

MBA (GENERAL) SEMESTER-WISE SYLLABUS

Total Number of Credits: 93 Credits

SEMESTER I - 9X3 Credits = 27 Credits

- **List of Courses in MBA (General) for Semester I**

GE101: Managerial Theories, Approaches & Functions

GE102: Managerial Economics

GE103: Individual & Organizational Behaviour

GE104: Marketing Management

GE105: Financial Reporting and Analysis

GE106: Statistics for Business Analytics

GE107: Business Environment and Business Laws

GE108: Business Communication

One Course Under CBCS

GE101
MANAGERIAL THEORIES, APPROACHES AND FUNCTIONS

(3 CREDITS)

Objective

The Objective of the paper is to provide an understanding of the basic management concepts / principles and their significance to the organization. The course also includes the contemporary issues and perspectives in management.

Unit-1 Management and Organization – Relationship between management theory and management practice – Role of a manager – skills of a manager.

Unit-2 Perspectives on Management and Development – Scientific management – Taylor, Taylor and Gilbreth. Human Relations approach Hawthorne experiments – Theory X and Theory Y – Theory Z – Behavioral approach – Contingency approach.

Unit-3 Contemporary approaches to management theory – contributions of Tom Peters – Rosabeth – Karter – Peter Lange – Prahlad and Sumantra Ghoshal. Comparative perspectives on American, Japanese and European Approaches to management.

Unit-4 Management processes and function – Nature and description of management process – Managerial functions – planning, organizing, directing, coordinating and controlling.

Unit-5 Organizational processes – concept of power, Authority and delegation – emergence of new organizational, model. Leadership – approaches – theories – transactional – transformational leadership – leader – manager.

Unit-6 Contemporary Issues in management – social responsibility, ethics and environmental management. Perspectives on Indian Management - Management by values.

Suggested Readings

1. Weirich & Koontz (1996) Essentials of Management. New Delhi: TMH
2. Paul Heresy & Ken Blanchard (1995) Management and Organizational behavior. New Delhi: PHI
3. Hawthorne V. Butler (1987) Organization and Management - Theory and Practice. New Delhi: PHI
4. Miner B. John (1990) Organizational Behaviour - Performance and Productivity. New York: Random House
5. Stephen P Robins and M Coulter (2004) Management. New Delhi: PHI

GE102
MANAGERIAL ECONOMICS

(3 CREDITS)

Objective

The objective of this paper is to provide the basic concepts in Managerial Economics.

Unit-1 Basic concepts of Managerial Economics – Profits, revenue – costs – discounting – profit maximization – marginal analysis – regression analysis – objectives of the enterprise.

Unit-2 Demand – Demand function – Law of demand, demand elasticity's, demand estimation and forecasting.

Unit-3 Production and Costs – Production Function – Employment decisions – cost curves in the short and long run – estimating cost functions.

Unit-4 Perfect competition – Output decisions of firms, equilibrium of the industry in the short and long run – supply-demand analysis – effects of price control. Monopoly and simple Oligopoly – Price and output decisions under monopoly, discriminating monopoly, effects of price control, kinked demand curve hypothesis.

Unit-5 Price practices – Cost based pricing, Competition oriented pricing, - Limit pricing – Peak load pricing – Life Cycle pricing.

Suggested Readings

1. Christopher R Thomas and S. Charles Murice (2005) Managerial Economics - Concepts and Applications. New Delhi: Tata McGraw Hill.
2. P.L. Mehta (2002) Managerial Economics - Analysis, Problems and Cases. New Delhi: Sultan Chand
3. Watson and Getz (1995) Price Theory and its uses. AITBS
4. Rahul A. Shastri (2000) Microeconomic Theory. Hyderabad: Universities Press (Orient Longman)

GE103
INDIVIDUAL AND ORGANIZATIONAL BEHAVIOUR
(3 CREDITS)

Objective

The Objective of this paper is to acquaint the student with the behavioral nuances of individual and group on Organizations.

Unit-1 Introduction to OB – Definition – Relationship with other fields – Theoretical frame works – Environmental context – Globalization – Diversity and Ethics – Work behavior.

Unit-2 Foundations of Behavior: Personality – Meaning – Role of heredity – Self-esteem – Self efficacy – Socialization process – Person – Situation interaction – Big 5 personality traits – Attitudes – Nature and dimensions of attitudes – Components of attitudes – Functions – Changing attitudes – Antecedents of work related attitudes job satisfaction – Outcomes – Commitments – Perception – Nature – Sensation Versus Perception – Sub processes – Perceptual selectivity – Organization- Social perception – Attribution – Stereotyping – Locus of control – Impression Management – Positive OB – Positive Psychology – Optimism – Dimensions – Emotional intelligence – Self efficacy.

Unit-3 Work Motivation – Meaning – Primary motives – Secondary motives – Approaches – Content theories – Process theories – Contemporary Theories – Applications of theories in work place – Job Design.

Unit-4 Groups – Nature of groups – Dynamics of Informal groups – Dysfunctions of groups and teams – Teams in modern work place.

Unit-5 Interactive Conflict – Nature – Sources of conflict – Intra individual conflict – Interactive Conflict – Resolving conflicts – Negotiation – Skills – Management.

Unit-6 Stress – Emergence of Stress – Causes – Copying mechanisms – Psychosomatic Disorders – Consequences – Managing Stress.

Unit-7 Organizational Culture – Definition – Characteristics – Strong and Weak Cultures – How cultures start – Maintaining an uniform culture – Changing Organizational Culture.

Unit-8 Challenges of Organizations in the Post Globalized Era

Suggested Readings

1. Fred Luthans (1998) Organizational Behavior. New Delhi: Mc Graw – Hill International Edition
2. Udai Pareek (2004) Understanding Organizational Behavior. New Delhi: Oxford University Press
3. K. Aswathappa (2005) Organizational Behavior Text cases games. New Delhi: Himalaya Publishing Company
4. Schermerhorn, Hunt, Osborn (2001) Organizational Behavior. New Delhi: John Wiley & sons, Inc.

GE104
MARKETING MANAGEMENT
(3 CREDITS)

Objective

The Objective of this course is provide the students a basic conceptual framework of the Marketing Principles and Practices in an organization:

Unit-1 Fundamental of Marketing: Introduction – Marketing Concept – Philosophy – Marketing Environment Consumer and Industrial Marketing.

Unit-2 Marketing Process and Framework: Elements of the Marketing Mix – Promotional Mix – Product Life Cycle (PLC).

Unit-3 Market Analysis and Planning – Market Segmentation – Competitive analysis and Marketing Organizations and Control.

Unit-4 Consumer and Industrial Buyer Behaviour – Model of consumer and industrial behavior.

Unit-5 Marketing Management in the New Millennium

Suggested Readings

1. Kotler, Philip (1998) Principles of Marketing. New Delhi: Prentice Hall of India
2. Mc Carthy, E. Jerome (1998) Basic Marketing : Richard D. Irwin Inc: Homewood, Illinois
3. Neelamegham S (1998) Marketing in India, Cases and Readings. New Delhi: Vikas Publishing House Pvt. Ltd.
4. Panwar J.S. (1997) Marketing in the New Era. Sage Publications

GE105
FINANCIAL REPORTING AND ANALYSIS
(3 CREDITS)

Objectives:

The objectives of this course is to familiarize the Students with the rudiments of Accounting Cycle (as a basis for financial decision making). It will also equip the student with skills in analyzing and interpreting financial Statements

Unit-1 Introduction to Accounting Cycle - Definitions – Journalizing – Ledger Posting – Subsidiary Books – Trial Balance – Profit and Loss Account – Balance Sheet.

Unit-2 Basic Postulates of Accounting – Concepts and Conventions – GAAP – IFRS.

Unit-3 Corporate Accounts – Special Characteristics - Preparation of Final Statements of Account.

Unit-4 Financial Statement Analysis – Ratio Analysis – Liquidity – Leverage – Activity – Profitability – Implications and Interpretation.

Unit-5 Financial Statement Analysis – Comparative Statements – Common-Size Statements – Trend Analysis – Inter-firm Comparison – Industry Analysis.

Unit-6 Funds Flow Analysis – Concept of Fund – Statement of Changes in Working Capital – Statement of Changes in Financial Position – Cash Flow Analysis.

Suggested Readings:

1. Jain & Narang: Advanced Accountancy, Kalyani Publications, Ludhiana. Latest Edition
Pandey I.M: Financial Management, Vikas Publishing, New Delhi, Latest Edition.
2. Khan M. Y. & Jain P K: Management Accounting, Tata McGraw-Hill, New Delhi, Latest Edition.
3. Sharma & Gupta: Management Accounting, Kalyani Publishers, Ludhiana.
4. Singvi, N.M. & Ruzbeh J. Bodhanwala: Management Accounting Text and Cases .

GE106
STATISTICS FOR BUSINESS ANALYTICS
(3 CREDITS)

Objective

This course helps students to understand and formulate managerial situations in a decision theoretic framework. They shall be exposed to fundamental optimization procedures and techniques. Real life case studies are discussed to illustrate constrained and unconstrained optimization methods.

Unit-1 Introduction: History; Subdivisions within Statistics; Data collection; Editing; Classification; Tabulation; Diagrammatic and Graphic representation of data.

Unit-2 Measures of Central tendency and Dispersion: Arithmetic Mean; Geometric Mean; Harmonic Mean; Median; Mode, Standard Deviation; Skew ness; Kurtosis; Moments.

Unit-3 Probability and Probability Distributions: Introduction to Probability: Probability Rules; Probabilities under Conditions of Statistical Independence; Probabilities under Conditions of Statistical Dependence, Revising Prior Estimates of Probabilities: Bayes' Theorem; Random Variables; Use of Expected Value in Decision Making; The Binomial Distribution; The Poisson Distribution; The Normal Distribution.

