functions-Location, Design and Layout-Staffing; Duties of Radiologist and Technicians-Laboratory Services-Objectives and Functions-Location, Design and Layout-Staffing; Duties of Pathologists and Lab Technicians-Classification of Laboratory Services.

UNIT III: OTHER SUPPORTIVE SERVICES **9**

CSSD-Objectives and Functions-Advantages of Centralized System-Distribution System- Location, Design and Layout-Duties of CSSD In-charge-Linen and Laundry-Objectives and Functions-Location and Space-Staffing-Bed Linen Ratio-Automation-Housekeeping-Objectives and Functions-Staffing-Key Tasks-Systematic and Standard Procedures of Cleaning Required Materials for Cleaning-Security Services-Objectives and Functions- Water Supply and Sanitary Services-Staffing; Responsibilities of Security Guard-Gate Pass; Physical Verification,; Control Movement.

UNIT IV: PHARMACY FACILITY **9**

Pharmacy-Objectives and Functions-Location, Design and Layout-Staffing; Duties of Chief Pharmacist; Therapeutic Committee-Hospital Formulary-Dietary Services-Objectives and Functions-Staffing-Equipment and Physical Facilities-Purchases, Stores and Issues-Pricing and Control Measures-Location, Design and Layout.

UNIT V: MAINTENANCE MANAGEMENT **9**

Objectives and Functions-Civil and Biomedical-Staffing-Location and Space-Policy and Procedures-Equipment Types and Characteristics; Purchase, Inspection and Installation-Records, Responsibilities-Levels of Maintenance; Service Contracts and Disposition

TOTAL: 45 HOURS

TEXTBOOKS

1. Mc Laughlin, Daniel B. & Olson, John R.(2012), Healthcare Operations Management, 2nd edition, Chicago, Health Administrations Press, ISBN 978-1-56793-4441-1
2. Langabeer, James R., (2016), Health Care Operations Management 2nd Edition, Jones and barttelt Publisher, USA, ISBN-13: 978-0763750510, ISBN-10: 0763750514
3. NHS, Guide to Good Practices in Hospital Administration (Department of Health and Social Security: National Health Services, London)

REFERENCES:

1. C.M. Francis and et al., Hospital Administration (Jaypee Brothers Medical Publishers Pvt. Ltd., New Delhi)
2. G. D. Kunders, Designing for Total Quality in Health Care (Prism Books Pvt. Ltd., Bangalore)
3. Syed Amin Tabish, Hospital and Health Services Administration Principles and Practice (Oxford University Press, New Delhi)

MS45G4	Hospital Materials Management	L	T	P	C
		3	0	0	3

Course Description

This course covers the key concepts and practices in hospital materials management, focusing on the efficient procurement, storage, and utilization of materials and equipment in healthcare settings. It addresses the unique challenges of managing healthcare supplies, from purchasing and equipment maintenance to inventory control and disposal. The course emphasizes strategic planning, ethical considerations, and the use of modern information systems for effective materials management in hospitals.

Objectives

- To understand the fundamental goals and functions of materials management in hospitals, and its impact on healthcare service delivery.
- To examine the purchasing process and legal aspects involved in the procurement of hospital materials and equipment.
- To develop knowledge of equipment utilization and maintenance in hospitals, including procedures for audits and repairs.
- To apply inventory management techniques for healthcare settings, focusing on optimizing stock levels and reducing wastage.

Course Outcome		Cognitive Skill
CO-01	Explain the goals, objectives, and functions of materials management in a healthcare setting.	R, U
CO-02	Analyze the purchasing procedures and legal, ethical aspects of procurement in both public and private healthcare sectors.	An, E
CO-03	Evaluate equipment management techniques, including selection, operation, and maintenance in hospitals.	E, U
CO-04	Apply quality assurance practices and distribution methods in the inspection and storage of hospital materials.	A, An
CO-05	Implement scientific inventory management techniques to optimize materials and equipment in healthcare settings.	A, S

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	M	M	N	N	N	M	N
CO-02	N	S	M	S	S	N	N	N
CO-03	M	S	N	N	M	N	S	S
CO-04	S	M	N	S	N	N	N	M
CO-05	N	N	S	N	M	S	N	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT I: MATERIALS MANAGEMENT 9

Introduction-Definition and Function –Goals and Objectives of Materials Management-Materials Cycle-Functions of Materials Manager-Problems and issue in Hospitals-Information Systems for Materials Management-Health Supply Management Cycle

UNIT II: PURCHASING 9

Objectives and Elements of Purchasing-Purchasing System-Purchase Cycle-Purchase Procedures-

Legal and Ethical Aspects-Conditions of Contract-Financial Rules-Arbitration- Procedures in Public and Private Sectors

UNIT III: EQUIPMENT PURCHASE AND MAINTENANCE 9

Planning and Selection of Equipment-Import of Equipment-Equipment Utilization and Operation-Equipment Repair and Maintenance-Equipment Audit.

UNIT IV: INSPECTION, STORAGE AND DISTRIBUTION OF MATERIALS 9

Planning Consideration of Stores-Inspection and Verification of Materials-Quality Assurance- Storage of Materials – Distribution of Materials-Condemnation and Disposal.

UNIT V: SCIENTIFIC INVENTORY MANAGEMENT 9

Inventory Management Techniques in Health Care- Codification and Standardization-Value Analysis-Inventory Control – Lead Time, Safety Stock and Reorder Level-Economic Order Quantity (EOQ)-Selective Controls-Case Studies on Inventory Control.

TOTAL: 45 HOURS

TEXTBOOKS

1. John F.Kros, Evelync.Brown (2013), Health Care Operations and Supply Chain Management; John Wiley & Sons; ISBN: 978-1-118-10977-9
2. Gerald (Jerry) R. Ledlow, Karl *Manrodt*, David Schott (2016), Health Care Supply Chain Management, Jones & Bartlett Learning, ISBN: 1284123626, 9781284123623
3. Shakti Gupta and Sunil Kant, Hospital Stores Management: An Integrated Approach (Jaypee Brothers Medical Publishers Pvt. Ltd., New Delhi)

REFERENCES:

1. WHO, Maintenance and Repair of Laboratory, Diagnostic, Imaging and Hospital Equipment (WHO, Geneva)
2. Murriel Skeet and David Fear, Care and Safe Use of Hospital Equipment (VSO, UK)

MS45G5	Strategic Management in Healthcare	L	T	P	C
		3	0	0	3

Course Description

This course explores the principles and practices of strategic management within healthcare organizations. Students will learn how to formulate, implement, and evaluate strategies to improve healthcare operations at both the national and international levels. Through analysis of internal and external environments, strategic decision-making models, and case studies, students will gain the ability to apply strategic management concepts to real-world healthcare challenges. The course also covers strategic approaches adopted by international agencies like WHO and World Bank in shaping global healthcare policies.

Objectives

- To understand the importance and challenges of strategic management in healthcare organizations, focusing on the decision-making process.
- To analyze the strategic management process and its components, including mission setting, strategic analysis, and long-term objectives in healthcare.
- To evaluate situational analysis tools like SWOT in healthcare settings and understand how they impact strategic planning.
- To formulate and assess strategic alternatives within the healthcare industry, with a focus on national and international health programs.

Course Outcome		Cognitive Skill
CO-01	Explain the concepts and importance of strategic management and decision-making in healthcare organizations.	R, U
CO-02	Analyze the components of the strategic management process and how they are applied in healthcare organizations.	An, U
CO-03	Evaluate the use of situational analysis tools such as SWOT in determining the strategic direction of healthcare organizations.	E, An
CO-04	Formulate and assess strategic alternatives for healthcare organizations, considering long-term objectives and external environments.	A, E
CO-05	Compare and contrast strategic management practices at national and international levels, including strategies adopted by global health organizations.	A, S

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	M	M	N	N	N	M	N
CO-02	N	S	M	S	S	N	N	N
CO-03	M	S	N	N	M	N	S	S
CO-04	S	M	N	S	N	N	N	M
CO-05	N	N	S	N	M	S	N	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT I: INTRODUCTION **9**

Strategic Management – Concept, Meaning of Critical Areas- different Dimensions-Levels of Strategy-Characteristics of Strategic Decision making- Importance –Advantages and Disadvantage of Strategic Decision Making In Health Organizations.

UNIT II: STRATEGIC MANAGEMENT PROCESS: COMPONENTS 9

Mission for a Health Organisation- Health Organisational Profile-External Environment- Strategic Analysis and Choice-Long term Objectives-Grand Strategy-Annual Objectives- Functional Strategies-Policies-Institutionalizing the Strategy-Evaluation and Control

UNIT III: SITUATIONAL ANALYSIS 9

SWOT analysis- Environmental Issues, Vision, Mission, Objectives, Values, Directional Strategies, Adaptive Strategies, Market Entry Strategies, Positioning Strategies and Operational Strategies-External Environment Analysis-Need-Goals-Limitations-Description-General Environment, Healthcare Environment and Information-Process: Scan, Monitor, Forecast and Assess-Tools and Techniques-Responsibility: Three Administrative Models-Internal Environment Analysis-Objectives-Culture, Management Subsystem and Information Subsystem- Audit Checklist of Strengths and Weaknesses.

UNIT IV: STRATEGY FORMULATION 9

Strategy Formulation in Health Organizations: Definition of strategy Formulation - Developing Strategic Alternatives in Healthcare Sector-Evaluation of Alternatives and Strategic Choice made by the Health Industries.

UNIT V: APPLICATION IN NATIONAL AND INTERNATIONAL LEVEL 9

Strategic Management Practices in National Health Care Programs- Strategies Adopted in Long Term Health Policy with special reference to Various Health Care Programs at National Level; Strategic Management Practices in International Healthcare- Strategies adopted by International Agencies: WHO, World Bank- Strategic Approach in Health Programmes of few Developed Countries and or Neighboring Countries.

TOTAL: 45 HOURS

TEXTBOOKS

1. Linda E.Swayane, W.Jack Duncan, Peter M. Ginter.Strategic Management of Health Care Organizations Wiley-Blackwell; 6 edition.
2. W. Jack Duncan, Peter M Ginter and Linda E Swayne, Strategic Management of Health Care Organizations (Blackwell Publishers, Massachusets, USA)ISBN 1-55786-534-5
3. K Park, Textbook of Preventive and Social Medicine (M/s BanarsidasBhanot, Jabalpur)

REFERENCES:

1. John a Pearce II and Richard B Robison Jr., Strategic Management: Strategy Formulation and Implementation (AITBS Publishers and Distributors, Delhi)
2. Roger Kropf and et al Strategic Analysis for Hospital Management (Aspen Publication, USA)

MS45G6	Quality Management in Healthcare	L	T	P	C
		3	0	0	3

Course Description

This course explores the principles, methodologies, and practices of quality management in healthcare settings. It covers the historical context, key concepts, and tools necessary for improving quality in healthcare organizations. Emphasis is placed on understanding the dimensions of quality, the roles of various healthcare professionals, and the impact of quality management on patient satisfaction and outcomes. The course also investigates accreditation standards and recent trends in healthcare quality, including international benchmarks and quality awards.

Objectives

- To understand the fundamentals of quality management in healthcare, including its history, principles, and core values.
- To explore various quality management approaches and processes, such as quality control, assurance, and continuous improvement, and their application in healthcare.
- To analyze the role of customer service and patient satisfaction in healthcare quality, focusing on indicators of clinical quality and performance.
- To evaluate the role of healthcare organizations and professionals in implementing quality management policies, accreditation processes, and adherence to international standards.

