

## **LIST OF SUBJECTS**

### **Sem-I**

1. Management Principles
2. Financial Accounting
3. Organizational Behavior
4. Marketing Management
5. Quantitative Techniques
6. Production Management
7. Live Project

### **Sem-II**

1. Human Resource Management
2. Corporate Communication
3. Legal Aspects of Business
4. Managerial Economics
5. Management Information System
6. Financial Management
7. Live Project Continued

### **Sem-III**

#### **Live Project Work - Viva Voce**

#### **Core Papers:**

1. Business Strategy
2. Project Management

#### **Finance:**

1. Capital Markets
2. Mergers & Acquisitions
3. Derivatives
4. Behavioral Finance
5. Financial Markets & Institutions

#### **Marketing:**

1. Sales Management
2. Digital Marketing
3. Pharma Marketing
4. Retail Management
5. Small Business Marketing

## **HR:**

1. Performance Management & Appraisals
2. Labour Law
3. Organizational Change Management
4. Learning Organization
5. Talent Acquisition

## **Operations:**

1. Operations Strategy
2. Supply chain management logistics
3. Procurement & Quality Management
4. Operation Research
5. Materials & Stores Management

## **IT:**

1. Cyber security Law
2. Data Warehousing & data mining
3. Software engineering
4. Web designing & multi-media
5. ERP

## **Detailed Syllabus**

### **Sem-I**

#### **Management Principles:**

1. Basics Of Management
2. Functions Of Manager
3. Planning In Organization
4. Organizational Change
5. Team Work
6. Leading In Organization
7. Leadership Theory
8. Motivation
9. Communication In Workplace
10. Controlling In Organization
11. Decision Making

#### **Financial Accounting:**

1. Accounting Principles

2. Assets
3. Bank Reconciliation
4. Cost Accounting
5. Equity
6. Financial Ratios
7. Financial Statements
8. Fixed Assets
9. Inventory Accounting
10. Liabilities
11. Payroll Accounting
12. Present & Future Values
13. Receivables & Bad Debts
14. Revenue
15. Taxation
16. Variance Analysis

### **Organizational Behavior:**

1. Factors impacting individual & groups
2. Ability of Learning - Values, Attitudes and Job Satisfaction
3. Personality & Emotions - Perception & Individual & Group Decision Making
4. Group: Foundational of Group Behavior - Group and Team Work
5. Functions of Communication.
6. Basic Approaches to Leadership: Contemporary Issues in Leadership
7. Power and Politics - Conflict and Negotiation process that includes defining goals, establishing strategy, and developing plans to coordinate activities
8. Basic Motivation Concepts - Motivation and its Applications - theories and concepts to understand, analyze, describe, and manage attitudes and behavior in organizations – individual behavior to attain group and organizational goals
9. Manager must increase effectiveness in organization culture, change and development.

### **Marketing Management:**

1. Marketing Concepts
2. Approaches To Marketing
3. Core Concepts Of Marketing
4. Marketing Process
5. Functions Of Marketing
6. The Changing Marketing Environment
7. Analyzing Needs And Trends In Macro Environment And Micro Environment Market Segmentation
8. Marketing Research
9. Bases For Market Segmentation Of Consumer Goods, Industrial Goods And Services

10. Market Targeting And Positioning Strategies
11. New Product Decision Process
12. Types Of New Products
13. Test Marketing Of A New Product, Packaging
14. Purpose, Types And New Trends In Packaging Marketing Mix
15. Four P's – Its Significance In The Competitive Environment
16. Product And Product Line – Product Mix
17. Product Life Cycle – Managing The Product In Product Life Cycle Physical Distribution
18. Importance And Role Of Distribution In Marketing
19. Introduction To The Various Channels Of Distribution
20. Promotion Tools – Sales Promotion, Advertising, Personal Selling, Direct Marketing And Online Marketing As Promotion Tools
21. Pricing –Importance – Methods – Objectives
22. Factors Market Evaluation And Controls
23. P & L Implications To Marketing
24. Marketing Control
25. Marketing Audit
26. Marketing Ethics
27. Marketing Plan