Unit-4 Correlation, Regression and Time Series: Estimation Using the Regression Line; Correlation Analysis; Making Inferences about Population Parameters; Using Regression and Correlation Analysis: Multiple Regression and Correlation Analysis; Finding the Multiple-Regression Equation; Variations in Time Series; Trend Analysis; Cyclical Variation; Seasonal Variation; Irregular Variation; A Problem Involving All Four Components of a Time Series; Time Series Analysis in Forecasting

Unit-5 Index Numbers: Unweighted Aggregates Index; Weighted Aggregates Index; Average of Relatives Methods; Quantity and Value Indices; Issues in Constructing and Using Index Numbers

Unit-6 Concepts of Sampling and Estimation: Random Sampling; Design of Experiments, Introduction to Sampling Distributions; Sampling Distributions in More Details; An Operational Consideration in Sampling: The Relationship Between Sample Size and Standard Error; Point Estimates; Interval Estimates: Basic Concepts; Interval Estimates and Confidence Intervals; Calculating Interval Estimates of the Mean from Large Samples; Calculating Interval Estimates of the Proportion from Large Samples.

Unit-7 Testing of Hypotheses and Analysis of Variance: Concepts Basic to the Hypothesis-Testing Procedure; Testing Hypotheses; Hypothesis Testing of Means When the Population Standard Deviation is Known; Measuring the Power of a Hypothesis Test; Hypothesis Testing of Proportions: Large Samples; Hypothesis Testing of Means When the Population Standard Deviation Is Not Known; Hypothesis Testing for Differences between Means and Proportions; Tests for Differences between Means: Large Sample Size, Small Sample Sizes; Testing Differences between Means with Dependent Samples; Test for Differences between Proportions: Large Sample Sizes; Analysis of Variance; Inferences about a Population Variance; Inferences about Two Population Variances

Unit–8 Non-parametric tests: Chi-Square as a Test of Independence; Chi-Square as a Test of Goodness of Fit: The Sign Test for Paired Data; Rank Sum Tests: The Mann-Whitney U Test and the Kruskal-Wallis Test; The One-Sample Runs Test; Rank Correlation; The Kolmogorov-Smirnov Test.

Suggested Readings

1. Richard I. Levin & David S. Rubin, Statistics for Management, PHI.1999, New Delhi
2. Kishor S. Trivedi, Probability and Statistics with Reliability, Queuing and Computer Science Applications, John Wiley & Sons, Singapore, 2002
3. John E. Freund & Ronald E. Walpole, Mathematical statistics, PH, New Jersey, 1980
4. E. L. Lehmann, Testing Statistical Hypotheses, John Wiley & Sons, New York, 1986
5. S. P. Gupta, Statistical Methods, Sultan Chand & Sons, New Delhi 1998.

GE107
BUSINESS ENVIRONMENT AND BUSINESS LAWS
(3 CREDITS)

Objective

The objective of this paper is to sensitize the student about the business environment in the Indian context. The political, economic, legal and technological environment is also included in the course.

Unit-1 Business Environment: Concept, Nature and scope of Business Environment, Global Business Environment, Business Environment in the Indian context.

Unit-2 Economic Environment : Types of economic policies, economic liberalization, fiscal and monetary policies and budget; WTO and international economy Industrial policy – Trade Policy – Economic Development and role of government – Privatization & Public Systems Management.

Unit-3 Political & Legal environment: Political institutions – Legislature – executive – Judiciary interaction between political institutions and business, firm; legal framework of business; Company laws; Labor legislations: Consumer Protection Act, 1986.

Unit-4 Technological Environment; Impact of Technology, Technology and Society; Trends in Technology Management, Issues & Challenges.

Unit-5 Social Environment: Business and Society: Social responsibility of Business; Social pressures, groups and dimensions. Natural Environment: Environmental aspects in business – Environmental hazards: Government role and interventions.

Unit-6 Indian Contract Act – 1872. Sale of Goods Act 1930 - - Negotiable Instruments Act 1881 – Companies Act – 1956 – Consumer Protection Act and Cyber Laws. Role of MRTP Act. Competition Law Environmental Act.

Suggested Readings

- 1) Ashwathappa (2006) Essentials of Business Environment. Bombay: Himalaya Publishing House
- 2) Francis Cherunilam (1993) Business Environment. Bombay: Himalaya Publishing House, Bombay
- 3) Agarwal, Raj (2002) Business Environment, New Delhi: Excel Books
- 4) Cherunilam, Francis (1997) Business Environment, Mumbai: Himalaya Publishing House
- 5) Mathew M.J. (2003), Business Environment: A study of socio cultural, economic and legal environment in business, Jaipur RBSA Publishers.

GE108
BUSINESS COMMUNICATION
(3 CREDITS)

Objective

To develop application of written, oral and interpersonal communication skills and familiarize the students with gaps for personal effectiveness and ways to overcome them.

Unit-1 Fundamentals of Communication – Introduction, Understanding Communication, the communication process, Barriers to communication, the Importance of Communication in the Workplace

Unit-2 Expressive Communication – Written Communication, Business Letters. E-mail, Memo, Reports and Proposals, Oral Communication, Presentation Skills, Meetings, Group Discussion, Managerial Speeches, Interviews, Non-verbal Communication, Kinesics, Proxemics, Voice

Unit-3 Receptive Communication Skills – Listening, Importance, Types, Barriers, Improving Listening, Reading Body Language

Unit-4 Organizational Communication – Internal, Types, Channels, Diversity and Intercultural Communication, External Communication, Types, Channels, Use of Technology

Unit-5 Interpersonal Communication – Interpersonal needs, Reducing Misunderstandings, Rapport Building, Negotiation Skills, Johari Window, Transactional Analysis

Unit-6 Employment Communication – Resumes and Cover Letters, Introduction, Writing a Resume, Writing Job Application Letters, Group Discussion and Interviews

References

1. Bovee and Thill: Business Communication Today, McGraw-Hill, Second Edition
2. Guffey M. E.: Business Communication Process & Product, Thompson, South-Western
3. Level D.A: Managerial Communications, Business Publications, Plano, Texas
4. Pradhan and Pradhan: Business Communication, Himalayan Publishing House
5. Seely J, Oxford Writing and Speaking, Oxford
6. Raman and Singh: Business Communication, Oxford University Press, New Delhi

SEMESTER II - 9X3 Credits = 27 Credits

• **List of Courses in MBA (General) for Semester II**

GE201: Business Analytics for Decision Making
GE202: Operations Research
GE203: Human Resource Management
GE204: Strategic Marketing
GE205: Financial Management
GE206: Operations Management
GE207: Research Methodology for Managers
GE208: Cost and Management Accounting
One Course under CBCS

**GE201
BUSINESS ANALYTICS FOR DECISION MAKING
(3 CREDITS)**

The objective of this course is to provide the students an exposure to the role of analytics in business decision making. The students also learn working with R software which is quite popular and extensively used in the area of analytics

Unit-1 Introduction to Business Analytics, Types of data, Integrating Analytics with business, Business Analytics for Competitive Advantage, Descriptive, Predictive, and Prescriptive Analytics, Dashboards

Unit-2 Business Analytics Process Cycle

Unit-3 Machine Learning, Supervised Learning and Unsupervised Learning, Clustering & Segmentation, Affinity/Association Analysis, Data Reduction, Visual Analytics and data visualization

Unit 4: Market basket Analysis, Text Analytics, Spreadsheet Modelling,

Unit 5: Introduction to Big Data, Master Data Management

Suggested Readings:

1. Analytics at Work by Thomas H. Davenport, Jeanne G. Harris and Robert Morison, Harvard Business Press, 2010
2. Getting Started with Business Analytics: Insightful Decision-Making by David Hardoon, Galit Shmueli, Chapman & Hall/CRC, 2013
3. Business Intelligence: A Managerial Approach by Efraim Turban, Ramesh Sharda, Dursun
4. Delen and Daid King, Pearson Publication, 2012
5. Business Intelligence Making Decision through Data Analytics, Jerzy Surma, Business Expert Press, 2011
6. Successful Business Intelligence: Secrets to Making BI a Killer App by Cindi Howson, Tata McGraw Hill Edition, 2012

GE202
OPERATIONS RESEARCH
(3 CREDITS)

Objective:

The objective of the course is to provide exposure to the major tools and techniques of Operation Research (OR), and to create awareness and appreciation about the application of Operation Research in functional areas of Management.

Course Outline: [Approximate number of lectures per topic]

Unit-1 Introduction to Operation Research and Modeling, Definitions of OR, Evolution, Scope and Applications in Business [4]

Unit-2 Linear Programming, Models, Assumptions of LPP, Formulation, Graphical Method, Simplex method, Dual Simplex Method and Duality, Sensitivity Analysis [8]

Unit-3 Transportation Problem, Initial solution methods, Degeneracy, MODI method, Transshipment problem, Assignment Problem, Hungarian method, Unbalanced problems, The Travelling- Salesman problem [8]

Unit-4 Statistical Decision Theory, Criteria for Decision Making under risk and uncertain environments, concept of Utility , Expected Monetary Value, EVPI, Decision Tree, Bayesian approach and Utility theory, Markov Analysis [6]

Unit-5 Game theory, Zero sum game, Saddle point, pure strategies, mixed strategies, Dominance, Graphical Method, Matrix method, Algebraic Method [6]

Unit-6 Sequencing Problem, Johnson's Rule, "n" jobs through two/more machines, Two jobs through 'm' machines, Replacement Problem, Queuing theory, Queuing system, Models and applications, Simulation, Monte Carlo simulation, Business Applications [8]

Suggested Readings:

1. Richard .I. Levin, David. S. Rubin: Quantitative approaches to Management, Mc Graw Hill International Book co.1992.
2. Barry Render, Ralph M. Stair, Jr., Michael E. Hanna: Quantitative Analysis for Management, Pearson Education.2008.
3. Hamdy A. Taha: Operations Research: An Introduction, Dorling Kindersley, 2008.
4. S. D. Sharma: Operations Research, Kedar Nath Ram Nath & Co., 2006
5. Kanthi Swarup, Gupta P K, Man Mohan, Sultan Chand & Sons, 2008.

GE203
HUMAN RESOURCE MANAGEMENT
(3 CREDITS)

Objective

The objective of this course is to introduce the concept of Human Resource in Management and provide insights into the functional dimensions of human resource management

Unit-1 Human Resource Management-concept, nature, scope, function perspectives, strategic HR in changing environment-Challenges of HR.

Unit-2 Employee planning – Need for HR planning, determining the demand for work force, predicting the future supply, replacement charts, HR planning in a Globalized era.

