

## **MBA (OPERATIONS & SUPPLY CHAIN MANAGEMENT)**

*(Course code – 47)*

### **CURRICULUM**

#### **1<sup>st</sup> YEAR - I SEMESTER**

<b>Sl.No.</b>	<b>Code</b>	<b>Course Title</b>
1	MBCP 1001	Management Concepts
2	MBCP 1002	Managerial Economics
3	MBCP 1003	Accounting for Managers
4	MBCP 1004	Business Environment
5	MBCP 1005	Research Methodology
6	MBCP 1006	Organisational Behaviour
7	MBCP 1007	Business Law

#### **1<sup>st</sup> YEAR - II SEMESTER**

1	MBCP 2001	Financial Management
2	MBCP 2002	Marketing Management
3	MBCP 2003	Human Resources Management
4	MBCP 2004	Operations Research
5	MBCP 2005	Strategic Management
6	MBCP 2006	Business Ethics
7	MBCP 2007	Operations Management

#### **2<sup>nd</sup> YEAR - III SEMESTER**

1	MBSC 3001	Production and Operations Management
2	MBSC 3002	Logistics Management
3	MBSC 3003	Supply Chain Management
4	MBSC 3004	Materials and Stores Management
5	MBSC 3005	Information System in Supply Chain Management
6	Elective – I (Syllabus will be updated soon)	
7	Elective – II (Syllabus will be updated soon)	

#### **2<sup>nd</sup> YEAR - IV SEMESTER**

1	MBSC 4001	Project Management in Supply Chain Operations
2	MBSC 4002	Innovations and R&D Management
3	MBSC 4003	Procurement and Quality Management
4	MBSC 4004	Customer Relationship Management
5	MBSC 4005	Global Supply Chain Management
6	MBSC 4006	Project Work
7	Elective – III (Syllabus will be updated soon)	
8	Elective – IV (Syllabus will be updated soon)	

**PAPER: I**

**MANAGEMENT CONCEPTS**

**Objectives**

- Providing conceptual understanding of Management Concepts
- Familiarizing the students with the contemporary issues in Management
- Enable them to apply the concepts in the management organization

**UNIT - I**

Introduction to Management - Nature and Functions of Management - Levels in Management - Social Responsibilities of Business - Managerial Skills – Manager and Environment - An Overview of Staffing, Directing and Controlling Functions

**UNIT – II**

Planning - Steps in Planning Process - Short Range and Long Range Planning - Flexibility in Planning - Characteristics of a sound Plan - Management by Objectives (MBO) - Policies and Strategies - Scope and Formulation- Decision Making - Techniques and Processes.

**UNIT – III**

Organising - Organisation Structure and Design - Delegation of Authority and Decentralisation – Line and Staff Relationships - Emerging Trends in Corporate Structure, Strategy and Culture - Impact of Technology on Organisational design - Formal and Informal Organisation.

**UNIT – IV**

Communication – Types and Process of Communication - Barriers of Communication - Communication Effectiveness - Organisational Creativity and Innovation Entrepreneurial Management - Management of Innovation

**UNIT – V**

Comparative Management Styles and approaches - Best Management Practices across the world - Japanese Management Practices - Management of Diversity - Benchmarking

**References:**

**Koontz, Weirich & Aryasri**, PRINCIPLES OF MANAGEMENT, *Tata McGraw-Hill, New Delhi, 2004*

**Tripathi & Reddy**, PRINCIPLES OF MANAGEMENT, *Tata McGraw-Hill, New Delhi, 2008*

**Laurie Mullins**, MANAGEMENT AND ORGANISATIONAL BEHAVIOUR, *Pearson, New Delhi, 2007*

**Meenakshi Gupta**, PRINCIPLES OF MANAGEMENT, *PHI Learning, New Delhi, 2009*

**PAPER – II  
MANAGERIAL ECONOMICS**

**Objectives**

- To introduce the economic concepts
- To familiarize with the students the importance of economic approaches in managerial decision making
- To understand the applications of economic theories in business decisions

**UNIT – I**

General Foundations of Managerial Economics - Economic Approach - Circular Flow of Activity - Nature of the Firm - Objectives of Firms - Demand Analysis and Estimation - Individual, Market and Firm demand - Determinants of demand - Elasticity measures and Business Decision Making - Demand Forecasting.

**UNIT-II**

Law of Variable Proportions - Theory of the Firm - Production Functions in the Short and Long Run - Cost Functions – Determinants of Costs – Cost Forecasting - Short Run and Long Run Costs –Type of Costs - Analysis of Risk and Uncertainty.

**UNIT-III**

Product Markets -Determination Under Different Markets - Market Structure – Perfect Competition – Monopoly – Monopolistic Competition – Duopoly - Oligopoly - Pricing and Employment of Inputs Under Different Market Structures – Price Discrimination - Degrees of Price Discrimination.

**UNIT-IV**

Introduction to National Income – National Income Concepts - Models of National Income Determination - Economic Indicators - Technology and Employment - Issues and Challenges – Business Cycles – Phases – Management of Cyclical Fluctuations - Fiscal and Monetary Policies.

**UNIT – V**

Macro Economic Environment - Economic Transition in India - A quick Review - Liberalization, Privatization and Globalization - Business and Government - Public-Private Participation (PPP) - Industrial Finance - Foreign Direct Investment(FDIs).

**REFERENCES**

**Yogesh Maheswari**, MANAGERIAL ECONOMICS, *PHI Learning, NewDelhi, 2005***Gupta G.S.**,  
MANAGERIAL ECONOMICS, *Tata McGraw-Hill, New Delhi***Moyer &Harris**, MANAGERIAL  
ECONOMICS, *Cengage Learning, NewDelhi, 2005***Geetika, Ghosh & Choudhury**, ,  
MANAGERIAL ECONOMICS, *Tata McGrawHill, NewDelhi, 2011*

**PAPER –III**  
**ACCOUNTING FOR MANAGERS**

**Objectives**

- To acquaint the students with the fundamentals principles of Financial, Cost and Management Accounting
- To enable the students to prepare, Analyse and Interpret Financial Statements and
- To enable the students to take decisions using Management Accounting Tools.

**UNIT-I**

Book-keeping and Accounting – Financial Accounting – Concepts and Conventions – Double Entry System – Preparation of Journal, Ledger and Trial Balance – Preparation of Final Accounts –Trading, Profit and Loss Account and Balance Sheet with adjustment entries, simple problems only - Capital and Revenue Expenditure and Receipts.