### **Quantitative Techniques:**

1. What Is Statistics?
2. Graphical & Descriptive Statistics
3. Numerical
4. Descriptive Techniques
5. Numerical Descriptive Techniques
6. Data Collection And Sampling
7. Continuous Probability Distributions
8. Sampling Distributions
9. Introduction To Estimation
10. Hypothesis – Testing Of Hypothesis
11. Inference About Population - Inference About Comparing Two Populations
12. Chi-Square Test
13. Simple Linear Regression and Correlation

### **Production Management:**

1. Integrated Production Management,
2. System Productivity, Capital Productivity, Labour Productivity, Personnel Productivity, Training –
3. Operations Management: Introduction, Operations Management and Strategy,
4. Tools for Implementation of Operations, Industry Best Practices -
5. Operations Strategy - Competitive Capabilities and Core Competencies,

6. Operations Strategy as a Competitive Weapon, Linkage Between Corporate,
7. Business – Forecasting - Introduction, The Strategic Importance of Forecasting, Benefits, Cost implications and Decision making using forecasting,
8. Classification of Forecasting Process, Methods of Forecasting, -
9. Location Strategies - Location Planning Process - Facility or Layout Planning and Analysis : Introduction, Objectives of Layout,
10. Classification of Facilities, Basis for Types of Layouts, Why Layout decisions are important, Nature of layout problems, Redesigning of a layout, -
11. Total Quality Management: Introduction, Meaning and Dimensions of Quality,
12. Quality Control Techniques, Quality Based Strategy,
13. Total Quality Management (TQM), Towards TQM – ISO 9000 as a Platform which is going through changes –
14. ISO 14000 for environmental management –
15. ISO 18001 and 18000 OHSAS –
16. Working with Intranet,
17. Total Productive Maintenance (TPM) –
18. business Process Modeling: Introduction –
19. Data Driven Approach to Process Definition. Logical vs. Physical Database Modeling –
20. introduction to project management –
21. Supply Chain Management Introduction - Domain Applications, SCM– The Breakthrough Article,
22. Views on Supply Chain, Bullwhip Effect in SCM, Collaborative Supply Chain, Inventory Management in Supply Chain,
23. Financial Supply Chain – A New Revolution within the SCM Fold –
24. Operations Scheduling: Introduction, Purpose of Operations Scheduling,
25. Factors Considered while Scheduling, Scheduling Activity under PPC, Scheduling Strategies, -
26. Value Engineering: Introduction, Value Engineering/Value Analysis, Relevance of VE in Modern Manufacturing, Process of Value Analysis,
27. VE – Approaches and Aim, Providing Value to the Customers, Benefits –
28. Just-In-Time : Introduction, Characteristics of JIT, Key Processes to Eliminate Waste, Implementation of JIT, Pre-requisites for implementation, JIT Inventory and Supply Chains.

## **Sem-II**

### **Human Resource Management:**

1. Basic Overview of Human Resource Management
2. Getting the Best Employees: Recruitment & selection – Manpower planning, selection tools, recruiting knowledge workers
3. Emotional Intelligence: emotional competence – managerial effectiveness – dealing with difficult customers
4. Compensation & Benefits: Compensation Philosophy – designing compensation proposals & benefit schemes
5. Training & Development: Identifying training needs – competency mapping – Role of HRM in knowledge management

6. Ensuring Compliance to Regulations
7. Ensuring Safe Work Environment
8. Sustaining High-Performing Employees - General resources in Human Resource Management
9. Performance management & Appraisal - Goal setting – job description (JD) – appraisal process – HR Role in Mergers & Acquisitions
10. Building organizational culture & employee engagement.
11. HR Policies and Practices

### **Corporate Communication:**

1. Communication and Mass Communication – meaning, definition and scope
2. Choice of communication channels in communication strategy
3. Introduction to Communication Theory - Definition and importance of Business Communication
4. Channels of communication - Means or media of communication Verbal Non-verbal – body language/space language, paralanguage, sign language – Perceptions /attitudes /beliefs /values /norms
5. Interpersonal/intrapersonal Business Communication - Business correspondence - Business letters/reports (annual committee etc.) précis/summarizing etc.
6. Guidelines for effective communication
7. Traditional Media – religious / coir groups, traditional art and theatre
8. Social media & it's uses and impacts.

