

**MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY**  
**(Formerly West Bengal University of Technology)**  
**Syllabus of MBA**  
**(Effective from 2023-2024 Admission Session)**

**Semester-II**

MB-201	Operations Research
MB-202	Financial Management
MB-203	Marketing Management
MB-204	Operations and Project Management
MB-205	Management Information System
MB-206	Human Resource Management

**Detailed Syllabus**

**MB201: Operations Research**

**Module-I:**

1. Linear Programming: Formulating maximization / minimization problems, Graphical solution, Simplex method, Artificial Variables – BigM Method, Special cases of LP, Duality of LP and its interpretation, Post Optimality / Sensitivity Analysis. Applications of LP. [5L]
2. Transportation Problems: Introduction – Mathematical formulation of transportation problem – the Transportation method for finding initial solutions – North West Corner Method - Least Cost Method - Vogel's Approximation method - test for optimality - steps of MODI method – loops in transportation table - Degeneracy. [4L]
3. Assignment Problems: Introduction - Mathematical statement of the problem – Hungarian method of solution - Maximization case in assignment problem — unbalanced assignment problem – restrictions on assignment – Travelling salesman problem. [4L]
4. Theory of Games: Introduction – Two-person zero sum games - Pure strategies - games with saddle points - rules to determine saddle points - mixed strategies - Game without saddle points- the rules of dominance – Methods of solution for games without saddle points — algebraic methods, graphical methods. [4L]
5. Queuing Theory: Introduction, characteristics of queuing systems, input process, service mechanism, queue discipline, service channels, symbols and notations, distribution of inter-arrival times, service times, definition of transient and steady state, M/M/1 queuing system, basic queuing models and their applications. [3L]

**Module-II:**

6. Capacity Planning & Management: Planning for the Process: Resource planning, Capacity of a process, capacity planning, period covered by plans, adjustment to capacity, Capacity planning under uncertain environment. [4L]
7. Quality Management: Concept of Quality, Quality Gurus, PDCA, TQM, Monitoring Performance for quality and improvement, Kaizen, Incremental vs. breakthrough improvement, Quality Certification [4L]
8. Quality Control & Statistical Process Control: Quality Management Tools, Statistical Quality Control (SQC), Acceptance Sampling, Inspection & Control Charts, Cost of Quality [4L]
9. Inventory Management: Inventory Management - Introduction, Techniques of Inventory Control with known demand, Problem of EOQ with uniform demand, with finite rate of replacement, EBQ, with shortage. Inventory Systems - Q-system & P-System, Selective Control of Inventory - ABC, VED, FSN analysis etc. [4L]
10. Maintenance Management & Reliability Types of Maintenance –Breakdown and Preventive Maintenance; Total Productive Maintenance (TPM); Reliability: Fundamentals; Failure data analysis; Failure rate; mortality curve; Mean time to failure (MTTF); Mean time between failure, (MTBF); Statistical

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Concepts in Reliability; Use of Reliability in the design of the system.

[4L]

**Suggested Readings:**

1. Operations Research by A Ravindran, Don T Philips and James J Solberg
2. Operations Research by V K Kapoor
3. Operations Research by S K Kalavathy
4. Taha, H.A. : Operations Research - An Introduction, Prentice Hall/ Pearson Education
5. Hillier, F.S. and Lieberman, G.J. : Operations Research, TMH
6. Panneerselvam, Operations research, PHI
7. Anderson, Quantitative Methods for Business, 8th ed, Thomson learning
8. Prabha, Random Processes & Queuing Theory, Scitech
9. Kothari, Operations Research, Vikas
10. Anderson, Introduction to Management Science, 10th ed, Thomson learning
11. L.C.Jhamb, Quantitative Techniques ( Vol.1 & 2), EPH
12. Bazaraa, M., Jarvis, J., and Sherali, M. : Linear Programming and Network Flows, Wiley.
13. Sharma, J.K. : Fundamentals of Operations Research, Macmillian
14. Srivastava U.K., Shenoy G.V.and Sharma S.C.: Quantitative Techniques for Managerial Decisions, New Age International.
15. Render B, Stair R M Jr, Hanna M E : Quantitative Analysis for Management, Pearson Education/PHI
16. Kanti Swarup, PK Gupta & Man Mohan, Operations Research, Sultan Chand & Sons