**UNIT-II**

Depreciation – Causes – Methods of Calculating Depreciation – Straight Line Method, Diminishing Balance Method and Annuity Method - Ratio Analysis – Uses and Limitations – Classification of Ratios – Liquidity, Profitability, Financial and Turnover Ratios – Simple problems only.

**UNIT-III**

Funds Flow Analysis – Funds From Operation, Sources and Uses of Funds, Preparation of Schedule of Changes in Working Capital and Funds Flow Statements – Uses and Limitations - Cash Flow Analysis – Cash From Operation – Preparation of Cash Flow Statement – Uses and Limitations – Distinction between Funds flow and Cash Flow – only simple problems

**UNIT-IV**

Marginal Costing - Marginal cost and Marginal costing - Importance - Break-even Analysis - Cost Volume Profit Relationship – Application of Marginal Costing Techniques, Fixing Selling Price, Make or Buy, Accepting a foreign order, Deciding sales mix.

**UNIT-V**

Cost Accounting - Elements of Cost - Types of Costs - Preparation of Cost Sheet – Standard Costing – Variance Analysis – Material Variances – Labour Variances – simple problems related to Material and Labour Variances only

**[Note: Distribution of Questions between Problems and Theory of this paper must be 60:40 i.e., Problem Questions: 60 % & Theory Questions: 40 %]**

**REFERENCES**

**Jelsy Josheph Kuppapally**, ACCOUNTING FOR MANAGERS, *PHI, Delhi, 2010.*

**Paresh shah**, BASIC ACCOUNTING FOR MANAGERS, *Oxford, Delhi, 2007*

**Ambrish Gupta**, FINANCIAL ACCOUNTING FOR MANAGEMENT, *Pearson, Delhi, 2004*

**Narayanaswamy R**, FINANCIAL ACCOUNTING , *PHI, Delhi, 2011*

**PAPER: IV**

**BUSINESS ENVIRONMENT**

**Objectives**

- To acquaint students with the issues of domestic and global environment in which business has to operate
- To understand the opportunity and challenges of global business environment
- To relate the Impact of Environment on Business in an integrated manner
- To provide an understanding of the role of business in society

**UNIT – I Business and its environment**

Dynamics of Business and its Environment – Definition, Types of Environments. - Corporate Governance and Social Responsibility - Ethics in Business. – Business Ethics in India

**UNIT – II Economic System**

Economic Systems and Management Structure - Family Management to Professionalism - Resource Base of the Economy - Land, Forest, Water, Fisheries, Minerals - Environmental Issues.

**UNIT – III Infrastructure and current issues in Business Environment**

Infrastructure - Economic- Social, Demographic Issues, Political context - Productivity Factors, Human Elements and Issues for Improvement -.

**UNIT – IV Global trends in Business and Management**

Global Trends in Business and Management – International Relations Multi-National Companies, Multi-National Companies in India,

**UNIT – V Foreign Capital and Collaboration**

Foreign Capital, Needs for Foreign Capital, Trends in Indian Industry, Foreign Development Investment, FDI and the Indian Stock market

**References:**

**Keith-Davis & William Frederick**, BUSINESS AND SOCIETY, McGraw-Hill, Tokyo.Iran  
Worthington and Chris Britton, THE BUSINESS ENVIRONMENT, Prentice Hall

**Namita Gopal**, BUSINESS ENVIRONMENT, 2<sup>nd</sup> Edition, Tata McGraw Hill Education Pvt. Ltd. New Delhi, 2010

**PAPER-V**  
**RESEARCH METHODOLOGY**

**Objectives**

- To enable the students to know about the information needs of Management
- To introduce the concept of Scientific Research and the methods of conducting Scientific Enquiry and
- To introduce the Statistical Tools of Data Analysis.

**UNIT-I**

Research – Qualities of Researcher – Components of Research Problem – Various Steps in Scientific Research – Types of Research – Hypotheses Research Purposes - Research Design – Survey Research – Case Study Research.

**UNIT-II**

Data Collection – Sources of Data – Primary Data – Secondary Data - Procedure Questionnaire – Sampling methods – Merits and Demerits – Experiments – Observation method – Sampling Errors - Type-I Error & Type-II Error.

**UNIT-III**

Statistical Analysis – Introduction to Statistics – Probability Theories – Conditional Probability, Poisson Distribution, Binomial Distribution and Properties of Normal Distributions – Hypothesis Tests – One Sample Test – Two Sample Tests / Chi-Square Test, Association of Attributes - Standard deviation – Co-efficient of variations .

**UNIT-IV**

Statistical Applications – Correlation and Regression Analysis – Analysis of Variance – Partial and Multiple Correlation – Factor Analysis and Conjoint Analysis – Multifactor Evaluation – Two-Factor Evaluation Approaches.

**UNIT-V**

Research Reports – Structure and Components of Research Report – Types of Report, characteristics of Good Research Report, Pictures and Graphs, Introduction to SPSS.

**[Note: Distribution of Questions between Problems and Theory of this paper must be 40:60 i.e., Problem Questions: 40 % & Theory Questions: 60 %]**

**REFERENCES**

**Panneerselvam, R.**, RESEARCH METHODOLOGY, *Prentice Hall of India, New Delhi, 2004.*  
**Kothari CR** , RESEARCH METHODOLOGY-METHODS AND TECHNIQUES, *New Wiley Eastern Ltd., Delhi, 2009.*

**PAPER: VI**

**ORGANISATIONAL BEHAVIOUR**

**Objectives**

- To understand and appreciate the fact that why & how of human behaviour in organisations is critical for its success and to orient the managers - to-be to develop people skills to make and run the work-place effective, innovative and stake-holder centric.

**UNIT - I**

Organisational Behaviour: Introduction, Definition, Nature & Scope - Basic Concepts of OB - Individual & Organisational Image and Self Image -self-esteem & self-efficacy- Theoretical constructs and models of Organisational Behaviour.

**UNIT – II**

Perception and Learning - Personality and Individual Differences - Motivation and Job Performance - Values, Attitudes and Beliefs - Stress Management

**UNIT – III**

Group Dynamics - Leadership - Styles - Approaches - Power and Politics in Organisation

**UNIT – IV**

Organisational Structure - Organisational Climate and Culture - Organisational Change and Development.