Unit-3 Work Analysis and Design- Methods of Job Analysis, Job Description, Job Specifications, Job Evaluation.

Unit-4 Recruitment and selection procedures- Recruitment sources-e-recruitment-steps in selection procedures, hiring decisions, placement procedures-process of induction, socialization process, global placement, transfers, promotions, handling separations, downsizing.

Unit-5 Training and Development- Need and Importance of Training-Methods and Evaluation of Training, Career Management-Career Development and planning, Career Success.

Unit-6 Performance Appraisal- Methods-Purpose Traditional and Modern Approaches-Performance Management- Competency Management.

Unit-7 Employer- Employee Relations- Industrial Relations, Nature, Importance, Trade Unions in a liberalized era. Collective bargaining, workers participation movement, managing employee safety and health.

Unit-8 Contemporary Issues in HRM- Diversity Management, Cross-Cultural Management, Ethics in HRM, Human Resource Information System.

Appropriate cases studies will be discussed

Suggested Readings:

- 1) P. Jyothi and Venkatesh (2005) D.N. Human Resource Management, New Delhi: Oxford University Press.
- 2) Wayne F Cascio (1998) Managing Human Resources, New Delhi: Tata Mc.Graw Hill.
- 3) John Walton (1999) Strategic Human Resource Development, New Delhi: Prentice Hall.
- 4) Arun Monappa & Merukh Engineer (1999) Liberalization and Human resource Management- Challenges for the corporations of Tomorrow, New Delhi: Sage publications.

GE204
STRATEGIC MARKETING
(3 CREDITS)

Objective:

The objective of this course is to provide a conceptual and practical framework of marketing management in an organization and develop analytical and decision making skills.

Unit-1 Changing marketing issues and trends- Delivering Customer Value and Satisfaction. Relationship Marketing.

Unit-2 Analysis of consumer / organizational markets - Model of consumer behavior. Factors influencing Buyer behavior. Buying decision process / stages.

Unit-3 Analysis of competition - Identifying and analyzing competitors. Designing the competitive intelligence system. Strategy formulation.

Unit-4 Marketing decisions - Managing Product Lines and Brands. Price setting and responding to pricing changes. Channel design and management. Direct marketing and marketing of services. Marketing communication. Sales force management

Unit-5 Marketing organization and control – Techniques and Strategies.

Suggested Readings

1. Philip Kotler (1994) Marketing Management. New Delhi: Prentice Hall
2. Georg Fisk (1986) Marketing Management. New Delhi: Praeger
3. Joseph P. Goiltinam and Gordan W. Paul (1985) Marketing Management: Strategies and Programs. New Delhi: McgrawHill
4. Rajan Saxena (2002) Marketing Management . New Delhi: TMH

GE205
FINANCIAL MANAGEMENT
(3 CREDITS)

Objective:

To Provide an Insight into the broad Framework of Financial Management
To Impart the Skills Necessary for Making Financial Decision

Unit-1 Overview of Financial Management-Functions of financial management – Profit Maximization – Wealth Maximization – Organization of finance function - Time Value of Money – Future Value – Present Value - Single flow - Annuity Flow- Multiple compounding periods – Doubling Period – Sinking Fund Factor etc.

Unit-2 Investment Decision – Traditional - Discounted cash flow Techniques - Risk Analysis and Real Options in Investment Decision.

Unit-3 Concept of Cost of Capital - Component cost and overall Cost of capital – Cost of Debt – redeemable and irredeemable – Cost of Preference – Cost of Equity – Internal and External – Weighted Average Cost of Capital – Book Value – Market Value Weights.

Unit-4 Capital Structure Decision – Sources of Finance – Debt – Equity – Preference – Hybrid - Leverage – Operating leverage – Financial Leverage – Combined Leverage – Financial Breakeven Point – Theories – Net Income Approach – Net Operating Income Approach – MM Approach – Traditional Approach - Practical - determinants of capital structure.

Unit-5 Dividend Decision – Theories – Modigliani and Miller Approach – Walter Model – Gordon Model – Dividend Policy and Share Valuation – Stock Splits – Bonus Shares – Practical Aspects of Dividend Policy – Corporate Dividend Behaviour.

Unit-6 Working Capital Management – Overall Considerations – Duration of Operating Cycle – Investment in Current Assets – Management of Individual Components – Cash Management – Receivables Management – Inventory Management – Current Asset Financing.

Books Recommended:

1. James C.Van Horne, Financial Management &Policy, Prentice Hall of India, New Delhi, Latest Edition.
2. Eugene H Brigham, Fundamentals of Financial Management, Dryden Press, New York, Latest Edition.
3. Pandey. I.M, Financial Management, Vikas Publishing House, New Delhi, Latest Edition.
4. Khan M.Y& Jain P.K. Financial Management, Tata McGraw Hill, New Delhi Latest Edition.
5. Rama Moorthy V.E., Working Capital Management, IFMR, Chennai, 1978.
6. Prasanna Chandra, Financial Management Theory & Practice, Tata McGraw Hill Latest Edition.

GE206
OPERATIONS MANAGEMENT
(3 CREDITS)

Objective:

This course attempts to help the students to learn operations management systems and analyze issues pertaining to management of productivity, technology and facilities. This course will also focus on concepts and policies relating to operations planning and control and management of materials. It highlights integrative perspectives of the operations management function.

Course Outline: [Approximate number of lectures per topic]

Unit 1 Introduction: Production/Operation system and process, Product design, Process design [6]

Unit 2 Facilities Management, Location of facilities, Productivity, Capacity planning, Layout of facilities, and JIT [6]

Unit 3 Operations planning and control: Forecasting, Aggregate Planning, Mass and continuous production systems, Lean Manufacturing, Material Requirements Planning, and Master Production Schedule [8]

Unit 4 Management of Technology: Role and importance, Technology change, Technology Life Cycle, Technological transformation, Technological alternatives and Technology assessment [8]

Unit 5 Materials Management: Planning and procurement of materials, Inventory planning and control, Economic Order Quantity, Replacement Problem [8]

Unit 6 Introduction to Project Management, Network analysis and Supply Chain Management [4]

Suggested Readings:

Textbooks:

1. Lee. J.Krajewski & P.Ritzman, Operations Management- Strategy and Analyses, 6th Edition, Pearson Education, 2000, Delhi.
2. R.Pannerselvam, Production and Operations Management, Prentice' Hall of India Private Limited, 2005, New Delhi.
3. Joseph S. Martinich, Production and Operations Management, An applied Modern Approach, John Wiley & Sons, 2002, Delhi.
4. S.N.Chary, Production and Operations Management, Tata Mc Graw Hill, 1995, New Delhi.
5. Gopal Krishnan , Hand Book of Materials M
6. Management, PHI, 1997, New Delhi.
7. Jack R Meredith & Samuel J. Mantel, Jr. Project Management, John Wiley & Sons, 2000, Delhi.
8. Chopra. S. and Meindl.P Supply Chain Management: Strategy, Planning & Operations, Prentice' Hall of India Private Limited, 2005, New Delhi.

GE207
RESEARCH METHODOLOGY FOR MANAGERS
(3 CREDITS)

Objective:

The objectives of the course is to enable the students in developing the most appropriate methodology for their research studies and make them familiar with the art of using different research methods and techniques.

Unit-1 Introduction to Research- Nature, Objectives, Types, Characteristics, Problems, Techniques and defining the problem.

Unit-2 Research design- Meaning, Purpose, Principles and developing a research plan.

Unit-3 Sampling design, Measurement and Scaling techniques and psychological testing.

Unit-4 Data collection- Preparation of data collection instruments, Interviews, Observation, Participatory Learning Appraisal and problems in collection of data.

Unit-5 Data analysis: Analysis of variance, Discriminant analysis, Factor analysis, Cluster analysis, conjoint analysis, Excel and Statistical Package for Social Sciences (SPSS).

Unit-6 Report writing: Interpretations, Inferences, Generalizations and characteristics of good report.

References

1. Donald R. Cooper & Pamela S. Schindler (1999) Business Research Methods. New Delhi: Tata Mc Graw Hill
2. Krishna Swamy and Ranganatham (2005) Methodology of Research in Social Sciences. Mumbai: Himalaya Books
3. Levin, R. I. and Rubin, D. S. (2001) Statistics for Management. New Delhi: PHI
4. Verenson, M. L. and Levine, V. N. (1996) Basic Business Statistics. New Jersey: Prentice Hall
5. Berry, W. D. (1985) Multiple Regression in Practice. Beverly Hills: Sage

GE208
COST & MANAGEMENT ACCOUNTING
(3 CREDITS)

Unit-1 Marginal Costing and Break-even Analysis – basic concepts, marginal costing and absorption costing, cost-volume-profit analysis, break-even analysis, limitations of break-even analysis, differential cost analysis and relevant cost analysis, applications for management decision making (simple types)

Unit-2 Standard Costing – concepts/uses and setting of standard cost accounting methods, computation of simple cost variances, relationship of standard costing and budgetary control, possible reasons for variations in costs

Unit-3 Uniform Costing – inter-firm comparison, cost reduction, value analysis/engineering including value management

Unit-4 Functional-based planning and control- budgeting-nature, administration and effectiveness, budgeting cycle, activity-based budgeting, Kaizen-approach, ZBB, performance budgeting, responsibility centres and financial control, nature and role responsibility centres, accounting and evaluation of responsibility centres, measuring the performance of investment centre – ROI, RI, EVA Transfer pricing and its application

Suggested Readings

1. Cost Accounting – A managerial emphasis, Horngren, Foster & Datar, Prentice Hall
2. Cost Accounting, N.K Prasad & A.K Prasad, Book syndicate
3. Fundamental Managerial Accounting Concept, Edmonds, Edmonds and Tsay, Irwin Mc Graw Hill

SEMESTER III – Total Credits = 24 Credits

7X3 Credits = 21 Credits + SIP of 3 Credits.