**MB202: Financial Management**

**Module-I**

1. Introduction to Financial Management: Scope, Objectives, Functions.[2L]
2. Capital Structure: Concepts, Component of Capital, Leverage, Models of Capital Structure.[6L]
3. Introduction to Corporate Finance: Meaning of Corporation, Role of Financial Manager, Agency Problem.[2L]
4. NPV as Investment Decision Criteria: Comparing NPV with other methods of Investment Decisions, The problems of multiple rates of Return, Mutually Exclusive Projects, and Capital Rationing.[4L]
5. The Investment Decision: The Cash Flow, Equivalent annual Costs, Project Interactions. [4L]

**Module-II**

6. Capital Budgeting and Risk: Company and Project Costs of Capital, Measuring Cost of Equity, Cost of Capital, and Risk Adjusted Discount Rate, Sensitivity Analysis, Monte Carlo Simulation, Real Options and Decision Trees. [4L]
7. Alignment of Managers and Owners Goal: Practical aspects of Capital Investment Process, Information and Capital Investment, Incentives and their role in agency Problem, Measuring and Rewarding Performance: EVA, Pros and Cons of EVA. [4L]
8. Market efficiency and Corporate Financing Basics of EMH, The Anomalies, The lessons for the Corporate Manager. [4L]
9. The Financing Decision: The Financing Process, The Financing Mix: Tradeoffs and Theory, The Optimal Financing Mix, The Financing Mix and Choices. [4L]

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10. The Dividend Decision: Dividend Policy, analyzing Cash Returned to Stockholders, Buybacks, Spinoffs, and Divestitures. [4L]

11. CaseStudy [2L]

**Suggested Readings:**

1. Brearly, Myers, Mohanty: Corporate Finance, Tata McGraw-Hill
2. Copel and Weston Shastri: Financial theory and Corporate Policies, Pearson Education
3. Damodaran: Corporate Finance, Wiley
4. Ehrhardt and Brigham: Corporate Finance - a Focused approach, Thomson Learning
5. Megginson, Smart and Gitman: Principles of Corporate Finance, Thomson Learning
6. Ross, Westerfield and Jaffe: Corporate Finance, Tata McGraw-Hill

**MB203: Marketing Management**

**Module-I**

1. Introduction: Definitions and scope of marketing; need, want, demand, STP (various bases for segmentation) Targeting: Massmarketing, Segment Marketing, Niche Marketing, Micro Marketing, and Customization; Concept of Differentiation and Positioning. USP, Marketing concepts (Production, Product, Selling, Marketing); Marketing Management Tasks [6L]

2. Market Planning and Strategy: Marketing Mix – 4Ps, 7Ps and 4Cs, Marketing intelligence; SWOT Analysis, PEST Analysis, Marketing plan, Concept of SBU, Choice of Corporate level Strategy; BCG matrix, Product-Market Grid, Porter's Five Force Model. [6L]

3. Consumer Behavior and Marketing Research: Consumer decision-making process, marketing research process: Marketing metrics, marketing dashboards, demand forecasting, measuring customer satisfaction (complaints, product and service quality, maximizing customer lifetime value), the role of CRM [8L]

**Module-II**

1. Product: Product Classification, Product and Services differentiation; Product Levels, Product Mix, Product Line Management, Product Life Cycle, New Product Development, Product development process, AIDA mode. [5L]

