

MBA Semester 1

Course Name: **Organisational Behaviour**

Syllabus

Unit 1: Introduction

- Management and Organizational Behavior
- Individual and Cultural Differences

Unit 2: Perception

- Perception and Job Attitudes
- Learning and Reinforcement

Unit 3: Diversity in Workforce

- Diversity and Workforce
- Challenges of Diversity
- Recommendations for Managing Diversity
- Managerial Decision Making

Unit 4: Optimising Decision Making, Motivation and Performance Management

- Barriers to Effective Decision Making
- Improving Quality of Decision Making
- Work Motivation for Performance
- Process Theories for Motivation

- Performance Appraisals and Reward

Unit 5: Building and Managing Diverse Work Teams

- Group and Intergroup Relations
- Managing Effective Work Group
- Understanding and Managing Work Team, Multicultural Team

Unit 6: Strategic Leadership and Effective Communication

- Managerial Communication and Corporate Reputation
- Leadership Needs in the 21st Century
- Approaches to Leadership

Unit 7: Navigating Power, Politics and Conflicts in Organisation

- Power in Interpersonal Relationships
- Political Behavior in Organization
- Resolving Conflicts in Organization

Unit 8: Adapting to Environmental Changes: Negotiation, Structure and Dynamics

- Negotiation Behavior

- External and Internal Organizational Environment
- Organization Structure and Change

Unit 9: HRM and Entrepreneurship

- Human Resource Management and Compliance
- Coping with Work-Related Stress
- Overview of Entrepreneurship
- Optimal Support for Entrepreneurship

Course Name: **Principles of Accounting**

Syllabus

Unit 1: Introduction to Accounting

- Introducing
- Meaning, utility
- Definition of Accounting
- Types of Accounting

Unit 2: Accounting Principles & Concepts

- Financial Accounting vs. Management Accounting
- Accounting Principles
- Kinds of Accounting Principles

- Accounting Concepts

Unit 3: Introduction to Journal

- Introduction, Meaning
- Journalizing
- Format of Journal
- Opening entry

Unit 4: Journal Entries

- Types of Journal Entry
- Advantages of Journal
- Debit & Credit

Unit 5: Subsidiary Books - I

- Introduction, Meaning
- Needs
- Uses of Subsidiary Book
- Purchase Book

Unit 6: Subsidiary Books - II

- Purchase Return Book
- Sales Book
- Sales Return Book
- Cash Book

- Petty Cash Book

Unit 7: Introduction to Trial Balance

- Introduction, Meaning
- Objective of Trial Balance
- Advantages & disadvantages
- Purpose of Trial Balance

Unit 8: Preparation of Trial Balance

- Preparation of Trial Balance
- Format
- Methods of preparation
- Types of Trial Balance
- Balancing
- Meaning of balances

Unit 9: Final Accounts

- Introduction, Meaning
- Objectives and importance of Final Accounts
- Trading Account
- Balancing of Trading Account
- Profit & Loss Account
- Balance Sheet

- Features of Balance Sheet
- Difference between Trial Balance and Balance Sheet
- Adjustments - Closing stock, Prepaid expenses, Outstanding expenses & Depreciation

Course Name: **Managerial Economics**

Syllabus

Unit 1: Introduction to Managerial Economics

- Nature and scope of Managerial Economics
- Nature and scope of Managerial Economics, its relationship with subjects.
- Objective of Firm

Unit 2: Basic Economic Concepts

- Fundamental Economic concepts - Opportunity cost concept,
- Incremental concept,
- Principle of the perspective,
- Discounting principle and Equimarginal principle.

Unit 3: Demand and Elasticity of Demand

- Demand Analysis: Concept and importance of Demand & its determinants,
- Income & Substitution effect,
- Various elasticities of demand,
- Using elasticities in managerial decisions.

Unit 4: Concept of Revenue and Demand Forecasting

- Revenue concepts,
- Relevance of demand forecasting,
- Methods of demand forecasting.

Unit 5: Concept of Cost

- Cost Concept and Production Theory: Various cost concepts & classifications,
- Cost output relationship - in short run and in long run (cost curves).

Unit 6: Production Function and Indifferent Curves

- Economies of scale,
- Cost control and cost reduction,
- Managerial uses of production function,
- Indifferent curves.

Unit 7: Pricing Decisions

- Pricing Decisions: Pricing methods,
- Price Discrimination.

Unit 8: Price and Output Decisions Under Different Market Structures

- Price and output decisions under different market structures - Perfect competition,
- Monopoly and Monopolistic Competition,
- Oligopoly.

Unit 9: Concept of Profit & Inflation

- Profit & Inflation: Profit,
- Functions of profit,
- Profit maximization.
- Break Even analysis,
- Inflation - Types, in terms of demand pull & cost factors,
- Effects of inflation.

Course Name: **Principles of Management**

Syllabus

Unit 1: Basic concepts of management

- Definition of Management
- Need of Management Principles
- Management Science or Art
- Management as an Art
- Management as Science
- Management as both Science and Art

Unit 2: The working of management

- Functions of Management
- Needs of Levels of Management
- Levels of Management
- Managerial Skills
- Managerial Roles

Unit 3: Different approaches to management

- Early Approaches to Management
 - o Robert Owen: Human Resource Management Pioneer
 - o Charles Babbage
 - o Andrew Ure & Charles Dupin
 - o Henry Robinson Towne
- Classical Approach
- Scientific Management

- o 4 Steps of Scientific Management
- o Taylor's Approach to Management
- o Limitation of Scientific Management
- Administrative Theory
 - o Fayol Outlined 14 Principles of Management

Unit 4: Additional approaches to management

- Bureaucratic Management
 - o Mary Parker Follet: Focusing on Group Influences
 - o Elton Mayo: Focusing on Human Relations
 - o Four Parts of Hawthorne Studies / Experiments
 - o Conclusions of Hawthorne Studies / Experiments
 - o Criticism of Hawthorne Studies / Experiments
 - o Abraham Maslow: Focusing on Human Needs
 - o Douglas McGregor
 - o Chris Argyris
- Quantitative Approach
 - o Management Science o Operations Management
- Modern Approaches to Management→

- o Systems Theory
- o Contingency Theory

Unit 5: Social responsibilities of management

- Social Responsibilities of Management
- Arguments for Social Responsibilities of Business
- Arguments Against Social Responsibilities of Business
- Social Stakeholders

Unit 6: Social responsiveness and managerial ethics

- Measuring Social Responsiveness
- o Social Audits
- Managerial Ethics
 - o Factors that Influence Ethical Behavior
 - o Stages of Moral Development
 - o Ethical Guidelines for Managers
 - o Geographic Segmentation.

Unit 7: Span of Control

- Meaning of Span of Control
- Importance of Span of Control
- Factors Affecting Span of Control
- Graicuna's Formula

Unit 8: Rational decision making and decision making process

- Introduction
- Significance of Rational Decision Making
- Limitations of Rational Decision Making
- Managers as Decision Makers
 - o The Rational Model
 - o Non-Rational Model
- Decision Making Process
- Types of Managerial Decisions
 - o Decision Making Under Certainty
 - o Decision Making Under Risk
 - o Decision Making Under Uncertainty
 - o Modern Approaches to Decision-making under Uncertainty

Unit 9: MIS, DSS and approaches to decision making

- Management Information System Vs Decision Support System
- The Systems Approach to Decision Making
- Group Decision Making

- o List of the advantages of Group Decision Making
- o List of the disadvantages of Group Decision Making
- o Forms of Group Decision Making
- Decision Making Techniques.

