

Devi Ahilya University, Indore, India Institute of Engineering & Technology				ME – I Year (Spl Digital Communication) Semester- A			
Subject Code & Name	Instructions Hours per Week			Credits			
	L	T	P	L	T	P	Total
DCRIC3 Advance Computer Networking	3	1	2	3	1	1	5
Duration of Theory Paper: 3 Hours							

Course Objectives: Appreciate working network layer protocols, selection of appropriate routing algorithm, understanding of QOS parameters, understanding of transport and application layer protocols, use of cryptography in computer networking.

Prerequisite(s): Fundamentals of computer networking, concepts of programming and operating systems.

COURSE CONTENTS

UNIT-1

Network Models, OSI Model, TCP/IP Protocol Suite, Addressing, Data Rate Limits, Performance Parameters, Transmission Media, Switching, Data Link Layer, Error Detection and Correction techniques.

UNIT-2

Data Link Control- LLC, HDLC , Multiple Access, Random Access, Wired LANS- Standard Ethernet, Fast Ethernet , Gigabit Ethernet , Wireless LANS, Bluetooth, Connecting Devices.

UNIT-3

Network Layer- Logical Addressing, IPV4 Addresses, IPV6 Addresses, Transition From IPV4 to IPV6, Address Mapping, ARP protocol, ICMP, Unicast Routing Protocols, Multicast Routing Protocols, Routing in Autonomous System

UNIT-4

Transport Layer- Process-To-Process Delivery, User Datagram Protocol (UDP), TCP, SCTP, Congestion Control, Quality of Service, Techniques to Improve QoS

UNIT-5

Application Layer- Domain Name System, Electronic Mail, File Transfer Protocol, HTTP, WWW, Remote Login (TELNET, SSH), Simple Network Management Protocol (SNMP), Internet Security- Network Layer Security, Transport Layer Security and Application Layer Security, Firewalls

BOOKS RECOMMENDED

- [1] B. Forouzan, "TCP/IP Protocol Suite", McGraw Hill, 3/e, 2006
- [2] Douglas E. Comer, David L. Stevens, "Internetworking with TCP/IP Vol. II design, Implementation of Intranets", PHI, 3rd Edition 2000
- [3] A. S. Tanenbaum, "Computer Networks", 4th Edition Pearson Education, 2003.
- [4] W. Stalling, "Network Security and Cryptography", 4th Edition Pearson Education, 2006.
- [5] B. Forouzan, "Data Communication and Networking" 4th Ed Tata McGraw Hills