Course Outcome		Cognitive Skill
CO-01	Explain the core concepts and history of quality management in healthcare and its relationship with productivity and profitability.	R, U
CO-02	Analyze quality management approaches and methodologies, including continuous quality improvement and total quality management, and apply them to healthcare settings.	An, A
CO-03	Evaluate customer service dimensions, patient satisfaction, and clinical quality indicators, including complication and infection rates.	E, U
CO-04	Understand and assess the roles and responsibilities of healthcare professionals in promoting quality, including the role of quality managers and teams.	U, E
CO-05	Synthesize recent trends in healthcare quality management, including ISO certification, NABH and JCI accreditation, and international quality standards.	S, A

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	M	M	N	N	N	M	N
CO-02	M	S	S	M	S	N	N	N
CO-03	N	M	M	S	M	N	S	M
CO-04	S	M	N	M	N	N	N	M
CO-05	M	N	S	N	S	M	N	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT I: FUNDAMENTALS 9

History, Need for and Importance of Quality Management in health care–Core Values, Concepts and Model-Quality Gurus and their views-Dimensions of Quality-Principles of Quality Management: Structure, Process and Outcome-Quality Vs Productivity Vs Profitability-Cost of conformance and non-conformance to Quality

UNIT II: QUALITY MANAGEMENT APPROACHES AND PROCESS 9

Quality management approaches and methodologies- Components –Quality control, quality assurance, continuous quality improvement, total quality management, Quality Management Process--Benchmarking-Quality Measurement and Statistical Report at all Levels-Recognition and Reward-Management Integration

UNIT III: HEALTHCARE QUALITY 9

Quality / Customer Service-Define Customer and Identify Customers-Customer Experience: -Individual Behavior: Stress, Communication and Interpersonal Relationship –Patient Satisfaction-Rights and Responsibilities -Quality Indicators of Patient Satisfaction-Clinical Quality-Complication and Infection Rate-Follow Up and Continuity of Care –Measuring Quality- Performance Indicators-Quality Audit and Review Techniques.

UNIT IV: ORGANISATION AND ROLES IN QUALITY 9

Quality Policy: Commitment to Patients and Staff – Code of Conduct for Health Professionals- Job Description of Quality Manager-Quality Steering Committee-Quality Council-Quality Teams: Task Force, Quality Circle-Obstacles to Practice Quality

UNIT V: RECENT TRENDS 9

ISO Certification – Accreditation – Importance of Accreditation in Health Sector: Accreditation of Health Institutions in India- Process of Accreditation - NABH and JCI-Quality Awards Scheme in Health – Quality Circle- International Accreditations.

TOTAL: 45 HOURS

TEXTBOOKS

1. Donald E Lighter, Douglas C Fair. Quality Management in Health Care- Principles & Methods Johnes&Bartlet Learning: An ASPEN Publication ISBN 0763732184, 9780763732189
2. Patrice Spath. Introduction to Healthcare Quality Management, Publisher: Health Administration Press; 1st edition.
3. Hugh C H. Kogh, Total Quality Management in Health Care (Longman Publication) ISBN 0582 04696

REFERENCES:

1. Roger Ellis and Dorothy Whittington, Quality Assurance in Health Care – A Hand Book (Edward Ainoid, London) ISBN 0-340-55273-5
2. Nankemp and Eilleen Richardson, Quality Assurance in Nursing Practice (Butterworth Heinemann Ltd., Second Edition) ISBN 0-7506-2326-8
3. Helga Drummond, The TQM Movement-What Total Quality Management is Really All About (UBSPD, New Delhi)

MS45G7	Operations Management In Health Care	L	T	P	C
		3	0	0	3

Course Description

This course provides an in-depth exploration of operations management principles and their application in healthcare settings. Students will learn about the critical role of operations managers in the healthcare industry, project management processes, supply chain strategies, and performance improvement tools tailored for healthcare systems. The course covers contemporary healthcare operations issues, emphasizing scheduling, capacity management, and operational excellence. Special focus is given to using data-driven decision-making techniques and emerging trends like Six Sigma and Lean in healthcare environments.

Objectives

- To understand the key functions, roles, and responsibilities of operations managers in the healthcare sector.
- To analyze project management processes and evaluate the return on investment models and risk management approaches in healthcare operations.
- To examine supply chain management strategies and their impact on healthcare operations, focusing on purchasing, inventory management, and collaboration.
- To apply performance improvement tools and techniques such as Six Sigma and Lean to address operational challenges in healthcare.

Course Outcome		Cognitive Skill
CO-01	Explain the key functions and roles of healthcare operations managers and the principles of operations management.	**R, U**
CO-02	Analyze project management processes and evaluate the use of ROI models in healthcare operations.	**An, E**
CO-03	Apply supply chain management strategies to improve purchasing, inventory management, and logistics in healthcare.	**A, An**
CO-04	Use performance improvement tools like Six Sigma and Lean to enhance healthcare operational processes.	**A, S**
CO-05	Evaluate contemporary healthcare operations issues, such as scheduling and demand forecasting, to achieve operational excellence.	**E, A**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	M	M	N	N	N	M	N
CO-02	N	S	M	S	M	N	N	N
CO-03	S	S	M	N	S	N	N	S
CO-04	M	M	N	N	S	S	N	M
CO-05	N	N	S	N	S	S	N	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT I: FUNDAMENTALS 9

Role of health care operations management, key functions, need, goals of operations managers, principles of management, power and decision making, trends in operations management-Health care as a business, hospital business operations, health finance for operations managers, implications for operations and logistics management

UNIT II: PROJECT MANAGEMENT PROCESS 9

Project and change management, key stages of project management, planning for operational excellence, planning process-Return on investment models, different models and approaches, calculating rate of returns, value of money-risk management.

UNIT III: SUPPLY CHAIN & OPERATION MANAGEMENT 9

Supply chain management strategy, purchasing and material management, supply chain systems-Purchasing and material management, inventory management and accounting, costs of supplies and inventory, supply chain collaboration, future of operations management

UNIT IV: PERFORMANCE IMPROVEMENT TOOLS & TECHNIQUES 9

Problem solving and decision making – decision making framework, mapping- problem identification tools, analytical tools – Using data and statistical tools for operational improvement – qualitative and quantitative tools and techniques- Quality management with focus on six sigma -the lean enterprise.

UNIT V: CONTEMPORARY HEALTHCARE OPERATIONS ISSUES 9

Process improvement approaches –scheduling and capacity management – staff scheduling-operations scheduling and sequencing rules- patient appointment scheduling – demand forecasting – human resource planning – operational excellence - healthcare organizations of the future

TOTAL: 45 HOURS

TEXTBOOKS

1. James R Langabeer& Jaffrey Helten (2016) Healthcare operations management, a systems perspective, Jones & Bartlett learning, ISBN:978-1-284-05006-6.
2. Daniel B, McLaughlin & John R.Olson (2012), Heathcare Operations Management, Health Administration Press, ISBN: 978-1-56793-444-1

REFERENCES:

1. James R Langabeer& Jaffrey Helten (2014), Healthcare operations management, a quantitative approach to business and logistics, Jones & Bartlett learning, ISBN: 1284071316, 9781284071313

ELECTIVE CURRICULUM
H. ARTIFICIAL INTELLIGENCE

Sl.No	Code	Name of the Subjects	L	T	P	C
1	MS45H1	Artificial Intelligence	2	1	0	3
2	MS45H2	Machine Learning	2	1	0	3
3	MS45H3	Deep Learning	2	1	0	3
4	MS45H4	Business Intelligence	2	1	0	3
5	MS45H5	Data Visualization – R Programming	2	1	0	3
6	MS45H6	Ethics in Artificial Intelligence	2	1	0	3

MS45H1	Artificial Intelligence	L	T	P	C
		2	1	0	3

Course Description

Artificial Intelligence (AI) explores the development of intelligent systems capable of performing tasks that typically require human intelligence, such as problem-solving, learning, and decision-making. The course covers key AI concepts, algorithms, and applications in various domains.

Objectives

Objective of AI (also called heuristic programming, machine intelligence, or the simulation of cognitive behavior) is to enable computers to perform such intellectual tasks as decision making, problem solving, perception, understanding human communication (in any language, and translate among them)

Course Outcome		Cognitive Skill
CO-01	Understand basic concepts of artificial intelligence and various search techniques	**U, A**
CO-02	Know and understand the need of different algorithms and its purposes	**R, U**
CO-03	Analyze various applications related to the algorithms and their implementation in the case of programming	**U, A, An**
CO-04	Analyze the techniques related to planning and reasoning	**U, A, An**
CO-05	Evaluate and perform the types of learning over the neural network and the statistical methods	**U, A, An, E**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	S	S	S	S	S	M	S
CO-02	S	M	S	M	S	S	M	S
CO-03	S	S	S	S	S	S	M	S
CO-04	S	S	S	S	S	S	S	S
CO-05	S	S	S	S	S	S	S	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

Unit I: Introduction **9**

Artificial Intelligence Introduction - Brief history - Problem solving by search - State space – Search and Knowledge representation - Uninformed search - Breadth First Search - Depth First Search – Depth First with Iterative Deepening and Uniform Cost Search – Case Study.

Unit II: Heuristic Search **9**

Heuristic Search –Hill climbing –Simulated Annealing -A* -problem reduction –Algorithm –Mini max search Binary and higher order CSP –Constraint Satisfaction Graph -MRV -Degree –Least Constraining –Forward Checking and Arc Consistency General Purpose heuristics for CSP– Case Study.

Unit III: Genetic Algorithm **9**

Introduction to genetic algorithm – operations – selection – crossover - mutation examples – Logic based representations (PL,FoL) and inference –Logic Programming: Prolog –Rule based representations – forward and backward chaining - matching algorithms–Case Study.

Unit IV: Planning Techniques **9**

Planning Techniques –Goal Stack Planning –Constraint posting –Probabilistic Reasoning –Bayesian Network and reasoning –Case Study.

Unit V: Learning **9**

Learning –Neural Network models –Statistical methods –Naive-Bayes –Nearest Neighbor –Decision trees –Inductive Learning– Case Study.

TOTAL: 45 HOURS

TEXTBOOKS:

1. Artificial Intelligence Modern Approach Third Edition by S. Russell, P. Norvig, PHI Artificial Intelligence Third Edition by Kevin Knight, Elaine Rich.

REFERENCES:

1. Artificial Intelligence, Structures and Strategies for Complex Problem-Solving George Fluger, Sixth Edition, Pearson.

MS45H2	Machine Learning	L	T	P	C
		2	1	0	3

Course Description

Machine Learning focuses on algorithms and statistical models that enable systems to learn from data and improve performance over time without explicit programming. The course covers supervised, unsupervised, and reinforcement learning techniques, along with real-world applications.

Objectives

Objective of Machine Learning **is** to discover patterns in the user data and then make predictions based on these and intricate patterns for answering business questions and solving business problems. Machine learning helps in Analyzing the data as well as identifying trends.

Course Outcome		**Cognitive Skill**
CO-01	Recognize the characteristics of machine learning that make it useful to real-world problems.	**U, A**
CO-02	Understand and apply the need of different algorithms and models to real time applications	**R, U**
CO-03	Understand the inference and learning algorithms for the hidden Markov model.	**U, A, An**
CO-04	Understand the inference and learning algorithms for the models.	**U, A, An**
CO-05	Understand and evaluate the data in different ways for learning and implementation	**U, A, An, E**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	S	S	S	S	S	M	S
CO-02	S	S	S	M	S	S	M	S
CO-03	S	S	S	S	S	S	S	S
CO-04	S	S	S	S	S	S	S	S
CO-05	S	S	S	S	S	S	S	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

Unit I: Introduction **9**

Introduction:MachineLearning–Types–SupervisedLearning–Unsupervised Learning Probability: Introduction –Probability theory–Discrete Distributions–Continuous Distributions –Joint Probability Distributions–Transformations of Random Variables–Monte Carlo Approximation–Information Theory Generative Models for discrete data –Introduction–BayesianConceptLearning–Beta-binomialmodel–Dirichlet – multi nomial model–Naïve Bayes Classifiers – Bayesian Statistics: Introduction – Summarizing posterior distributions – Bayesian Model Selection – Priors – Hierarchical Bayes – Empirical Bayes – Bayesian Decision Theory –Case Study.

