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**			
DCP2C3 **Advance Computer Networking**	**L**	**T**	**P**	**L**	**T**	**P**	**Total**
	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, 3nd 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