### **Legal Aspects of Business:**

1. Indian contract Act 1871 –
2. The Arbitration and Conciliation Act 1996 –
3. Sale of goods act 1930 –
4. Negotiable instrument Act 1881 –
5. Companies Act 2013 –
6. Consumer Protection Act 1986

### **Managerial Economics:**

1. Introduction to Labour and Managerial Economics: Definition, Nature and Scope,
2. Relationship with other disciplines – circular flow of economic activities – basic economic principles and concepts – rationality, ceteris paribus, the opportunity cost, scarcity marginalism, equi-marginalism, time value of money, discounting principle, risk and uncertainty.
3. The role of managerial economist - Objectives of the firm - Managerial theories of firm - Behavioral theories of firm - optimization techniques - optimization with calculus - New management tools of optimization
4. Theory of Demand - Demand Analysis - types and significance of various elasticity
5. Demand estimation – Marketing research approaches to demand estimation
6. Forecasting techniques – production & supply analysis

7. Production Analysis: Production function, Marginal Rate of Technical Substitution, Isoquants and Isocosts, Production function with one/two variables, Cobb-Douglas Production Function, Returns to Scale and Returns to Factors, Economies of scale
8. Cost theory and estimation - Cost concepts, determinants of cost, cost-output relationship in the short run and long run, short run vs. long run costs, average cost curves, overall cost leadership – supply function – elasticity of supply
9. Theories of firm: Market Structure and Pricing practices: Features and Types of different competitive situations - Price-Output determination in perfect competition, Monopoly, Monopolistic competition and Oligopoly both the long run and short run.
10. Pricing Strategies - Price discrimination, various pricing strategies in practice – cost plus, skimming, penetration, loss leader, transfer bundled.
11. Pricing of multiple products - Profit Management: Nature, scope, Theories of profit, satisficing behavior.
12. Measurement policies: business vs economic profit - Cost – Volume- Profit Analysis.
13. Capital budgeting: Payback period – accounting rate of return – net present value & internal rate of return.

### **Management Information System:**

1. Organization and Computing
2. Managing Information Systems in Organizations
3. Data and Information: - Decision making and communication
4. Competing with IT- strategy:- Business Process Integration with IT - Introduction,
5. Supply Chain Management Systems,
6. Customer Relationships Management Systems,
7. Challenges of Enterprise Systems Implementations- Managing the implementation
8. Electronic Commerce: Introduction, E-commerce Technology, doing business over internet-networks
9. electronic data interchange (EDI)-online payment technology- Mobile commerce-ecommerce-portals- decision support system
10. Managing data resources
11. Managing social media
12. IT Functions

### **Financial Management:**

1. The Goals & Functions of Financial Management
2. Review of Accounting
3. Financial Analysis
4. Financial Forecasting
5. Operating & Financial Leverage
6. Working Capital and the Financial Decision
7. Current Asset Management
8. Sources of Short Term Financing
9. The Time Value of Money

## 10. Valuation and Rates of Return

### **Sem III**

#### **Project Work - Viva Voce**

#### **Core Papers:**

##### **Business Strategy:**

1. Introduction to Strategic Management, Concept of Corporate Strategy,
2. Strategic Management Process - the 7-S Framework –
3. Corporate Policy and Planning in India –
4. Role, functions of Board of Directors – skills of directors to run an organization – Board functioning in Indian context –
5. environmental scanning – internal factors – external factors –
6. Strategy Formulation, Strategic Factors Analysis Summary (SFAS) Matrix,
7. Business Strategy, Corporate Strategy, Functional Strategy,
8. Strategic Choices –
9. Strategy Implementation,
10. Organization Structure, Corporate Culture, Diversification, Mergers and Acquisitions - Other Strategic Issues,
11. Small and Medium Enterprises, Non- Profit Organizations - Evaluation and Control,
12. Strategic Information Systems

