

COMPUTER NETWORKING

Code : CS 611 (EI)

Credits : 4

Module I

Introduction of Computer Networks and Data Communication Services, Roles of Network

Network Topologies, Data Transmission modes – Simplex, Duplex, Half-duplex, The Reference Models: OSI, TCP/IP

Module II

Physical layer, Different communication media, Digital to digital encoding techniques, Digital to analog encoding techniques, QAM, Synchronous and asynchronous data transmission, DTE and DCE, Circuit switching, packet switching and message switching, Multiplexing, ISDN services, ATM networks

Module III

Introduction to mobile communication – GSM and CDMA, Ad hoc Networks
Design of data link layer, data link protocol, framing, error and flow control. Error detection and correction. Example of data link protocols – HDLC, Multiple access protocols – CSMA/CD, Wireless LAN protocols, IEEE standards

Module IV

Network layer - its internal organization, routing algorithms, hierarchical routing, routing for mobile hosts, congestion control algorithms. The network layer in Internet, the IP protocol/ addresses/header

Transport layer services, Internet transport protocols

Network Devices – Repeater Hub, Switch, Bridge, Router, Gateway

Module V

TCP/IP protocols – ARP, RARP, BOOTP, Telnet, FTP, DNS, HTTP, SMTP, DHCP, The Electronic Mail, Email gateways, the World Wide Web

Network security concepts.