

SYLLABUS

**MBA - IInd YEAR
IT**

**Syllabus for
M.B.A. (IT)**

Group - IV Information Technology

Paper - I Management Support System

Paper - II Business Process Re-Engineering

Paper - III System Analysis and Design

Paper - IV Data Base Management

Group - IV
Information Technology

Paper - I
Management Support System

- Unit - I. An overview of Decision Support Systems**
Decision Making at Different Levels of Management, Decision making situation, Decision Support System (DSS), Computerised DSS, Characterised of Decision support systems, Other Information Systems
The Decision Making Process
Characteristics of Business Decisions, Information Needs of Decision Making, Informatin Concepts, The Quality of Information, Characterstics of Information Quality, human Decision Making process
- Unit - II. System Concepts**
System, System Elements and their Relationship, Types of Systems, Common Features of Systems, Systems Analysis and Design
Anatomy of Decision Support Systems
Model Sub System, Knowledge Based Systems, The User Interface, Types of Decision Support Systems Classification of Decision support systems based on Usage Modes, Approaches to the Design of Decision Support System Architecture
- Unit - III. Hardware, Software and User Interfaces, Decision Support Systems**
Basic Considerations for Acquiring Hardware, The Role of External Consultants, Stages in Acquiring Hardware, Financial Resources, Questionnaire, Acquisition of Software, Criteria for the Evaluation of the Software, Questionnaire for Selection, Maintenance of the Equipment, Decision Support system User Interface.
- Unit - IV. Expert Systems for Decision Support**
Need for an Expert system, Concept of an Expert System, Expert systems and Conventional Information Systems, Types of Expert System, Design of an Expert system, limitation of Expert systems, Reasons for the Failure of an Expert System.
Executive Support Systems
Introduction, Functions of an Executive, Design of an Executive Support System, Frequency Analysis, Comparison between Executive support system and the decision support system, Factors for the Failure of ESS
- Unit - V. Group Decision Support Systems**
Group Decision Support Systems, Concepts of Group Decision Support systems. Advantages of G.D.S.S., How G.D.S.S. is Developed, Advantages and Disadvantages of G.D.S.S.
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Paper - II
Business Process Re-Engineering.

- Unit - I.** Meaning and purpose of Data processing, Source documents, data input data Manipulation, Output of information, data storage, Files and Records, File creation, File access, File manipulation and maintenance, File generation, Sequential and Direct file organisation.
- Unit - II.** Meaning and purpose of window, menus, Dialog Boxes, file Management under windows, microsoft word, file Menu, Use Letter wizard for producing business letters, Entering, selecting, inserting, viewing text, Normal view, page view, Point view, Zooming the view, character and paragraph formating, Printing a document.
- Unit - III** Introduction to spreadsheet, spreadsheet overview, formatting worksheet Data, Relative and absolute Referencing, working with Formula, working with function, Creating and using Macros, Data Management through worksheets, analysis through charts graphs, Setting print Styles printing worksheets and charts/Graphs.
- Unit - IV** Introduction to database - Concepts of relational Database. Management Applications, Types of Database Models, Network Model Heirarchial Model, RDBMS, ORDBMS.
- Unit - V** Introduction to SQL - Part of SQL - DML, DDL, DCL and Query Language creating and manipulating tables Inserting data into tables, Restricting and validating Data Entry with constraints, creating simple reports using oracle Plus Report Manager, maintaining users and Database Administration, user creation, Roles and Privileges concepts of Front, end applications, Need for data entry screens, D2K as a front-end tool, Working with D2K forms Designer-forms, Menus, Tool Bars, D2K reports for better Reporting of Data - Master detail reports

Paper - III

System Analysis and Design

- Unit - I. Systems Concepts and the Information Systems Environment.**
Introduction, The Systems concept : *Definition*, Characteristics of a System : *Organization, Interaction, Interdependence, Integeration, Central Objective*, Elements of System : *Outputs and Inputs, Processor(s). Control, Feedback, Environment. Boundaries and Interface*. Types of Systems : *Physical or Abstract Systems. Open or Closed Systems, ManMade Information Systems*.
- The System Development Life Cycle**
The System Development life Cycle : *Recognition of Need - Feasibility Study, Analysis, Design, Implementation, Post-Implementation and Maintenance*. Considerations for Candidate Systems : *Political Considerations. Planning and Control for System Success*. Prototyping.
- The Role of the Systems Analyst**
Introduction, Definition. Historical Perspective : *The Early Years. The War Effort. Academic and Personal Qualification*. The Multifaceted Role of the Analyst :
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Change Agent. Investigator and Monitor. Architect. Psychologist. Saleperson, Motivator, Politician. The Analyst in the MIS Organization : The MIS Organization. Rising Positions in System Development :

Unit - II.

Systems Planning and the Initial Investigation

Bases for Planning in Systems Analysis : Dimensions of Planning. Initial Investigation : *Needs Identification. Determining the User's Information Requirements. Case Scenario. Problem Definition and project Initiation. Back ground Analysis. Fact-Finding. Fact Analysis Determination of Feasibility.*

Information Gathering

Information about the Firm. Information about User Staff. Information about Work Flow. Information Origination, Information-Gathering Tools : Review of Literature, Procedure, and Forms. On- Site observation. Interview and Questionnaires. Types of Interviews and Questionnaires.