##### **Project Management:**

1. Introduction To Project Management – Beginning A Project - Defining Goals Of A Project
2. Project Planning - Requirement Of Aggregate Plan, Steps In Developing An Aggregate Plan, Management, Team Building, And Organization
3. Project Budgeting - Including Cost Budgeting And Personnel Budgeting
4. Project Scheduling - Importance Of Estimation, Guesswork, And Milestones In Project Scheduling
5. Project Execution - How Leadership And Communication Affect Project Management –
6. Monitoring And Controlling The Project - How Variables And Risks Should Be Approached When Planning A Project
7. Introduction Of IT In Project Management – Safety Management
8. Contracts For Executing Projects – Contract Administration And Correspondence – Documentation Between Contractor (Executing Contract) And Party Is Related To The Project Including Consultants, Nominated Sub-Contractors/Sub Suppliers, Client/Owners, Financiers –
9. Introduction To Legal Aspects Of Contracts
10. Working Capital And Cash Management For Projects
11. Insurance Management
12. Counter Party Risks
13. Sub-Contractor Management And Labor Compliances



## 14. Nuances Of Project Closure

### **Finance:**

#### **Capital Markets:**

1. Basics Of Capital Markets
2. How Stock Markets Work
3. Role Of Regulatory Institutions Like SEBI And RBI
4. Risk And Rewards Of Stock Markets
5. Stock Market Strategies
6. Introduction To Options, Option Pricing, Trading Strategies

#### **Mergers & Acquisitions:**

1. Introduction to M&A - What exactly is M&A? What are the major forces driving each of domestic and international M&A activity?
2. What is the process timeline for an M&A transaction? How an M&A idea originated and what is the process from origination to closing? What role do synergies play in M&A analysis
3. Due Diligence: How do you conduct effective due diligence? Who should you talk to? What should you ask for? What is the target likely to be looking for in terms of Confidentiality and Standstill Agreements?-
4. Financing Decisions: How does the transaction get financed? What macro and micro factors impact M&A financing? What are the major financing alternatives from senior secured debt to high yield?
5. Transaction Structures: What forms can a transaction take and how do they differ? What is a tender offer? What is the difference between a one-step and two-step deal? How do tax factors influence the choice of transaction structure?
6. What are the basic components of the Merger Agreement? How does the Merger Agreement relate to the due diligence process?
7. Restructuring Options: What are the alternatives available to the firm to “unlock” shareholder value, including mechanics of the divestiture process and maximization of after-tax proceeds, straight sale, leveraged joint ventures, letter stock, rights offerings
8. What makes a company vulnerable? What are the major “defense” mechanisms and do they work? How do you launch a hostile bid?

#### **Derivatives:**

1. Course overview; Introduction to derivatives Fundamental derivatives concepts –
2. Forward contracts, futures contracts, options and swaps,
3. Hedging with Derivatives contracts - "Statistical" hedging Risk and return in a real world futures hedge Finding the minimum risk hedge using regression –
4. Futures pricing: Expectations vs the Cost of Carry Arbitrage, the key to derivatives pricing –
5. Stock index futures arbitrage Important stock index futures strategies -

6. T-bond futures pricing; the cheapest to deliver bond Using interest rate futures –
7. Introduction to commodity derivatives trading,
8. Derivatives trading in forex,
9. Mortgages and mortgage-backed securities Monte Carlo solution techniques –
10. Credit risk and credit derivatives.

### **Behavioral Finance:**

1. Non-behavioral finance: Introduction; Why we care: The roles of securities prices in the economy;
2. Efficient markets hypothesis (EMH): Definitions; EMH in supply and demand framework;
3. Theoretical arguments for flat aggregate demand curve;
4. Equilibrium expected returns models - Key methodologies - Return predictability in the stock market;
5. Data mining;
6. Joint hypothesis problem;
7. Predictability in bonds, forex, futures, real estate, options, sports betting –
8. Definition of arbitrageur; Long-short trades; Risk vs. Horizon;
9. Transaction costs and short-selling costs; Fundamental risk; Noise-trader risk; Professional arbitrage;
10. Destabilizing informed trading (positive feedback, predation);
11. Case: Strategic Capital Management - Definition of average investor; Belief biases; Limited attention and categorization;
12. Nontraditional preferences – prospect theory and loss aversion;
13. Bubbles and systematic investor sentiment –
14. Supply of securities and firm investment characteristics (market timing, catering) by rational firms; Associated institutions;
15. Relative horizons and incentives; Biased managers