**UNIT – V**

Trends in Organisational Behaviour – Consciousness – Conscience Management – Organisational Vision and Employee alignment with vision- Gender Sensitivity – Competency Level and behavioral Dimensions

**References:**

**Fred Luthans**, ORGANISATIONAL BEHAVIOUR, *Tata McGraw-Hill, New Delhi*  
**Stephen Robbins**, ORGANISATIONAL BEHAVIOUR, *Pearson, New Delhi*

**PAPER: VII**  
**BUSINESS LAW**

**Objectives**

- To introduce the statutory provision that affects the business decision
- To provide legal understanding and exposure to the important commercial laws
- To understand the legal framework related to contract
- To familiarise about legal aspects about negotiable instruments
- To understand the legal regulations about the company

**UNIT – I The Indian Contract Act, 1872**

Law of Contract - Agreement - Offer - Acceptance - Consideration - Capacity of Contract  
Contingent Contract - Quasi Contract - Performance - Discharge - Remedies to breach of Contract.

**UNIT – II The Indian Partnership Act, 1932 & Sales of Goods Act 1930**

Definition of Partnership and its essentials, Rights and duties of Partners: Authority of a Partner, Minor as a Partner, Registration of a firm, Dissolution of Firms. Sales of Goods – Definition of a Contract of Sales, Essentials of a Contract of Sales of Goods, Kinds of Goods,

**UNIT – III The Negotiable Instruments Act, 1832, Law of Insurance**

Negotiable Instruments - Notes, Bills, Cheques - Crossing - Endorsement - Holder in due course - Holder in value - Contract of Agency. Law of Insurance: Fundamental Principles of Law of Insurance, Types of Policies, Kinds of Losses

**UNIT – IV The Indian Companies Act, 2013**

Company - Formation - Memorandum - Articles - Prospectus - Shares - Debentures - Directors Appointment - Powers and Duties - Meetings - Proceedings – Management - Accounts - Audit Oppression and Mismanagement - Winding up.

**UNIT –V Factory Act, Industrial Dispute Act, Minimum Wages Act & Workmen Compensation Act, 1923**

Factory Act – Licensing and Registration of Factories, Health, Safety and Welfare measures - Industrial Disputes Act – Objects and scope of the Act, Effects of Industrial Dispute, Administration under the Act.

**References:**

- Kapoor G,K & Dhamija S**, COMPANY LAW, 17<sup>th</sup> Edition, Taxman Publication, Pvt. Limited, NewDelhi, 2014  
**Daniel Albuquerque**, LEGAL ASPECTS OF BUSINESS, 2<sup>nd</sup> edition, Oxford University Press, NewDelhi, 2013  
**Pathak**, LEGAL ASPECTS OF BUSINESS, Tata McGraw- Hill Publishing Company Limited, NewDelhi, 2010.  
**M.M. Sulphery & Azhar Basheer**, LAWS FOR BUSINESS, PHI Learning Pvt. Ltd. New Delhi, 2011.



**PAPER-VIII  
FINANCIAL MANAGEMENT**

**Objectives**

- To know the various sources of finance
- To understand the various uses for finance and
- To familiarize oneself with the techniques used in financial management.

**UNIT-I**

Financial Management – Financial goals - Profit vs. Wealth Maximization; Finance Functions – Investment, Financing and Dividend Decisions – Cost of Capital – Significance of Cost of Capital – Calculation of Cost of Debt – Cost of Preference Capital – Cost of Equity Capital (CAPM Model and Gordon's Model) and Cost of Retained Earnings – Combined Cost of Capital (weighted/Overall).

**UNIT-II**

Capital Budgeting – Nature of Investment Decisions – Investment Evaluation criteria – Net Present Value (NPV), Internal Rate of Return (IRR), Profitability Index (PI), Payback Period, Accounting Rate of Return (ARR) – NPV and IRR comparison.

**UNIT-III**

Operating and Financial Leverage – Measurement of Leverages – Effects of Operating and Financial Leverage on Profit – Analyzing Alternate Financial Plans - Combined Financial and Operating Leverage – Capital Structure Theories - Traditional approach - M.M. Hypotheses – without Taxes and with Taxes – Net Income Approach (NI) – Net Operating Income Approach (NOI) - Determining capital structure in practice.

**UNIT- IV**

Dividend Policies – Issues in Dividend Decisions – Relevance Theory – Walter's Model – Gordon's Model – Irrelevance Theory – M-M hypothesis - Dividend Policy in Practice – Forms of Dividends – Stability in Dividend Policy – Corporate Dividend Behaviour.

**UNIT-V**

Management of Working Capital – Significance and types of Working Capital – Calculating Operating Cycle Period and Estimation of Working Capital Requirements – Financing of Working Capital and norms of Bank Finance – Sources of Working capital – Factoring services– Various committee reports on Bank Finance – Dimensions of Working Capital Management.

**[Note: Distribution of Questions between Problems and Theory of this paper must be 40:60 i.e., Problem Questions: 40 % & Theory Questions: 60 %]**

**REFERENCES**

- Khan MY, Jain PK**, BASIC FINANCIAL MANAGEMENT, *Tata McGraw Hill, Delhi* , 2005.  
**Chandra, Prasanna.** FINANCIAL MANAGEMENT, *Tata McGraw Hill, Delhi*.  
**Bhabatosh Banerjee**, FUNDAMENTALS OF FINANCIAL MANAGEMENT, *PHI, Delhi*, 2010  
**Chandra Bose D**, FUNDAMENTALS OF FINANCIAL MANAGEMENT, *PHI, Delhi*, 2010  
**Preeti Singh**, FUNDAMENTALS OF FINANCIAL MANAGEMENT, *Ane*, 2011.

**PAPER-IX  
MARKETING MANAGEMENT**

**Objectives**

- To familiarize with the basic concepts, and techniques of marketing management
- To understand the behaviour of consumers
- To create awareness of marketing mix elements, and
- To analyse and solve marketing problems in the complex and fast changing business environment.

**UNIT-I**

Introduction to Marketing and Marketing Management, Marketing Concepts - Marketing Process Marketing mix - Marketing environment. - Consumer Markets and buying behaviour - Market segmentation and targeting and positioning.

**UNIT-II**

Product Decisions - concept of a Product - Product mix decisions - Brand Decision - New Product Development – Sources of New Product idea - Steps in Product Development - Product Life Cycle strategies- Stages in Product Life Cycle,

**UNIT-III**

Price Decisions - Pricing objectives - Pricing policies and constraints - Different pricing method - New product pricing, Product Mix pricing strategies and Price adjustment strategy.