Course Name: **Quantitative Techniques**

Syllabus

Unit 1: Introductions

- Introducing
- Meaning
- Definition and Characteristics of Statistics
- Statistics as a Scientific Method
- Statistics as a Science or an Art

Unit 2: Importance and Scope of Statistics

- Importance of Statistics
- Scope of Statistics
- Limitations of Statistics

Unit 3: Introduction to Classification and Types

- Classification
- Types of Classification
- Formation of a Frequency Distribution
- Construction of a Discrete Frequency Distribution
- Construction of a Continuous Frequency Distribution

Unit 4: Frequency Distribution

- Relative or Percentage Frequency Distribution
- Cumulative Frequency Distribution
- Frequency Density
- Bivariate and Multivariate Frequency Distributions

Unit 5: Tabulation

- Objectives of Tabulation
- Difference between Classification and Tabulation
- Main Parts of a Table
- Type of Tables
- Methods of Tabulation

Unit 6: Diagrammatic Presentation of Data

- Diagrammatic Presentation - Advantages, Limitations, General Rules for Making Diagrams, Choice of a Suitable Diagram
- Bar Diagrams
- Circular or Pie Diagrams

Unit 7: Methods and Source of Data Collection

- Pictogram and Cartogram (Map Diagram)
- Collection of Data
- Method of Collecting Data - Drafting a Questionnaire or a Schedule
- Sources of Secondary Data - Secondary Data

Unit 8: Average and Arithmetic Mean

- Introduction
- Average - Functions of an Average, Characteristics of a Good Average, Various Measures of Average
- Arithmetic Mean - Calculation of Simple Arithmetic Mean, Weighted Arithmetic Mean, Properties of Arithmetic Mean, Merits and Demerits of Arithmetic Mean

Unit 9: Median and Mode

- Median - Determination of Median, Properties of Median, Merits, Demerits, and Uses of Median
- Mode - Determination of Mode, Merits and Demerits of Mode, Relation between Mean, Median, and Mode

Course Name: AI & Data-Driven Decision Making

Syllabus

Chapter 1: Foundations of AI & Machine Learning for Managers

- Introduction to AI, Machine Learning, and Deep Learning
- Types of AI: Narrow AI, General AI, Generative AI
- Supervised vs Unsupervised Learning
- AI lifecycle: Data → Model → Deployment → Feedback
- Business implications of AI adoption
- Limitations and risks of AI systems

Chapter 2: Data-Driven Decision Frameworks (PwC Methodology)

- Evolution from intuition-based to data-driven decision-making
- PwC decision intelligence frameworks
- Data maturity models
- KPI design and performance analytics
- Decision trees and scenario analysis
- Role of dashboards and business intelligence tools

Chapter 3: GenAI Tools Landscape: ChatGPT, Claude & Gemini

- Overview of the Generative AI ecosystem
- Comparative analysis: ChatGPT, Claude, Gemini
- Fundamentals of prompt engineering
- Applications of GenAI in business workflows
- Limitations: hallucination, reliability, and data privacy

Chapter 4: Identifying AI Use Cases Across Business Functions

- AI applications in Marketing, Finance, HR, Operations, and Supply Chain
- Value identification: efficiency vs innovation

- Use case prioritisation frameworks
- ROI estimation and feasibility analysis
- Case studies of AI adoption in Indian enterprises

Chapter 5: AI Ethics, Bias Detection & Fairness Frameworks

- Ethical challenges in AI
- Types of bias: data bias, algorithmic bias, societal bias
- Fairness metrics and evaluation techniques
- Explainability and transparency in AI
- Responsible AI frameworks (PwC, OECD, UNESCO)

Chapter 6: India's DPDP Rules 2025 & EU AI Act Overview

- Digital Personal Data Protection (DPDP) Act – India
- Key provisions: consent, data fiduciaries, penalties
- EU AI Act and risk-based classification
- Compliance requirements for organisations
- Cross-border data governance challenges

Course Name: **Business Law & AI Governance**

Syllabus

Unit 1: Corporate Governance

Issues, need of corporate governance code. Code of Corporate Practices. Social Responsibility of Corporates. Corporate Social Reporting. Corporate Governance and the Role of Board (BOD). Corporate Governance System Worldwide, Corporate Disclosure and Investor Protection in India The Indian Contract Act: Essentials of a valid contract, void agreements, performance of contract, breach of contract and its remedies. Quasi -Contracts

Unit 2: Moral Values and Ethics

Values - Concepts Types and Formation of Values
Ethics and Behaviour

Values of Indian Managers, Managerial Excellence through Human Values: Development of Ethics
Ethical Decision Making, Business Ethics- The Changing Environment and Stakeholder Management, Relevance of Brics and Values in Business, Spiritual Values Modern Business Ethics

and Dilemmas Overview of Corporate Social Responsibility (CSR) and Sustainability

Unit 3: The Sale of Goods Act

Contract of sale of goods condition and warranties, transfer of property, rights of an unpaid seller; the negotiable instruments act: nature and types, negotiation and assignment; holder in due course, dishonour and discharge of a negotiable instrument, arbitration

Unit 4: The Companies Act, 2013

Nature and types of company's formation memorandum and articles of association, prospectus, shares and share capital, allotment of shares

Unit 5: Corporate Governance & AI

borrowing powers; management and meetings accounts and audit, compromise arrangements and reconstruction: prevention of oppression and mismanagement, winding up:

Role of AI in Corporate Governance (AI in board decision-making, automated compliance monitoring)

Algorithmic Accountability in Corporate Management (legal responsibility for AI-driven decisions)

AI-related Risks in Corporate Structures (bias, opacity, governance challenges)

Legal Implications of AI in Mergers, Reconstruction and Corporate Restructuring

Unit 6: Cyber & AI Laws

Consumer Protection Act and Cyber Law: RTI Act 2005 Purpose, Right to Information and Obligation of Public Authorities. Exemption from disclosure of information

Digital Personal Data Protection (DPDP) Act & Rules 2025 – Key Provisions and Compliance for AI Systems

Overview of EU AI Act – Risk-based Classification and Compliance Requirements

Regulation of Deepfakes and AI-generated Content under Indian and Global Laws

AI Liability and Legal Frameworks (accountability for automated decisions and harm)