• **List of Courses in MBA (General) for Semester III**

GE301: Strategic Management

GE302: Quality Measurement and Quality Systems

GE303: Entrepreneurial Management

GE304: Summer Project

GE331: Human Resource Analytics

GE332: Management of Change and Organizational Development

GE341: International Marketing

GE342: Marketing of Services

GE351: Financial Markets

GE352: Strategic Financial Management

GE361: Service Operations Management

GE362: Logistics and Supply Chain Management

GE371: Predictive Analytics

GE372: Big Data Analytics

GE301
STRATEGIC MANAGEMENT
(3 CREDITS)

Objective

The objective of this course is to familiarize the students with the principles of Strategic Management. They would also be exposed to the techniques of Strategic analysis and facilitated to develop strategic thinking through case analysis and seminars

Unit-1 Context- Introduction; Meaning, Dimensions of context, theoretical models, diversity of context.

Unit-2 Strategy Formulation - Process: Importance, logical elements of the process, practices. Strategic intent - Concept-practice-role of leadership in forming strategic intent-stakeholders and their ability to influence strategic intent-impact of context on strategic intent.

Unit-3 Strategic Assessment and Analysis - General principles, purpose, environmental analysis, industry analysis, different analytical techniques; analysis of resources, capabilities and competence; different analytical techniques. Strategic Choice- Importance, structure, general tests of strategic option.

Unit-4 Analytical tools to Support Strategy Formulation Process: Models as analytical tools, application of these tools. Business Strategies: Scope of business strategy, content of a business strategy document, practical examples. Corporate Strategy: Historical development of ideas about corporate strategy, documenting corporate strategy, practical examples.

Unit-5 Strategy Implementation Process: Realizing strategic intent, leading strategic change, managing the change process. Strategy Evaluation and Control: Nature and importance of strategy evaluation; process; criteria of evaluation; characteristics of an effective evaluation and control system.

Suggested Readings

1. Michael A. Hitt, R. Duane Ireland & Robert E. Hoskisson Strategic Management: Competitiveness and Globalization: Concepts and Cases. South Western: Thomson Learning.
2. Arthur A. Thopson Jr. A.J. Strickland III & John E. Gamble Crafting and Executing Strategy: The Quest for Competitive Advantage- Concepts and Cases.
3. VSP Rao & V. Hari Krishna Strategic Management: Text and Cases. N.Delhi: Excel Books.

GE302
QUALITY MEASUREMENT & QUALITY SYSTEMS
(3 CREDITS)

Objective:

This course is about managing quality in today's competitive environment. It will focus on the issues that quality manager's face and the principles, strategies, methods and tools that might be used to build an effective quality system. The emphasis will be to discuss, understand and integrate various concepts of quality. The students will be appraised about the approaches to achieve customer satisfaction at a competitive price and developing an attitude of doing right things, right at the first time, every time.

Unit-1 Introduction to Quality: Origin, growth, Philosophies and Frameworks, Historical Approaches to Quality, Management Systems that impact the delivery of quality; Companywide assessment of Quality, Quality Planning, Process Management for controlling and improving quality, and Quality Systems and Organization for building and sustaining total quality [7]

Unit-2 Principles of Quality costs: Concept of Quality cost system, Use of Quality cost, Quality cost Programmed, Quality cost reduction, Cost of Quality and Return on Quality [6]

Unit-3 Models for Quality Improvement, Quality Improvement Tools, Problem Solving, Root Cause Analysis, Cause and Effect analysis, Failure Mode and Effect Analysis, Types of Variation, Methods of Measurement, Variation in Administrative Applications, Variation in Production Systems, Variation in Service Systems Quality Systems, An Overview of Supplier Quality Assurance Systems, Process Capability and Control, Inspection, Testing, Reliability. The Six Sigma Way [8]

Unit-4 Statistical Quality Control, Statistical Process Control, Quality assurance, Process capability analysis, Software Quality Management, Acceptance sampling, Customer Quality Assurance [7]

Unit-5 Total Quality Management: Concepts, Implementing TQM Systems, Approaches, Barriers, Changes in organization culture, Role and responsibilities of management, Continuous improvement, Quality circles, Quality Function Deployment [7]

Unit-6 Implementing the ISO series: ISO series as a system, implementing change, Quality assurance systems and quality audits [5]

Suggested Readings:

1. Juran J.M & Frank.M.Gryna, Quality planning and Analysis, Tata Mc Graw Hill, New York
2. Kaoru Ishikawa, Introduction to Quality Control, Chapman and. Hall, London, 1991.
3. Jack Campanella, ed., Principles of Quality Costs: Principles Implementation and Use, PHI Learning, New Delhi, 2008.
4. James L. Lamprecht, Implementing the ISO series, Marcel & Dekkar int., New York, 1994.
5. Besterfield D H et al., Total Quality Management, Pearson Education Asia, 200

GE303
ENTREPRENEURIAL MANAGEMENT
(3 – CREDITS)

Objective:

The objective of this course is to create awareness among the students about entrepreneurship as a career option. The major trends, laws, along with the sourcing of opportunity, opportunity evaluation and incubation of ideas will be discussed.

Unit 1 Overview of Entrepreneurship - Introduction, nature, concept, types, entrepreneurship and economic development, characteristics, evolution of entrepreneurship, environment for entrepreneurship.

Unit 2 Major laws governing an enterprise - Policies for small scale sector – Items reserved for exclusive production in small scale sector. Items reserved for marketing from small sector – central & state purchase policy. Incentives and subsidies.

Unit 3 Major trends in small scale sector: - Location, investment, organization, structure, industry wise classification. Emerging Business Models – Revenue – Building & Technology of Projects.

Unit 4 Sourcing of opportunities – Opportunity identification and evaluation.

Unit 5 –Opportunity Evaluation – Entrepreneurial Experiences – New Venture Ideas – Best Practices/ Ideas.

Unit 6 –Generating and managing growth-Growth through M&A, Partnering Strategies & Strategic Alliances – Entrepreneurship in established organizations.

Unit 7 Incubation of Ideas and products – Role of technology based incubators – Management of incubators.

Suggested Readings

1. P. Jyothi, Bhagwan Prasad, V. Sita (2006) Choosing an enterprise: How, what and when? New Delhi: Allied publishers.
2. Sharda S. Nandran and Samson J. Karek (2006) the spirit of Entrepreneurship. New York, Springer Inc.
3. Zolton J. ACS & David Audxtsch, 2005, Hand book of Entrepreneurship Research, New York: Springer Inc.
4. Kuratko, D. F and Hodgetts, RM. (2005), Entrepreneurship-theory, Process & Practice, Chennai, Thompson south Western.
5. Smith, K. K and Smith, R. L (2004) Entrepreneurial Finance, California: John Wiley & sons

GE331
HUMAN RESOURCE ANALYTICS
(3 CREDITS)

Objective

The objective of this course is to introduce the concept of Human Resource in Management and provide insights into the functional dimension of human resource management. The concepts in HRM along with the challenges and Issues in HRM will be discussed.

Unit- 1 Human Resource management-Concept, nature, scope, function perspectives, strategic HR in changing environment-Challenges of HR.

Unit-2 Employee planning – Need for HR planning, determining the demand for workforce, predicting the future supply, replacement charts, HR planning in a Globalized era.

Unit-3 Work Analysis and Design- Methods of Job Analysis, Job Description, Job Specifications, Job Evaluation.

Unit-4 Recruitment and selection procedures- Recruitment sources-e-recruitment-steps in selection procedures, hiring decisions, placement procedures-process of induction, socialization process, global placement, transfers, promotions, handling separations, downsizing.

Unit 5 Training and Development- Need and Importance of Training-Methods and Evaluation of Training, Career Management-Career Development and planning, Career Success.

Unit-6 Performance Appraisal- Methods-Purpose Traditional and Modern Approaches-Performance Management- Competency Management.

Unit-7 Employer- Employee Relations- Industrial Relations, Nature, Importance, Trade Unions in a liberalized era. Collective bargaining, workers participation movement, managing employee safety and health.

Unit-8 Contemporary Issues in HRM- Diversity Management, Cross-Cultural Management, Ethics in HRM, Human Resource Information System.

Suggested Readings:

1. P.Jyothi and Venkatesh (2005) D.N. Human Resource Management, New Delhi: Oxford University Press.
2. Wayne F Cascio (1998) Managing Human Resources, New Delhi: Tata Mc.Graw Hill.
3. John Walton (1999) Strategic Human Resource Development, New Delhi: Prentice Hall.
4. Arun Monappa & Merukh Engineer (1999) Liberalization and Human resource Management- Challenges for the corporations of Tomorrow, New Delhi: Sage publications

GE332
MANAGEMENT OF CHANGE AND ORGANIZATIONAL DEVELOPMENT
(3 CREDITS)

Objective:

The course aims at sensitizing the students about the dynamics involved in the management of change. The basic concepts, approaches, change initiatives along with the OD interventions are introduced to the students to manage the change processes.

Unit-1 Organizational change- Basic Concept Change- Organizational Change-Concept & Definition. Nature of Organizational change- Forces for change – types. Essential components of a change management program. Process of change – Model, Resistance to change. Overwhelming resistance strategies & Techniques.

Unit-2 Organizational development – Planned Change – Organizational Development- Definition, Assumptions, Objectives. Strategies – Diagnostics Activities, Team Building, Survey Feed Back, Process consultation , planning & goal setting, and OD.

Unit-3 Forms of organizational change. Contemporary organizational trends – organizational design & organizational structures. Emerging forms of organizational change- mergers & acquisitions turn around management. Process based change- business process re-engineering, TQM, downsizing & outsourcing

Unit-4 Interventions in organizational change-focus on intervention-person focused. Role focused interventions-role efficacy lab, role negotiation technique; forced field analysis. Focus on team-inter group team building interventions- organizational Mirror

Unit-5 Evaluation – approaches to evaluating change. Strategies –survey, case study, experimental, longitudinal, cross-sectional

Unit-6 Role of change agent – key roles in managing change-external change agent, internal consultant, community activists, role of leader, role of management.

Appropriate case studies will be discussed

Suggested readings:

1. Nilakant, V and Ram Narayan, S (1998). Managing Organizational Change. New Delhi: response Books
2. French, W.L and Bell. C.H. (1983). Organizational Development. New Delhi: Prentice Hall of India
3. Somnath Chattopadhyay and Udai Pareek (1982). Managing Organizational Change. New Delhi: Oxford & IBH
4. Pradip N Khandwalla (2001) Turnaround excellences. New Delhi: Response Books
5. Maheswari, B.L and D P Sinha (1991) Management of Change through HRD, New Delhi: Tata McGraw-Hill.