Unit II: Linear Models **9**

Generalized Linear Models and the Exponential Family: Introduction – The Exponential family – Generalized Liner Models (GLMs) – Probit Regression – Multi-task Learning – Generalized Linear Mixed Models–Learning to Rank Directed Graphical Models(Bayesnets):Introduction – Naïve Bayes Classifiers – Markov and hidden Markov Models – Directed Gaussian Graphical Models–Conditional Independence properties of DGMs- Mixture Models and the EM Algorithm :Latent variable models – Mixture Models – Parameter Estimation for Mixture Models – The EM Algorithm– Case Study.

Unit III: Adaptive Basis Function Models **9**

Adaptive basis function models: Introduction – Classification and Regression Trees (CART) – Generalized Additive Models–Boosting–Feed forward neural networks– Ensemble Learning–Experimentation Comparison Markov and Hidden Markov Models: Markov models–Hidden Markov models–Inference in HMMs–Learning for HMMs–Generalizations of HMMs– Case Study.

Unit IV: State Space Models **9**

State Space Models**:** Introduction – Applications of SSMs – Inference in LG-SSM – Learning for LG – SSM–Approximate online inference for non-linear –Non-Gaussian SSMs–Hybrid discrete/continuous SSMs Undirected Graphical Models – Conditional Independence properties of UGMs–Parameterization of MRFs–Learning–Conditional Random Fields (CRFs) – Structural SVMs – Exact Inference for Graphical Models: Belief Propagation for Trees – The variable elimination algorithm – The Junction Tree Algorithm – Local variational bounds Monte Carlo Inference: Introduction – Sampling from Standard Distributions – Rejection Sampling– Importance Sampling–Particle Filtering–Rao-Black wellised particle filtering(RBPF)– Case Study.

Unit V: Latent Variable Model for Discrete Data **9**

Latent Variable Models for Discrete Data – Distributed state LVMs for discrete data – Latent Dirichlet Allocation (LDA) – Extensions of LDA – LVMs for graph-structured data – LVMs for relational data– Restricted Boltzmann machines (RBMs)– Case Study.

TOTAL: 45 HOURS

TEXT BOOKS

1. “Hands-On Machine Learning with Scikit- Learn and Tensor Flow”, Aur Elien Geron,
2. O’Reilly
3. “Introduction to Machine Learning with Python”, Andreas Muller, O’Reilly
4. “Learning from Data”, YaserS. Abu-Mostafa
5. “Learning from Data: Artificial Intelligence and Statistics”, Doug Fisher

MS45H3	Deep Learning	L	T	P	C
		2	1	0	3

Course Description

Deep Learning delves into neural networks with multiple layers that can model complex patterns in data, enabling tasks like image recognition, natural language processing, and more. The course covers key architectures, including convolutional and recurrent networks, along with practical applications and model training techniques.

Objectives

The primary purpose of machine learning is to discover patterns in the user data and then make predictions based on these and intricate patterns for answering business questions and solving business problems. Machine learning helps in Analyzing the data as well as identifying trends.

Course Outcome		Cognitive Skill
CO-01	Understand the basic concepts in machine learning, deep learning its foundation's and their applications.	**R, U, A**
CO-02	Understand and develop deep learning concepts with convolutional Neural Network	**R, U, A**
CO-03	Analyze large-scale deep learning problems and apply sequence modeling in complex scenarios through case studies.	**U, A,**
CO-04	Discuss the sequence modeling and their practical issues of performance	**U, A, An**
CO-05	Develop and implement the models based on the learning from deep learning	**An, E**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	S	S	S	S	S	M	S
CO-02	S	S	S	M	S	S	S	S
CO-03	S	S	S	S	S	S	M	S
CO-04	S	S	S	S	S	S	S	S
CO-05	S	S	S	S	S	S	S	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

Unit I: Introduction **9**

Machine Learning Basics: Learning Algorithms – Capacity, Over fitting and Under fitting –Hyper parameters and Validation Sets – Estimators, Bias and Variance – Maximum Likelihood Estimation – Bayesian Statistics – Supervised Learning Algorithms – Unsupervised Learning Algorithms– Stochastic Gradient Descent– Building a Machine Learning Algorithm Challenges Motivating Deep Learning-Deep Feed forward Networks: Learning XOR– Gradient- Based Learning– Hidden Units– Architecture Design–Back Propagation Regularization for Deep Learning– Case Study.

Unit II: Deep Models **9**

Optimization for Training Deep Models: Challenges in Neural Network Optimization – Basic Algorithms – Parameter Initialization Strategies – Algorithms with Adaptive Learning Rates – Approximate Second- Order Methods– Optimization Strategies and Meta- Algorithms-Convolutional Networks: The Convolution Operation – Pooling – Convolution and Pooling as an Infinitely Strong Prior – Variants of the Basic Convolution Function – Structured Outputs – Data Types– Efficient Convolution Algorithms– Random or Unsupervised Features–The Neuro –scientific Basic for

Convolutional Networks – Convolution Networks and the History of Deep Learning– Case Study.

Unit III: Sequence Modelling 9

Sequence Modelling-Recurrent and Recursive Nets: Unfolding Computational Graphs–Recurrent Neural Networks – Bidirectional RNNs – Encoder-Decoder Sequence-to-Sequence Architectures–Deep Recurrent Networks–Recursive Neural Networks–The Challenge of Long-Term Dependencies – Echo State Networks – Optimization for Long-Term Dependencies –Explicit Memory –Practical Methodology: Performance Metrics – Default Baseline Models –Selecting Hyper parameters–Debugging Strategies–Multi-Digit Number Recognition Applications: Large-Scale Deep Learning – Computer Vision – Speech Recognition – Natural Language Processing –Case Study

Unit IV: Linear Factor Models 9

Linear Factor Models: Probabilistic PCA and Factor Analysis– Independent Component Analysis (ICA) – Slow Feature Analysis – Sparse Coding – Manifold Interpretation of PCA –Auto encoders – Under complete Auto encoders – Regularized Auto encoders – Representational Power, Layer Size and Depth – Stochastic Encoders and Decoders – De noising Auto encoders –Learning Manifolds with Auto encoders–Contractive Auto encoders–Predictive Sparse Decomposition – Applications of Auto encoders – Structured Probabilistic Models for Deep Learning: The Challenge of Unstructured Modelling–Using Graphs to Describe Model Structure – Sampling from Graphical Models – Advantages of Structured Modeling – Learning about Dependencies– Inference and Approximate Inference– The Deep Learning Approach to Structured Probabilistic Models– Case Study.

Unit V: Approximate Inference 9

Confronting the Partition Function: The Log-Likelihood Gradient – Stochastic Maximum Likelihood and Contrastive Divergence–Pseudo likelihood–Score Matching and Ratio Matching –Denoising Score Matching– Noise-Contrastive Estimation–Estimating the Partition Function –Approximate Inference: Inference as Optimization–Expectation Maximization– MAP Inference and Sparse Coding–Variational Inference and Learning – Learned Approximate Inference–Case Study.

TOTAL: 45 HOURS

TEXTBOOKS

1. Ian Good fellow, Yoshua Bengio, Aaron Courville," Deep Learning (Adaptive Computation and Machine Learning series", MIT Press,2017.
2. Josh Patterson and Adam Gibson,"Deep Learning: Apractitioner's Approach"

REFERENCES:

1. Nikhil Buduma, Nicholas Locascio, "Fundamentals of Deep Learning: Designing Next-Generation Machine Intelligence Algorithms", O'Reilly Media,2017.
2. Reza Zadeh and Bharath Ramsundar, "Tensor Flow for Deep Learning", O'Reilly
3. Nikhil Buduma and Nichola Locascio, "Fundamentals of Deep Learning: Designing
4. Next-Generation Machine Learning Algorithms", O'Reilly

MS45H4	Business Intelligence	L	T	P	C
		2	1	0	3

Course Description

Business Intelligence (BI) focuses on the tools, technologies, and processes used to analyze data and present actionable insights to support decision-making in organizations. The course covers data warehousing, reporting, dashboards, and data visualization to improve business performance.

Objectives

The entire purpose of Business Intelligence is to support and facilitate better business decisions. Business Intelligence allows organizations access to information that is critical to the success of multiple areas including sales, finance, marketing, and a multitude of other areas and departments

Course Outcome		Cognitive Skill
CO-01	Understand and introduce the basic concepts and components of BI	**U, R**
CO-02	Apply and evaluate the different technologies that make up BI its data ware housing and OLAP	**U, A, An**
CO-03	Discuss the technologies, methodologies and applications of BI in management	**U, A, An, E**
CO-04	Apply and implement the process and perform implementation of the tools in BI	**U, A, An, E**
CO-05	Understand and evaluate applications, tools of text mining and web mining	**U, A, An, E**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	S	S	S	S	S	M	S
CO-02	S	M	S	S	S	S	M	S
CO-03	S	S	S	S	S	S	M	S
CO-04	S	S	S	S	S	S	S	S
CO-05	S	S	S	S	S	S	S	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

Unit I: Introduction **9**

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

Unit II: Data Warehousing Introduction **9**

Data Warehousing–Definition and concepts –Characteristics –Data marts –Operational data stores – Enterprise data warehouse – Metadata – Architectures – Data warehouse process overview – Data integration –ELT –Data warehouse development–Vendors –Development approaches –Representation of data in data warehouse – OLAP Vs OLTP – OLAP operations Implementation issues of data warehouse –Administration – Security and future trends of data warehouse.

Unit III: Business Performance Management **9**

Business performance management(BPM)–Overview –Definition –BPMVs BI –Strategize –Plan – Monitor – Act and Adjust of BPM – Performance management – BPM methodologies – Technologies and Applications – Performance dashboards and scoreboards.

Unit IV: Data Mining for Intelligence **9**

Data mining for business intelligence – Concepts – Definitions –Applications – Process –Methods – Clustering methods – Meta Heuristics – Artificial Neural Networks for data mining – Data mining software tools – Case Study.

Unit V: Web Mining **9**

Text mining – concepts and definitions – Natural language processing – Applications – Process – Tools – Web mining – overview – web content mining – Web structure mining – Web usage mining – BIImplementation–Overview(Biimplementationfactors,managerialissues) –BI and integration implementation – Connecting BI systems to databases and other systems – On demand BI – Issues of legality – privacy and ethics – Social networks and BI for collaborative decision making, RFID and new BI application opportunities– Case Study.

TOTAL: 45 HOURS

TEXT BOOKS

1. Turban,E.,Sharda,R.,Delen,D.and King,D.,Business Intelligence-Amanagerial Approach, Pearson Education, New Delhi, 2012.

REFERENCES:

1. Sonar,R.M.,Next generation Business Intelligence–Aknowledge Based Approach, VIKAS Publications, New Delhi, 2011.

MS45H5	Data Visualization – R Programming	L	T	P	C
		2	1	0	3

Course Description

Data Visualization with R Programming explores techniques for transforming complex data into clear and insightful visual representations using R. The course covers key visualization libraries like ggplot2, enabling the creation of charts, graphs, and interactive plots for effective data communication.

Objectives

The main goal of data visualization is to make it easier to identify patterns, trends and outliers in large data sets. The term is often used interchangeably with others, including information graphics, information visualization and statistical graphics.

Course Outcome		**Cognitive Skill**
CO-01	Understand the basics of R programming.	**U, R**
CO-02	Able to apply and analyzing and handling the data	**A,An**
CO-03	Understand and evaluate simple problems related to business using looping.	**U, A, E**
CO-04	Apply data visualization concepts using chart.	**U, A**
CO-05	Able to analyze statistical functions	**A, An**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	**PO-A**	**PO-B**	**PO-C**	**PO-D**	**PO-E**	**PO-F**	**PO-G**	**PO-H**
CO-01	S	S	S	S	S	S	M	S
CO-02	S	M	S	S	S	S	M	S
CO-03	S	S	S	S	S	S	M	S
CO-04	S	S	S	S	S	S	S	S
CO-05	S	S	S	S	S	S	S	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

Unit I: Introduction to Basics **9**

Understanding the interface – Basic R Operations (Math and Text) –Attribute and Data Types – Numeric – Character – and Logical Data Types – Vectors – Arrays and Matrices – Data Frames – Lists – Factors – Contingency Tables.