**UNIT-IV**

Channel Decision - Nature of Marketing Channels –. Types of Channel flows - Channel functions - Functions of Distribution Channel – Structure and Design of Marketing Channels -Channel co-operation, conflict and competition – Retailers and wholesalers.

**UNIT - V**

Promotion Decision - Promotion mix - Advertising Decision, Advertising objectives - Advertising and Sales Promotion – Developing Advertising Programme – Role of Media in Advertising - Advertisement effectiveness - - Sales force Decision.

**REFERENCES**

**K.S. Chandrasekar**, MARKETING MANAGEMENT TEXT AND CASES, *Tata McGraw-Hill Publication, New Delhi.2010*

**Govindarajan**, MARKETING MANAGEMENT CONCEPTS, CASES, CHALLENGES AND TRENDS, *Prentice Hall of India, New Delhi. 2009*

**Philip Kotler**, MARKETING MANAGEMENT- ANALYSIS PLANNING AND CONTROL, *Prentice Hall of India, New Delhi,*

**Ramaswamy. V S & Namakumari. S**, MARKETING MANAGEMENT-PLANNING IMPLEMENTATION AND CONTROL, *Macmillan Business Books, New Delhi, 2002,*

**PAPER – X  
HUMAN RESOURCES MANAGEMENT**

**Objectives**

- To understand and appreciate the importance of the human resources vis-a-vis other resources of the organisation
- To familiarize the students with methods and techniques of HRM
- To equip them with the application of the HRM tools in real world business situations.

**UNIT-I**

Human Resources Management - Context and Concept of People Management in a Systems Perspective - Organisation and Functions of the HR and Personnel Department - HR Structure and Strategy; Role of Government and Personnel Environment including MNCs.

**UNIT – II**

Recruitment and Selection - Human Resource Information System [HRIS] - Manpower Planning - Selection – Induction & Orientation - Performance and Potential Appraisal - Coaching and Mentoring - HRM issues and practices in the context of Outsourcing as a strategy .

**UNIT-III**

Human Resources Development –Training and Development Methods - Design & Evaluation of T&D Programmes - Career Development - Promotions and Transfers - Personnel Empowerment including Delegation - Retirement and Other Separation Processes.

**UNIT-IV**

Financial Compensation- -Productivity and Morale - Principal Compensation Issues & Management - Job Evaluation - Productivity, Employee Morale and Motivation - Stress Management - Quality of Work Life.

**UNIT – V**

Building Relationships – Facilitating Legislative Framework - Trade Unions - Managing Conflicts - Disciplinary Process - Collective Bargaining - Workers Participation in Management - Concept, Mechanisms and Experiences.

**REFERENCES**

**Venkata Ratnam C. S. & Srivatsava B. K.**, PERSONNEL MANAGEMENT AND HUMAN RESOURCES, *Tata Mc-Graw Hill, NewDelhi*,

**Aswathappa**, HUMAN RESOURCE MANGEMENT, *Tata McGraw Hill, NewDelhi, 2010*

**Garry Dessler & Varkkey**, HUMAN RESOURCE MANAGEMENT, *Pearson, New Delhi, 2009*

**Alan Price**, HUMAN RESOURCE MANAGEMENT, *Cengage Learning, NewDelhi, 2007*

**Pravin Durai**, HUMAN RESOURCE MANGEMENT, *Pearson, New Delhi, 2010*

**Snell, Bohlander & Vohra**, HUMAN RESOURCES MANAGEMENT, *Cengage, NewDelhi, 2010*

**OPERATIONS RESEARCH**

**Objectives:**

- To introduce various optimization techniques of operations research
- To facilitate the use of Quantitative Technique in various functional areas

**UNIT-I**

Stages of Development of Operations Research, Applications of Operations Research, Limitations of Operations, Introduction to Linear Programming, Graphical Method, Simplex Method, Duality.

**UNIT-II**

Transportation Problem, Assignment Problem, Inventory Control – Introduction to Inventory Management, Basic Deterministic Models, Purchase Models, Manufacturing Models without Shortages and with Shortages.

**UNIT-III**

Shortest Path Problem - Minimum Spanning Tree Problem - CPM/PERT, Crashing of a Project Network.

**UNIT-IV**

Game Theory- Two Person Zero-sum Games -Graphical Solution of (2 x n) and (m x 2) Games - LP Approach to Game Theory - Goal programming - Formulations.

**UNIT-V**

Introduction to Queuing Theory - Basic Waiting Line Models: (M/M/1):(GD/a/a), (M/M/C):GD/a/a).

**References**

1. **Panneerselvam, R**, OPERATIONS RESEARCH, Prentice-Hall of India, New Delhi, 2006.
2. **G.Srinivasan**, OPERATIONS RESEARCH, PHI Learning, NewDelhi,2010
3. **Tulsian & Pandey**, QUANTITATIVE TECHNIQUES, Pearson, NewDelhi, 2002
4. **Vohra**, Quantative Techniques in Management, Tata McGrawHill, NewDelhi, 2010

**PAPER-XII  
STRATEGIC MANAGEMENT**

**Objectives**

- Integrating the knowledge gained in functional areas of management
- helping the students to learn about the process of strategic management, and
- helping the students to learn about strategy formulation and implementation

**UNIT-I**

Concepts of Strategy - Levels at which strategy operates; Approaches to strategic decision making; Mission and purpose, objectives and goals; Strategic business unit (SBU); Functional level strategies

**UNIT-II**

Environmental Analysis and Diagnosis - Environment and its components; Environment scanning and appraisal; Organizational appraisal; Strategic advantage analysis and diagnosis; SWOT analysis

**UNIT-III**

Strategy Formulation and Choice - Modernization, Diversification Integration - Merger, take-over and joint strategies - Turnaround, Divestment and Liquidation strategies - Strategic choice - Industry, competitor and SWOT analysis - Factors affecting strategic choice; Generic competitive strategies - Cost leadership, Differentiation, Focus, Value chain analysis, Bench marking, Service blue printing

**UNIT-IV**

Functional Strategies: Marketing, production/operations and R&D plans and policies- Personnel and financial plans and policies.

**UNIT-V**

Strategy Implementation - Inter - relationship between formulation and implementation - Issues in strategy implementation - Resource allocation - Strategy and Structure - Structural considerations - Organizational Design and change - Strategy Evaluation- Overview of strategic evaluation; strategic control; Techniques of strategic evaluation and control.