### **Financial Markets & Institutions:**

1. Introduction - Operations In The Financial System – Financial Assets
2. Financial Intermediaries – Financial Markets – Financial Innovation
3. Determination Of Interest Rates Loan Funds Theory
4. Economic Forces That Affect Interest Rates, Evaluation Of Interest Rates Over Time, Forecasting Interest Rates
5. Characteristics Of Debt Securities That Cause Their Yields To Vary, Explaining Actual Yield Differentials
6. Estimating The Appropriate Yield, A Closer Look At The Term Structure
7. International Structure Of Interest Rates

### **Marketing:**

### **Sales Management:**

1. B2B – B 2 C-
2. Sales Force Cycle Management – Recruitment- Competency Building- Retention- Handling Sales Representatives, Unions And Grievances - Reward And Recognition Schemes For Front Ends
3. Collaborative Marketing Within The Organization
4. Training And Impact On Marketing Campaigns And Brand Building
5. Sales Forecasting Techniques And Impact On Inventories And Production
6. Marketing Research

### **Digital Marketing:**

1. Basics Of Advertising –
2. What Is Digital Media –
3. How Is Digital Media Different Than Traditional Media –
4. Social Media –
5. Latest Trends In Digital Marketing –
6. Benefits Of Digital Marketing –
7. Websites And Blogs –
8. E-Commerce Website Development –
9. SEO

### **Pharma Marketing:**

1. Industry economics - Regulatory framework –
2. Pharma organizational structure and culture –
3. Marketing to physicians - Sales force, including call plan development –
4. Journal ads on Medical education –
5. Marketing to patients: Historical development –
6. Positioning and messaging –
7. Legal and regulatory considerations and principals –
8. Acquisition – Retention - Public relations –
9. The patient/physician dialogue - Why it's important in pharma marketing –
10. Tactics to drive to desired outcome – importance of marketing research in pharma marketing

### **Retail Management:**

1. Retail Branding & Strategy –
2. Store Location, Design and Visual Merchandising –
3. Retail Planning and Legal Issues –
4. Logistics And Supply Chain \Management –
5. Retail Marketing –
6. Retail Shoppers' Behavior –
7. Retail Sales Techniques & Promotions –
8. Retail Information System & e-Retailing –
9. Customer Relationship Management –

## 10. Global Competitiveness And Retailing- Brand Planning -

### **Small Business Marketing:**

1. Marketing Budget – Defining – Your Segment, Targeting And Positioning
2. Market Analysis – Planning Your Marketing Strategy
3. New Product Launch
4. The Internet Has Become An Essential Small-Business Marketing Tool. This Session Gives An Overview Of Building A Website And Driving Traffic To It With Web Searches, Social Media, And Other Tools – Keeping In Sync With Healthy Cash Flows
5. Difference between Business ‘Pitch’ And A Business ‘Plan’ And The Advantages Of Both. It Includes Things To Consider When Presenting Your Business Idea To Potential Investors, And How To Determine The Amount Of Investment You Actually Need

### **HR:**

#### **Performance Management & Appraisals:**

1. Definition of Performance Evaluation, Evolution of Performance Management
2. Definitions and Differentiation of Terms Related to Performance Management - goals and objectives of performance management
3. Overview of Performance Management Process, Performance Management Planning Process
4. Drawing up the Plan, Evaluating the Performance Planning Process
5. The Need for Structure and Documentation, Manager’s Responsibility in Performance Planning Mechanics and Documentation
6. Definitions and Dimensions of PA, Purpose of PA and Arguments against PA, Necessity of Performance Appraisal and its Usage by Organizations
7. Different Performance Appraisal Methods - Feedback – Role, Types and Principles
8. Situations Requiring Feedback and Pitfalls
9. 360-Degree Appraisal: Introduction, the Impact of 360-Degree
10. Facilitation of Performance Management System through Automation

#### **Labour Law:**

1. Industrial Disputes Act, 1947 –
2. Bombay Industrial Relations Act 1946 - .
3. Industrial Employment (Standing Orders) Act 1946 –
4. Indian Trade Union Act, 1926 - .
5. Maharashtra Recognition of Trade Union & Prevention of Unfair Labour Practice Act, 1971 –
6. Workmen’s Compensation Act, 1923 -
7. Employees Provident Fund Act, 1952 -
8. Employees State Insurance Act, 1948 -
9. The Maternity Benefit Act, 1961 -
10. The Bombay Labour Welfare Fund Act, 1953 -
11. The Payment of Gratuity Act 1972 –