Unit II: Handling Data **9**

Data Import and Export from R – Sorting Data – Selecting Cases – Recoding Existing Variable – Computing New Variables.

Unit III: Control Structures and loops in R **9**

Control Structure and Loops in R – If Statement, For Loop, While Loop.

Unit IV: Data Visualization **9**

Dotchart and Bar plot – Single Variable, Histogram and Density Plot, Dotchart and Barplot – Multiple Variables, Box-and-Whisker Plot, Hexbinplot for Large Datasets, Scatterplot Matrix, Analysing a Variable over Tim.

Unit V: Basic Statistical Analysis **9**

Basic Statistical Analysis – Basic Statistical Functions, Descriptive Statistics, Statistical Tests.

TOTAL: 45 HOURS

TEXT BOOKS

1. Turban,E.,Sharda,R.,Delen,D.and King,D.,Business Intelligence Amanagerial Approach, Pearson Education, New Delhi, 2012.

REFERENCES:

1. Sonar,R.M., Next generation Business Intelligence– Acknowledge Based Approach, VIKAS Publications, New Delhi, 2011.

MS45H6	Ethics in Artificial Intelligence	L	T	P	C
		2	1	0	3

Course Description

Ethics in Artificial Intelligence examines the moral, social, and legal implications of AI technologies, focusing on issues such as fairness, accountability, privacy, and bias. The course explores ethical frameworks and guidelines to ensure responsible AI development and deployment.

Objectives

An ethical AI system must be inclusive, explainable, have a positive purpose and use data responsibly. An inclusive AI system is unbiased and works equally well across all spectra of society. An explainable AI system supports the governance required of companies to ensure the ethical use of AI.

Course Outcome		Cognitive Skill
CO-01	To Understand the ethical issues in the development of AI agents.	**U**
CO-02	Learn the ethical considerations of AI with perspectives on ethical values.	**R, U**
CO-03	Apply the ethical policies in AI based applications and Robot development.	**U, A, An**
CO-04	To implement the AI concepts to societal problems by adapting the legal concepts by securing fundamental rights.	**U, E**
CO-05	Evaluate and perform the types of learning over the neural network and the statistical methods.	**A, An, E**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	S	S	S	S	S	M	S
CO-02	S	M	S	M	S	S	M	S
CO-03	S	S	S	S	S	S	M	S
CO-04	S	S	S	S	S	S	M	S
CO-05	S	S	S	S	S	S	M	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

Unit I: Introduction to Ethics of AI **9**

Role of Artificial Intelligence in Human Life – Understanding Ethics – Why Ethics in AI? - Ethical Considerations of AI – Current Initiatives in AI and Ethics – Ethical Issues with our relationship with artificial Entities.

Unit II: Framework and Model **9**

AI Governance by Human-right centered design – Normative models – Role of professional norms – Teaching Machines to be Moral.

Unit III: Concepts and Issues **9**

Accountability in Computer Systems – Transparency – Responsibility and AI. – Race and Gender – AI as a moral right-holder.

Unit IV: Perspectives and Approaches **9**

Perspectives on Ethics of AI – Integrating ethical values and economic value – Automating origination – AI a Binary approach – Machine learning values – Artificial Moral Agents.

Unit V: Cases and Applications **9**

Ethics of Artificial Intelligence in Transport – Ethical AI in Military – Biomedical Research – Patient Care – Public Health – Robot Teaching – Pedagogy – Policy – Smart city Ethics.

TOTAL: 45 HOURS

TEXTBOOKS

1. Paula Boddington, "Towards a Code of Ethics for Artificial Intelligence", Springer, 2017.
2. Markus D. Dubber, Frank Pasquale, Sunit Das, "The Oxford Handbook of Ethics of AI", Oxford University Press Edited book, 2020

REFERENCES:

1. S. Matthew Liao, "Ethics of Artificial Intelligence", Oxford University Press Edited Book 2020.
2. N. Bostrom and E. Yudkowsky. "The ethics of artificial intelligence". In W. M.

ELECTIVE CURRICULUM
I. SYSTEM

Sl.No	Code	Name of the Subjects	L	T	P	C
1	MS45I1	Data Warehousing and Data Mining	2	1	0	3
2	MS45I2	Enterprise Resource Planning	2	1	0	3
3	MS45I3	Software Project and Quality Management	2	1	0	3
4	MS45I4	Artificial Intelligence &Deep Learning	2	1	0	3
5	MS45I5	Decision Support System	2	1	0	3
6	MS45I6	System Analysis and Design	2	1	0	3
7	MS45I7	Database Management System	2	1	0	3
8	MS45I8	E-Commerce Management	2	1	0	3
9	MS45I9	Data Visualization and R programming	2	1	0	3

MS45I1	Data Warehousing and Data Mining	L	T	P	C
		2	1	0	3

Course Description

This course provides a comprehensive introduction to the concepts, methodologies, and applications of data warehousing and data mining. It covers the design and implementation of data warehouses, focusing on data integration, storage, and retrieval strategies that support business intelligence and decision-making processes. Students will learn the principles of dimensional modeling, the ETL (Extract, Transform, Load) process, and OLAP (Online Analytical Processing) operations.

Objectives

Data mining has opened a world of possibilities for business. This field of computational statistics compares millions of isolated pieces of data and is used by companies to detect and predict consumer behavior. Its objective is to generate new market opportunities. Data mining converts information into knowledge. Data warehousing is intended to provide the organization with a reliable source of data for many types of business analysis. Data mining is intended to provide the organization with hidden insights that cannot otherwise be gleaned from large-scale data.

Course Outcome		Cognitive Skill
CO-01	List different issues related to data warehousing and data mining.	R
CO-02	Classify the main characteristics of different data warehousing and data mining techniques through observation of their operations.	A, An
CO-03	Evaluate perform a critical assessment of current data warehousing and data mining techniques.	A, E
CO-04	Understand different data mining tasks and their common real-world applications.	U
CO-05	Understand the knowledge of text mining and customer relationship management.	R, U

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	S	S	S	M	S	S	S
CO-02	S	S	S	S	M	S	S	S
CO-03	S	S	S	S	M	S	M	S
CO-04	S	S	S	S	M	S	S	S
CO-05	S	S	S	S	M	S	S	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

Unit I: Data Mining and Warehousing - Introduction **9**

Introduction - Data Mining - Data Warehousing - KDD process - Classifications and Algorithms - Data mining tasks - Machine Learning - Case Study.

Unit II: Data Warehousing Architecture **9**

Basic Concept - Data Warehousing Architecture - Data Modeling - Data marts & OLAP - Data Mart Designing - Data Mart Builder - Data Mart Discovery - Online Analytical processing - OLTP VS. DW Environment - Case Study.

Unit III: Applications of Data Mining and Warehousing **9**

Relationship of Data Mining and data warehousing - Application of Data Mining - Application of

Data Warehousing - Relation between Data Mining and Data Warehousing according to need of business - Case Study.

Unit IV: Statistical Analysis of Data Mining **9**

Statistical Analysis and Cluster Analysis - Difference between Statistics and Data Mining – Histograms - Statistic for Predictions - Clustering for Clarity - Hierarchical and Non-Hierarchical clusters - Choosing Classics - Case Study.

Unit V: Data mining Techniques **9**

Next generation of Informatics Mining and Knowledge Discovery - Business Intelligence and Information Mining - Text Mining - Knowledge Management -Benefits and Product of Text Mining - Customer Relationship Management in the E-Business World - Data Mining Techniques for Optimizing Inventories for Electronic Commerce - Case Study.

TOTAL: 45 HOURS

TEXTBOOKS

1. 'Data Mining – Concepts & Techniques' – Jiawei Han & Micheline Kamber, 2001.
2. 'Data Mining Technology for Marketing, Sales and Customer Support' – Michel Berry.
3. 'Data Warehousing & Data Mining for Telecommunication' – Rob Maltison.

REFERENCES:

1. 'Distributed Data Warehousing using Web Technology' - R.A. Moeller.
2. 'Building Data Mining Application for CRM' – Alex Berson.

MS45I2	**Enterprise Resource Planning**	L	T	P	C
		2	1	0	3

Course Description

This course provides an in-depth exploration of Enterprise Resource Planning (ERP) systems, focusing on the integration of core business processes across various functional areas of an organization. It covers the foundational concepts of ERP, the architecture and modules of ERP systems, and the role they play in improving business efficiency and decision-making.

Objectives

Enterprise Resource Planning or ERP is referred to a widely used software package to enhance the operational efficiency of a business resource. ERP is nothing but a symphony of software modules, which help company owners to accomplish their business goals at a very faster rate. At present, ERP has become a commonly applied software system in almost all sorts of industrial fields such as small, medium sized and even large companies. Some of the key benefits you get from implementing an ERP include inventory control, customer relationship management, human capital management and order tracking as well.

Course Outcome		**Cognitive Skill**
CO-01	Understand the concepts Enterprise Resource Planning (ERP) systems.	**U, R**
CO-02	Classify the main characteristics of different data warehousing and data mining techniques through observation of their operations.	**R, An**
CO-03	Evaluate perform a critical assessment of current data warehousing and data mining techniques.	**U, E**
CO-04	Demonstrate the business processes that underlie a business management information system, and how ERP fits into the business model.	**An, E**
CO-05	Demonstrate modern software including Oracle ERP system to plan and manage resources in organizations.	**A, E**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	**PO-A**	**PO-B**	**PO-C**	**PO-D**	**PO-E**	**PO-F**	**PO-G**	**PO-H**
CO-01	S	S	S	S	S	S	S	M
CO-02	S	S	S	S	S	S	S	M
CO-03	S	S	S	S	S	S	M	M
CO-04	S	S	S	S	S	S	S	M
CO-05	S	S	S	S	S	S	S	M

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

Unit I: Enterprise Resource Planning Introduction 9

Enterprise – an overview ERP Introduction-Basic concept- ERP and related technologies- Business Process Reengineering - Conceptual Model of ERP, The Evolution of ERP, The Structure of ERP – Case Study.

Unit II: Data Warehousing and Data Mining 9

Data ware Housing - Data Mining - Online Analytical Processing (OLAP) – Product Life Cycle Management (PLM) – OLAP - Supply chain Management - Customer relationship management -

Advanced Technology and ERP Security – Case Study.

Unit III: ERP Implementation Strategies **9**

ERP Implementation Strategies - ERP Implementation Life Cycle and Methodologies - Vendors and Consultants - Contracts with Vendors - Consultants and Employees – Project Management and Monitoring– Case Study.

Unit IV: ERP Packages **9**

Business Modules of ERP packages – Finance – Manufacturing – Human Resources – Plant Maintenance – Materials Management – Quality Management – Marketing – Sales Distribution and Service – Case Study.

Unit V: ERP Marketplace Dynamics **9**

ERP Marketplace and Marketplace Dynamics – SAP – ORACLE Corporation – Turbo charge the ERP system – Enterprise Application Integration – ERP and E-Business – ERP Internet and WWW – Total Quality Management – Future Direction and Trends in ERP– Case Study.