**REFERENCES**

**Azhar Kazmi**, STRATEGIC MANAGEMENT & BUSINESS POLICY, *Tata McGraw-Hill Publishing Company Limited, New Delhi 2008.*

**Vipin Gupta, Kamala Gollakota & Srinivasan**, BUSINESS POLICY & STRATEGIC MANAGEMENT, *Prentice Hall of India Private Limited, New Delhi, 2008.*

**Amita Mittal**, CASES IN STRATEGIC MANAGEMENT, *Tata McGraw-Hill Publishing Company Limited, New Delhi 2008.*

**Fred R. David**, STRATEGIC MANAGEMENT CONCEPT AND CASES, *PHI Learning Private Limited, New Delhi, 2008.*

PAPER-XIII  
**BUSINESS ETHICS**

**Objectives:**

- To introduce the concept and importance of business ethics and corporate governance
- To know the facets of ethics management
- To know the ethical values and Indian ethos in Management

**UNIT-I: Introduction:** Meaning – Definition – Scope – Ethical Values and Theories- Myths – Ethics Vs Morality- Ethical Issues in the functional Areas of Business Management – Cross-Country Perspectives on Business Ethics.

**UNIT-II: ETHICS MANAGEMENT:** Ethical Dilemma – Ethical Decision Making – Ethical Reasoning – Ethical issues – Ethics Management Programmes – Benefits of Managing Ethics in Work Place – Organisation Ethics Development System (OEDS) – Code of ethics – Value based leadership.

**UNIT-III: Ethical Values in Work Place:** Characteristics- Types- Importance – Work Ethics – Work Culture – Professional Ethics- Environmental Ethics – Challenges of Cyber Age.

**UNIT-IV: CORPORATE GOVERNANCE:** Meaning – Mechanism- Principles – Code of Corporate Governance – Audit Committee – Role of Independent Directors – Protection of Stakeholders – Corporate Social Responsibility – Issues in Corporate Governance- Emerging Trends.

**UNIT-V: INDIAN ETHOS IN MANAGEMENT:** Principles – Approaches – Role of Gita – Karma Yoga – Wisdom Management- Gandhian Ethics- Spirituality- Humanism - Morals Standards in Indian Ethics.

**References:**

1. **Bhatia, S.K.**, Business Ethics and Corporate Governance, Deep & Deep Publication.
2. **B.N Ghosh**, Business Ethics and Corporate Governance, Mc Graw Hill.
3. **Daniel Albuquerque**, Business Ethics, Oxford Univ. Press
4. **Laura P. Hartman**, Perspectives in Business Ethics, Tata Mc Graw Hill.
5. **Chakraborty, S.K.**, Management by Values, Oxford Univ. Press

**OPERATIONS MANAGEMENT**

**Objectives:**

- To understand the concepts and techniques of Operations Management.
- To use the above for improving the Operational Productivity of Organizations.

**UNIT-I**

Introduction to Operations Management - Process Planning - Plant Location - Plant Lay out - Introduction to Production Planning. Inventory Control: Review of Basic Models of Inventory, P & Q system of Inventory

**UNIT-II**

Systems Concept of Production, Types of Production System, Productivity, Value Engineering, Make or Buy Decision. Capacity Planning, Forecasting: Models of forecasting

**UNIT-III**

Nature of Aggregate Planning Decisions, Aggregate Planning Strategies, Aggregate Planning Methods: Material Requirement Planning: Single Machine Scheduling:

**UNIT-IV**

Work Study: Method Study – Recording Techniques, Steps in Method Study, Principles of Motion Economy, Time Study. Quality Control: Introduction, need for Controlling Quality, Definition of a Quality System, Classification of Quality Control Techniques,

**UNIT-V**

Maintenance Planning and Control: Maintenance Objectives, Replacement, Group Replacement Vs Individual Replacement – Trade-off. Reliability:

**References**

1. **Panneerselvam. R;** Production and Operations Management, 3<sup>rd</sup> Edition, PHI Learning, Delhi, 2013.
2. **Joseph G. Monks:** Operations Management - Theory and Problems, (McGraw Hill).
3. **Everett E. Adam & Ronald J. Ebert:** Production and Operations Management, (Prentice Hall, 1994).
4. **William J. Stevenson:** Production/Operations Management, Richard Irwin.
5. **Norman Gaither:** Production and Operations Management, (The Dryden Press).
6. **Jack R. Meredith-** The Management Of Operation, (John Wiley & Sons).
7. **S.N. Chary,** Production and Operations Management, (Tata McGrawHill).
8. **Jay Heizer & Barry Render:** Operations Management, Prentice Hall International, Inc. 2001, International Edition.

## **MBA (Operations & Supply Chain Management) – III Semester**

### **PAPER - XV PRODUCTION AND OPERATIONS MANAGEMENT**

**Paper Code: MBSC3001**

#### **Objectives**

- To understand the concepts and principles of Production and Operations
- To appreciate the importance of quality in Production Management
- To apply the productivity improvement techniques

#### **UNIT I**

**Transformation process model:** Inputs, Process and outputs; Classification of operations; Responsibilities of Operations Manager; New Product Development, Selection and Design of Product / Services.

#### **UNIT II**

**Process types in manufacturing:** Project, jobbing, batch, line, mass, continuous; Process types in services: professional services, services shops, mass services; Plant location; Layout planning.

#### **UNIT III**

**Production Planning & Control:** Production planning techniques for various process choices, Techniques of production control, Aggregate planning techniques,

#### **UNIT IV**

**Quality management:** Introduction; Meaning; Quality characteristics of goods and services; Tools and techniques for quality improvement: check sheet, histogram, scatter diagram, cause and effect diagram, Pareto chart, process diagram, statistical process control chart; Quality assurance; Total quality management (TQM) model; Service quality, concept of Six Sigma and its application.