Course Name: **Business Communication & Executive Presence**

Syllabus

Module 1: Introduction

Effective Business Communication

Delivering your message

Principles of Verbal Communication

Language Can be an Obstacle to Communication

Emphasis Strategies

Improving Verbal Communication

Understanding Your Audience

Differences in Perception

Effective Business Writing

Principles of Written Communication

Module 2: Business Writing

Writing Preparation – Checklist for business message

Research and Investigation

Ethics, Plagiarism, and Reliable Sources

Organizing Principles

Paraphrase and Summary versus Plagiarism

Revising and Presenting Your Writing

Proofreading and Design Evaluation

Feedback in the Writing Process

Qualitative and Quantitative Research

Feedback as an Opportunity

Module 3: Business Writing in Action

Resumes, Cover Letters

Business Proposals

Reports and Sales Messages

Memorandums and Letters

Developing Business Presentations

Overcoming Obstacles in Your Presentation

Nonverbal Delivery, Movement in Your Speech

Visual Aids, Nonverbal Strategies for Success with Your Audience

Organization and Outlines

Module 4: Fundamentals of Presentations & Communication

Presentations to Inform

Types of Presentations to Inform and uses

Presentation to Teach

Preparing Your Speech to Inform

Presentations to Persuade

Principles of Persuasion

Making an Argument

Module 5: Applied Business Presentations & Communication

Sample Persuasive Speech

Elevator Speech

Business Presentations in Action

Telephone/VoIP Communication

Sound Bites and Quotables, Celebrations: Toasts and Roasts, Meetings

Intrapersonal and Interpersonal Business Communication

Module 6: Crisis, International and Group Communication

Negative News and Crisis Communication

Intercultural & International Business Communication

Group Communication, Teamwork, and Leadership

Writing Effective Routine and Positive Messages

MBA Semester 2

Course Name: **Human Resource Management**
Syllabus

Unit 1: Understanding HRM

Concept of HRM

Characteristics of HRM

Scope of HRM

Importance of HRM

Unit 2: HRM Functions and Roles

Objectives of HRM

Functions of HRM

Roles of HRM

Origin, Evolution, and Development of HRM

Unit 3: Human Resource Planning

Concept of HRP

Factors affecting HRP

Process of HRP

Unit 4: Job Design Fundamentals

Concept of Job Design

Approaches to Job Design

Factors affecting Job Design

Unit 5: Techniques of Job Design

Techniques for optimizing job roles

Ergonomic considerations in job design

Unit 6: Job Analysis & Description

Significance of Job Analysis

Process of Job Analysis

Methods of information collection for Job Analysis

Components of Job Description

Creating effective job descriptions

Job Specification

Unit 7: Recruitment

Concept of Recruitment

Importance of Recruitment

Recruitment Process

Sources of Recruitment

Unit 8: Employee Selection and Placement

Meaning of Employee Selection

Selection Procedure

Effective employee placement

Unit 9: Induction and Onboarding

Meaning of Induction

Induction in Indian companies

Conducting Effective Induction Programme

Course Name: **Strategic Management**

Syllabus

Unit 1: Introduction to Strategies

Introduction to Strategies

Fundamentals of Strategy

Conceptual Evolution of Strategy

Scope and Importance of Strategies

Unit 2: Purpose of Business

Introduction to Purpose of Business

Understanding the purpose of business

Difference between Goals and Objectives of Business

Unit 3: Strategic Intent

Strategic Intent through Vision and Mission Statements

Core Competencies of Business

Unit 4: Strategic Management Overview

Introduction to Strategic Management

Need, Scope, Key Features, and Importance of Strategic Management

Role of Strategists in Decision Making

Unit 5: Types of Strategies

Types of Strategies

Differentiating strategies at various management levels

Limitations of Strategic Management

Unit 6: Strategy Analysis and its Importance

Strategy Analysis and its Importance

Environmental Appraisal and Scanning Techniques

Organizational Position and Strategic Advantage Profile

Strategic Management Model

Unit 7: Strategy Formulation Process & Strategy Implementation

Strategy Formulation Process

Steps involved in Strategy Formulation

Strategy Implementation

Stages of Strategy Implementation

Reasons for Strategy Failure and Methods to Overcome

Unit 8: Strategy Leadership and Strategic Business Units (SBUs)

Strategy Leadership in Organizations

Overview and Management of Strategic Business Units

Unit 9: Strategy Evaluation and Strategic Control

Introduction to Strategy Evaluation and Strategic Control

Difference Between Strategic Control and Operational Control

Concept of Synergy and Its Meaning

Key Stakeholder's Expectations

Understanding Strategic Alliances

Types of Strategic Alliances and Business Decisions

Problems Involved in Strategic Alliances

Course Name: Financial Management

Syllabus

Unit 1: Understanding Finance and Financial Management

Definition of Finance

Concept of Business Finance

Introduction to Financial Management: Goals & Objectives

Unit 2: Financing for the Long Term

Sources of Long-Term Financing

Shares

Debentures

Term Loans

Lease & Hire Purchase

Retained Earnings

Public Deposits

Bonds (Types, Features & Utility)

Unit 3: Financing for the Short Term & Internal Sources of Financing

Sources of Short-Term Financing

Bank Finance

Commercial Paper

Trade Credit

Bills Discounting

Utilizing Retained Earnings for Business Financing

Unit 4: Time Value of Money and Capital Budgeting

Concept of Time Value of Money, Compounding & discounting

Nature and significance of Capital Budgeting

Techniques of Capital Budgeting - Pay Back Method, Accounting rate of return, Internal Rate of Return, Net Present Value and profitability index

Unit 5: Analyzing Financial Ratios

Introduction to Ratio Analysis

Liquidity Ratios (Current, Quick, Cash Ratio)

Unit 6: Evaluating Financial Ratios (Cont'd)

Debt Ratio

Interest Capital Ratio

Profitability Ratios (Inventory Turnover, Gross Profit Ratio)

Unit 7: Interpreting Financial Statements

Meaning of Analysis of Financial Statements

Significance of Analysis of Financial Statements

Objectives of Analysis of Financial Statements

Tools of Analysis (Comparative Statements,
Common Size Statement)

Unit 8: Effective Working Capital Management

Concept of Working Capital

Significance and Types of Working Capital

Ensuring Adequate Working Capital

Factors Affecting Working Capital Needs

Unit 9: Managing Working Capital Efficiently

Methods for Forecasting Working Capital
Requirements

Significance and Management of Accounts
Receivable

Course Name: **Principles of Marketing**

Syllabus

Unit 1: Foundations of Marketing

Introduction to marketing

Marketing concepts

Marketing process

Unit 2: Marketing Environment and Buyer Behavior

Marketing environment

Buyer behavior

Unit 3: Market Segmentation and Positioning

Market segmentation, targeting, and positioning

Introduction to marketing mix

Unit 4: Product Decision and Concepts

Product decisions

Concept of a product

Unit 5: Product Strategies and Life Cycles

Product mix decisions

Product life cycle strategies

Brand decision

New Product Development Strategies

Unit 6: Pricing Fundamentals

Pricing decisions

Pricing objectives and approaches

Unit 7: Pricing Policies and Methods

Pricing policies and constraints

Pricing methods

Unit 8: Marketing Channels, Retailers and Wholesalers

Nature of marketing channels

Structure and design of marketing channels

Retailers and wholesalers

Unit 9: Promotion Mix and Strategies

Promotion decision

Promotion mix

Advertising decision

Objectives and campaign

Ad effectiveness

Sales promotion and publicity

Sales force decision

Course Name: **Production & Operation Management**

Syllabus

Unit 1: Production Management Fundamentals

Definition of production and its functions.

Functions and Responsibilities of Production Management.

The relationship between Production Management and other management functions, Automation.

Overview of automation in production.

Unit 2: Service vs. Manufacturing

Differences between service and manufacturing operations.

Impact on management strategies and challenges.

Strategies for managing service and manufacturing operations.

Competitive strategies and productivity assessment.

Unit 3: Competitiveness Strategy and Productivity

Defining competitiveness in operations.

Strategies for achieving competitiveness.

Computation of productivity and its importance.

Tools and methods for measuring and improving productivity.

Unit 4: Product Design

Objectives of product design.

Legal and environmental considerations in design.

Product lifecycle stages and management.

Standardization and mass customization.

Delayed differentiation in product design.

Unit 5: Product Design Processes

Phases in product design and development.

Modular design principles.

Enhancing product reliability.

Concurrent Engineering and its significance.

Design for manufacturing, concurrent Engineering, CAD, and Recycling Component Commonality.

Unit 6: Service Design

Understanding the differences between product and service design.

Key considerations in service design.

Strategies for delivering high-quality services.

Role of customer experience in service design.

Unit 7: Location Decisions

Importance and need for location decisions.

Nature of location decisions in production and operations.

Factors influencing location and site decisions.

Methods for selecting a suitable site.

Location decision procedures, including factor rating, center of gravity, and least-cost methods.

Unit 8: Capacity Planning

Defining and measuring capacity.

Determinants of effective capacity.

Calculating capacity requirements.

Make or buy decisions in capacity planning.

Developing capacity alternatives.