TOTAL: 45 HOURS

TEXT BOOKS

1. Alexis Leon, "ERP Demystified", second Edition, Tata McGraw Hill publishing Company Ltd., 2008.
2. Rahul V. Altekar "Enterprise Resource Planning", Tata McGraw Hill, 2004

REFERENCES:

1. Vinod Kumar Garg and Venkitakrishnan N K, "Enterprise Resource Planning –Concepts and Practice", PHI 2002.
2. Joseph A Brady, Ellen F Monk, Bret Wagner, "Concepts in Enterprise Resource Planning", Thompson Course Technology.
3. Mary Summer, "Enterprise Resource Planning"- Pearson Education

MS45I3	Software Project and Quality Management	L	T	P	C
		2	1	0	3

Course Description

This course focuses on the principles and practices of managing software projects and ensuring software quality. It covers essential concepts in software project management, including project planning, scheduling, resource allocation, risk management, and cost estimation. The course also delves into the methodologies used to ensure software quality, such as quality assurance, control techniques, testing strategies, and process improvement models.

Objectives

Software Quality Objectives covers a variety of techniques and measurements, including gathering code metrics, enforcing coding rules, and proving the absence of run-time errors. The guide also considers the origin of the code, its stage in the software life cycle, and the safety aspects of the application. Project quality management is the process of continually measuring the quality of all activities and taking corrective action until the desired quality is achieved.

Course Outcome		Cognitive Skill
CO-01	Evaluate and select the most desirable projects.	**E**
CO-02	Explain familiarity and a working knowledge of the principles and practice of quality management, quality control and assurance.	**R, U**
CO-03	List terminology, methods and tools which are essential for the quality practitioner, planner, and decision-maker.	**A, An**
CO-04	Understand the basic functions and responsibilities of software configuration management.	**U**
CO-05	Analyze the maintenance side effects, characteristics and tasks.	**An**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	S	S	M	S	S	S	S
CO-02	S	S	S	M	S	S	S	M
CO-03	S	S	S	M	S	S	M	M
CO-04	S	S	S	M	S	S	S	L
CO-05	S	S	S	M	S	S	S	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

Unit I: Introduction to Software Projects **9**

Introduction to Software Projects – Software Projects versus other types of projects – Projects Management – Requirements specification – An overview of project planning – Project Evaluation: Strategic and Technical Assessment – Risk Evaluation – Project Analysis and Technical planning – Software Estimation - Case Study.

Unit II: Activity Planning **9**

Objectives – Project schedules and activities – Different planning models – Sequencing and Scheduling projects – Network planning model – shortening project duration – Identifying critical activities – Risk Management: Nature of risk-Management risk-Evaluation risk - Case Study.

Unit III: Resource Allocation **9**

Nature of resources – Resource requirements – Creating Critical path and counting the cost –

Monitoring and control: Responsibility – assessing progress – setting cheek points – taking snap shots – collecting data – visualizing progress – Cost monitoring – Priority monitoring – Managing people and organizing teams - Case Study.

Unit IV: Software Configuration Management 9

Basic Functions – Responsibilities – Standards – Configuration management – Prototyping – Models of Prototyping – Planning for small projects: Introduction – Some problem with student projects – Content of project plan - Case Study.

Unit V: Software Maintenance and Configuration Management 9

Maintenance characteristics – Management tasks – Maintenance side effects – Maintenance issues – Configuration Management – Source code metrics – Case study – PRINCE project management - Case Study.

TOTAL: 45 HOURS

TEXTBOOKS

1. 'Software project management' - Mike Cotterell, Bob Hughes, Inclination / Thomas Computer press, 1995.
2. 'Introduction to software project management and Quality Assurance' - Darrel Ince, H. Sharp and M. Woodman, Tata McGraw Hill, 1995.
3. 'Software Project Management' – A unified Framework – Walker Royce, Pearson Education Asia, New Delhi, 2000.

REFERENCES:

1. 'Software Quality – Theory & Management' – Alan Gillies, Thomson Learning, 2003.
2. 'Software Engineering – A Practitioners Approach' – Roger S Pressman, McGraw Hill International Edition, New Delhi, 2001.
3. 'Software Quality Metrics and Models' – Stephen Kan, Pearson Education, Asia.

MS45I4	Artificial Intelligence & Deep Learning	L	T	P	C
		2	1	0	3

Course Description

This course provides an in-depth exploration of Artificial Intelligence (AI) and Deep Learning (DL), two rapidly growing fields that are revolutionizing industries across the globe. The course begins by introducing the fundamentals of AI, including its history, key concepts, and various applications in real-world problem-solving, such as natural language processing, computer vision, robotics, and expert systems.

Objectives

Objective of AI (also called heuristic programming, machine intelligence, or the simulation of cognitive behavior) is to enable computers to perform such intellectual tasks as decision making, problem solving, perception, understanding human communication (in any language, and translate among them)

Course Outcome		Cognitive Skill
CO-01	Understand basic concepts of artificial intelligence and various search techniques	**U, A**
CO-02	Know and understand the need of different algorithms and its purposes	**R, U**
CO-03	Analyze various applications related to the algorithms and their implementation in the case of programming	**U, A, An**
CO-04	Analyze the techniques related to planning and reasoning	**U, A, An**
CO-05	Evaluate and perform the types of learning over the neural network and the statistical methods	**U, A, An, E**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	S	S	S	S	S	M	S
CO-02	S	M	S	M	S	S	M	S
CO-03	S	S	S	S	S	S	M	S
CO-04	S	S	S	S	S	S	S	S
CO-05	S	S	S	S	S	S	S	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

Unit I: Introduction **9**

Artificial Intelligence Introduction - Brief history - Problem solving by search - State space – Search and Knowledge representation - Uninformed search - Breadth First Search - Depth First Search – Depth First with Iterative Deepening and Uniform Cost Search – Case Study.

Unit II: Heuristic Search **9**

Heuristic Search –Hill climbing –Simulated Annealing -A* -problem reduction –Algorithm –Mini max search Binary and higher order CSP –Constraint Satisfaction Graph -MRV -Degree –Least Constraining –Forward Checking and Arc Consistency General Purpose heuristics for CSP–Case Study.

Unit III: Genetic Algorithm **9**

Introduction to genetic algorithm – operations – selection – crossover - mutation examples – Logic based representations (PL,FoL) and inference –Logic Programming: Prolog –Rule based representations –forward and backward chaining - matching algorithms–Case Study.

Unit IV: Planning Techniques **9**

Planning Techniques –Goal Stack Planning –Constraint posting –Probabilistic Reasoning –Bayesian Network and reasoning –Case Study.

Unit V: Learning **9**

Learning –Neural Network models –Statistical methods -Naive-Bayes –Nearest Neighbor –Decision trees –Inductive Learning– Case Study.

TOTAL: 45 HOURS

TEXTBOOKS:

1. Artificial Intelligence Modern Approach Third Edition by S.Russell, P.Norvig, PHI Artificial Intelligence Third Edition by Kevin Knight, Elaine Rich.

REFERENCES:

1. Artificial Intelligence, Structures and Strategies for Complex Problem Solving George Fluger, Sixth Edition, Pearson.

MS45I5	Decision Support System	L	T	P	C
		2	1	0	3

Course Description

This course introduces the fundamental concepts, methodologies, and tools of Decision Support Systems (DSS), focusing on how they assist in decision-making processes within organizations. The course provides an overview of the architecture of DSS, including data management, model management, and user interfaces. Students will explore how DSS integrates with databases, models, and analytical tools to support business decision-making, providing the right information at the right time.

Objectives

Decision making involves selecting the best alternative out of different options available for performing a task. It chooses the right course of action after properly analyzing its pros and cons for deriving maximum result out of it. Decision Support System refers to a class of systems which support in the process of decision making and does not always give a decision itself. Decision Support Systems (DSS) are a specific class of computerized information system that supports business and organizational decision making activities.

Course Outcome		Cognitive Skill
CO-01	Identify the business relevance and technical basics of business intelligence (BI), knowledge management (KM), and decision support.	R, U
CO-02	List the role of analytics in decision making.	U
CO-03	Explain the concepts, methodologies, and technologies behind decision support systems.	A, An
CO-04	Elaborate the practical uses of BI and KM systems such as Artificial Intelligence and Expert Systems.	A, An, E
CO-05	Understand knowledge management and technologies and tools.	U

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	S	S	M	S	S	M	S
CO-02	S	S	S	M	S	S	M	M
CO-03	S	S	S	M	S	S	M	S
CO-04	S	S	S	M	S	S	M	S
CO-05	S	S	S	M	S	S	M	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

Unit I: Introduction **9**

Managers and Decision making – Managerial decision making and information systems – Managers and computerized support – Framework for decision support – Concept of decisions support systems – Group support systems – Executive information support systems – introduction to Expert systems & Intelligent agents – knowledge management systems – supporting ERP & SCM - Case Study.

Unit II: Decision Making **9**

Introduction and Definitions – Systems – Models – preview of modeling process – Decision making phases: intelligence, design, choice – evaluation – implementation phase – alternative models. Introduction to DSS – Characteristics and capabilities of DSS & DSS components – Classifications of DSS - Case Study.

Unit III: Group Decision Support System **9**

Decision-making in groups - Characteristics and Challenges - Technology of GDSS - The GDSS meeting process - Creativity and idea generation – GSS and collaborative computing issues and research - Case Study.

Unit IV: Enterprise Decision Support System **9**

Concepts and Definitions – Evolution – Executive's roles and their information needs – Characteristics and Capabilities of ESS – Comparison of EIS and DSS – Supply and Value chains and decision support – problems and solutions - Case Study.

Unit V: Introduction to Knowledge Management **9**

Knowledge – Organizational learning and Organizational memory – Knowledge Management – Knowledge management development – Methods – Technologies and Tools – Knowledge management and AI – Electronic Document Management - Case Study.

TOTAL: 45 HOURS

TEXT BOOKS

1. 'Decision Support Systems and Intelligent Systems' – Efrain Turban, Jay E.Aronson, 6th Edition, Pearson Education, 2001.
2. 'Decision Support System' – George M. Marakas, Prentice Hall, India, 2003.

REFERENCES:

1. 'Decision Support Systems' – Janakiraman V.S. and Sarukesi. K, Prentice Hall of India, 1999.
2. 'Decision Support System and Management' – Lofti, McGraw Hill Inc., International Edition, New Delhi, 1996

MS45I6	System Analysis and Design	L	T	P	C
		2	1	0	3

Course Description

This course provides an in-depth exploration of the methodologies, techniques, and tools involved in the analysis, design, and development of information systems. The course focuses on understanding the entire systems development life cycle (SDLC), including requirements gathering, system analysis, system design, implementation, testing, deployment, and maintenance.

Objectives

Objective of System Analysis is to study procedural components and modules. The goal of System Design *is* to design whole software, which fulfils all the requirements of customer**.** This leads to improve organizational systems, by applying software, which helps employees to perform business, tasks more effectively.

Course Outcome		Cognitive Skill
CO-01	Understand system concepts, types and life cycle.	**R, U**
CO-02	Analyze and investigate system planning.	**A, An**
CO-03	Able to remember the user information requirements.	**R**
CO-04	Understand and analyze ER diagram, DFD and OOAD.	**U, An**
CO-05	List the basic information securities and authentication.	**R, U**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	S	S	M	S	S	S	S
CO-02	S	S	S	M	S	S	S	M
CO-03	S	S	S	M	S	S	S	S
CO-04	S	S	S	M	S	S	S	S
CO-05	S	S	S	M	S	S	S	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

Unit I: Introduction **9**

Systems Concept - Characteristics of a System- Elements of System - Types of Systems - Decision Support System - System Development Life Cycle – Investigation – Analysis – Design - Implementation - Post Implementation Review and Maintenance.

Unit II: System Planning **9**

Systems Planning and Investigation - Basis for Planning in Systems Analysis - Dimensions of Planning - Initial Investigation - Needs Identification.

Unit III: Information Requirements **9**

Determining the User's Information Requirements - Feasibility Study - Feasibility Considerations - Steps in Feasibility Analysis - Feasibility Report.

Unit IV: Analysis **9**

Tools of Structured Analysis - Data Flow Diagram (DFD) - Entity Relationship Diagrams - Data Dictionary - Process Modeling - Structured English - Decision Tree and Decision Table - Object Oriented Analysis (OOA) and Object-Oriented Design (OOD).

