

**DEPARTMENT OF BUSINESS AND INDUSTRIAL MANAGEMENT
BUSINESS DATA NETWORKS**

Objective: To provide knowledge about communication.

Contents:

Unit: 1 Data Communication Concepts

- Introduction to Data Communications
- Concepts & Terminology, Communication Channels, Communication system, Analog and Digital, Transmission Mode
- Data Transmission: Data Signals & Transmission, Transmission Impairments, Computer and Communication, Asynchronous and Synchronous Data, Multiplexer
- Transmission Media: Guided Transmission Media: Twisted pair, Coaxial cable, Fiber optics. Unguided Transmission media: Terrestrial microwave, Satellite, microwave, Broad cast Radio, Infrared.
- Concepts of Modulation: Introduction to Various Modulation Techniques
- Base Band & Broad Band Transmission
- Circuit Switching: Switching networks, circuit, switching networks, circuit switching concepts, routing in circuit, switching networks.
- Packet switches: Packet switching principles, routing in packet switching

Unit: 2 Computer Network

- Computer network Basic: uses of computer networks, Goals and applications of networks, computer network structure and architecture, Topology (Physical & logical)
- Category of Network: LAN, MAN, WAN.
- Network Protocol and Standards: Reference models: OSI model, TCP/IP model, Comparison of TCP/IP and OSI models,
- Other Hardware and Software Protocols: (only overview of)
- Static and dynamic channel allocation for LAN and MAN ALOHA Protocols, LAN Protocols : CSMA, CSMA/CD, Collision Free protocol
- Routing Protocols
- Networking and Internetworking devices: Hub, Repeater, bridges, routers, gateways, multiprotocol routers, B-routers, switches, routing switches

Unit: 3 Communication: Optic Fiber and Satellite Communication

- (Various Technology involved, Various devices used for Transmission)
- Introduction Optic Fiber
- Optical Source
- Propagation in fiber, fiber optic networks,
- FDDI
- Fiber Optic Networks
- Satellite Networks
- Polling, ALOHA, Satellite Networks: FDM, TDM, CDMA
- Satellite Communication introduction
- Components of Satellite Communication
- Multiple Access Techniques: FDMA, TDMA, CDMA

- Satellite Transmission. Earth Station.
- Satellite Transmission Equipments

Unit: 4 Internetworking

- Internet: A historical perspective, Intranet a Conceptual Frame work, Internet and organizational effectiveness; Internet & MIS, Intranet verses Traditional Group-ware.
- Extranet: Concept, Comparison with Internet & Intranet, and Future of Intranet & Extranet.
- Internet working Models; Dial Connection; Proxy Server Connection,
- Introduction to Internet Programming (JAVA, ASP, CGI, PERL, VB Script, ActiveX, SGML, HTML, XML), Concept of front end and back end
- Internet Protocols: Principles of Internetworking, connectionless internetworking, Internet protocols, IPv6. Distributed applications: SNMP, SMTP POP3, HTTP, etc.

Unit : 5 Wireless Network & various Technologies

- Introduction to wireless transmission
- Wireless Component, Medias, Methods and Services
- Introduction to Mobile Technology (Mobile telephone, mobile telephone switching office.)
- Wireless Massaging Application (SMS, MMS)
- Wireless Application Protocol & Standards
- Infrared, Blue tooth, ISDN, SONET, ATM, WiFi ,VPN etc.

References:

**DEPARTMENT OF BUSINESS AND INDUSTRIAL MANAGEMENT
DECISION SUPPORT SYSTEMS & INTELLIGENT DSS**

Objective: To provide in depth knowledge about significance of Decision systems in growth of organization.

Contents:

Unit 1 Decision Making & computerization

- A Framework & Concept for Decision Support
- A Preview of the Modeling Process
- Decision Making & its Phases
- Evaluation: Multiple Goals, Sensitivity Analysis, What-If, and Goal Seeking
- Characteristic and Capabilities of DSS
- Component of DSS
- Introduction to Group Support Systems, Executive Support Systems, Enterprise Information Systems
- Introduction to Knowledge Management Systems, Expert Systems, Artificial Neural Networks, Intelligent DSS

Unit 2 Decision Support System Development

- Introduction
- Development Methodologies
- Change Management
- Development Platforms and Tools