The Tools of Structured Analysis

Structured Analysis. The Tools of Structured Analysis : The Data Flow Diagram (DFD). Data Dictionary. Decision Tree and Structured English. Decision Tables. Pro and Cons of Each Tool.

Unit - III.

Feasibility Study

System Performance Definition : *Statement of Constraints. Identification of Specific System Objectives. Description of Outputs. Feasibility Study : Feasibility Considerations. Steps in Feasibility Analysis. feasibility Report. Oral Presentation.*

Cost/Benefit Analysis

Data Analysis. Cost/Benefit Analysis : *Cost and Benefit Categories. procedure for Cost/Benefit Determination. The System Proposal.*

The Process and Stages of Systems Design

The Process of Design : *Logical and Physical Design. Design Methodologies : Structured Design. Form-Driven Methodology - The IPO Charts, Major Development. Activities : Personnel Allocation. Audit Consideration : Processing Controls and Data Validation. Audit Trail and Documentation Control*

Unit - IV.

Input/Output and Forms Design

Input Design : *Input Data. Input Media and Devices. Output Design. Forms Design : Classification of Forms. Requirements of Forms Design. Carbon Paper as a Form Copier. Types of Forms. Layout Considerations. Forms Control.*

File Organization and Data Base Design

File Structure. File Organization : *Sequential Organization. Indexed - Sequential Organization. Inverted List Organization. direct-Access Organization. Data Base Design : Objectives of Data Base. Logical and Physical Views of Data. Data Structure. Normalization. The Role of the Data Base Administrator.*

Unit - V.

System Testing and Quality Assurance

System Testing. *The Nature of Test Data. The Test Plan : Activity Network for System Testing. System Testing. Quality Assurance : Quality Assurance Goals in the Systems Life Cycle. Levels of Quality Assurance. Trends in Testing Role of the Data Processing Auditor : The Audit Trail.*

Implementation and Software Maintenance

Conversion : *Activity Network for Conversion. Combating Resistance to Change. Post - Implementation Review : Request for the view. A Review Plan. Software Maintenance : Primary Activities of a Maintenance Procedure. Reducing*

Maintenance Costs.

Hardware/Software Selection and the Computer Contract

The computer Industry : *Hardware Suppliers. Software Supplier. Service Suppliers.*
The Software Industry Industry: *Types of Software.* A Procedure for Hardware/
Software Selection : *Major Phases in Selection. Software Selection. The Evaluation Process.* Financial Considerations in Selection : *The Rental Option. The Lease Option. The Purchase Option.* The used Computer. The Computer Contract : *The Art of Negotiation. Contract Checklist.*

Security, Disaster/ Recovery, and Ethics in System Development

System Security : *Definitions. Threats to System Security, Control Measure*
Development : ethics Codes and Standards of Behaviour.

Paper - IV

Data Base Management

Unit - I. Introduction

Objective, Early Information System, Problems with Early Information Systems, Organization of Database, Components of Database Management System. Data Models, Entity - Relationship Model, Hierarchical Data Model, Semantic Data Modelling

Basic File Systems

Secondary Storage Devices, Basic Terminology, Files, Buffer Management, File Organization, The Sequential File Organization. The Indexed Sequential File Organization, Creation and Manipulation of Indexed Sequential File Hashing, Key to Address Transformations, overflow Management in Hashed Files.

Additional File Organization Techniques

B-tree Based Indexed File Organization, Secondary Indexes : Organization and Usage, File Organization Based on Dynamic Hashing with Immediate Splitting, Dynamic Hashing with Deferred Splitting, Linear Splitting.

Unit - II. Relation Data Model

Basic Definitions and Terminology, Relational Algebra, ISBL - A Pure Relational Algebra Based Query Language, Relational Calculus, The Tuple Calculus System, The Domain Calculus System, Structured English Query Language (SEQUEL or SQL), QUEL (Query Language), QBE (Query-By-Example), Secondary Indexing in Evaluating Relational, Algebraic Operations

Relation Database Design

Integrity Constraints, Function Dependency, Logical Implication of Dependencies, Inference Axioms for Functional Dependencies, Covers for Functional Dependencies, Covers for Functional Dependencies, Normal Forms, Decomposition of Relation Schemes, design Procedures, Multivalued Dependencies, Join Dependency, Closed Family of Dependencies.

Unit - III. Query Processing and Optimization

Query Optimization by Algebraic Manipulation, Join Algorithms, SQL Query Optimization Strategies Query Decomposition

Semantic and Object-oriented Data Models

Relation Model does not Offer Sufficiently Rich Conceptual Model, Features of Different Semantic Models, Object-oriented Models.

Unit - IV. Network and hierarchical Database Systems

Network Data Model, Hierarchical Database Systems.

Security

Access Control, Cryptosystems, Statistical Database Security.

Unit - V. Distributed Database

Structure of Distributed Databases, Data Model, Query Processing, Join processing, Query Processing in SDD-1; A System for Distributed Databases, Distributed Query Processing in R*, Concurrency Control, Recovery in Distributed Data bases.

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