#### **UNIT V**

**Productivity Improvement Techniques:** Work study; Method study; Work measurement: time study: stop watch time study; Work sampling. Maintenance: maintenance policies for facilities and equipment; Time of failure; Preventive versus breakdown maintenance; Procedure for maintenance, total productive maintenance (TPM)

#### **REFERENCES**

**Adam Jr Everetl E. R J**, PRODUCTION AND OPERATIONS MANAGEMENT , *Prentice-Hall*, 1992, 2000 5<sup>th</sup> ed.

**Chary**, PRODUCTION AND OPERATIONS MANAGEMENT, *Tata McGraw-Hill*, 1997 9<sup>th</sup> e

**Hill T**, OPERATIONS MANAGEMENT , *Palgrave*, 2000

**Haleem A**, PRODUCTION AND OPERATIONS MANAGEMENT , *Galgotia Publication*, 2004

**Shanker Ravi**, **Industrial Engineering**, *Galgotia Publication*.

**Kanishka Bedi**, PRODUCTION & OPERATIONS MANAGEMENT, *Oxford University Press*



## **MBA (Operations & Supply Chain Management) – III Semester**

### **PAPER - XVI LOGISTICS MANAGEMENT**

**Paper Code: MBSC3002**

#### **Objectives**

- To introduce process and functions of logistics system
- To understand the major building blocks, functions, business process, performance metrics and decision making in supply chain network, and
- To provide an insight into the role of Internet Technologies in Logistics Management

#### **UNIT I**

**Introduction to logistics management-** Definition, scope, functions, objectives - Integrated logistics management, role of logistics in the Supply chain - Logistics & customer service, Role of logistics in competitive strategy, Logistics organization & performance measurement, ERP –SAP - ORACLE

#### **UNIT II**

**Inventory planning-** inventory costs, classifying inventory, Nature & importance of warehousing, types of warehouses, warehousing functions, warehouse layout & design. Material handling -objectives, guidelines & principles, selection of material handling equipments. Packaging-role of packaging, packaging materials, consumer & industrial packaging, material handling efficiency

#### **UNIT III**

**Transportation-** role of transportation in logistics, transportation selection decision, basic modes of transportation- Rail, Road, Water, Air, Pipeline- characteristics of different modes-transport economics - Inter modal operations

#### **UNIT IV**

**Containerization-**concept, types, benefits, Types of carriers- indirect & special carriers, Role of intermediaries- shipping agents, brokers- freight management- route planning Role of ports, ICDs, CONCOR - Global shipping options

#### **UNIT V**

**Reverse logistics-** scope, design, e-logistics- logistics information system-application of IT in logistics- automatic identification technologies- bar coding, RFID, Logistics outsourcing- 3PL & 4PL, Global logistics- operational & strategic issues

#### **REFERENCES**

- Ailawadi C Sathish & Rakesh**, LOGISTICS MANAGEMENT, *Prentice Hall, India, 2005*  
**Agrawal D K**, LOGISTICS & SUPPLY CHAIN MANAGEMENT , *Macmillan India Ltd, 2003*  
**Coyle et al.**, THE MANAGEMENT OF BUSINESS LOGISTICS, *Thomson, 7<sup>th</sup> ed., 2004*  
**Bowersox Donald J**, LOGISTICAL MANAGEMENT- THE INTEGRATED SUPPLY CHAIN PROCESS, *Tata McGraw Hill, 2000*

**MBA (Operations & Supply Chain Management) – III Semester**

**PAPER - XVII**

**SUPPLY CHAIN MANAGEMENT**

**Paper Code: MBSC3003**

**Objectives**

- To introduce process and functions of supply chain management
- Appreciate the design and network in supply chain management
- To understand the role of coordination in supply chain management

**UNIT I**

**Introduction to Supply Chain Management-** Supply chain – objectives – importance – decision phases – process view – competitive and supply chain strategies – achieving strategic fit – supply chain drivers – obstacles – framework – facilities – inventory – transportation – information – sourcing – pricing.

**UNIT II**

**Designing the Supply Chain Network-** Designing the distribution network – role of distribution – factors influencing distribution – design options – e-business and its impact – distribution networks in practice – network design in the supply chain – role of network – factors affecting the network design decisions – modeling for supply chain.

**UNIT III**

**Planning Demand and Supply-** Role of forecasting – demand forecasting – approaches – role of IT.

**Planning and Managing Inventories-** Safety inventory and its appropriate level – impact of supply uncertainty, aggregation and replenishment policies.

**UNIT IV**

**Transportation Networks and Sourcing-** Role of transportation – modes and their performance – transportation infrastructure and policies - design options and their trade-offs – Tailored transportation. Sourcing – In-house or Outsource – 3<sup>rd</sup> and 4<sup>th</sup> PLs – supplier scoring and assessment.

**UNIT V**

**Coordination in a Supply Chain-** Lack of supply chain coordination and the Bullwhip effect – obstacle to coordination – managerial levels – building partnerships and trust – continuous replenishment and vendor-managed inventories – collaborative planning, forecasting and replenishment.

**REFERENCES**

**Sunil Chopra and Peter Meindl**, SUPPLY CHAIN MANAGEMENT – STRATEGY, PLANNING AND OPERATION, *PHI, 4<sup>th</sup> Edition, 2010.*

**Wisner, Keong Leong and Keah-Choon Tan**, PRINCIPLES OF SUPPLY CHAIN MANAGEMENT A BALANCED APPROACH, *Thomson Press, 2005..*

**Coyle, Bardi, Longley**, THE MANAGEMENT OF BUSINESS LOGISTICS – A SUPPLY CHAIN PERSPECTIVE, *Thomson Press, 2006.*

**Jeremy F Shapiro**, MODELING THE SUPPLY CHAIN, *Thomson duxbury 2002.*

**MBA (Operations & Supply Chain Management) – III Semester**

**PAPER - XVIII**

**MATERIALS AND STORE MANAGEMENT**

**Paper Code: MBSC3004**

**Objectives**

- To understand the concepts and principles materials and store management
- To appreciate the role of store management and forecasting
- To analyze the management aspects of health and safety in work

**UNIT I**

Determination of Stockholding Policy. Customer expectations – internal/external; supply market conditions; Categories of risks and their evaluation; Requirements of the business and the need for stock; Economics constraints; methods of avoiding carrying stock; General control methods e.g. ABC analysis. Control of Stock Range Coding, classification and categorization methods;

**UNIT II**

Variety reduction and standardization; Application and approval of new stock items; Control of slow moving; obsolete and redundant stock; Role of and function in determining stock range, Control of Stock Levels Forecasting techniques in relation to demand and lead times; Independent demand situations and the use of fixed order quantity and periodic review systems; Techniques for dealing with dependent demand.

**UNIT III**

The Kanban approach and Just in Time philosophy; Coping with uncertainty in achieving required service levels; Suppliers contribution to controlling stock. Management of Storage Facilities. Identifying types of commodities to be stored and their characteristics with regard to storage and handling needs; Materials requirements planning (MRP) and manufacturing resource planning (MRPII) and distribution requirements planning (DRP); Pull systems.