Unit 3 Intelligent DSS

- Introduction to Knowledge Management
- Basic Concepts of Expert Systems
- Structure of Expert Systems
- Working of Expert System
- Benefits, Capabilities and Limitations of Expert System
- Types of Expert Systems
- Knowledge Engineering
- Scope and Types of Knowledge
- Knowledge Acquisition
- Knowledge Representation
- Knowledge Verification & Validation

Unit 4 Advanced Intelligent Systems

- Neural Network Fundamentals
- Benefits and limitations of Neural network.
- Fuzzy Logic
- Intelligent software agents

Reference:

DEPARTMENT OF BUSINESS AND INDUSTRIAL MANAGEMENT
PROJECT PLANNING AND RISK MANAGEMENT

Contents:

Unit 1:Introduction

Software Engineering (SE)

Software Characteristics

Phases of SE

Life Cycle Models

Unit 2 :Requirement Specifications

Metrics and Measurement

Requirements Document

Requirements Validation

Requirements Management

Unit 3 :System Design

Problem Partitioning

Abstraction

Design concepts

Design Specification and Verification Metrics

Unit 4 :Testing

Testing Fundamentals

Level of Testing

Test Plane

Test Cases Specification

Reliability Assessment

Unit 5 :Project Management

Project Estimation

Managing People

Empirical Estimation Models

Project Scheduling & Tracking

Staffing

Software Configuration Management

Project Monitoring

Unit 6 :Risk Management

Risk strategies

Specification: Risk-driven, Safety, Security, Reliability

Risk Identification

Risk Projection

Risk Refinement

Risk Mitigation, Monitoring, and Management

Unit 7 :Software Quality Assurance

Quality concept

Measuring Quality

Quality Assurance and Standard

Software reliability

Quality standard (ISO, CMM)

Unit 8 :Reengineering

Business Process reengineering

Software reengineering

Reverse Engineering

Restructuring

Forward Engineering

Reference:

Software Engineering – A Practitioner’s Approach – R. S. Pressman, McGraw Hill

Software Engineering – Sommerville, Person Education

Modern Systems Analysis & Design – J. A. Hoffer, J.F. George & J.S. Valacich, Person Education

Systems Analysis and Design – Kendall & Kendall, PHI.

**DEPARTMENT OF BUSINESS AND INDUSTRIAL MANAGEMENT
SYSTEM ANALYSIS AND DESIGN**

Contents:

Unit 1 Introduction

System, Types of Systems

System analysis fundamentals

System Analysis and Design

Roles of System Analysts

Business Systems Concepts

Systems Development Life Cycle

System Development Models

CASE tools and their Significance

Unit 2 System Study and Planning

- Problem identification & Project Initiation

Introduction to Feasibility Study and its importance

Preparing Systems proposal

Presenting Systems proposal

Systems Planning Methodologies

Preliminary Investigation

Selecting Project Development Strategy

Unit 3 System Requirements and Analysis

Introduction

User requirements and System requirements

Fact Finding Techniques: Traditional, Modern & Redical Techniques

Tools and Techniques for Documenting Procedures

Structured Analysis & its components

Process Flow Strategy: DFD, E-R diagram

Data Flow Strategy: Structured English, Decision Tables, Decision Trees, Data Dictionary

Unit 4 System Design

Introduction

Design Goals and Objectives

Elements of Design

Relationship between System Analysis & Design

Input/Output Design including Online Dialogue and User Interface

Files / Database Design

Control / Procedures Design

Program Specification Design

Design and Documentation Tools

Design Specification

Unit 5 System Testing and Implementation

Testing: Objectives, Types, Techniques

Installation

User Training and Support

Unit 6 Object Oriented Analysis & Design

Object Oriented Concepts

Object Oriented Development Life Cycle

Applying UML and Patterns in OOAD

Use Case Model: Goals and Scope, Types & Formats, Actors & Associations, Use Case Diagrams, System Sequence Diagrams

Domain Model: Class Identification, Domain Modeling Guidelines, Conceptual classes, UML notation, modes & methods

Process Modeling: Activity Diagrams, Design Class Diagrams

Reference:

Modern Systems Analysis & Design – J. A. Hoffer, J.F. George & J.S. Valacich, Person Education

Analysis and Design of Information Systems – James A. Senn, McGraw Hill

Management Information Systems: Managing IT in the E-business Enterprise – James A., Tata McGraw Hill

Systems Analysis and Design – Kendall & Kendall, PHI.