Challenges in planning service capacity.

Cost-Volume-Profit (CVP) analysis in capacity decision-making.

Strategies for optimizing capacity utilization.

Unit 9: Quality Management and Quality Control Systems

Importance of quality assurance in operations.

Inspection and its role in quality control.

Statistical process control (SPC) and its application.

Control charts and their significance.

Acceptance sampling concept and associated risks.

Cost of quality control and its components.

ISO Quality Systems, including ISO 9000 and ISO 14000.

Total Quality Control (TQC) concept.

Introduction to KAIZEN and Six Sigma for quality improvement.

Course Name: **Supply Chain Management & Automation Tool**

Syllabus

Module 1: 21st Century Supply Chains

Introduction and Concepts,

Generalized Supply Chain Model,

Financial Sophistication,

Logistics Value Proposition, the Work of Logistics,

Logistical Operations,

Logistical Operating Arrangements,

Flexible Structure,
Supply Chain Synchronization.

Module 2: Customer Accommodation

Customer-focused Marketing,
Customer Service,
Customer Satisfaction,
Customer Success,
Forecasting,
CPFR,
Procurement and Manufacturing.

Module 3: Inventory

Functionality and Definitions,
Inventory Carrying Cost,
Planning Inventory,
Managing Uncertainty,
Inventory Management Policies and Practices.

Module 4: Transportation and Warehousing

Transportation Infrastructure;
Transport Functionality,
Principles & Participants, Regulations,

Transport Structure, Transport Service,
Transport Operations; Transport Economics and
Pricing,
Transportation Administration, Documentation.

Warehousing:

Strategic Warehousing,
Warehouse Operations,
Ownership Arrangements,
Warehouse Decisions,
Warehouse Management Systems.

Module 5: Supply Chain Digitalization & Automation Tools

Introduction to Automation in Supply Chains
Enterprise Systems (ERP, SCM Software)
Data-Driven Supply Chains
Emerging Technologies in Automation
Integration of Systems

Module 6: Advanced Automation & Future Trends in Supply Chain

Robotics and Intelligent Automation
Smart Warehousing & Logistics

Decision Automation

Risk Management through Automation

Future Trends

Course Name: **Business Technology & Data Platforms**

Syllabus

Module 1: Management Information Systems

The Need for Information Systems

Digital Convergence and the changing Business Environment

Information and Knowledge Economy

Contemporary Approach to IS and Management Challenges

Module 2: Information Systems in the Enterprise

Types of Information Systems in the Organization

TPS, DSS, MIS and ESS. Functional Perspective of IS

Enterprise Systems

Strategic uses of Information Systems

Economic Organisational and Behavioural Impacts

IT Impact on Decision Making;
Leveraging Technology in the Value Chain
MIS and Core Competencies
Strategic Information Systems (SIS).

Module 3: Electronic Commerce

Introduction to Electronic Commerce
Internet based Business Models
B2B, EDI and B2C Models
Role of Intranets
Networks and their Types
Protocols; Internet Networking Services

Module 4: Digital Organization

Introduction to Digital Organisation
Business Networks and Telecommunications
Communication Technologies in Business
Videoconferencing, Wireless Payments
Bandwidth and Media
Broadband telephony, VOIP, RFID and
Convergence.
Future of Networking Technologies

Module 5: Databases and Data Warehouses

Traditional vs Database approach

Database Models, Relational Model, and Object-Oriented Model

Relational Operations SQL

Data Modelling

Databases on the Web

Data Warehousing.

Module 6: The Wireless Revolution

Introduction. Business Value

Wi-Max and EVDO; M-Commerce

Applications in CRM ,

Supply Chain and Healthcare.

Course Name: **Sales Management**

Syllabus

Module 1: Sales Management

- Definition of sales management
- Nature of sales management
- Key Aspects of Sales Management

- Sales Management Scope
- Importance of Sales Management
- Objectives of sales management

Module 2: Sales organization

- Sales organisation – its purpose
- Setting up a sales organisation
- Types of sales organization

Module 3: Personal selling

- Objectives and theories of personal selling
- Analysis market potential
- Sales potential and sales forecasting
- Method and evaluation
- Determining sales related marketing policies – product policies
- Distribution policies and pricing policies

Module 4: Sales operations

- Sales budget
- Sales territories
- Sales Quota's
- Control of sales

- Sales meeting and sales contest
- Organising display, showrooms and exhibitions

Module 5: Salesmanship

- Sales manager – qualities and functions
- Types of salesman
- Prospecting
- Pre-approach and approach
- Selling
- Sequence
- Psychology of customers

Module 6: Sales force management

- Recruitment and selection
- Training, formulation and conduction of sales training programme
- Motivation of sales personnel
- Compensation of sales personnel
- Evaluation and supervision of sales personnel

MBA Semester 3

Course Name: **International Business**

Syllabus

Unit 1: Introduction to International business

- IB – Introduction
- A Global Village
- What is International Business?
- Internationalization of Business
- Advantages of Internationalization
- Factors Causing Globalization of Businesses
- IB – Country Attractiveness: Adapting to Changing Needs

Unit 2: Protectionism in International Business

- IB – Protectionism
- Liberalization Vs Deregulation
- Liberalization, Privatization, and Globalization
- Revolutionary Economic Trends

Unit 3: International institutions and agreements

- General Agreements on Tariffs and Trade
 - GATT – Major Principles

- Role of GATT in Promoting International Trade
- World Trade Organization
 - Reasons behind the Formation of WTO
 - Role of WTO in Promoting International Trade
 - Role of Developing Countries
- Global Trade – Major Challenges

Unit 4: Theories of international trade

- IB – Modern Theories
 - The Heckscher and Ohlin Model
 - The Samuelson and Jones Model
 - The Krugman and Obsfeld Model
 - The Michael Porter Model
- Global Competetiveness

Unit 5: Regional Blocs in international trade

- Regional Trading Blocs
 - What are Regional Trading Blocs?
 - Regional Trading Blocs – Advantages?
 - Regional Trading Blocs – Disadvantages
- Major Trade Blocs: ASEAN; EU; MERCOSUR; NAFTA.

Unit 6: Strategic approaches

- Strategic Compulsions
 - Areas of Strategic Compulsions
 - Standardization Vs Differentiation
 - Strategic Options
 - Factors that Affect Strategic Options
- Global Portfolio Management
 - Factors Affecting Global Portfolio Investment
 - Modes of Global Portfolio Management
 - Drawbacks of Global Portfolio Management

Unit 7: Modes of international trade

- IB – Modes of Entry: Exporting, Licensing, Franchising, Turnkey Project, Mergers & Acquisitions, Joint Venture, Wholly Owned Subsidiary
- IB – Organizational Structures:
 - Centralization vs. Decentralization
 - Use of Subsidiary Board of Directors
 - Organizational Structures
 - Mixed Matrix

- IB – Control Mechanisms: Objectives of Control; Types of Control Mechanisms; Approaches to Control Mechanisms; Constraints of Control Approaches.
- IB – Performance Issues

Unit 8: Business Operations

- IB – Production Issues: Factors that Affect Production; Facility or Location; Scale of Operations; Cost of Production; Make-or-Buy Decisions.
- IB – Supply Chain Issues:
- Global Marketing Mix
- IB – Financial Aspects:
 - Foreign Investment by International Companies
 - International Investment Outcomes
 - Factors for Investment Decisions
 - Funding the International Business
 - Sources of Funds
 - Foreign Exchange Risks
 - Hedging Forex Risks – Internal Techniques
 - Hedging Forex Risks – External Techniques

- IB – HRM Issues:
 - Recruitment and Selection
 - Development & Training
 - Performance Evaluation
 - Management of Expatriates