GE341
INTERNATIONAL MARKETING
(3 CREDITS)

Objective

The Objective of this course is to develop both theoretical and practical understanding to the various concepts of Industrial and International Marketing.

Unit-1 Industrial marketing – Definition. Difference between Industrial consumer Markets/Products. Classification of Goods/Industrial Goods - Characteristics of Industrial Markets - Industrial Buying situation/decisions - Value and vendor analysis

Unit-2 Industrial marketing intelligence systems – Market identification search and evaluation process.

Unit-3 Marketing strategy – product and service components, price, channel and promotion components.

Unit-4 International marketing-International Marketing Environment, International Economy, Cultural and Social factors, Political and legal factors.

Unit-5 Analyzing international opportunities: international Markets / Buyers.

Unit-6 International Marketing and Entry Strategies: Geographic concentration, country selection, product market strategies – Exporting, Licensing, local manufacturing, joint ventures, and strategic alliances.

Unit-7 International product strategies, International distribution systems, pricing for International Markets, International promotion strategies.

Suggested Readings

1. Helmut Becker – International Marketing Strategy – Pergamon Press 1980
2. R. Srinivasan – International Marketing - Prentice Hall of India 2005
3. Warren J. Keegan : Global Marketing Management, 5th Ed. PHI, 1998
4. Stanley J. Paliwoda – The Essence of Industrial Marketing – Prentice hall Direct 1994
5. Philip R. Cateora : International Marketing, 9th Ed. Irwin, 1997 – Business Marketing, PHI, 1998

GE342
MARKETING OF SERVICES
(3 CREDITS)

Objective:

The Objective of this course is provide the students an understanding of Services and Marketing of Services.

This course will equip the students with the application of Marketing to the Services. This course helps a marketer to look at services in a different perspective than the goods while applying the principles of marketing to them.

This course helps the student to understand the differences between goods and services, nature and characteristics of services. This course helps them in learning the decision making process inherent in services marketing and varied strategies of services marketing.

Course Outline: [Total 54 [30 + 24 for Case Studies]:

Unit-1 Understanding Services: Service concepts, scope of services, services in modern economy, marketing of services versus physical goods. Classification of services. Customer involvement in service process and managing service encounters. [8 + 4 for Case Studies]

Unit-2 Services Market: the distinguishing key features, consumer and organisation behaviour. Services marketing mix - Product, Pricing, Place, Promotion, People, Physical Evidence and Process. Segmenting, Targeting and positioning for services marketing. Expectations of the customer and perceptions of services. [8 + 6 for Case Studies]

Unit-3 Role of quality in service – Service Quality, Dimensions of service quality, managing service quality and measuring service quality. Managing the demand and supply of services – strategies for demand management, capacity planning, waiting line strategies, etc. [6 + 4 for Case Studies]

Unit-4 Overview of Strategies for Services Marketing, strategies to deal with intangibility, inventory, inconsistency and inseparability of Services. Focus on Customer and Managing customer relationships. Planning and managing service delivery. [4 + 6 for Case Studies]

Unit-5 Current trends in services marketing. Issues for top level management in a service firms. Marketing of varied services. [4 + 4 for Case Studies]

SUGGESTED READINGS:

1. Christopher Lovelock (2010), Services marketing, 6th Edition, Pearson Education.
2. Ravi Shanker (2008), Services Marketing – the Indian Perspective, 1st Edition, Excel Books.
3. K. Douglas Hoffman (2010), John E.G. Bateson, Services Marketing, 4th Edition, Thompson – South western.
4. Zeithmal (2010), Services Marketing, Special Indian Edition, Tata Mc. Graw Hill.
5. Srinivasan (2012), Services Marketing, 3rd Edition, PHI.

GE351
FINANCIAL MARKETS
(3 CREDITS)

Course outline:

This course introduces students on the functions, evolution and interlinkages of financial markets, with particular focus on India. Students are exposed to both theory and practices with field trips to financial institutions in Hyderabad and Mumbai. At the end of the course, students are expected to have sound understanding of various players of the markets, their functions. They should be able to apply their conceptual understanding of financial markets to their financial decisions in real life.

Course Objective:

1. To familiarize students to financial system and its importance
2. To provide in depth understanding of financial markets, participants, institutions, instruments and services.
3. To gain practical relevance of the theoretical concepts through field trips to financial institutions.
4. To understand the interlinkages between several institutions in financial markets.

Assessment:

Field trip reports: 20 %

Internal Exams: 20 %

Final Exam: 60%

Teaching Schedule:

WEEK	TOPICS	Assessment weight
1	Introduction to Financial System, components, markets, institutions and instruments	10%
2	Financial Markets – capital markets, money markets, foreign exchange markets, derivatives markets, commodity markets.	10%
3	Field trip to Broking Firm: Enrich Investments	5%
4	Financial Institutions – banking, commercial banks	20%
5	Field trip to ICICI bank regional headquarters to study on bank risk man agent	5%
6	Development Financial Institutions and non-banking financial institutions	5%
7	Insurance market	
8	Field trip to TATA AIG regional head quarters to discuss on several issues relating to insurance sector	5%
9	Financial Instruments- debt, equity, hybrid, innovative instruments, mutual funds, ADRs, GDRs, money market instruments.	20%
10	Financial services- merchant banking, IPO market, credit rating agencies, depositories, underwriting, debentures issues, venture capital funds, private equity funds, hire purchase and lease and wealth management services.	20%
11	Field trip to Bombay Stock Exchange, Reserve Bank of India merchant bankers in Mumbai	5%

Recommended Textbooks:

Bhole L.M. Financial Institutions and Markets, Tata McGraw Hill

M.Y. Khan, Indian Financial System, 4th edition, Tata McGraw Hill

Meir Kohn, Financial Institutions and Market, Oxford University Press

GE352
STRATEGIC FINANCIAL MANAGEMENT
(3 CREDITS)

Objective

The course familiarizes the students with the concepts and approaches of managing corporate finance from a Strategic perspective. The students are also introduced to the techniques of evaluating financial risks / opportunities for taking appropriate decisions and further course of actions.

Unit-1 Managing Strategy for Value - Shareholder value analysis-ways of linking strategy and value-exploring business value system. Corporate Valuation- adjusted book value approach-stock and debt approach-direct comparison approach- DCF approach- guidelines for corporate valuation.

Unit-2 Corporate Restructuring Acquisitions and Sell offs - Reasons for mergers-mechanics of merger- costs and benefits of merger- terms of merger- purchase of division/plant-takeovers-divestitures- ownership restructuring.

Unit-3 Financing Planning and Control - planning system- what and why of financial planning- financial planning techniques- control reports. Working Capital Management Strategies: various techniques of financing working capital in liberalized and globalized environment

Unit-4 Corporate Risk Management - Classification of risks- principles of hedging- forward contracts-futures contracts-swaps-options-insurance- hedging with real tools and options-guidelines for risk management.

Unit-5 Strategic Management Accounting: strategic management accounting: a frame work – life cycle analysis- impact of the competitive advantage on the value drivers- identifying performance improvements- evaluating business and financial performance- SMA reports.

Unit-6 Strategic Financial Accounting - Analysis and interpretation of annual reports and financial accounts from strategic perspective. Strategic Investment Decisions: process- stages in evaluating strategic investment decisions-conclusions.

Unit-7 Strategic Cost Management – Cost in a strategic management perspective- a financial management perspective - an operational management perspective. Strategic cost management process- various techniques, value chain analysis- business process analysis- activity based costing.

Suggested Readings

- 1.Prasanna Chandra Financial Management : Theory and Practice. New Delhi: Tata Mc Graw Hill
- 2.Tony Grundy, Gerry Johnson & Kevan Scholes Exploring Strategic Financial Management Europe: Prentice Hall

GE361
SERVICE OPERATIONS MANAGEMENT
(3 CREDITS)

Objective:

The course is to provide tools, framework and techniques for operational analysis and improvement, the text builds on the principles of operations management; examining the operations decisions that managers face in controlling their resources and in delivering services to their customers.

Course Outline: [Approximate number of lectures per topic]

Unit-1 The service concept, Introduction to service operations management. Difference between Customers and Supplier relationships, Customer expectations and satisfaction, Managing supply relationships [10]

Unit-2 Service delivery, Service processes, Service people, Resource utilization, Networks, Technology and information [10]

Unit-3 Performance management, Performance measurement, linking operations decisions to business performance, driving operational improvement [10]

Unit-4 Service strategy, Service culture, Operational complexity, Managing strategic change [10]

Suggested Readings:

Textbooks:

1. Service Operations Management, Improving Service Delivery, 2nd Edition, Robert Johnston, Graham Clark
2. Service Operations Management, Richard Metters, Kathryn King-Metters, Madeleine Pullman, Thompson South-Western, 2003

GE362
LOGISTICS & SUPPLY CHAIN MANAGEMENT
(3 CREDITS)

Objective:

The objective of the course is to discuss the various components of SCM and its implications in business. The course also helps the students to understand the importance of logistics and its role in business with the help of various industry examples.