12. The Minimum Wages Act 1948 -
13. Payment of Wages Act 1936 -
14. The Payment of Bonus Act, 1965 –
15. Factories Act, 1948 -
16. The Plantation Labour Act, 1951 –
17. The Dock Workers (Regulations of Employment) Act, 1948 –
18. The Mines Act, 1952 –
19. The Bombay Shops & Establishment Act, 1948 –
20. The Contract Labour (Regulation & Abolition) Act 1970 –
21. The Employment of Children Act, 1986 –
22. Case Laws and case studies to understand the perspectives of the laws.

### **Organizational Change Management:**

1. How To Prepare For Change, Including Factors Which Will Increase The Probability Of A Successful Outcome
2. Help Identify Individual Learning Issues Affecting Change, Suggest Learning Activities Appropriate To Different Individual Learning Styles, And Evaluate The Roles In The Change Process Of Feedback, Coaching And Action Learning
3. Use An Understanding Of Different Psychological Approaches To Propose And Evaluate Tactics Which Will Help People Engage – And Remain Engaged – With A Change Process
4. Recognize Early Signs Of Resistance To Change And Propose Actions To Mitigate It
5. Identify The Impact Of Individual Personality Types On Responses To Change And On Team Relationships, And To Suggest Positive Ways To Make Use Of Such Diversity
6. Support A Range Of Types Of Team With Insights Which Will Help Achieve Team Effectiveness, Including An Appropriate Role For Facilitation Of Team Meetings And Processes
7. Use A Range Of Organization Paradigms To Understand, Support And Sustain Change Processes Whether These Changes Are Planned, Emergent Or Complex
8. Offer An Appropriate Process Framework To Help Plan Or Understand Any Particular Organizational Change.

### **Learning Organization:**

1. What does it mean to learn? Explore different theories about learning, and identify the organizations and leaders whose beliefs best fit - What does leadership look like across different learning organizations?
2. Discover the leadership methods and values - How does an organization's structure reflect its beliefs about learning?
3. Consider how organizational methods match your personal theory of learning - How does physical design affect learning?
4. What does design mean for digital learning? Learn how to answer key design questions and support your learning theory.
5. Instructional Design and move towards adopting design thinking forming the basis
6. E-learning and its implementation.

7. Training needs identification.
8. Effectiveness of Training (Kirkpatrick's Model).
9. Competency Mapping and Competency Models.
10. Career Development.
11. Managerial Effectiveness and Competence.
12. Employee Engagement.

### **Talent Acquisition:**

1. Manpower planning, Introduction to talent acquisition,
2. Recruiting as a part of the HR function, overview,
3. Evaluating staffing needs, developing recruiting plans, approval process,
4. Diversity & confirmation action FLSA (Fair Labour Standard Act) - -
5. Position description and specifications, job analysis, Bona Fide Occupational Qualifications (BFOQ) –
6. Understand the importance of employment process and where it fits in the overall Human Resources function –
7. Plan for the various steps in the recruitment and selection process –
8. Understand the legal framework which governs the recruiting function -
9. Prepare a position description and specifications –
10. Understand the candidate evaluation process through interviewing, testing and background investigations –
11. Design an effective new employee orientation program –
12. Monitor the overall function to maintain both the efficiency and productive activity to achieve the best new hire results-
13. Develop a recruiting and staffing strategy.
14. Selection tools (using Psychometrics – overview of Big 5), Behavioral /event Interview (BEI), Building Employee Value Proposition.
15. Strategic HR: Vision and mission of an organization,
16. Building HR strategy based on Business Strategy,
17. Succession Planning,
18. Leadership Development and Hi-Pots Identification and Development in the On-line Era,
19. International Human Resource Management (Cross Culture Sensitivity, Diversity, International Labor Standards),
20. Fundamentals of HR Analytics (HR Accounting, HR Cost Monitoring, ROI, Productivity, Review and Capture Data).

### **Operations:**

#### **Operations Strategy:**

1. Value creation – Quality service delivery –
2. TQM - tools and techniques for greater efficiency in the delivery of services: organizing workflows,

3. Managing - management techniques for assessing effectiveness and efficiency –
4. Performance measurement – Role of technology - What value does the technology add? –
5. Operation's management in developing world - basic concepts to the edge such as rapid response to disasters, scaling up and distributed delivery of services.

