

VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT
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.