Unit V: Basic Security **9**

Basics of Information Security - Types of Attacks – Viruses - Virus Control – Hackers - Overview of Risks associated with Internet - Intrusion Detection Risk Management - Disaster Recovery Plan - Cryptography and authentication - Managing Risk - Information Security Policy - Creating a secure environment - Internet Security Standards.

TOTAL: 45 HOURS

TEXTBOOKS

1. Shah-Software Engineering & SAD (Wiley Dreamtech)
2. Kenneth E Kendall and Julie E Kendall – SAD (PHI Publication, 7 Ed.)
3. Grienstein and Feinman- E-commerce –Security, Risk Management and Control (TMH, 2nd Ed.)

REFERENCES:

1. AnkitFadia -Encryption-Protecting your Data (Vikas Publication, 1st Ed.)
2. Singh B –Network Security (PHI Publication, 1st Ed.

MS45I7	Database Management System	L	T	P	C
		2	1	0	3

Course Description

This course provides a comprehensive introduction to the concepts, design, and implementation of database management systems (DBMS). The course covers the fundamental principles of database design, focusing on how data is stored, organized, and retrieved in a structured way to ensure efficiency, accuracy, and scalability in managing large datasets.

Objectives

The objective of a database management system is to facilitate the creation of data structures and relieve the programmer of the problems of setting up complicated files. Data base management systems have developed from a concept of the data base as something distinct from the programs accessing it.

Course Outcome		Cognitive Skill
CO-01	Describe fundamental elements of a relational database management system.	**R, U**
CO-02	Elaborate entity-relationship diagrams to represent simple database application scenarios.	**U, A**
CO-03	Convert entity-relationship diagrams into relational tables, populate a relational database and formulate SQL queries on the data.	**A, An**
CO-04	Implement the following for a simple prescribed business problem.	**A, E**
CO-05	Understand the concept of transaction and concurrent control.	**U**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	S	S	S	S	S	S	S
CO-02	S	S	S	S	S	S	S	M
CO-03	S	S	S	S	S	S	S	S
CO-04	S	S	S	S	S	S	S	S
CO-05	S	S	S	S	S	S	S	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

Unit I: Database System Introduction **9**

Data base System Applications, Purpose of Database Systems - View of Data – Data Abstraction – Advantages– Database Architecture – data models: Relational-Hierarchical-Network - Case Study.

Unit II: Storage structure and Relational Data Structure **9**

Database design and ER Model – Overview - ER-Model – Constraints - ER-Diagrams - ERD Issues - Weak entity sets - Codd’s rules - Relational Schemas - Introduction to UML Relational database model - Logical view of data – Keys - Integrity rules - Case Study.

Unit III: Relational Database Design **9**

Relational Database design - Features of good relational database design - atomic domain and Normalization - 1NF - 2NF - 3NF - BCNF.

Unit IV: Constraints views and SQL **9**

Introduction - Types of Constrains - Integrity constraints – Views - Introduction to views - Data

Independence – Security - Updates on views - Comparison between tables and views SQL - Data definition - Data Manipulation - Aggregate function - Null Values - Nested sub queries, Joined relations - PL/SQL - Case Study.

Unit V: Transaction Management and Concurrent Control 9

Transaction Concept - Transaction State - Implementation of Atomicity and Durability – Concurrent – Executions – Serializability- Recoverability – Implementation of Isolation – Testing for serializability - Lock – Based Protocols – Timestamp Based Protocols - Validation- Based Protocols – Multiple Granularity. Recovery and Atomicity – Log – Based Recovery – Recovery with Concurrent Transactions - Case Study.

TOTAL: 45 HOURS

TEXTBOOKS

1. Data base System Concepts, Silberschatz, Korth, McGraw hill, Sixth Edition, 2010
2. 'Database Management Systems' – Rajesh Narang, Eastern Economy Edition, PHI learning Private Ltd, 2010.
3. 'Data Modeling and Database Design' – Narayan S. Umanath and Richard W. Scamell, Thomson Course Technology, 2008.

REFERENCES:

1. 'Introduction Database Management' – Mark L. Gillenson& el, Wiley India Pvt., Ltd., 2008.
2. 'Database Systems – Design, Implementation and Management' – Peter Rob and Carlos Coronel, Thomson Course Technology, 2008.

MS45I8	E-Commerce Management	L	T	P	C
		2	1	0	3

Course Description

This course provides an in-depth exploration of e-commerce principles, strategies, and technologies, focusing on the effective management of online business operations. It is designed to equip students with the knowledge and skills required to manage and operate e-commerce platforms and digital business models successfully.

Objectives

The primary objective of e-commerce is to reach maximum customers at the right time to increase sales and profitability of the business. Functions of e-commerce include buying and selling goods, transmitting funds or data over the internet.

Course Outcome		Cognitive Skill
CO-01	Demonstrate the critical building blocks of E-Commerce and different types of prevailing business models employed by leading industrial leaders;	**E**
CO-02	Understand the benefits of E-Commerce to Organizations, Consumers and society.	**U**
CO-03	Appraise the opportunities and potential to apply and synthesize a variety of E-Commerce concepts and solutions to create business value for organizations, customers, and business partners;	**A**
CO-04	Formulate E-Commerce strategies that lever firms' core competencies, facilitate organizational transformation, and foster innovation; undertake planning, organizing, and implementing of E-Commerce initiatives to effectively respond to of dynamic market environments.	**A, E**
CO-05	Understand the concept of web-based business and SCM.	**U**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	S	S	S	M	S	S	S
CO-02	S	S	S	S	M	S	S	S
CO-03	S	S	S	S	M	S	S	S
CO-04	S	S	S	S	M	S	S	S
CO-05	S	S	S	S	M	S	S	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

Unit I: Introduction **9**

What is Electronic Commerce – Brief history of Electronic Commerce – Electronic commerce Framework- Advantages and Limitations of Electronic Commerce – Electronic commerce and business plans-Types of Electronic commerce - Case study**.**

Unit II: Market **9**

E-Market places –Types of E-Markets –The Role and values of intermediaries –Electronic catalogs and other market mechanisms - Auctions as EC market mechanisms – Bartering and negotiating online – e-Commerce in the wireless environments –Issues in E-Markets - Case study.

Unit III: Electronic Payment Systems **9**

Electronic payments - Electronic cards and smart cards - E-cash and Innovative payment methods -E-Checking -B2BElectronicpayments -E-Billing –Launching a successful online business - Case Study.

Unit IV: Security **9**

Security in the cyberspace – Designing for security – Virus – Security Protection and Recovery – Encryption – The Basic Algorithm System – Authentication and Trust – Key management – Internet Security Protocols and Standards – Other Encryption issues. - Case Study.

Unit V: Web Based Business **9**

Business-to-Business Electronic Commerce – Intranets and Extranets – Intranets and Supply Chain Management – Legal and Ethical issues - Case Study.

TOTAL: 45 HOURS

TEXTBOOKS

1. ‘Electronic Commerce’ – Elias, M. Awad, Prentice Hall of India Pvt. Ltd, 2002.
2. ‘Electronic Commerce’ – A Manager’s guide’- Ravi Kalakota, Andrew B. Whinston, Addision – Wesley, 2000.
3. Effrain Turban, David king, Jae Lee, Dennis vichland, “Electronic Commerce 2004: A managerial Perspective “, Pearson Education.

REFERENCES:

1. ‘Electronic Commerce’ – A Managerial Perspective’ - Efraim Turban, Jae Lee, David King, H. Michael Chung, Addison – Wesley, 2001.
2. ‘Electronic Commerce from Vision to Fulfillment’ - Elias M Award, 3rd Edition, PHI, 2006.
3. ‘E-Marketing’ – Judy Strauss, Adel El-Ansary, Raymond Frost, 3rd Edition, PHI, 2006.
4. ‘Frontiers of Electronic Commerce’ – Ravi Kalakota, Andrew B. Whinston, Addition-Wesley, 2000.

MS45I9	Data Visualization and R programming	L	T	P	C
		2	1	0	3

Course Description

This course provides a comprehensive introduction to data visualization techniques and the R programming language, focusing on how to effectively communicate data-driven insights through visualizations. It is designed for students and professionals who want to harness the power of R for data analysis and visualization.

Objectives

The main goal of data visualization is to make it easier to identify patterns, trends and outliers in large data sets. The term is often used interchangeably with others, including information graphics, information visualization and statistical graphics.

Course Outcome		Cognitive Skill
CO-01	Understand the basics of R programming.	U, R
CO-02	Able to apply and analyzing and handling the data	A,An
CO-03	Understand and evaluate simple problems related to business using looping.	U, A, E
CO-04	Apply data visualization concepts using chart.	U, A
CO-05	Able to analyze statistical functions	A, An

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	S	S	S	S	S	M	S
CO-02	S	M	S	S	S	S	M	S
CO-03	S	S	S	S	S	S	M	S
CO-04	S	S	S	S	S	S	S	S
CO-05	S	S	S	S	S	S	S	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

Unit I: Introductionto Basics 9

Understanding the interface - Basic R Operations (Math and Text) - Attribute and Data Types - Numeric – Character - and Logical Data Types - Vectors - Arrays and Matrices - Data Frames - Lists – Factors - Contingency Tables.

Unit II: Handling Data 9

Data Import and Export from R - Sorting Data - Selecting Cases - Recoding Existing Variable - Computing New Variables.

Unit III: Control Structures and loops in R 9

Control Structure and Loops in R - If Statement, For Loop, While Loop.

Unit IV: Data Visualization 9

Dotchart and Bar plot – Single Variable, Histogram and Density Plot, Dotchart and Barplot – Multiple Variables, Box-and-Whisker Plot, Hexbinplot for Large Datasets, Scatterplot Matrix, Analysing a Variable over Tim.

Unit V: Basic Statistical Analysis 9

Basic Statistical Analysis - Basic Statistical Functions, Descriptive Statistics, Statistical Tests.

TOTAL: 45 HOURS

TEXTBOOKS

1. Turban,E.,Sharda,R.,Delen,D.and King,D.,Business Intelligence-A Managerial Approach, Pearson Education, New Delhi, 2012.

REFERENCES:

1. Sonar ,R.M., Next generation Business Intelligence–A Knowledge Based Approach, VIKAS Publications, New Delhi, 2011.

ELECTIVE CURRICULUM
J. BUSINESS ANALYTICS

Sl.No	Code	Name of the Subjects	L	T	P	C
1	MS45J1	Business Analytics for Managerial Decision-Making	3	0	0	3
2	MS45J2	Data Mining for Business Intelligence	3	0	0	3
3	MS45J3	Data Visualization / Web Analytics	3	0	0	3
4	MS45J4	Machine Learning application for Business	3	0	0	3
5	MS45J5	Quantitative Business Analysis	3	0	0	3
6	MS45J6	Health Care Data Analytics	3	0	0	3

MS45J1	Business Analytics for Managerial Decision-Making	L	T	P	C
		3	0	0	3

Course Description

In the digital era, data has emerged as the cornerstone of business success, driving organizations towards more informed and strategic decision-making. Welcome to the realm of Business Analytics, where data transforms into valuable insights, providing leaders with the tools they need to navigate the complexities of the modern market. This subject is aimed at generating the ideas of strategic decision-making.

Objectives

The modern business landscape is increasingly shaped by the power of data-driven decision-making. In this era of rapid technological advancement, business analytics emerges as a crucial tool for extracting insights from data to inform strategic choices. By harnessing the capabilities of descriptive, predictive, and prescriptive analytics, organizations gain the ability to make informed decisions that drive efficiency, innovation, and success.

