

MCA 303 Computer Networks

Module 1 (10 Hours)

Network architecture – layers – Physical links – Channel access on links – Hybrid multiple access techniques - Issues in the data link layer - Framing – Error correction and detection – Link-level FlowControl

Module 2 (10 Hours)

Medium access – CSMA – Ethernet – Token ring – FDDI - Wireless LAN – Bridges and Switches, Circuit switching vs. packet switching / Packet switched networks – IP – ARP – RARP – DHCP – ICMP – Queueing discipline – Routing algorithms – RIP – OSPF – Subnetting– CIDR – Interdomain routing – BGP – Ipv6 – Multicasting – Congestion avoidance in network layer

Module 3 (10 Hours)

UDP – TCP – Adaptive Flow Control – Adaptive Retransmission -Congestion control – Congestion avoidance – QoS

Module 4 (10 Hours)

Email (SMTP, MIME, IMAP, POP3) – HTTP – DNS- SNMP – Telnet – FTP – Security – PGP - SSH

Module 5 (6 Hours)

(as per choice of faculty)

Portion covered can be tested through Internal evaluation only not to be included in University examination)

Preferably use of NetSim, NS2

TEXT BOOK :

1. Larry L. Peterson, Bruce S. Davie, “Computer Networks: A Systems Approach”, Third Edition, Morgan Kaufmann Publishers Inc., 2003.

REFERENCES:

1. James F. Kuross, Keith W. Ross, “Computer Networking, A Top Down Approach Featuring the Internet”, Third Edition, Addison Wesley, 2004.
2. Nader F. Mir, “Computer and Communication Networks”, Pearson Education, 2007
3. Comer, “Computer Networks and Internets with Internet Applications”, Fourth Edition, Pearson Education, 2003.
4. Andrew S. Tanenbaum, “Computer Networks”, Fourth Edition, 2003.
5. William Stallings, “Data and Computer Communication”, Sixth Edition, Pearson Education, 2000