**UNIT IV**

Physical Management of Stock Selection and operation of appropriate storage and materials handling equipment – general outline; Methods of stores layout to optimize the use of space and minimize picking costs; Outsourcing the activity and vendor managed inventory; Maintenance of security and prevention of theft; Storage and disposal of redundant, obsolete and scrap items; Environmental issues.

**UNIT V**

Management Aspects Health and Safety at work – operational issues: Health and Safety at work – management issues interdependence and teamwork; Relationships with other functions. Relevant Techniques Use of operational research techniques of queuing theory, network analysis, simple simulation techniques and decision trees; Identifying methods to distinguish between stores efficiency and effectiveness; Benchmarking and measurement of performance.

**REFERENCES**

**Jessop & Morrison**, STORAGE AND SUPPLY OF MATERIALS,

**Duru C. Innocent**, PURCHASING AND STORES MANAGEMENT, *Ken Printing Press*,

**Terry Lucey**, QUANTITATIVE TECHNIQUES, *Letts Educational*, 5th Edition.

**Dobler & Burt**. PURCHASING & SUPPLY MANAGEMENT

## **MBA (Operations & Supply Chain Management) – III Semester**

### **PAPER - XIX INFORMATION SYSTEM IN SUPPLY CHAIN MANAGEMENT**

**Paper Code: MBSC3005**

#### **Objectives**

- To appreciate the role of IT in supply chain
- To understand data mining in supply chain
- To analyze IT practices in supply chain

#### **UNIT I**

The role of IT in Supply Chain .Uses of IT in inventories, Transportation & facilities within a Supply Chain .The Supply Chain IT frame work-macro Processes

#### **UNIT II**

The future of IT in the Supply Chain, Internal Supply Chain management, Supply Relationship Management, The Transaction Management Foundation .Data mining –Methods application area in Supply Chain

#### **UNIT III**

Goals of Supply Chain information Technology, Standardization, information Technology infrastructure Presentation Devices, Communication Devices .Data base, System architecture.

#### **UNIT IV**

The Supply Chain IT in Practice, Integrating Supply Chain Information Technology, Stage of Development, Implementation of ERP & DSS. Structure of DSS. Selection of Supply Chain DSS. Supply Chain master Planning.

#### **UNIT V**

Supply Chain Information System Design – Planning, Capacity, Performance requirement' manufacturing requirement, Operation, Transportation, Inventory Development .E-Business – Role in Supply chain, Framework, Impact on Cost.

#### **REFERENCES**

**David Simchi-Levi et al**, DESIGNING AND MANAGING THE SUPPLY CHAIN – CONCEPTS, STRATEGIES, AND CASE STUDIES, *McGraw Hill International Edition* 2003.

**N. Chandrasekaran**, SUPPLY CHAIN MANAGEMENT, *Oxford University Press, New Delhi* 2010

**Donald J Bowersox et al**, SUPPLY CHAIN LOGISTICS MANAGEMENT, *McGrawe hlll Education (India) Pvt. Ltd.New Delhi* 2007

**MBA (Operations & Supply Chain Management) – IV Semester**

**PAPER - XX**  
**PROJECT MANAGEMENT IN SUPPLY CHAIN OPERATIONS**

**Paper Code: MBSC4001**

**Objectives**

- To understand the role of project management
- To understand the technique to manage conflict in project planning
- To appreciate the role of IT in project management

**UNIT I**

**Introduction** – Project life cycle – Project selection – Types of project selection models – Project manager – Selection of Project Manager.

**UNIT II**

**Project Organization** – types – Project planning. Sorting out the project – Work breakdown structure and Linear Responsibility charts – Conflict and Negotiation – Conflict and Project life cycle – some requirements and principles of negotiation.

**UNIT III**

**Budgeting and cost estimation** – Scheduling – Network techniques: PERT and CPM –Gantt charts – Resource allocation – Resource loading – Resource Leveling.

**UNIT IV**

**Monitoring and Information Systems** – Project Control – Types of control processes – Control as a function of Management.

**UNIT V**

**Project auditing** – Purposes of evaluation – Project Audit Life Cycle – Project termination – Termination process.

**REFERENCES**

**Jack R. Meredith & Samuel J. Mantel**, PROJECT MANAGEMENT – A MANAGERIAL APPROACH

**Prasanna Chandra**, PROJECTS PLANNING, ANALYSIS, SELECTION, IMPLEMENTATION AND REVIEW

**P. Gopalakrishnan & V.E. Ramamoorthy**, TEXTBOOK OF PROJECT MANAGEMENT

**Richard B. Chase et al**, OPERATIONS AND SUPPLY CHAIN MANAGEMENT, *Tata McGraw Hill education Pvt. Ltd, New delhi2010*

## **MBA (Operations & Supply Chain Management) – IV Semester**

### **PAPER - XXI INNOVATIONS AND R&D MANAGEMENT**

**Paper Code: MBSC4002**

#### **Objectives**

- To understand the managerial aspects of Innovation functions
- To appreciate the Research & Development in management
- To evaluate the financial aspects of R&D projects

#### **UNIT I**

##### **Introduction & Managerial aspects of Innovation function**

Introduction, Components of Innovation, Types of Innovations, Models of Innovation Processes,

Evolution and characteristics of Innovation Management, Key drivers of Innovation, Factors influencing Innovation,

Organizing for Innovation, Factors influencing organizational design, Developing Innovation Strategy, Characteristics of creative organization.

#### **UNIT II**

##### **Research and Development Management-**

Introduction, Meaning,

Objectives,

Significance, Classification of R&D according to R&D type, process phase, measurement level, purpose of measurement and measurement perspective. Technology development approaches, Performance of R&D management in Indian scenario.

#### **UNIT III**

##### **Financial Evaluation of R&D Projects**

Introduction, Cost effectiveness of R&D,

R&D financial forecasts, Project selection, Evaluating R&D ventures, Conflicting views of managers. Allocation of resources, R&D programme planning and control. Project management, Project Planning and Control Techniques.

#### **UNIT IV**

**Organization R&D and innovation,** HRM issues in innovation and R&D, Leadership and R&D management, Organization Design and structure of R&D, R&D Project Management, Measurement, Evaluation and assessment of R&D

#### **UNIT V**

**National R&D infrastructure and Institutional Framework,** Fiscal and other incentives and Promotional /Support measures, Industry, Institutions and government cooperations. Other important issues in R&D management, Commercialization of R&D.