Unit 9: Conflict management and negotiation

- IB – Conflict Management
- IB – Negotiations.
- IB – Ethical Issues.
- Moral Obligations

Course Name: **Research Methodology**

Syllabus

Chapter 1: The Nature and Scope of Business Research

Introduction to Business Research

The role of managers in research

Differences between internal and external consultants/researchers

Enhancing managerial effectiveness through research knowledge

Chapter 2: Fundamentals of Scientific Research in Management

The hallmarks of scientific research

Challenges to conducting scientific research in management

The Hypothetico-Deductive method

Overview of other types of research

Information Needs of Business

Commonly Used Technologies in Business Research

Literature Survey

Managerial Implications

Ethical issues in the preliminary stages of investigation

Chapter 3: Designing the Research Framework

Understanding the research process for applied and basic research

The importance of preliminary data collection

Developing a theoretical framework

Hypotheses Development

Hypothesis Testing with Qualitative research

Chapter 4: Advanced Research Design and Validation

Review of elements of research design

Exploring various experimental designs

Laboratory and field experiment control

Assessing external and internal validity

Measurement of variables and operational definition and scaling

Chapter 5: Foundations of Statistical Analysis

Introduction to distributions and statistical inference

Understanding more distributions

Basic concepts of analysis of variance (ANOVA)

Chapter 6: Measurement, Data Collection, Sampling

Scaling, reliability, and validity

Developing guidelines for questionnaires

Exploring electronic questionnaire and survey

Other methods of data collection

Ethical considerations in data collection

Understanding normality of distribution

Probability and non-probability sampling methods

Special considerations for sampling in cross-cultural research

Chapter 7: Analyzing and Interpreting Data

Techniques for data analysis and interpretation

Research Done in Excelsior Enterprises

Utilizing software for data analysis

Role of data analysis as an integral part of research reporting

Chapter 8: Reporting and Presenting Research

Structuring and writing a research report

Effective oral presentation techniques

Assessing the quality of research conducted

Case study analysis as a reporting method

Chapter 9: Research and Managerial Decision Making

Understanding the impact of scientific research on managerial decision making

The consulting team and its approach to problem-solving

Recommendations and implications for business strategies

Course Name: **Project Management**

Syllabus

Chapter 1: Fundamentals of Project Management

Definition and Introduction to Project Management

The role and responsibilities of a Project Manager

Project Management as a profession

Selection of a Project Manager

Fitting Projects into Parent Organization

Chapter 2: Dynamics of Project Management

Introduction to the Project Management Team

Phases of Project Management

Understanding the Project Environment

The 7S of Project Management and their implications

Chapter 3: Understanding the Project Life Cycle

Concept and detailed explanation of the Project Life Cycle

The stages and significance of each phase in the Project Life Cycle

Chapter 4: Project Classification and Extended Life Cycles

Detailed Project Classification

Extended Project Life Cycles and their impacts on management practices

Chapter 5: The Strategic Context of Projects

Introduction to the selection process of projects

Project selection criteria and its importance

Chapter 6: Project Selection Models

Nature of Project Selection Models

Types of Project Selection Models

Analysis under certainty in project selection

Chapter 7: Project Initiation and Feasibility Analysis

Introduction to project initiation and resource allocation

Why is Resource Allocation needed?

Market analysis and demand analysis for new projects

Chapter 8: Technical and Regulatory Considerations

Criteria for a good forecasting method

Technical Analysis

Material Inputs and Utilities

Basis of Government Regulatory Framework

The project proposal and project portfolio process

Chapter 9: Functions of a Project Manager

Fundamental functions of a Project Manager

Roles and Responsibilities of a Project Manager

Delegation of Authority

Building an effective project team

Overview of project organization and matrix organization structures

The impact of human factors on the project team

Course Name: **Entrepreneurship Essentials & AI Driven Innovations**

Syllabus

Chapter 1: Conceptual Framework of Entrepreneurship

- Concept, definition, and role of entrepreneurship
- The importance of entrepreneurship in the Indian economy
- Review of various theories of entrepreneurship
- Entrepreneurial traits and motivation
- Comparison between Entrepreneurs and Professional Managers
- Future challenges in entrepreneurship

Chapter 2: Entrepreneurial Development

- Meaning and importance of the entrepreneurial environment
- The role of private enterprise in economic development
- Significance of Entrepreneurial Development Programmes
- Meaning, Evolution and Objectives of EDP
- Institutional efforts to develop entrepreneurship
- Operational problems of EDPs

Chapter 3: Project Management

- Searching for a business idea
- Concepts of projects and their classification
- Project identification strategies
- Project formulation and design
- Network analysis and project reporting
- Project appraisal including financial analysis, risk, and return
- Factory design and plant layout considerations

Chapter 4: Finance and Marketing

- Sources of development finance
- Project Financing Institutions- Financial Institutions, Consultancy, Organizations.
- Marketing: Methods, Channel of Marketing
- Marketing institutions and assistance for entrepreneurs

Chapter 5: Setting Up a Small Industry

- Considerations in selecting the form of organization
- Sole Proprietorship.
- Partnership

- Joint Stock Company
- Cooperative Organisations-Their Merits, Demerits, Suitability, Brief
- Procedure of Incorporation: Location of a Small Industry

Chapter 6: Entrepreneurship and Small Industry Management

- Steps of starting a small industry
- Incentives and subsidies available to entrepreneurs
- Exploring export possibilities for small industries
- Problems commonly faced by entrepreneurs

Chapter 7: AI as an Innovation Lever Across Industries

- Role of AI in driving innovation
- Industry use cases: healthcare, finance, retail, education, manufacturing
- AI-enabled products and services
- Competitive advantage through AI
- Challenges in AI adoption
- Future trends in AI-driven innovation

Chapter 8: Human-AI Co-Creation & Generative Ideation

- Concept of human-AI collaboration
- Generative AI for idea generation and creativity
- Co-creation workflows using AI tools
- Prompting techniques for ideation
- Enhancing innovation through AI augmentation
- Ethical considerations in AI-assisted creation

Chapter 9: Innovation Frameworks: Blue Ocean, Jobs-to-Be-Done

- Blue Ocean Strategy and value innovation
- Jobs-to-Be-Done (JTBD) framework
- Identifying unmet customer needs
- Competitive differentiation strategies
- Applying frameworks to product innovation
- Case-based applications

Course Name: **Cost & Management Accounting**

Syllabus

Chapter 1: Foundations of Management Accounting

Definition, scope, and functions of Management Accounting

Comparative analysis between Management Accounting and Financial Accounting

Roles and responsibilities of the Management Accountant

Chief Financial Officer and Controller

Strategic decisions, planning, and control

Decision Making

Cost Benefit Approach

Chapter 2: Understanding Costs and Cost Structures

Detailed cost terminology: Direct Costs, Indirect Costs, Variable Costs, Fixed Costs, Total Cost and Unit Cost

Cost drivers and their relevance to management accounting

The concepts of Prime Cost and Conversion Cost, Inventoriable Costs and Period Costs, Relationship of types of costs

Cost allocation methods and their impact on financial statements

Chapter 3: Cost Determination and Elements

Introduction to the fundamental concepts of costs
Determination of costs and their behavior
Elements of Cost: Material, Labor, and Expenses
Cost classification techniques and their significance

Chapter 4: Practical Applications of Cost Concepts

Preparation of cost sheets and their importance in pricing
Tendering processes and cost-based decision making
Using cost information for pricing and product planning
Cost estimation techniques in production

Chapter 5: Overhead Management

Introduction to overhead costs
Allocation, Apportionment, and Absorption of overheads
Principles of overhead control