### **Supply chain management logistics:**

1. Single-warehouse, single-product deterministic inventory - models: Constant demand, infinite horizon - Single-warehouse,
2. multi-product inventory model - Single-warehouse, multi-retailer models –
3. Time-varying demand - Stochastic inventory models: Newsvendor models –
4. Pricing models - The bullwhip effect - Green logistics - Vendor-managed inventory.

### **Procurement & Quality Management:**

1. Introduction to Procurement Management
2. Alternative Procurement Strategies - Partnering
3. Client Supply Chain Management and Procurement Options
4. Contract Strategies
5. Procuring programme of projects

### **Operation Research:**

1. Introduction, Historical Background, Scope of Operations Research
2. Features of Operations Research, Phases of Operations Research
3. Types of Operations Research Models, - Linear Programming Problem, Requirements of LPP,
4. Mathematical Formulation of LPP, Case Studies of LPP
5. Graphical Methods to Solve Linear Programming Problems, - Graphical Analysis, Some Basic Definitions
6. Graphical Methods to Solve LPP, Some Exceptional Cases
7. Important Geometric Properties of LPP- Standard Form of LPP, Fundamental theorem of LPP
8. Solution of LPP – Simplex Method, The Simplex Algorithm
9. Penalty Cost Method or Big M-method
10. Importance of Duality Concepts, Formulation of Dual Problem
11. Economic Interpretation of Duality
12. Sensitivity Analysis
13. Mathematical Analysis of Queuing Process, Properties of Queuing System
14. Notations, Service System, Single Channel Models, Multiple Service Channels
15. Erlang Family of Distribution of Service Times
16. Applications of Queuing Theory
17. Limitations of Queuing Theory
18. Methodology of Simulation, Basic Concepts, Simulation Procedure, Application of Simulation
19. Basic Difference between PERT and CPM, PERT/CPM Network Components and Precedence Relationship, Project Management – PERT - GAME Theory

### **Materials & Stores Management:**

1. Materials Management – Evolution, Importance, Scope and Objectives – Interface with other functions.
2. Concept of Logistics and Supply Chain Management and evolution to 4PL - Logistics - Objectives, Components,-
3. Need of Inventory – Costs associated with Inventory – Types of Inventory –
4. Basic EOQ Model – EOQ with discounts –
5. Classification of material – ABC Analysis – Significance.
6. Supply Chain Management – Objectives, Components, Significance, Trade off Customer Service & Cost.-
7. Advantages over conventional planning (Order Point Method) –
8. Input and output of MRP system – Forecasting –
9. Overview of quantitative and qualitative methods of forecasting –
10. Master Production Schedule –
11. Bill of Materials - Responsibilities of Purchase Department – Purchase Cycle – Negotiation & Bargaining – Vendor relations – Purchasing Methods –
12. Global sourcing – stores - Functions, Importance, Organization of stores & Stores layout.
13. Stores procedure – documentation - Inventory turns ratios – Standardization – need and importance.
14. Codification – concept, benefits - Value Engineering and Value Analysis –
15. Principles of Materials Handling system – Materials Handling Equipments – Safety issues.

## **IT:**

### **Cyber security Law:**

1. Introduction to IT laws & Cyber Crimes – Internet, Hacking, Cracking, Viruses, Virus Attacks, Pornography, Software Piracy,
2. Intellectual property, Legal System of Information Technology,
3. Social Engineering, Mail Bombs, Bug Exploits, and Cyber Security etc.-
4. Introduction to Cyber Forensic Investigation, Investigation Tools, eDiscovery, Digital Evidence Collection, Evidence Preservation, E-Mail Investigation, E-Mail Tracking, IP Tracking, E-Mail Recovery, Encryption and Decryption methods,
5. Search and Seizure of Computers, Recovering deleted evidences,
6. Password Cracking - introduction to Cyber Security, Implementing Hardware Based Security, Software Based Firewalls, Security Standards, Assessing Threat Levels, Forming an Incident Response Team,
7. Reporting Cyber crime, Operating System Attacks, Application Attacks,
8. Reverse Engineering & Cracking Techniques and Financial Frauds.