2. Branding Packaging and Pricing: Purpose of branding; PoP and PoD, Brand Positioning, Brand equity; Branding strategies; Packaging and its types – primary, secondary, shipping packages. Methods for pricing a product, Pricing and market share, price sensitivity of demand. [5L]

3. Marketing Channels: Channel levels, flows and functions; service sector channels, Channel design decisions; Terms and responsibilities of channel members, evaluating channel members, Channel management decisions, Channel power, Role of technology in managing channels, Causes of Channel Conflict, e-commerce and m-commerce [5L]

4. Promotion: Promotion Mix (Advertising, Sales Promotion, Personal Selling, Direct Marketing, Publicity & PR), Developing and managing and advertising campaign (from budgeting to evaluation), Role of advertisement agency, Media buying (reach, frequency, impact), Events and experiences, Understanding PR, Direct Marketing, Introduction to Digital Marketing; Selling Process (including sales forecasting) [5L]

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**Suggested Reading:**

1. Kotler, P., Keller, K., Koshy, A. & Jha, M. – Marketing Management; Pearson
2. Ramaswamy & Namakumari – Marketing Management; McMillan
3. Saxena, R. – Marketing Management; TMH
4. Kurtz, David L, Boone, Louis E – Principles of Marketing; Thomson
5. Keith Blois – Text Book of Marketing; Oxford University Press
6. Etzel, M. J., Walker, B. W. & W. J. Stanton - Marketing; TMH

**MB204: Operations and Project Management**

**Module-I: Operations Management**

1. Introduction to Production and Operations Management: Difference between Manufacturing and Service Operations; Product Process Matrix capacity planning – Responsibilities of Production Manager; Production as a Coordination Function; Production Cycle, Production Planning & Control Concept. [2L]
2. Facilities Location: Need for a Good Plant Location; Factors influencing Plant Location – Tangible and Intangible Factors; Economic Survey of Site Selection. [3L]
3. Plant Layout: Need for a Good Plant Layout; Characteristics of a Good Layout; Costs associated with Plant Layout; Process Layout vs. Product Layout; Optimization in a Process Layout and Product Layout; Designing Product and Process Layout; Assembly Line Balancing – Concept and Problems; Cellular Manufacturing Concept. [3L]
4. Manufacturing Systems: Classification of Manufacturing Systems with Examples; Differences between Intermittent and Continuous Production. [2L]
5. Operations Scheduling & Sequencing: Sequencing – Definition and Assumptions; Sequencing of n jobs on a single machine – Shortest Processing Time, Longest Processing Time, Earliest Due Date and First Come First Serve basis; Sequencing of 2 jobs on 2 machines – Gantt Charts, Limitations of Gantt Charts; Sequencing of n jobs on 2 and 3 machines – Johnson's Rule. [5L]
6. Resource Management: Purchasing Procedure; Value Analysis; Vendor Selection; Negotiation; Make or Buy decision; Concepts of MRP -I, MRP-II, ERP. [2L]
7. Work Study: Definition and its Importance; Basic Procedure in Performing a Work Study; Method Study – Objectives and Procedure; Work Measurement – Objectives and Procedure; Concepts of Performance Rating, Basic Time, Allowances and Standard Time. [3L]

**Module-II: Project Management**

8. Introduction - Definitions of Project and Project Management, Issues and Problems in Project Management, Project Life Cycle - Initiation / Conceptualization Phase, Planning Phase, Implementation / Execution Phase, Closure / Termination Phase. [4L]
9. Project Feasibility Studies – Pre-Feasibility and Feasibility Studies, Preparation of Detailed Project Report, Technical Appraisal, Economic/Commercial/Financial Appraisal including Capital Budgeting Process, Social Cost Benefit Analysis. [2L]
10. Project Planning – Importance of Project Planning, Steps of Project Planning, Project Scope, Work Breakdown Structure (WBS) and Organization Breakdown Structure (OBS), Phased Project Planning.