#### **REFERENCES**

**White,** THE MANAGEMENT OF TECHNOLOGY AND INNOVATION-A STRATEGIC APPROACH, Cengage Publication

**S Moikal,** INNOVATION MANAGEMENT, Sage Publication

**C.K Prahalad & M.S. Krishnan,** THE NEW AGE OF INNOVATION, Tata McGraw Hill Education Pvt. Ltd. New Delhi 2008.

## **MBA (Operations & Supply Chain Management) – IV Semester**

### **PAPER - XXII PROCUREMENT AND QUALITY MANAGEMENT**

**Paper Code: MBSC4003**

#### **Objectives**

- To understand the concepts of quality in supply chain
- To appreciate the role quality control in supply chain
- To analyze benefit and risk in outsourcing

#### **UNIT I**

Definition of Quality, Quality Standard, Quality Control, Aspects of Quality Control, Quality Control of Purchased Materials in a Supply Chain.

#### **UNIT II**

General Problems of Vendor Quality, Suppliers Quality Survey, Model for evaluation of Suppliers Quality.

#### **UNIT III**

Management Action for Quality Assurance, Activities under Quality Assurance, Evaluating Product Quality, Control Chart – Mean & Range.

#### **UNIT IV**

Element of Quality Management, Benefits, Six Sigma Quality Control, Principles, Benefits, Steps of Six Sigma.

#### **UNIT V**

Benefits and Risk of Outsourcing, What is E-Procurement, Framework of E-Procurement.

#### **REFERENCES**

**David Simchi-Levi, Philip Kamiusky, Edith Simchi Levi**, DESIGNING & MANAGING THE SUPPLY CHAIN, *Tata Mc Graw Hill*

**Dr. R.P. Mohanty & Dr. S.G. Deshmukh**, ESSENTIALS OF SUPPLY CHAIN MANAGEMENT, *Jaico Publishing House*

**L.C. Jhamb**, PRODUCTION MANAGEMENT, *EPH*.

**Richard B. Chase et al**, OPERATIONS AND SUPPLY CHAIN MANAGEMENT, *Tata McGraw Hill education Pvt. Ltd, New delhi2010*

## **MBA (Operations & Supply Chain Management) – IV Semester**

### **PAPER-XXIII CUSTOMER RELATIONSHIP MANAGEMENT**

**Paper Code: MBSC4004**

#### **Objectives**

- To understand the concepts and principles of CRM
- To appreciate the role and changing face of CRM as an IT enabled function, and
- To enable managing Customer Relationship.

#### **UNIT I**

**CRM concepts** - Acquiring customers, - Customer loyalty and optimizing customer relationships - CRM defined - success factors, the three levels of Service/ Sales Profiling - Service Level Agreements (SLAs), creating and managing effective SLAs.

#### **UNIT II**

**CRM in Marketing** - One-to-one Relationship Marketing - Cross Selling & Up Selling - Customer Retention, Behaviour Prediction - Customer Profitability & Value Modeling, - Channel Optimization - Event-based marketing. - CRM and Customer Service - The Call Centre, Call Scripting - Customer Satisfaction Measurement.

#### **UNIT III**

**Sales Force Automation** - Sales Process, Activity, Contact- Lead and Knowledge Management -Field Force Automation. - CRM links in e-Business - E-Commerce and Customer Relationships on the Internet - Enterprise Resource Planning (ERP), - Supply Chain Management (SCM), - Supplier Relationship Management (SRM), - Partner relationship Management (PRM).

#### **UNIT IV**

**Analytical CRM** - Managing and sharing customer data - Customer information databases - Ethics and legalities of data use - Data Warehousing and Data Mining concepts - Data analysis - Market Basket Analysis (MBA), Click stream Analysis, Personalization and Collaborative Filtering.

#### **UNIT V**

**CRM Implementation** - Defining success factors - Preparing a business plan requirements, justification and processes. - Choosing CRM tools - Defining functionalities - Homegrown versus out-sourced approaches - Managing customer relationships - conflict, complacency, resetting the CRM strategy. Selling CRM internally - CRM development Team - Scoping and prioritizing - Development and delivery - Measurement.

#### **REFERENCES**

**Alok Kumar Rai**, CUSTOMER RELATIONSHIP MANAGEMENT CONCEPT & CASES, *Prentice Hall of India Private Limited, New Delhi. 2011*

**S. Shanmugasundaram**, CUSTOMER RELATIONSHIP MANAGEMENT, *Prentice Hall of India Private Limited, New Delhi, 2008*

**Kaushik Mukherjee**, CUSTOMER RELATIONSHIP MANAGEMENT, *Prentice Hall of India Private Limited, New Delhi, 2008*

**Jagdish Seth, et al**, CUSTOMER RELATIONSHIP MANAGEMENT

**V. Kumar & Werner J.**, CUSTOMER RELATIONSHIP MANAGEMENT, *Wiley India, 2008*



**MBA (Operations & Supply Chain Management) IV Semester**

**PAPER - XXIV  
GLOBAL SUPPLY CHAIN MANAGEMENT**

**Paper Code: MBSC4005**

**Objectives**

- To understand the global market force in supply chain
- To analyze risks and advantages in supply chain
- To appreciate green supply chain indicators

**UNIT I**

**Introduction, Forces of Global Supply Chain-** Global market force, Technology force, Global cost force, Political force. Stages of International Development.

**UNIT II**

**Risk of Global Supply Chain-** Speculative Strategies, Hedge Strategies, Flexible Strategies Requirements for Global Strategy implementation, Advantages of Global Supply Chain. Supply Chain security.

**UNIT III**

**Issues in international Supply Chain Management** –International Versus Regional Product, Local autonomy versus control logistics –Importing & Exporting, Main forces, Barriers

**UNIT IV**

**The Global Supply Chain-**Performance Cycle length, operations, system integration, Alliances, Views of Global Logistics –Importing & Exporting, Main force.

**UNIT V**

**Green Supply Chain** –Strategies. Green Supply Chain indicators, Strategic, tactical, Operational. Wastivity in Supply Chain.

**REFERENCES**

**Sunil Chopra & Peter Meindl**, SUPPLY CHAIN MANAGEMENT , *PHI*

**Donald J. Bowersox David J. Closs**, LOGISTICAL MANAGEMENT , *TATA MC GRAWHILL*

**Dr. R.P. Mohanty & Dr. S.G. Deshmukh** ESSENTIALS OF SUPPLY CHAIN MANAGEMENT, *Jaico Student Edition*