### **Data Warehousing & data mining:**



1. Data warehousing Components –Building a Data warehouse – Mapping the Data Warehouse to a Multiprocessor Architecture –
2. DBMS Schemes for Decision Support – Data Extraction, Cleanup, and Transformation Tools – Metadata. –
3. Reporting and Query tools and Applications – Tool Categories –
4. The Need for Applications – Cognos Impromptu – Online Analytical Processing (OLAP) – Need – Multidimensional Data Model – OLAP Guidelines –
5. Multidimensional versus Multirelational OLAP – Categories of Tools –
6. OLAP Tools and the Internet. - Introduction – Data – Types of Data – Data Mining Functionalities – Interestingness of Patterns –
7. Classification of Data Mining Systems – Data Mining Task Primitives – Integration of a Data Mining System with a Data Warehouse – Issues –Data Preprocessing. –
8. Mining Frequent Patterns, Associations and Correlations – Mining Methods – Mining Various Kinds of Association Rules –
9. Correlation Analysis – Constraint Based Association Mining – Classification and Prediction - Basic Concepts –
10. Decision Tree Induction - Bayesian Classification – Rule Based Classification – Classification by Backpropagation –
11. Support Vector Machines – Associative Classification – Lazy Learners – Other Classification Methods –
12. Prediction - Cluster Analysis - Types of Data – Categorization of Major Clustering Methods - K- means – Partitioning Methods – Hierarchical Methods - Density-Based Methods –Grid Based Methods – Model-Based Clustering Methods – Clustering High Dimensional Data - Constraint – Based Cluster Analysis – Outlier Analysis – Data Mining Applications.

### **Software engineering:**

1. Software Processes - Software Processes: RUP and XP – requirements - Design Overview - Testing Overview
2. Design Pattern - The Unix/C++ Development Platform (in 512 WWH) - Version Control Development Tools - Effective C++ I - Effective C++ II - Effective C++ III
3. Debugging Tools I - Memory Management and Debugging
4. Code Optimization I - Code Optimization II
5. Introduction to Formal Methods - Static Analysis – TBA

### **Web designing & multi-media:**

1. TML - JavaScript - CSS - Adobe Dreamweaver
2. Adobe FLASH - Adobe PHOTOSHOP - Word Press - Web Designing
3. Facebook Page Designing -You Tube Videos
4. SOUND FORGE - Utilities: Gif Animation - File Transfer Protocol
5. On-Page Search Engine Optimization
6. Google Webmasters Tools -Mobile website development
7. Dreamweaver CS5- Practical SEO

## **ERP:**

1. Business Functions and Business Processes
2. importance of Information: Characteristics of information; Types of information,
3. Information System: Components of an information system; Different types of information systems
4. Management information system
5. Enterprise Resource Planning: Business modeling; Integrated data model - Defining ERP, Origin and Need for an ERP System
6. Benefits of an ERP System, Reasons for the Growth of ERP Market, Reasons for the Failure of ERP Implementation: Roadmap for successful ERP implementation
7. Business Process Re-engineering, Management Information systems, Decision Support Systems, Executive Information Systems- Advantages of EIS; Disadvantages of EIS, Data Warehousing
8. Data Mining, On-Line Analytical Processing
9. Product Life Cycle Management
10. Supply Chain Management
11. ERP Security - ERP Tools and Software, ERP Selection Methods and Criteria
12. ERP Selection Process, ERP Vendor Selection, ERP Implementation Lifecycle
13. Pros and cons of ERP implementation, Factors for the Success of an ERP Implementation
14. Role of ERP in Purchasing
15. Purchase Module: Features of purchase module; Benefits of purchase module
16. ERP Purchase System - role of ERP in Sales and Distribution
17. Sub-Modules of the Sales and Distribution Module: Master data management
18. Order management - Role of ERP in Inventory Management: Features of ERP inventory management
19. Role of ERP in Human Resource Management: Workflow of ERP human resource management system; Advantages of ERP human resource management system
20. Role of ERP in Finance, Accounting and Finance Processes: Cash management; Capital budgeting, Features of ERP Financial Module, Benefits of ERP Financial Module
21. New Trends in ERP, ERP to ERP II-Implementation of Organization