

(Applicable to the batch of students admitted in the academic year 2016-17 and onwards)

M.Com. (CBCS)

FACULTY OF COMMERCE, OU

SEMESTER II: SPECIALISATION : COMPUTER APPLICATIONS

DATA COMMUNICATIONS & NETWORKS

PAPER CODE: COM 9 CA:

Total Marks: 80+15+05=100

THPW: 5 ; Credits : 5

ESED: 3 HRS

OBJECTIVE: To familiarize the students with fundamentals of data communication, computer networks, network applications and services.

UNIT - I:

Introduction to Computer Networks and Data Communications: Introduction – Taxonomy - Computer Networks - Basic Configurations - Network Architecture Model - Internet Model. Fundamentals of Data and Signals - Data and Signals - Converting Data into Signals - Spread Spectrum Technology - Data Codes - Data and Signal Conversions in Action. Media: Conducted and Wireless - Twisted Pair - Coaxial Cable - Fiber Optic Cable - Wireless Transmissions - Media Selection criteria.

UNIT-II:

Making Connections – Modems - Breaking bandwidth limitations - Modem Pools - Data Link Connections. Multiplexing Frequency - Division and Time Division Multiplexing - Business Multiplexing in action. Errors, Error Detection and Error Control - Errors - Error Prevention - Error Control - Error Detection Techniques.

UNIT-III:

Local Area Networks (LAN) – Introduction - Functions of LAN - Advantages and Disadvantages - Basic Topologies - Medium Access Control Protocol - IEEE802 formats - LAN Systems. Internetworking - Bridges - Hubs - Switches - Network Servers - Routers. LAN Software and Support Systems - Introduction to Network Operating Systems - Current Networking Operating Systems - Novell Netware - Windows NT – UNIX - LINUX – Utilities - Internet Server Software - Programming tools.

UNIT-IV:

Wide Area Networks (WAN) - Introduction - Types of Network Subnets - Connection Oriented Applications vs. Connectionless Applications. Routing - Routing Algorithms - Routing Examples. Network Congestion - Preventing and Handling Network Congestion. Internet - Internet Services – WWW - Intranets and Extranets - Internet Protocols.

UNIT-V:

Telecommunication Systems - Basic Telephone Systems - Leased Lines Services – ISDN - Frame Relay – ATM – DSN - Computer Telephone Integration. Network Security - Basic Security Measures - Encryption and Decryption Techniques - Fire Walls - Security Policy Design Issues. Network Design and Management - System Development Life Cycle - Network Modeling - Feasibility Studies - Capacity Planning - Creating a Base Line - Network Manager - Network Diagnostic Tools.

SUGGESTED READINGS:

1. Data Communications and Computer Networks - A Business Users Approach, Curt M White, Thomson Learning.
2. DC & Networking, Foronzan, Mc Graw Hills Publications.
3. Computer Networks, Dave, IE Publishers.
4. James F Kurose, Keith W Ross, Computer Networking A Top – Down Approach, Addison Wesley.