Course Outline: [Approximate number of lectures per topic]

Unit 1 Introduction: Logistics and Supply chain concept; Benefits of SCM; Managing Uncertainty; Model Decision Phases in a Supply Chain; Process View of a Supply Chain; The Importance of Supply Chain Flows [4]

Unit 2 Supply Chain Drivers, Obstacles: *A Framework for Structuring Drivers; Facilities; Inventory; Transportation; Information; Obstacles to Achieving Strategic Fit; Strategies and Planning; Competitive and Supply Chain Strategies; The Role of Aggregate Planning in the Supply Chain; Methods; Managing Supply; Managing Demand; Implementing Solutions to Predictable Variability.* Unit-3 Supply Chain Performance: Competitive and Supply Chain Strategies; Achieving Strategic Fit; Expanding Strategic Scope [4]

Unit 3 Supply Chain Customer Service: The marketing and logistics interface; Customer service and customer retention; Service-driven logistics system; Setting customer service priorities; Setting service standards [4]

Unit 4 Network Design in the Supply Chain: The Role of Distribution in the Supply Chain; Factors Influencing Distribution Network Design; Design Options for a Distribution Network; A Framework for Network Design Decisions; Models for Facility Location and Capacity Allocation; Transport Fundamentals: The Role of Transportation in the Supply Chain; Factors Affecting Transportation Decisions; Modes of Transportation and Their Performance Characteristics [4]

Unit 5 Forecasting, role of forecasting in a Supply Chain; Components of a Forecast and Forecasting Methods; Time Series Forecasting Methods; Measures of Forecast Error; Forecasting Demand at The Role of Cycle Inventory in the Supply Chain; Managing Multi-Echelon Cycle Inventory; The Role of Safety Inventory in the Supply Chain; Determining Appropriate Level of Safety Inventory; Impact of Replenishment Policies on Safety Inventory; Managing Safety Inventory in a Multi-Echelon Supply Chain [4]

Unit 6 Sourcing Decisions in a Supply Chain: The Role of Sourcing in a Supply Chain; Supplier Scoring and Assessment; Supplier Selection and Contracts; Design Collaboration; the Procurement Process; Sourcing Planning and Analysis; Purchasing and Supply Scheduling Decisions [4]

Unit 7 Storage and Handling Decisions, Pricing and Revenue Management in the Supply Chain: The Role of Revenue Management in the Supply Chain; Revenue Management for Multiple Customer Segments; Revenue Management for Perishable Assets; Revenue Management for Seasonal Demand; Revenue Management for Bulk and Spot Contracts [4]

Unit 8 Logistics/Supply Chain Organization, Supply Chain Control, Coordination in the Supply Chain: Lack of Supply Chain Coordination and the Bullwhip Effect; Effect of Lack of Coordination on Performance; Obstacles to Coordination in the Supply Chain; Managerial Levers to Achieve Coordination; Building Strategic Partnerships and Trust within a Supply Chain; Achieving Coordination in Practice [4]

Unit 9 Impact of Information Technology on Supply Chain: The Role of IT in the Supply Chain; The Supply Chain IT Framework; Customer Relationship Management; Internal Supply Chain Management; Supplier Relationship Management; The Transaction Management Foundation; The Future of IT in the Supply Chain; Supply Chain IT in Practice; E-Business and the Supply Chain: The Role of E-Business in Supply Chain; The E-Business Framework; The B2B Addition to the E-Business Framework; ERP [4]

SUGGESTED READINGS:

Textbooks:

1. Donald J Bower Sox & David J. Closs, *Logistical Management: The integrated Supply Chain process*, Tata McGraw-Hill, 2000, New Delhi. 2000.
2. Sunil Chopra & Peter Meindl: *Supply Chain Management, Strategy, Planning and Operation*, Pearson Education, 2005, Hong Kong. 2004.
3. Martin Christopher: *Logistics & Supply Chain Management, Strategies for reducing cost and improving service*, London Financial Times 2003.
4. David Simchi-Levi & Philip Kaminsky, *Designing & Managing the Supply Chain: Concepts, Strategies & Case Studies*, Tat McGraw-Hill, 2004, New Delhi.
5. Philippe-Pierre Dornier at al., *Global Operations & Logistics: Text & cases*, John Wiley & Sons Inc, 1998, Singapore.
6. B.S.Sahay, *Supply Chain Management in the 21st century (Edited)*, Macmillan, 2001, New Delhi.

GE371
PREDICTIVE ANALYTICS
(3 Credits)

Objective

The objective of this course is to introduce and demonstrate various techniques/ methods deployed in predictive analytics. Focus is laid on the business applications of predictive analytics.

Prerequisites: Students opting this course are required to have exposure to the fundamentals of statistics and probability.

Unit-1 Introduction to predictive analytics and introduction to R language. R walkthrough sessions.

Unit -2 Cluster Analysis, k-means clustering and Agglomerative Clustering, market basket analysis using association rules, dimensionality reduction with PCA

Unit -3 Classification using nearest neighbours, classification using naïve Bayes, classification using decision trees and rules

Unit -4 Simple Linear Regression, Multiple Linear Regression, logistic regression, classification and regression trees

Unit- 5 Concepts of neural networks and support vector machines, evaluating model performance, improving model performance

Suggested Readings

1. Dean Abbott, (2016) Applied Predictive Analytics, Wiley India Pvt.Ltd.
2. Eric Mayor, (2015) Learning Predictive Analytics with R, PACKT
3. Anasse Bari, Mohamed Chaouchi, Tommy Jung, (2017) Predictive analytics for Dummies, Wiley India Pvt. Ltd.
4. Brett Lantz, (2013) Machine learning with R, PACKT
5. Andrie de Vries, Joris Meys, (2016) R Programming for Dummies, Wiley India Pvt. Ltd.

GE372
BIG DATA ANALYTICS
(3 CREDITS)

Unit-1 Introduction to Big Data: Types of data; Introduction to databases; RDBMS; Data warehouse environment; In-memory analytics; In-database processing; Parallel and distributed systems; Database System Architectures CAP theorem (Brewer's theorem)

Unit-2 Introduction to Hadoop: Why Big Data; Limitations of traditional large scale systems; Traditional systems vs Hadoop architecture and challenges; Big Data Characteristics; Core components of Hadoop; Hadoop Eco System Tools - Pig, Hive, Hbase, Flume, and Sqoop; Install and Configure hadoop cluster; HDFS; NameNode, DataNode, SecondaryNameNode; Hands on HDFS, Web UI

Unit-3 MapReduce Framework: Overview of MapReduce framework Use cases of MapReduce; MapReduce Architecture; Understanding the concept of Mapper and Reducer; Hands on : Running MapReduce program; Setting up development environment for creating MapReduce programs; Developing MapReduce Programs – Mapper, Reducer, Driver; Understanding Combiner and Partitioner; Hands on Developing MapReduce program

Unit-4 Big Data Technologies: Hive, Pig, Hbase, Sqoop, Flume, ZooKeeper; Pig; Intro to Pig; Use cases of Pig; Diagnostic operators – DESCRIBE, ILLUSTRATE, EXPLAIN; Use cases of Pig; Basic Data types and complex data types (Map, Bag); Relational operators – SPLIT, FILTER, GROUP, etc; Loading data and analyzing data with Pig; Hands on Pig; Hive; Intro to Hive; Use cases of Hive; Hive Architecture; Managed tables vs External tables, Partitioning, Buckets; Dynamic partitioning; Analyzing data with Hive; UDFs in Hive; Hands on Hive; Hbase; Intro to NoSQL - Big Table , Hbase; User cases of various NoSQL Databases; Intro to Hbase; Hbase Architecture(Master-Slave) and use case; Region servers; Loading data into hbase (Create, disable, modify, drop); Sqoop; Intro to Sqoop; User cases of Sqoop; Flume; Intro to Flume; User cases of Sqoop; ZooKeeper; Intro to ZooKeeper

Unit-5 Use Cases for Big Data

SEMESTER IV – Total Credits = 15 Credits
4X3 Credits = 12 Credits + Project work = 3 Credits.

- **List of Courses in MBA (General) for Semester IV**

GE431: Issues in Human Resource Management
GE432: Performance Management and Counselling
GE441: Customer Relationship Management
GE442: Advertising and Brand Management
GE451: Security Analysis & Portfolio Management
GE452: Financial Risk Management
GE461: Project Management
GE462: Theory of Constraints
GE471: Supply Chain Analytics
GE472: Data Visualization
GE401 & 402: Final Project

GE431
ISSUES IN HUMAN RESOURCES MANAGEMENT
(3 CREDITS)

Objective:

The objective of this paper is to provide such inputs that would enable the students to think systematically and relate HR issues with other functional aspects in the organization.

Unit-1 SHRM – Concept- HRD versus SHRD-emerging roles of managers and staff in SHRD

Unit-2 Emerging Scenario of HR-HR strategy and evolution

Unit-3 Strategic planning – models of strategy-process of strategic management-corporate strategies-evolving role of SHR

Unit-4 Strategizing formulation- Design of work systems-understanding change-managing change

Unit-5 Implementation of SHRM- Training –Role-Identification of Training needs methods-Process-Evaluation-Designing a Training Program.

Unit-6 Applications of Motivational concepts-Rewards and Recognitions in Organizations-Problem solving approaches.

Unit-7 International HRM-Assessing culture-Strategic issues in international Assignments-Employee Value proposition.

Appropriate case studies will be discussed

Suggested Readings:

1. John Walton – Strategic Human Resource Development – New Delhi: Prentice Hall, 1999
2. T.V.Rao – HRD: Experiences, Intervention strategies- New Delhi: Sage Publication 1996
3. Ashok Chanda- Shilpakabra – Human Resource Strategy Architecture for change. New Delhi; Response Books – 2000
4. Jeffrey A. Mello – Strategic HRM – 2001 New Delhi: Thomas Learning

GE432
PERFORMANCE MANAGEMENT AND COUNSELING
(3 CREDITS)

Objective

The course aims at equipping the budding Managers with the concept, techniques and tools used for Performance Appraisal and Counseling with a view to improving the efficiency of workforce in the modern organizational context. At the end of the course, the students should be able to develop a Performance appraisal form for an executive / Manager.

Unit-1 Performance Appraisal – Concept and Importance – Performance Management.

Unit-2 Performance Management – Process – Communication of the evaluation – Feedback – training & self – assessment.

Unit-3 Process of identification of KPA / KRA – Getting measurable objectives – pitfalls in the process and measurement.

Unit-4 Performance Management – Methods and Techniques – Multi – rater Appraisal. Reasons for the failure of the Appraisal Process – Rater concerns – Errors.

Unit-5 Counseling – Development Models – Process, Aims & Objectives.

Unit-6 Appraisal and Performance Management practices in India – Recent Development in Executive appraisal. Balanced Scorecard – Concept. BSC as a tool for Strategy Implementation. Foundations, Advantages and Pitfalls in implementation – Best practices in Balanced Scorecard. The HR Scorecard – Concept and Importance.