Chapter 6: Advanced Overhead Management

Managing Factory, Administration, Selling, and Distribution Overheads
Overhead rates and their impact on cost accuracy

Valuation of Inventories: Impact of overheads

Techniques for efficient overhead management

Chapter 7: Fundamentals of Marginal Costing

Introduction and definition of Marginal Costing

Distinctions between absorption costing and marginal costing

Cost-volume-profit (CVP) analysis

Chapter 8: Analytical Tools in Marginal Costing

Break-Even Analysis: Concepts and calculations

Margin of Safety and its importance in risk assessment

Decision-making using marginal costing

Practical applications of CVP analysis in real scenarios

Chapter 9: Budgeting and Budgetary Control

Core concepts and objectives of budgeting

Production, Sales, and Cash Budgets: Preparation and analysis

Advantages and limitations of budgeting

Introduction to flexible budgeting

Preparing and using flexible budgets

Comparing flexible budgets to static budgets

The role of flexible budgeting in modern management accounting

Course Name: **Operations Research & AI-Powered Optimisation**

Syllabus

Chapter 1: Introduction to Operations Research

- Introduction to Operations Research
- History and evolution of Operations Research
- Overview of techniques and tools used in Operations Research
- Significance of Operations Research in problem solving
- Interdisciplinary nature of Operations Research

Chapter 2: The Scope and Challenges of Operations Research

- The role and relationship between an O.R. specialist and a manager
- Typical applications of Operations Research in various fields
- Phases and processes of an O.R. study

- Limitations of Operations Research
- Ethical considerations in Operations Research
- Career prospects in Operations Research

Chapter 3: Fundamentals of Probability, Probability Distributions and Statistics

- Introduction to Probability
- Concepts of random experiments and probability outcomes
- Random Variables: Understanding discrete and continuous types
- Events and their probabilities
- Independent and dependent events
- Probability distribution fundamentals and summary statistics
- Key discrete and continuous probability distributions
- Expectation and variance of distributions
- Applications of probability distributions in real-world scenarios
- The role of statistics in Operations Research

Chapter 4: Introduction to Linear Programming & Solving Problems Graphically

- Introduction and definition
- Formulating a Linear Programming Problem
- Various types of constraints in linear problems

- The importance of linear programming in optimization
- Assumptions underlying linear programming
- Graphical analysis and solutions
- Exploring multiple, unbounded solution, and infeasible problems
- Practical applications in business and industry
- Interpreting graphical solutions
- Limitations of the graphical method

Chapter 5: The Simplex Method Principles, Advanced Simplex Techniques and Sensitivity Analysis

- Introduction to the Simplex Method
- The computational aspects of the Simplex Method
- Simplex method with several decision variables
- The tableau format in Simplex method
- Basis and non-basis variables
- Two Phase and M-method
- Multiple solutions, unbounded solutions, and infeasible problems in Simplex
- Sensitivity analysis and dual linear programming problems
- The concept of shadow prices in sensitivity analysis
- The economic interpretation of dual variables

- AI-assisted Linear Programming Solvers (use of Python, Excel Solver with AI enhancements)
- Machine Learning Approaches to Optimization Problems
- Real-time Decision Optimization using AI Algorithms
- Application of AI in Sensitivity Analysis and Scenario Simulation

Chapter 6: Basics and Methods of Transportation Problems & Advanced Techniques

- Introduction to transportation problems
- Basic Feasible Solution of a Transportation Problem
- Modified Distribution Method
- Stepping Stone and Degenerate Transportation Problem
- Formulation of transportation models
- Cost reduction methods in transportation
- AI-based Route Optimization and Logistics Planning
- Use of Heuristic and Metaheuristic Algorithms (Genetic Algorithms, Ant Colony Optimization)
- Demand Forecasting for Transportation using AI
- Integration of Transportation Models with Real-time Data Systems

- Unbalanced and Transshipment Problems
- Maximization in transportation problems
- Real-world applications of transportation models
- Sensitivity analysis in transportation models
- Use of software tools in solving transportation problems
- AI-driven Supply Chain Optimization Models
- Simulation and Digital Twin Applications in Transportation Systems
- Reinforcement Learning for Dynamic Routing and Allocation Problems
- AI-enabled Decision Support Systems for Logistics and Distribution

Course Name: **AI-Powered Digital Marketing & Growth**

Syllabus

Module 1: Introduction of Digital Marketing

- What is marketing?
- What is Digital Marketing?
- Understanding Marketing Process
- Understanding Digital Marketing Process
- Increasing Visibility,
 - o What is visibility?

- o Types of visibility
 - o Examples of visibility
- Visitors Engagement
 - o What is engagement?
 - o Why it is important Examples of engagement
- Bringing Targeted Traffic
- Inbound and outbound marketing
- Converting Traffic into Leads
 - o Types of Conversion
 - o Understanding Conversion Process Tools Needed
- Digital Marketing VS Traditional Marketing
 - o What's the difference between digital marketing and traditional marketing, and why does it matter?
 - o Benefits of Traditional Marketing
 - o The Downside to Traditional Marketing
 - o Benefits of Digital Marketing
 - o Why Digital Marketing Wins Over traditional Marketing ?
 - o Tools of Digital Marketing
 - o How We Use Both Digital & Traditional Marketing

Module 2: Website Planning Process

- What is Internet?

- Understanding domain names & domain extensions
- Different types of websites
 - o Based on functionality
 - o Based on purpose
- Planning & Conceptualizing a Website
 - o Booking a domain name & web hosting
 - o Adding domain name to web Server
 - o Adding webpages & content
 - o Adding Plugins Building website using CMS in Class
 - o Identifying objective of website
 - o Deciding on number of pages required
 - o Planning for engagement options
 - o Landing Pages & Optimization
 - o Creating blueprint of every webpage
- Best & Worst Examples

Module 3: Search Engine Optimization (SEO) & Search Engine Marketing (SEM)

- Introduction to SEO
- How Do Search engines work?
- Search Engine Algorithms
- Google Algorithm Updates
- Google Search Console
- Keyword Research Process

- Keyword Research Tools
- Competition Analysis
- On page Optimization strategies
- Content development strategy
- Title & Meta Tags
- Semantic SEO
- Rich Snippets Integration
- Speed Optimization
- Off Page Optimization
- Link Building Techniques as per latest standards
- Local SEO Strategies
- Penguin & Panda update recovery process
- Reports and SERP Management

Module 4: Social Media and Email marketing

- Introduction to social media marketing Facebook marketing
 - o Facebook advertising
 - o YouTube marketing
 - o Twitter marketing
 - o LinkedIn marketing
 - o Pinterest marketing
 - o Instagram Marketing
 - o Quora Marketing
- What is Email Marketing Benefits of email marketing

- o Basic terminology in email marketing
- o Email Marketing Software's
- o Building email marketing strategy
- o Building subscriber lists
- o Designing Newsletters
- o Types of Campaigns
- o Reports and analysis

Module 5: Google Analytics

- Purpose of website analytics
- Tools for website analytics
- Installing Google Analytics
- Google Tag Manager
- How to use Google Tag Manager
- Implement Conversion Tracking
- Basic terminology and KPI's
- Audience Reports
- Customer Acquisition Reports
- Behavior Reports
- Goals and Conversion Reports
- Segmentation and Filters
- AI-powered Analytics and Predictive Insights (GA4 predictive metrics, churn probability)
- Automated Customer Segmentation using AI Tools
- AI-driven Funnel Analysis and Conversion Optimization