Course Outcome		Cognitive Skill
CO-01	Recall various business analytical models and concepts.	**R, U**
CO-02	Explain business analytical tools and techniques in Finance and Operations Management.	**R, A**
CO-03	Apply business analytical tools and techniques in Human Resource Management.	**A, A**
CO-04	Analyse business analytical tools and techniques in Marketing and Web Analytics.	**A, E**
CO-05	Evaluate business situations using predictive models and analytics.	**A, S**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	M	M	S	S	M	S	M	M
CO-02	M	S	S	M	S	M	S	S
CO-03	S	S	M	M	M	M	S	S
CO-04	S	M	S	S	M	S	S	S
CO-05	S	S	M	M	S	S	M	M

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT 1: Basics of Business Analytics 9

Business Analytics, evolution and scope, Business Analytics process, Business Intelligence. Decision models. Spreadsheets modelling, Datasets, data cleaning, outliers and outliers' diagnostics. Data Visualization -Tools and techniques, Applications. Big Data Analytics, Machine learning algorithms, Data Mining process.

UNIT-2: Financial Analytics and Operations Analytics 9

Understanding Risk, credit risk analysis, fraud detection and prevention analytics, analytics in banking and financial services - analytics in retail banking and wealth management Demand Planning – Forecasting, Model building, Supply chain analytics- Supply planning - Procurement and Strategic Sourcing, Inventory Modeling - Aggregate planning and resource allocation decisions, Make/Buy decision.

UNIT 3: Human Resource Analytics 9

Basics of HR analytics, HR Metric and HR Analytics, Intuition versus analytical thinking; People analytics, Recruitment Analytics- Evaluating Reliability and validity of selection models, finding out selection bias, Predicting the performance and turnover, On Boarding Analytics, Staffing Analytics, Performance & Skill Gap Analytics, Compensation & Benefit Analytics, Training & Learning Analytics, Promotion and Succession Planning Analytics, Compliance Analytics, Attrition & Retention Analytics.

UNIT 4: Marketing Analytics 9

Basics of marketing analytics, marketing decisions models, characteristics, types and benefits of marketing decisions models, Market Intelligence, Text analysis and search analysis, Customer profiling, Statistical programming, Choice Models and Logistic Regression, data mining and visualization, Response Models Concept, Factor segmentation, clustering algorithms, perceptual maps, Use of Excel to solve business problems, Google Analytics.

UNIT 5: Predictive Analytics and Application of Analytics in Business 9

Logic driven predictive models – single-period purchase decisions, multiple time period models, overbooking decisions. Data Driven predictive models - retail pricing markdowns, modeling relationships and trends Models involving uncertainty - what-if analysis, scenario manager, goal-seek.

TOTAL: 45 HOURS

TEXTBOOKS:

1. Davenport, T.H. and Harris, J.G. (2007). Competing on Analytics: The New Science of Winning, 1st ed. Harvard Business Review Press
2. Malhotra, N.K. and Dash, S. (2011). Marketing Research, 6th ed. Pearson India
3. R. Jubi (2023), Business Analytics - Unleashing Data Driven Decision Making, 1st edition, Nehas Publications.

REFERENCES:

1. Raman, A and Fisher, M. (2010). How Analytics Are Transforming the Supply Chain and Improving Performance, 1st ed. HBS Press
2. Fitz-enz, J. (2010). The New HR Analytics: Predicting the Economic Value of Your Company's Human Capital Investments, 1 st ed., American Management Association
3. Peterson, E. (2004). Web Analytics Demystified: A Marketer's Guide to Understanding How Your Web Site Affects Your Business, 1st ed. Celilo Group Media & Café Press

MS45J2	Data Mining for Business Intelligence	L	T	P	C
		3	0	0	3

Course Description

Data mining and analytics can help transform raw data into business intelligence and insight. This course introduces data mining concepts and techniques and is intended to provide students with working knowledge of applying data mining methods. Throughout the course, students regularly use a widely used commercial data mining platform that also prepares them to pursue relevant certifications upon completing the course.

Objectives:

Information must be easily accessible. Ease of accessibility can be hindered by data or report latency, not knowing where or how to access information, or having to go through redundant security steps. Information must be easy to understand. Information should be intuitive and obvious. Leave no room for misinterpretation, confusion, or ambiguity. User-friendly dashboards and data visualization tools make it much easier to understand the story your data is telling. Business Intelligence tools must be easy to understand. End-users don't necessarily need to be technical to use these tools to support their work and objectives. Like your data, the tool itself should be intuitive. Information must come from a trusted source of truth. Data quality should meet the needs of your business. The information should be current, complete, valid, accurate, and clearly defined. To ensure the quality of your data, it's crucial to have a good data governance program in place. Information must be secure. Data should only be made available to its intended users. Information should only be made available to its intended audience.

Course Outcome		Cognitive Skill
CO-01	Understand the principles and concepts of data mining.	**R A**
CO-02	Apply data pre-processing techniques to prepare data for analysis.	**U A**
CO-03	Utilize data mining algorithms to discover patterns and trends in business data.	**U A**
CO-04	Create effective data visualizations for business intelligence.	**A E**
CO-05	Apply data mining and visualization tools to real-world business problems.	**E S**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	M	M	S	S	M	S	M	M
CO-02	S	S	M	M	M	M	S	S
CO-03	S	S	M	M	M	M	S	S
CO-04	S	M	S	S	M	S	S	S
CO-05	S	S	S	M	S	S	M	M

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

Unit 1: Introduction to Data Mining and Business Intelligence 9

Understanding data mining and its applications in business, Overview of business intelligence and decision support systems, Data-driven decision-making in business.

Unit 2: Data Preprocessing 9

Data cleaning, transformation, and integration, Handling missing data and outliers, Data reduction and feature selection, Data Mining Techniques, Supervised learning, Classification and regression, Unsupervised learning: Clustering and association analysis, Introduction to ensemble methods.

Unit3: Data Mining Tools and Software 9

Overview of data mining tools and software (e.g., Python, R), Selection of appropriate tools for different tasks, Data Visualization Principles, Principles of effective data visualization Types of charts and graphs for business data, Designing dashboards for business intelligence.

Unit 4: Data Visualization Tools

Introduction to data visualization tools (e.g., Tableau, Power BI), Hands-on practice with data visualization software, creating interactive visualizations, Business Data Mining and Visualization Projects, forming project teams, identifying real-world business problems,

Unit 5: Project Planning and implementation 9

Project planning and proposal development, Project Implementation and Presentations, Data collection and preprocessing for project, Applying data mining and visualization techniques, Final project presentations and submissions.

TOTAL: 45 HOURS

TEXTBOOKS

1. "Data Mining: Concepts and Techniques" by Jiawei Han, Micheline Kamber, and Jian Pei
2. "Data Visualization: A Successful Design Process" by Andy Kirk
3. Online resources and tutorials for data mining and visualization tools such as Python, R, Tableau, and Power BI.

REFERENCES:

1. Learn Python Generative AI: Journey from auto encoders to transformers to large language models, Zonunfeli Ralte and Indrajit Kar
2. Business Analytics: The Science of Data-Driven Decision Making, U. Dinesh Kuma

MS45J3	Data Visualization / Web Analytics	L	T	P	C
		3	0	0	3

Course Description

This course is an introduction to data visualization techniques and web analytics. Data-driven decisions are increasingly embedded in business organizations, so professionals must be able to explore and communicate data with understandable and powerful visualizations. Furthermore, we cover the use of visualizations in web analytics.

Objectives:

The primary goal of data visualization is to make data more accessible and easier to interpret, allowing users to identify patterns, trends, and outliers quickly. This is particularly important in the context of big data, where the sheer volume of information can be overwhelming without effective visualization techniques. Performing accurate visualization of data is very critical to market research where both numerical and categorical data can be visualized, which helps increase the impact of insights and also helps in reducing the risk of analysis paralysis.

Course Outcome		Cognitive Skill
CO-01	Understand the importance of data visualization in data-driven decision-making.	**R, U**
CO-02	Create clear and effective data visualizations using various tools and techniques.	**R, A**
CO-03	Apply design principles for visual communication.	**A, A**
CO-04	Analyze and critique data visualizations for accuracy and clarity.	**A, E**
CO-05	Develop a portfolio of data visualizations for diverse purposes.	**E, S**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	M	M	S	S	M	S	M	M
CO-02	S	S	M	M	M	M	S	S
CO-03	M	S	M	S	M	M	S	M
CO-04	S	M	S	S	M	S	S	S
CO-05	M	S	S	M	M	S	M	M

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT 1: Introduction to Data Visualization **9**

The role of data visualization in data analysis and communication, Types of data visualizations (e.g., charts, graphs, maps), Data visualization tools and software, Overview of popular data visualization tools and software (e.g., Tableau, Excel, Python libraries), Features and capabilities of selected tools, Exploration of design principles, including colour theory, typography, and layout, Importance of visual hierarchy and consistency in visualization design.

UNIT 2: Data Visualization Principles **9**

Design principles for effective data visualization, Color theory and usage in data visualization, Human perception and cognition in visualization design, Tools and Techniques, Introduction to data visualization tools (e.g., Tableau, Python libraries)., Creating basic charts and graphs, Interactive and dynamic visualizations.

UNIT 3: Exploratory Data Visualization **9**

Data exploration and visual data profiling, Univariate and multivariate data visualization, visualizing patterns, outliers, and distributions, Storytelling with Data, Narrative structure in data storytelling, building data-driven narratives, using visualizations to support storytelling.

UNIT 4: Advanced Topics **9**

Geographic and spatial data visualization (e.g., maps and geospatial analysis), Network and hierarchical data visualization, Visualizing time series and temporal data, Future Trends and Emerging Technologies, Exploration of future trends in data visualization, Discussion of emerging technologies (e.g., VR, AR) in data visualization.

UNIT 5: Web Analytics **9**

Click stream analytics, anonymous vs. registered user's analysis, Social Media Analytics - User generated content – Page tagging, Server log files, Data abstractions. Sentiment Analysis, Analytics in digital decoding consumer intent, decoding customer sentiments from comments, Text mining from opinion platforms.

TOTAL: 45 HOURS

TEXTBOOKS:

1. "Storytelling with Data: A Data Visualization Guide for Business Professionals" by Cole Nussbaumer Knaflic: Focuses on the art of storytelling through data visualization.
2. "The Visual Display of Quantitative Information" by Edward R. Tufte: A classic book on data visualization principles.
3. "Data Points: Visualization That Means Something" by Nathan Yau: Explores the principles of meaningful data visualization.

REFERENCES:

1. Raman, A and Fisher, M. (2010). How Analytics Are Transforming the Supply Chain and Improving Performance, 1st ed. HBS Press
2. Fitz-enz, J. (2010). The New HR Analytics: Predicting the Economic Value of Your Company's Human Capital Investments, 1 st ed., American Management Association

MS45J4	Machine Learning application for Business	L	T	P	C
		3	0	0	3

Course Description

This course empowers business professionals to grasp machine learning concepts, applications, and lifecycle. It focuses on identifying and framing potential machine learning opportunities across various industries, preparing participants for practical implementation in real-world scenarios.

Objectives:

Machine Learning algorithms are part of Artificial Intelligence (AI) that imitates the human learning process, which can be used for decision making and problem solving. ML algorithms are systems of problem-solving techniques that exhibit human-like learning capability. While humans learn through practice and experience, machines learn through data. ML algorithms have applications across various industries and different functional areas. The primary objective of ML is to assist in decision making. Today, ML is used for driving innovation and as competitive strategy by several organizations.