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[2L]

11. Project Scheduling and Costing – Gantt chart, CPM and PERT Analysis, Identification of the Critical Path and its Significance, Calculation of Floats and Slacks, Crashing, Time Cost Trade-off Analysis, Project Cost Reduction Methods. [6L]
12. Project Monitoring and Control – Role of Project Manager, MIS in Project Monitoring, Project Audit. [2L]
13. Project Learning- Resource allocation, Risk and uncertainty, Budget constraints, Project feasibility, and Change management. Case Studies with Hands-on Training on any project management software (e.g. MS-Project). [4L]

**Suggested Readings:**

1. Chary, S.N. – Production and Operations Management; TMH
2. Panneerselvam, R. – Production and Operations Management, PHI
3. Bedi, K. – Production and Operations Management; Oxford University Press
4. Chase, Jacobs, Aquilano and Agarwal– Operations Management for Competitive Advantage; TMH
5. Buffa, E.S. and Sarin, R.K. – Modern Production / Operations Management; John Wiley
6. Collier, Evans and Ganguly – Operations Management; Cengage Learning
7. Chandra, Prasanna - Projects: Planning, Analysis, Selection, Financing, Implementation and Review, 9th Ed, McGraw Hill.
8. Text Book of Project Management: Gopalkrishnan, P. and Ramamoorthy, V.E.; McMillan
9. Project Management for Engineering, Business and Technology: Nicholas, J.M., and Steyn, H.; PHI
10. Project Management: The Managerial Process: Gray, C.F., Larson, E.W. and Desai, G. V.; MGH

**MB205: Management Information System**

**Module-I**

1. E-commerce / E-business [3L]  
Overview, Definitions, Advantages & Disadvantages of E-commerce, Business models of e-commerce: models based on transaction party (B2B, B2C, B2G, C2B, C2C, E-Governance), models based on revenue models, Implementation ecommerce business, online and offline marketing.
2. ERP, CRM, SCM [10L]  
ERP (Enterprise Resource Planning): Concepts of ERP, architecture of ERP, Generic modules of ERP, Applications of ERP, concept of XRP (extended ERP); Features of commercial software like SAP, Oracle Apps, MS Dynamics NAV; CRM (Customer Relationship Management): Concepts of CRM, Features, application of CRM Sales force automation, SCM (Supply Chain Management): Concepts of SCM, drivers of SCM, inbound & outbound Definition, brief description and applicability of: eProcurement, e-Tailing, e-Logistics, e-Collaboration, eIntegration. Case studies for ERP, CRM, and SCM.
3. Data Communication & Networking [4L]  
Need for computer networking, components of a data Communication system, Network topology, Types of networks: LAN, MAN, WAN; concepts of Internet, Intranet, Extranet, and WWW. Network protocols, Network Architecture.

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Module-II

4. Threats to Computer Systems and Control Measures [2L]  
Concepts of threats: Virus, hacking, phishing, spyware, spam, physical threats (fire, flood, earthquake, vandalism), Concepts of security measures: firewall, encryption.
5. Database Management Systems (DBMS) [e.g. MS-Access/Oracle/MS SQL Server/MySQL etc.][4L+2P]  
What is a DBMS; Need for using DBMS. Concepts of tables, records, attributes, keys, integrity constraints, SQL: DDL & DML, DCL concepts, SQL commands [ANSI standard].
6. Data Warehousing and Data Mining [3L]  
Concepts of Data warehousing, datamart, metadata, multidimensional modeling, Online Analytical Processing (OLAP), Online Transaction Processing (OLTP), Data mining concepts, knowledge discovery, data mining, data mining applications.
7. MS Office Application [12L]  
MS Excel: Graphs and Charts – Calculation of various financial functions Performing Mathematical Calculations (using Formula and Functions), Searching, Sorting and Filtering, Min Media Mode, Reference Operators, Functions: Typing a Function, Creating a Column Chart: Changing the Size and Position of a Chart Saving.  
MS Access: Tables and Queries, Forms, Relationship  
MS PowerPoint: Introduction – Toolbar, their Icons and Commands – Navigating in Powerpoint – Creation of slides, animation, and templates - Designing Presentations – Slide show controls – Making notes on Pages and Handouts – Printing Presentations – Customizing Presentations – Autocontent Wizard.