- Integration of Analytics with Marketing Automation Platforms

Module 6: Google AdSense and Affiliate Marketing

- What is adsense?
 - o How to get approved for adsense?
 - o Cool trick to get adsense approval by Google
 - o Using your adsense account interface
 - o Placing ads on your blog
- What is Affiliate Marketing
 - o Types of Affiliate Marketing
 - o Making Money using Affiliate Marketing
 - o Popular Affiliate Networks
 - o Freelancing Business Strategies
- AI-generated Content Strategies for AdSense and Affiliate Marketing (blogs, SEO content)
- AI-driven Ad Optimization and Programmatic Advertising Basics
- Predictive Targeting and Personalization in Affiliate Marketing
- Growth Hacking using AI Tools (automation, A/B testing, performance scaling)

MBA Semester 4 - DATA SCIENCE & BUSINESS ANALYTICS

Course Name: **Essentials of Data Science**

Syllabus

Chapter 1: Introduction to Data Science

Overview of Data Science: Meaning, Scope, and Importance

Ubiquity of Data Opportunities in Modern Industries

Roles and Responsibilities in Data Science

Distinguishing Data Science from Data Engineering and Big Data

Evolution from Big Data 1.0 to Big Data 2.0

Data Science as a Strategic Asset for Business

Chapter 2: Data-Driven Decision Making and Data-Analytic Thinking

Data-Driven Decision-Making Frameworks

Data Processing Fundamentals and Analytical Thinking

Introduction to Data Mining Concepts in Data Science

Data Science vs. Data Scientist Roles and Responsibilities

Chemistry Analogy: Data Science Compared to Lab Work

Chapter 3: Fundamentals of Probability and Statistics

Introduction to Probability Theory and Basic Notions

Approaches to Probability and Relative Frequency

Basic Probability Rules and Interpretation

Introduction to Statistical Measures: Central Tendency and Dispersion

Chapter 4: Statistical Inference, Hypothesis Testing and Simulation Techniques

Hypothesis Testing Concepts and Statistical Inference

Types of Hypotheses, Testing Methods, and Applications

Significance Levels, Errors, and Statistical Power

Introduction to Simulation and Its Role in Hypothesis Testing

Simulation Methodology: Proportions, Means, and the Null Hypothesis

Technology's Role in Simulation and Capturing Randomness

Verifying and Validating Simulation Models

Chapter 5: Exploratory Data Analysis (EDA) and Data Transformation

Introduction to Exploratory Data Analysis (EDA) and Its Importance

Data Exploration Techniques and Common Data Transformations

Visualization Techniques in Data Analysis

Chapter 6: Data Visualization and Statistical Tools

Data Visualization Fundamentals and Summary Statistics

Variable Types and Their Relevance in EDA

OLAP Operations for Data Summary and Analysis

Tools for Designing OLAP Cubes and Visualizing Complex Data

Chapter 7: Data Cleaning Techniques for Data Science

Importance of Data Cleaning in Data Science

Role, and requirement of data cleaning and transformation at front end

Data Preprocessing: Types and Techniques

Common Data Cleaning Steps in Data Mining

Closed-Loop Data Mining Process

Chapter 8: Data Transformation for Modeling

Key Strategies for Data Transformation in Analytics

Understanding the Data Mining Process and Its Requirements

Transforming Data for Machine Learning and Statistical Analysis

Chapter 9: Introduction to Machine Learning and R Programming for Data Science

Overview of Machine Learning and Its Applications in Data Science

Types of Machine Learning Problems and Their Solutions

Basics of R Programming: Data Structures, Importing, and Processing

Introduction to Lists, Control Structures, and Matrix Operations in R

R Programming for Data Import, File Handling, and Data Analysis

Strengths and Weaknesses of R for Data Science

Course Name: **Statistical Thinking for Data Science**

Syllabus

Chapter 1: Fundamentals of Data Science

Introduction to Data Science: Meaning and Scope

The Ubiquity of Data Opportunities

Data Science vs. Data Engineering

A Practical Definition of Data Science

From Big Data 1.0 to Big Data 2.0

Data Science as a Strategic Asset

Chapter 2: Data Science Processes and Thinking

Data Processing and “Big Data” in Practice

Data-Analytic Thinking and Problem-Solving

Data Mining and Its Relationship to Data Science

Chemistry Analogy: Data Science vs. Work of a Data Scientist

Chapter 3: Foundations of Probability, Probability Distributions and Hypothesis Testing

Introduction to Probability and Basic Notions

Approaches to Probability and Relative Frequency Interpretation

Basic Probability Rules

Introduction to Probability Distributions

Normal Distribution and Its Applications

Sampling Distributions and Hypothesis Testing

Chapter 4: Descriptive Statistics and Measures

Introduction to Statistics

Measures of Central Tendency and Dispersion

Statistical Inference and Hypothesis Testing Basics

Chapter 5: Advanced Statistical Concepts

Probability with the Normal Distribution

Percentiles and Percentile Ranks

Probability in Inferential Statistics

Permutations and Combinations in Probability

Chapter 6: Introduction to Exploratory Data Analysis (EDA)

Exploratory Data Analysis: Meaning and Importance

Data Exploration and Transformation Techniques

Environmental Data and Data Exploration Functions

Chapter 7: Visualization Techniques and Tools

Data Visualization Basics

Visualization Techniques in Exploratory Data Analysis

Introduction to OLAP and Designing OLAP Cubes

Interpretation and Data Analysis Layer

Chapter 8: Fundamentals of Bayesian Modeling

Introduction to Bayesian Modeling

Bayes' Theorem and Conditional Probability

Principles of Bayesian Inference and Models

Bayesian Classification Modeling

Chapter 9: Bayesian Methods and Applications

Bayesian Unsupervised Model-Based Visualization

Bayesian Methods in Data Science

Applications of Bayesian Modeling in Real-World Scenarios

Subject: **Data Analysis and Visualization**

Syllabus

Chapter 1: Foundations of Data Analysis and Visualization

Overview of Data Analysis and Visualization

Importance of Data-Driven Decision-Making

Role of Visualization in Data Analysis

Applying Data Visualization to Real-World Scenarios
(introducing practical applications)

Chapter 2: Data Types and Sources

Types of Data (Categorical, Numerical, Text, etc.)

Data Sources and Data Collection Methods

Data Cleaning, Transformation, and Preparation
Techniques

Chapter 3: Fundamentals of Descriptive Statistics

Summary Statistics (Mean, Median, Variance, etc.)

Data Distribution Analysis with Histograms

Box Plots, Quartiles, and Data Summary Techniques

Chapter 4: Exploratory Data Analysis (EDA) Techniques

Data Profiling for Initial Insights

Identifying Outliers and Anomalies

Visualizing Relationships between Variables

Ethics in Data Exploration and Privacy
Considerations

Chapter 5: Principles of Effective Data Visualization & Data Visualization Tools

Key Principles and Importance of Data Visualization

Types of Charts and Graphs (Bar, Line, Scatter, Pie,
etc.)