Course Outcome		Cognitive Skill
CO-01	Understand the core concepts and principles of machine learning.	**R A**
CO-02	Identify and evaluate business problems suitable for machine learning solutions.	**U A**
CO-03	Apply machine learning algorithms to analyse and interpret business data.	**U A**
CO-04	Create predictive models for business decision-making.	**A E**
CO-05	Effectively communicate results and recommendations derived from machine learning.	**E S**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	M	M	S	S	M	S	M	M
CO-02	M	S	M	M	M	M	S	S
CO-03	S	S	M	M	M	M	S	S
CO-04	S	M	S	S	M	S	S	S
CO-05	S	S	S	M	S	M	M	M

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT 1: Introduction to Machine Learning: 9

What is machine learning, Types of machine learning (supervised, unsupervised, reinforcement learning, Machine learning in business decision-making, Data Preprocessing and Exploration, Data cleaning and preparation, Feature engineering, Data visualization for business insights

UNIT 2: Supervised Learning: 9

Linear regression, Logistic regression, Decision trees and ensemble methods (random forests, gradient boosting), Unsupervised Learning, clustering techniques (K-means, hierarchical clustering), Dimensionality reduction (PCA), Anomaly detection.

UNIT3: Model Evaluation and Validation: 9

Model evaluation metrics (accuracy, precision, recall, F1-score), Cross-validation, Hyper parameter tuning, Introduction to Deep Learning, Neural networks and deep learning concepts, Feedforward neural networks, Deep learning libraries (Tensor Flow).

UNIT 4: Business Applications of Machine Learning: 9

Customer segmentation and targeting, Churn prediction, Recommender systems, Sentiment analysis, Machine Learning Projects, forming project teams,

UNIT 5: Real life Applications **9**

Identifying, and defining real-world business problems, Project implementation and presentations.

TOTAL: 45 HOURS

TEXTBOOKS:

1. "Introduction to Machine Learning with Python" by Andreas C. Müller & Sarah Guido
2. "Machine Learning: A Probabilistic Perspective" by Kevin P. Murphy -
3. Online tutorials, documentation, and resources related to Python, scikit-learn, and other machine learning libraries.

REFERENCES:

1. Machine Learning for Business Analytics: Concepts, Techniques and Applications with JMP Pro (R), 2nd Edition, Shmueli
2. Machine learning for Business Dr. Pankaj Chaudhary, Mr. Nagendra Prasad Krishnam, Dr. Usha S, Mr. Vinay Kumar Sharma

MS45J5	Quantitative Business Analysis	L	T	P	C
		3	0	0	3

Course Description

This course focuses on applied quantitative business analysis and uses Microsoft Excel. The course covers problem solving concepts and techniques, plus effective presentation of analysis results. Critical thinking and analytical problem solving will be stressed throughout the course. Exercises for the course reflect a variety of business disciplines. While students will learn to use Excel, this is not an Excel Course. The course only covers Excel functions that apply to analysis objectives.

Objectives:

Quantitative analysis is the process of collecting and evaluating measurable and verifiable data such as revenues, market share, and wages in order to understand the behavior and performance of a business. In the past, business owners and company directors relied heavily on their experience and instinct when making decisions. However, with data technology, quantitative analysis is now considered a better approach to making informed decisions.

Course Outcome		Cognitive Skill
CO-01	Apply Quantitative Methods: Students will be able to apply various quantitative techniques, such as statistical analysis	**R A**
CO-02	Data Interpretation: Students will demonstrate the ability to collect, analyze, and interpret data, making informed decisions based on quantitative insights	**U A**
CO-03	Critical Thinking: Develop critical thinking skills by critically evaluating quantitative information and its implications on business decisions.	**U A**
CO-04	Effective Communication: Improve the ability to communicate quantitative results and findings clearly and persuasively.	**A E**
CO-05	Data modelling, and optimization, to solve complex business problems	**E S**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	M	M	S	S	M	S	M	M
CO-02	S	S	M	M	M	M	S	S
CO-03	S	S	M	M	M	M	S	S
CO-04	S	M	S	S	M	S	S	S
CO-05	S	S	S	M	S	S	M	M

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT 1: Introduction to Quantitative Business Analysis 9

Importance of quantitative analysis in business, Data types and sources, Introduction to Excel for data analysis, Descriptive Statistics, Measures of central tendency, Measures of dispersion, Frequency distributions, Data visualization, Probability and Probability Distributions, Probability concepts, Discrete and continuous probability distributions, Normal distribution and its applications.

UNIT 2: Statistical Inference, Sampling and sampling distributions 9

Confidence intervals, Hypothesis testing, Regression Analysis, Simple and multiple regression, Model interpretation, Practical applications in business, Decision Analysis, Decision-making under uncertainty, Decision trees, Sensitivity analysis.

UNIT 3: Probability Concepts and Rules, Introduction to Probability 9

Definition of probability, Sample space and events, Basic probability rules (addition, multiplication, and complement rules), Expected value and variance for discrete random variables, Common Discrete Distributions, Binomial distribution, Poisson distribution, Hypergeometric distribution.

UNIT 4: Normal Distribution and its Application 9

The Normal Distribution and Its Applications, The Normal Distribution, Characteristics of the normal distribution, Standardization and the z-score, Using z-tables and calculators.

UNIT 5: Linear programming, Integer programming 9

Goal programming, Application of optimization in business, Determine the optimal production mix to maximize profit or minimize costs, Supply chain optimization, optimize logistics and distribution operations, financial portfolio optimization, create diversified portfolios with minimal risk, Network flow problems.

TOTAL: 45 HOURS

TEXTBOOKS:

1. "Quantitative Methods for Business" by David R. Anderson, Dennis J. Sweeney, Thomas A. Williams, and Jeffrey D. Camm
2. "Quantitative Analysis for Management" by Barry Render, Ralph M. Stair Jr., and Michael E. Hanna
3. "Operations Research: Applications and Algorithms" by Wayne L. Winston

REFERENCES:

1. "Statistics for Business and Economics" by Paul Newbold, William L. Carlson, and Betty Thorne
2. "Business Analysis with Microsoft Excel" by Conrad Carlberg

MS45J6	Health Care Data Analytics	L	T	P	C
		3	0	0	3

Course Description

The purpose of this course is to equip you with a solid analytics foundation that you can build on in your future roles as health care managers and practitioners. In other words, the goal is to teach you "how to fish" in the land of healthcare data analytics, as opposed to memorization of concepts.

Objectives:

From diagnostic imaging to administrative and billing systems, data analytics is transforming the overall healthcare industry. Data analytics in healthcare helps doctors predict patients' medical interventions and treatments based on their age, medical history, and possible scenarios and outcomes of medication. Data analytics also helps hospitals in managing their resources better, such as increased demand for medical equipment, beds, and staff during surges in patient volume, as well as helping healthcare institutions provide tailored treatments to patients, with data and AI-based systems doing the heavy lifting and delivering actionable insights.

Course Outcome		Cognitive Skill
CO-01	Understand the role of data analytics in quality and performance improvement efforts.	**R U**
CO-02	To be familiar with the tools and techniques used for data analytics in health care organizations.	**U A**
CO-03	To identify how the health care data can be processed	**U A**
CO-04	Create an idea regarding the Data Analytics Tools and Techniques	**A A**
CO-05	Identify techniques to communicate insights gained from data analysis.	**E S**

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	M	M	S	S	M	S	M	M
CO-02	S	S	M	M	M	M	S	S
CO-03	S	S	M	M	M	M	S	S
CO-04	M	M	S	S	M	S	S	S
CO-05	S	S	S	M	S	S	M	M

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT 1: Introduction to Quality Improvement and Data Analytics 9

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, health care data analytics.

UNIT 2: Health Care Data as an Organizational Asset 9

The data information, knowledge and wisdom hierarchy, sources of health care data, challenges HCO's face when using data for quality and performance improvement, an organizational approach for effective use of data analytics, the role of data governance.

UNIT 3: Working with Data 9

The information value chain, data context and relevance to business processes, common data types, basic statistical terms, 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 4: Data Analytics Tools **9**

Define data analytics terms, the process steps of data analytics and the tools used in each step, the role of the data analyst, the tools and techniques used to analyze and interpret healthcare data effectively and its applications in the health care sectors.

UNIT 5: Data Analytics Techniques **9**

Various types of databases and how they are structured, describe key data warehouse concepts Describe enterprise data architecture as seen in health care organizations

TOTAL: 45 HOURS

TEXTBOOKS:

1. Trevor L. Strome (2013). Healthcare Analytics for Quality and Performance Improvement. John Wiley & Sons, Inc.
2. "Introduction to Machine Learning with Python" by Andreas C. Müller & Sarah Guido

REFERENCES:

1. Peterson, E. (2004). Web Analytics Demystified: A Marketer's Guide to Understanding How Your Web Site Affects Your Business, 1st ed. Celilo Group Media & Café Press
2. Evans, J.R. (2013). Business Analytics: Methods, Models, and Decisions, 3rd ed. Pearson India.

MS45J7	Block chain and its applications	L	T	P	C
		3	0	0	3

Course Description

In the last few years, Block chain technology has generated massive interest among governments, enterprises, and academics, because of its capability of providing a transparent, secured, tamper-proof solution for interconnecting different stakeholders in a trust less setup, this subject will cover the basic design principles of Block chain technology and its applications over different sectors.

Objectives:

There are many applications of blockchains that one can learn about. Their purposes and uses are vital in many technical fields and help make many processes and works more accessible. Some of these purposes and benefits are −Easy money transfers Digitalization and shifting of the bulk of things to the online mode have made money transfers available online. Various platforms and applications support this and are easy to use. The payments are end-to-end and secure in every way. OTPs are sent to your registered mobile number. That takes a lot of time and costs you more. Blockchain technology has made it easier, cheaper, and faster. Transferring money from one account to the other takes just a few minutes.

Course Outcome		**Cognitive Skill**
CO-01	To collect a basic idea regarding the contents of block chain technology	R U
CO-02	To create an understanding on the details of Block Chain Technology	RA
CO-03	To create the basic contents in connection with Smart Contract Hands	UA
CO-04	To collect a clear picture of Decentralized Identity Management	AE
CO-05	To gather the Block Chain Applications in various fields.	ES

R-Remember, U-Understand, A-Apply, An-Analyze, E-Evaluate, S-Synthesis

Mapping of Course Outcome with Programme Outcome

PO / CO	PO-A	PO-B	PO-C	PO-D	PO-E	PO-F	PO-G	PO-H
CO-01	S	S	M	S	M	M	S	S
CO-02	M	S	M	M	M	S	S	S
CO-03	S	M	S	S	M	S	S	S
CO-04	S	M	S	M	S	M	S	M
CO-05	S	S	M	S	M	M	S	S

S-Strong, M-Medium, L-Low, N-Not relevant

COURSE CONTENT

UNIT 1: Introduction to Block Chain Technology

Introduction to Block Chain Technology and its Importance, Basic Crypto Primitives I – Cryptographic Hash, Basic Crypto Primitives II – Digital Signature, Evolution of the Block Chain Technology.

UNIT 2: Details of Block Chain Technology

Elements of a Block Chain Block Chain Consensus I – Permission less Models Block Chain Consensus II – Permissioned Models, Different applications and implementation levels

UNIT 3: Smart Contract Hands

Smart Contract Hands On I – Ethereum Smart Contracts (Permission less Model) Smart Contract Hand On II – Hyper ledger Fabric (Permissioned Model)

UNIT 4: Decentralized Identity Management

Decentralized Identity Management, block chain Interoperability, block chain Applications in our day-to-day life

UNIT 5: Block Chain Applications

Block chain Applications for Business, Smart Contracts, Government, Voting, IoT, Personal Data Storage, Money Transfer, Supply Chain Management.

TOTAL: 45 HOURS

TEXTBOOKS:

1. Mastering block chain: A deep dive into distributed ledgers, consensus protocols, smart contracts, Apps, cryptocurrencies, Ethereum, and more, 3rd Edition, Imran Bashir, Packet Publishing, 2020, ISBN: 9781839213199
2. Hyperledger Tutorials - https://www.hyperledger.org/use/tutorials
3. Ethereum Development Resources - https://ethereum.org/en/developer

REFERENCES:

1. Block chain Technology and Its Applications (Techsar Pvt. Ltd., Ashok Kumar Yadav, Munesh Chandra Trivedi)
2. Block chain Technology, Rishabh Anand (2023) Publisher: Khanna Publisher