**Suggested Readings:**

1. Waman S Jawadekar: Management Information Systems – Text and Cases 3ed. McGraw Hill
2. Mahadeo Jaiswal & Monica Mittal: Management Information Systems, OUP
3. Forouzan: Data Communication & Networking, TMH.
4. Tanenbaum: Computer Networks, Pearson Education
5. Ivan Bayross: SQL & PL/SQL, BPBISRD, Introduction to Database Management Systems, Tata McGraw Hill
6. Sadagopan: ERP: A Managerial Perspective, Tata McGraw Hill.

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**MB206: Human Resource Management**

**Module-I**

1. Human Resource Management: Meaning, Scope, objectives, and functions of HRM, Tracing the journey from Personnel to HRM to HRD to Talent Management, Structure of HR Department, Line and staff responsibility of HR Managers, qualities of HR manager [2L]
2. Human Resource Planning: objective, process of HRP. Supply and Demand Forecasting techniques, Manpower Inventory, Career Planning & Development, Creating a leadership pipeline for all levels, Succession Planning, Issues in rightsizing / downsizing / restructuring, Restructuring. Introduction to HR analytics, and developing Human Resource Information System(HRIS) to facilitate decision-making [8L]
3. Recruitment and Selection and its alignment with organization structure, Methods and sources of selection, steps in selection, differences between recruitment and selection, interview errors, types of interviews, interviewing methods (includes BEI), Understanding the phenomenon of day-1 placement at b schools, [4L]
4. Learning and Development: Training needs identification, Competency mapping, Various methods of training, Training Process; designing training programmes, Implementation, and Evaluation of Programs, Kirk Patrick Model, Induction and Onboarding, Assessment Centers, Creating and rolling out of training calendar, Preparation of training budgets [6L]

**Module-II**

5. Performance Management Systems: What is performance and how it is measured? Relationship between individual's, department's, and organization's performance, types of traditional and modern methods of appraisal, Finalizing KRAs, Functional and behavioral KRAs, Assessing potential, Various tools of assessment, Stages of the performance appraisal process, 360-degree assessment, HR Score Card, Conducting appraisal discussion, Understanding the phenomenon of the bell curve, Maintaining objectivity in the process [8L]
6. Compensation Management: Components of salary structure, minimum wage, fair wage and living wage, Fixed and variable pay, retirals, legal obligations, Job evaluation technique (Hay's), wage/salary fixation, incentives, bonus, ESOPs, Fringe Benefits, [3L]
7. Industrial Relations in India: Parties; Management and Trade Unions, Industrial Disputes: Trends, Settlement Machinery, Understanding Labor codes, [3L]
8. Workers' Participation in Management - Quality Circles and Other Small Group Activities, ESOPs. Collective bargaining [2L]
9. Discipline Management - Grievance management, Misconduct, domestic inquiry, disciplinary action [2L]
10. Strategic HRM - HR as a business partner, Understanding mindsets as barriers to SHRM, use of technology in delivering HR services, and understanding the role of AI/ML and its impact on HR function, e-recruitment, e selection [2L]

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**Suggested Readings:**

1. Aswathappa, K. – Human Resource Management, Tata McGraw Hill
2. Jyothi P. & Venkatesh, D.N. – Human Resource Management, OUP
3. Ramaswamy, E.A. – Managing Human Resources, OUP
4. Saiyadain, M.S – Human Resource Management: Tata McGraw Hill
5. Mondal Sabari & Goswami Amal – Human Resource Management: Vrinda Publications