Suggested Readings

1. T.V.Rao. (1996) Performance Appraisal – Theory & Practice. New Delhi : Vani Educational Books.
2. Stewart L and Stewart P. (2000) Practical Performance Appraisal. New York : Grower Press.
3. Board, R (1983) Counselling People at Work. UK : Gome.
4. Basu, M. (1994) Managerial Performance Appraisal in India. Bombay : Vision Books.
5. T.V.Rao, Vijaya Lakshmi, V and Raju Rao. (2000) 360 °Feedback .Ahmedabad : Excel Books.
6. Peter Drucker (2000) Encyclopedia of Management (HRM) Drucker Series.
7. Prem Chadha (2003). Performance Management. New Delhi : Macmillan India Ltd.

GE441
CUSTOMER RELATIONSHIP MANAGEMENT
(3 CREDITS)

Objective

The objective of the paper is to familiarize the students with the emerging trends in customer relations in the Indian business and to manage these relations an effective manner to increase customer loyalty.

Unit-1 Emerging Trends and Issues in Marketing – CRM as an emerging issue.

Unit-2 Conceptual framework of CRM - CRM – Definition, Key CRM Principles, Evolution of CRM Practice, Relevance of CRM for today’s business, Current Status of CRM in Indian business, Software solutions for CRM.

Unit-3 Implementing CRM - Organizing for CRM implementation, Implementation of the CRM solution, measuring the effectiveness of the CRM solution.

Unit-4 Relationship Management - Building Customer Loyalty – Loyalty programs, Creating value through Relationship Management.

Unit-5 Case studies in CRM.

Suggested Readings

1. Judith W. Kincaid – Customer Relationship Management: Getting It Right- Prentice Hall PTR 2002.
2. Federico Rajola – Customer Relationship Management: Organizational; and Technological Perspectives – Springer 2003.
3. Stan Maklan, Adrian Payne, Joe Peppard, Lynette Ryals, Simon Knox – Customer Relationship Management: Perspectives from the market place – Elsevier 2002.
4. Mitch Schneider – Total Customer Relationship Management – Thomson Delmar Learning 2002.
5. Russ Lombardo – CRM for the Common Man – PEAK Sale Consulting 2003

GE442
ADVERTISING AND BRAND MANAGEMENT
(3 CREDITS)

Objective

The course helps students to examine and understand the processes of building, Designing, measuring and maintaining brand equity. The applications of Brand Management Strategies and methodologies are also presented together with cases and exercises.

Unit-1 Brand management: Definition, concepts and evolution of brand management, component of a brand; strategy and structure – brand loyalty, image and personality – corporate brand,

Unit-2 Brand Identity, Personality and Brand Associations, Brand Promise, Brand Vision, Brand Equity, Brand Architecture, approaches to Brand Building, Brand Awareness strategies. Co- Branding, Emotional Branding

Unit-3 Brand Audit, Brand Valuation methods and approaches. Branding Decisions, Brand Extensions. Managing Brand Architecture and Brand Portfolios

Unit-4 Corporate Branding and Tools for Building Brand Equity, Brand Positioning – strategic brand positioning

Unit-5 Global Branding Strategies. Cases in global brand management

Suggested Readings

1. Kevin Lane Keller, Strategic Brand Management, New Delhi: PHI, 2nd Edition, 2003.
2. Alina R. Wheeler – Designing Brand Identity: A complete guide to Creating, Building and Maintaining Strong Brands – John Wiley and Sons. 2003
3. Jean Noel Kapfere – Strategic Brand Management: creating and sustaining brand equity long term – Kogan Page 1997
4. Lynn B – Building Brand Identity: A Strategy For success in a hostile marketplace – John Willy And Sons.1995
5. Merry, Baskin Mark - Brand New Brand Thinking: brought to light by 11 experts who do? – Kogan Page 2003

GE451
SECURITY ANALYSIS & PORTFOLIO MANAGEMENT
(3 CREDITS)

Objectives:

1. To Provide Comprehensive Introduction to the Area of Security Analysis and Portfolio Management.
2. To Familiarize Principles underlying Valuation of Financial Claims and Factors Influencing Prices.

Unit-1 Introduction – Securities and Security Market – Investment versus Speculation – The Investment Process- Investment Categories – Security Markets – Primary and Secondary – Functions – Organization – Regulation.

Unit-2 Valuation of Securities – General Framework and Valuation Model- Valuation of Fixed Income Securities – Preference Shares and Equity Shares.

Unit-3 Analysis for Equity Valuation – Economy – Industry – Company Analysis- Technical Analysis- Efficient Market Hypothesis.

Unit-4 Portfolio Theory – Meaning and Objectives of Portfolios – Computation of Return - Risk – Principles of Markowitz Diversification – Portfolio Analysis – Portfolio Selection – Sharpe’s Model – Capital Asset Pricing Model – Arbitrage Pricing Theory.

Unit-5 Portfolio Revision – Constant Dollar Value Plan – Constant Ratio Plan - Dollar Cost Averaging etc.

Unit-6 Institutional and Managed Portfolio: Mutual Funds – Types of Funds – Measure of Performance – Sharpe’s Measure - Treynor’s Measure - Jensen’s Measure.

Recommended Books:

1. Fischer & Jordon – Security and Portfolio Management, PHI
2. Francis J.C. – Investments: Analysis & Management, Mc Graw Hill
3. Elton & Gruber- Modern Portfolio and Investment Analysis, John Wiley & Sons
4. Avadhani V.A – Security Analysis & Portfolio Management, Himalaya Publishing House
5. Prasanna Chandra – Investment Management, Himalaya Publishing House
6. Preeti Singh – Investment Management, Himalaya Publishing House
Financial Dailies & Journals

GE452
FINANCIAL RISK MANAGEMENT

(3 CREDITS)

Objective:

The course aims at familiarizing the students with principle and practices of Financial Risk Management and enables the students to develop decision-making skills in financial risk management through exercises and case analysis.

Unit-1 Financial Risk – Definition and evolving styles of risk management. Organizing for Financial Risk Management - Role of risk manager- policies-decision making and execution

Unit-2 Exposure to Risk and Diversification - specific and market risk- forecasting market movements. Forwards and Futures: market volatility; concepts of forwards, futures and swaps. Options: option pay-off profiles-option strategies-option pricing and hedge ratios- Black-Schole option valuation model- arbitraging- speculating

Unit-3 Managing Equity Risk: specific risks- managing market risk-Markowitz and Sharpe Single Index models. Managing Bond Risk - market conventions and yields-bonds with special features- yield curves-hedging with futures and options

Unit-4 Managing Interest Rate and Currency Risk - one period forwards and futures-interest options-currency options and hedging longer term interest rate and currency exposures

Unit-5 Foreign Exchange Risk Management - various foreign exchange rate risk management strategies- foreign exchange market in India

Unit-6 Emergence of Commodity Risk Management - basic understanding of commodities-investment opportunities in commodities in India-working of commodity exchanges-importance of risk management in commodity derivatives- future of commodity derivatives.
Financial Risk Management : Case Studies

Suggested Readings

1. Brain A. Eales Financial Risk Management.: London:Mc Graw – Hill, 1995
2. N.D. Vohra & B.R. Bagri Futures and Options. New Delhi: Tata Mc Graw Hill, 2003

GE461
PROJECT MANAGEMENT
(3 CREDITS)

Introduction:

The objective of the course is to impart the concepts, tools and techniques in formulation and analysis of projects as well as in planning, scheduling & controlling of projects.

Course Outline: [Approximate number of lectures per topic]

Unit-1 Projects in Contemporary Organizations: Definition of Project, Objectives, The Project Manager, Recent changes in managing organizations, Project Life Cycle [3]

Unit-2 Technical Analysis: Manufacturing process and Technology, Technical Arrangements, Material Inputs and Utilities, Product Mix, Plant Capacity, Location and Site, Machineries and Equipment, Structures and Civil works, Environmental Aspects, Project Charts and Layouts, Schedule of Project Implementation, Need for Considering Alternatives [5]

Unit-3 Social Cost Benefit Analysis: History of cost benefit analysis, Objectives of Social Cost Benefits Analysis (SCBA), Description of the Technique, Approach to SCBA, UNIDO Approach to SCB Analysis, Social Desirability of a project for Indian Conditions, SCBA and Components, Steps in Cost Benefit Analysis [6]

Unit-4 Project Selection: Project Selection Models, Numeric Models – Payback period, IOR, Discounted Cash-Flow, NPV, IRR, Scoring Models, Cost Break-Even Analysis, Project Life-Cycle Cash-Flow [3]

Unit-5 Project Planning: Initial Project Coordination, Systems Integration, Sorting out the project, The Work Breakdown Structure and Liner Responsibility Charts, Interface coordination through integration management [4]

Unit-6 Project Organisation: Functional Organisation, Product Organisation, Matrix Organisation, Modified Matrix Structures, Pure Project Organisation Structure, Selection of Project Organisation Structure, Break-Down Structures, the project team-human factors [5]

Unit-7 Budgeting and Cost Estimation: Estimating Project Budgets, Top-Down Budgeting, Bottom-up Budgeting, The Budgeting Process, the Kick-off Meeting, Estimation of Labor

Requirements, Estimation of Overheads, Estimation of Materials and Support Services, Budgeting Techniques, Project Cost Estimation [6]

Unit-8 Project Scheduling: Network Techniques: Part and CPM, Applications [2]

Unit-9 Project Monitoring and Information Systems: The Planning-Monitoring-Controlling Cycle, Designing the Monitoring System, Information Needs and Reporting Process, Computerized PMIS [3]

Unit-10 Project Control: The Control Process, Information Monitoring, Internal and External Project Control, Cost Accounting Systems, Project Control process, & Emphasis, Performance Analysis, Forecasting “ to Complete” and “ at Complete”, Contract Administration, Control Problems [4]

Unit-11 Project Auditing: Purposes of Evaluation – Goals of the System, Project Audit, Construction and Use of the Audit Report, Project Audit Life Cycle, Some Essentials of an Audit/Evaluation, Measurement [3]

Unit-12 Project Termination: Methods of Project termination, When to Terminate a Project? Termination Process, the Final Report [2]

Suggested Readings:

Textbooks:

The following are list of suggested textbooks, although the course will initially be taught from a set of lecture notes.