Choosing the Right Visualization for Different Data
Types

Introduction to Visualization Tools (e.g., Excel,
Tableau, Python libraries)

Customizing Visualizations for Clarity and Impact

Hands-On Practice with Data Visualization Software

Chapter 6: Specialized Visualization Techniques

Heatmaps and Correlation Plots for Relationship
Analysis

Treemaps, Sunburst Charts, and Hierarchical Data
Visualization

Network and Graph Visualizations for Complex Data

Chapter 7: Geospatial and Time Series Data Visualization

Geographic Data Visualization (GIS, Choropleth Maps, Bubble Maps)

Basics of Geospatial Analysis

Time Series Plots, Seasonal Decomposition, and Trend Visualization

Chapter 8: Storytelling and Domain-Specific Applications in Data Visualization

Using Data Visualization to Tell a Story

Structuring a Data-Driven Narrative

Effective Communication with Data

Data Visualization in Finance and Healthcare

Industry-Specific Case Studies (integrating domain-specific visualizations)

Chapter 9: Interactive Dashboards, Ethics, and Portfolio Development

Interactive Dashboard Design Principles

Filters, Parameters, and Interactivity in Dashboards

Best Practices for Building and Presenting Dashboards

Ethical Considerations: Avoiding Misleading Visualizations, Data Privacy, and Security

Course Name: **Business Analytics**

Syllabus

Chapter 1: Fundamentals of Business Analytics

- Definition and Role of Business Analytics in Decision-Making
- Overview of the Analytics Lifecycle and Process
- Types of Analytics: Descriptive, Predictive, and Prescriptive

Chapter 2: Data Collection and Preparation

- Data Collection Methods and Data Sources
- Data Types and Structures
- Data Quality and Governance
- Data Cleaning and Transformation Techniques

Chapter 3: Introduction to Data Visualization

- Importance of Data Visualization in Analytics
- Overview of Data Visualization Tools (e.g., Tableau, Power BI)
- Design Principles and Best Practices for Effective Visualizations

Chapter 4: Advanced Data Exploration and Visualization Techniques

- Creating Effective Visualizations: Graphs, Charts, and Dashboards
- Exploratory Data Analysis (EDA)
- Trend Analysis and Summary Statistics
- Utilizing Advanced Visualization Features (e.g., interactive dashboards)

Chapter 5: Descriptive Analytics, Data Summarization & Predictive Analytics Techniques

- Summary Statistics and Data Exploration Techniques
- Introduction to Descriptive Analysis Tools and Methods
- Trend and Correlation Analysis
- Introduction to Regression Analysis and Classification Techniques

- Model Building and Validation (e.g., Decision Trees, Logistic Regression)
- Forecasting Methods: Time Series and Other Techniques

Chapter 6: Introduction to Machine Learning in Business Analytics

- Overview of Machine Learning and its Applications
- Supervised vs. Unsupervised Learning
- Model Evaluation and Selection Techniques
- Practical Applications of Machine Learning in Business

Chapter 7: Big Data Analytics and Tools

- Introduction to Big Data and its Importance in Analytics
- Handling and Processing Big Data
- Introduction to Hadoop and Spark for Big Data Processing
- Case Studies in Big Data Analytics

Chapter 8: Advanced Topics in Business Analytics

- Text Analytics and Natural Language Processing (NLP)
- Social Media Analytics and Sentiment Analysis
- Recommendation Systems and Decision Support Systems
- Implementing Prescriptive Models and Optimization Techniques

Chapter 9: Ethical and Future Trends in Business Analytics

- Ethical Considerations in Business Analytics and Data Privacy
- Bias and Fairness in Data Analysis
- Future Trends: Artificial Intelligence, Automation, and the Evolving Role of Analytics
- Preparing for Future Challenges in Business Analytics

Course Name: **Business Analysis using Excel**
Syllabus

Chapter 1: Excel Basics and Navigation for Business Analysis

- Overview of Excel as a Business Analysis Tool

- Excel Basics: Navigation, Data Entry, and Formatting Essentials
- Essential Excel Functions for Business Analysis (e.g., SUM, AVERAGE, VLOOKUP)
- Importing and Exporting Data in Excel

Chapter 2: Advanced Excel Functions and Formulas

- Intermediate to Advanced Functions: IF, SUMIFS, INDEX-MATCH
- Introduction to Logical and Lookup Functions
- Formula Auditing Tools and Error Checking
- Using Array Formulas for Data Analysis

Chapter 3: Data Cleaning and Transformation Techniques

- Techniques for Removing Duplicates, Handling Missing Data
- Text Functions for Data Transformation (e.g., CONCATENATE, LEFT, RIGHT)
- Data Cleaning with Excel's Flash Fill and Text-to-Columns Features
- Ensuring Data Consistency and Data Quality

Chapter 4: Data Summarization, Validation & Data Analysis with Excel

- Introduction to PivotTables and Pivot Charts
- Data Validation Techniques and Setting Validation Rules
- Conditional Formatting for Data Insights
- Summarizing Large Datasets with PivotTables
- Sorting and Filtering Data: Basic and Advanced Filtering Techniques
- Using Goal Seek for Scenario Planning
- Scenario Manager for Business Forecasting
- Statistical Analysis Tools: Mean, Median, Mode, Standard Deviation

Chapter 5: Business Forecasting and Regression Analysis

- Time Series Analysis and Forecasting Techniques in Excel
- Conducting Linear Regression Analysis
- Forecasting Methods and Tools, including Moving Averages
- Decision Trees and What-If Analysis

Chapter 6: Data Visualization Fundamentals in Excel

- Creating and Customizing Charts and Graphs (Line, Bar, Pie, etc.)
- Best Practices in Data Visualization for Business Analysis
- Using Infographics and Sparklines for Quick Insights
- Building Visual Summaries for Decision Making

Chapter 7: Interactive Dashboards and Advanced Visualization

- Dashboard Design Principles and Layouts
- Creating Interactive Dashboards with Form Controls
- Using PivotCharts and Slicers for Dynamic Reporting
- Interactive Dashboards and Data Presentation Techniques

Chapter 8: Advanced Excel Tools for Business Analysis

- Power Query and Power Pivot for Data Modeling
- Basics of Macros and Automation for Efficiency

- Advanced Formulas for Complex Calculations
- Data Tables and Sensitivity Analysis for Business Insights

Chapter 9: Financial Analysis, Case Studies, and Project Presentation

- Financial Functions and Formulas (e.g., NPV, IRR)
- Building Financial Models and Budgeting Templates
- Financial Reporting and Dashboards for Financial Data
- Business Analysis Case Studies: Sales, Financial, and Market Data Analysis
- Group or Individual Analysis Projects
- Presenting and Sharing Data Visualizations and Recommendations

Course Name: **Predictive Analysis for Business Decisions**

Syllabus

Unit 1: Introduction to Predictive Analysis

What is Predictive Analysis?

Role of Predictive Analysis in Business Decision-Making,

Overview of the Predictive Analysis Process

Unit 2: Data Preparation and Cleaning

Data Sources and Types,

Data Collection and Data Cleaning,

Data Transformation and Feature Engineering

Unit 3: Exploratory Data Analysis (EDA) & Regression Analysis

Descriptive Statistics and Visualization,

Identifying Patterns and Relationships,

Data Profiling and Data Quality Checks

Simple Linear Regression,

Multiple Linear Regression,

Model Evaluation and Interpretation,

Assumptions and Diagnostics

Unit 4: Classification and Decision Trees

Binary Classification,

Decision Trees and Random Forests,

Feature Importance and Tree Interpretability

Unit 5: Machine Learning Algorithms

Logistic Regression,
Support Vector Machines (SVM),
k-Nearest Neighbors (k-NN),
Model Evaluation Metrics

Unit 6: Time Series Analysis

Time Series Data and Components,
ARIMA Models,
Forecasting Techniques,
Seasonal Decomposition

Unit 7: Model Validation and Hyperparameter Tuning

Cross-Validation Techniques
Hyperparameter Optimization
Overfitting and Underfitting
Ensemble Learning and Model Stacking

Unit 8: Case Studies and Business Applications

Predictive Analysis in Marketing and Customer Retention
Financial Forecasting and Investment Decision-Making

Supply Chain Optimization

Industry-Specific Case Studies

Unit 9: Ethical Considerations and Communication

Ethical Issues in Predictive Analysis

Communicating Predictive Insights to Stakeholders

Final Project Presentations

Predictive modeling software (e.g., Python, R, or specialized tools)