1. Jack R. Meredith & Samuel J. Mantel, Jr, Project Management- A Managerial approach, J Wiley, 2000, Singapore.
2. Prasanna Chandra, Projects Planning, Analysis, financing, implementations & review, Tata MC Graw Hill, 2006, New Delhi.
3. Rory & Bruk, Project Management; J Wiley, 2003, Singapore.
4. Harold Kerzner, Project Management, CBS Publishers, 2004, New Delhi.

GE462
THEORY OF CONSTRAINTS
(3 CREDITS)

Introduction:

The Theory of Constraints (TOC) is a management philosophy developed by Dr. Eliyahu Moshe Goldratt. According to him, the strength of any chain, process, or system is dependent upon its weakest link. TOC is a systemic view, striving to identify constraints to system success and to effect the changes necessary to remove them. Dr. Goldratt and the TOC became widely known with the publication of Goldratt's novel *The Goal* in 1984. TOC emphasizes the maximization of profit by assuring that the factor that limits production is used most efficiently. The main objective is to provide students with concept and application of Theory of Constraints (TOC) in manufacturing and service industries.

Course Outline: [Approximate number of lectures per topic]

Unit-1 Thinking Process: Introduction, Tools of TOC, Where is TOC applicable? What is a constraint? [3]

Unit-2 TOC's Thinking Process and Human Being, Terminology used in the Thinking Process, Steps to implement the Thinking Process, Current Reality Tree(CRT), Conflict Resolution Diagram, Future Realty Tree(FRT), Prerequisite Tree, Transition Tree, Three Cloud Method, Solved problems, Unsolved problems [6]

Unit-3 Finance and Measures: Introduction, Economic Decisions, TOC and Product Costing, Economic Decisions Using TOC Costing, Solved problems, Unsolved problems [5]

Unit-4 Project Management: Introduction, Project Planning and Management Tools, Phases of Project Management, Common Problems in a Project Management, Critical Chain Project Management (CCPM)- TOC approach, Solved problems, Unsolved problems [6]

Unit-5 Drum-Buffer-Rope Solution (DBR): Introduction, The Drum – The Master Production Schedule(MPS) of the Capacity Constraint Resource, Implementing Drum Buffer Rope, Drum Buffer Rope on the Shop Floor, MPS using DBR Scheduling Method, Unsolved problem [8]

Unit-6 Theory of Constraints: In Supply Chain Management: Introduction, TOC in Distribution Solution, DBR in Distribution, Solved Problem, Unsolved problem [4]

Case Studies: Application of Thinking Process in Integrated Poultry Business, Application of TOC in a Tool Manufacturing Company [8]

SUGGESTED READINGS:

Textbooks:

The following are list of suggested textbooks, although the course will initially be taught from a set of lecture notes.

1. Eliyahu M. Goldratt and Jeff Cox, The Goal- A Process of Ongoing Improvement, Productivity & Quality Publishing Private Limited, Madras, 2004.
2. Eliyahu M. Goldratt , Critical Chain, Productivity & Quality Publishing Private Limited, Madras, 2005.
3. S.K. Mukhopadhyay, Theory of Constraints, Jaico Publishing House, 1st edition, Mumbai, 2005.
4. Goldratt, E.M., It's not Luck, North River Press, Inc., 1994.
5. L.J. Scheinkopf, Thinking for a Change – Putting the TOC Thinking Processes to Use, The St. Lucie Press, 1999.
6. Goldratt, E. M, The haystack syndrome: sifting information out of the data Ocean, North River Press, 1990
7. W. H. Dettmer, Goldratt's Theory of Constraints: A Systems Approach to Continuous Improvement, ASQ Quality Press, Milwaukee, 1997.
8. E. Goldratt, E. Schragenheim, C. Ptak, Necessary But Not Sufficient, North River Press, 2000.
9. E. Schragenheim, Management Dilemmas: The Theory of Constraints Approach to Problem Identification and Solutions, St. Lucie Press/APICS, Boca Raton, 1998.
10. Corbett, T., Throughput Accounting: TOC's management accounting system, North River Press, 1998.

GE471
SUPPLY CHAIN ANALYTICS
(3 CREDITS)

Course objectives

The course is an attempt to equip the students with applications of analytical tools and techniques in supply chain management for effective decision making. At the end of the course students are expected to have learnt:

- (i) Analytical concepts of supply chain management and the available tools
- (ii) Predictive models for improving the supply chain performance
- (iii) Optimization techniques and their usage in supply chain management

Course requirements

The prospective students are expected to have familiarity with the following tools and techniques:

Tools for analyzing data:

MS-Excel, SPSS, R-programming, Excel-Solver

Descriptive and predictive concepts:

Probability distributions (Normal, Poisson, Uniform, Triangular)

Multivariate regression models

Auto-regressive integrated moving average (ARIMA)

Model building using simulation

Prescriptive concepts:

Analytic hierarchy process (AHP)

Constrained and unconstrained optimization

Linear programming problems (LPP)

Integer linear programming (ILP) problems

Mixed integer programming (MIP) problems

Non-linear programming (NLP)

Critical path method (CPM)

Transportation and travelling salesman problem (TSP)

Programme evaluation and review technique (PERT)

Lectures and discussions

Sl. no.	Topics of discussion	No. of hours
1	Introduction to supply chain operations and analytics: <ul style="list-style-type: none"> • Supply chain drivers • Decision phases • Competitive and supply chain strategies 	3.0
2	Understanding metrics and KPIs in supply chain performance: <ul style="list-style-type: none"> • Supply chain operations reference (SCOR) model 	1.5
3	Forecasting for supply chain planning and management (trend and seasonal treatments): <ul style="list-style-type: none"> • Holt's and Winter's methods 	1.5
4	Forecasting for supply chain planning and management (continued): <ul style="list-style-type: none"> • ARMA and ARIMA 	3.0
5	I-Internal examination	3.0
6	Network design in an uncertain environment: <ul style="list-style-type: none"> • Facility location planning methods • Capacity expansion decisions using decision trees • Transportation and transshipment problems • Travelling salesman problem (TSP) 	3.0
7	Network design in an uncertain environment (continued): <ul style="list-style-type: none"> • CPM and PERT • Maximum flow and minimum cost flow problems 	3.0

8	Sales and operations planning: <ul style="list-style-type: none"> Aggregate production planning using LPP Determining optimal level of product availability 	3.0
9	II-Internal examination	3.0
10	Sales and operations planning (continued): <ul style="list-style-type: none"> Multi-echelon inventory Managing inventory for perishable products Benefits of design for postponement 	3.0
11	Supplier development, negotiation and contract: <ul style="list-style-type: none"> Supplier selection (factor rating and AHP methods) Buyback contract Revenue sharing contracts Quantity flexibility contracts 	3.0
12	Waiting lines and supply chain design: <ul style="list-style-type: none"> Queueing models Markov chains 	3.0
13	III-Internal internal examination (Case presentations)	3.0
14	Quality and reliability analytics in supply chains: <ul style="list-style-type: none"> Six sigma and reliability Warranty analytics 	3.0
15	Yield management: <ul style="list-style-type: none"> Supply chain segmentation (SCS) Pricing and revenue optimization 	3.0

Scheme of evaluation

Prescribed text book:

There is no prescribed text book for this paper.

Cases:

Cases to be distributed through mail in advance before the presentation/discussion dates.

Reference books:

1. Chopra, S., & Meindl, P. (2012). *Supply Chain Management: strategy, planning and operation*. New Delhi: Prentice Hall.
2. Hillier, F. S., & Lieberman, G. J. (2009). *Introduction to operations research*. New York: McGraw Hill Education.
3. Makridakis, S., Wheelwright, S. C., & Hyndman, R. J. (1997). *Forecasting methods and applications*. New Delhi: John Wiley & Sons.

Peer reviewed journals:

1. Journal of Operations Management
2. Management Science
3. Supply Chain Management Review

Websites:

1. <https://aimms.com/>
2. <http://www.apics.org/>
3. <https://cscmp.org/>

GE472
DATA VISUALIZATION
(3 CREDITS)

A. Course Description

This course is an introduction to the principles and techniques for data visualization. This hands on course is designed for analytics professionals who want to analyze and visualize data from a variety of sources.

Visualizations are graphical depictions of data that can improve comprehension, communication, and decision making.

In this course, students will learn visual representation methods and techniques that increase the understanding of complex data and models. Emphasis is placed on the identification of patterns, trends and differences from data sets across categories, space, and time.

B. Objectives / Learning Outcomes

1. Present data with visual representations for your target audience, task, and data
2. Identify appropriate data visualization techniques given particular requirements imposed by the data
3. Apply appropriate design principles in the creation of presentations and visualizations
4. Analyze, critique, and revise data visualizations

C. Learning Activity

Students begin with a foundation in data visualization techniques and principles. Effective data analysis techniques, and industry standard best practices are discussed. Through hands-on labs, assignments, projects and group work, participants learn how to build insightful and interactive dashboards. Participants learn to present compelling visuals via lab exercises and assignments. Tableau dashboard performance considerations are discussed.

D. Learning Resources

We will refer to the book ‘Communicating Data with Tableau’ by Ben Jones.

In addition, we will refer to following online resources: <https://www.edwardtufte.com/tufte/>

E. Session Plan

Session No.	Coverage
1 – 3	Installation and Overview of Visualization
4 – 6	Demonstration of Features in Tableau
7 – 9	Communicating quantitative data, communicating comparisons, Dot Chart; Ratios and Rates, Blending Data Sources and Visualizing Rates
10 – 12	Proportions and percentages – Filters and table calculations, Comparing current to historical and Actual to Target Mean and Median – Normal Distribution, Sensitivity to outliers, visualizing non Normal Distributions
13 – 15	Variation and Uncertainty – Reporting and Visualizing variation, Control Charts Multiple Quantities – Scatter Plots, Stacked bars, Regressions and trend lines.
16 – 18	Depicting changes over time, Line Chart, Dual Axis Line Chart, Scatterplot,
19 – 21	Maps and Locations; Maps with Shapes
22 – 24	Dashboards and Storyboards; Installation of Power BI
25 – 27	Replicating Reports on Power BI
29 – 30	Student Presentations