



MANGALORE UNIVERSITY

DEPARTMENT OF M.Sc. COMPUTER SCIENCE

MASTER OF COMPUTER APPLICATIONS (MCA) PROGRAMME

MCAS404 :ADVANCED COMPUTER NETWORKS		
Hours/Week: 4 Credits : 4		I.A. Marks: 30 Exams. Marks: 70
<u>Course Outcomes:</u> CO1: Illustrate reference models with layers, protocols and interfaces. CO2: Summarize functionalities of different Layers. CO3: Combine and distinguish functionalities of different Layers. CO4: Describe and Analysis of basic protocols of computer networks, and how they can be used to assist in network design and implementation. CO5: Identify and describe development history of routing protocols. CO6: Describe Sub-netting and Addressing of IP V4. CO7: Demonstrate Data Communications System and its components. CO8: Identify the different types of network devices and their functions within a network. CO9: Diagnose and resolve problems of a LAN and WAN.		
	UNIT-I	12 Hours
Introduction: Introduction to Computer Networks. Understanding Network architecture. Introduction to TCP/IP Architecture, TCP/IP addressing, services, FTP, SMTP, TFTP, SNMP, and Network file system, domain name system, transport layer protocols, user datagram protocol, transmission control protocol, Class addresses, ARP, RARP.		
	UNIT-II	12 Hours
Inter process communications: File and record locking, pipes, FIFO's, stream and messages, message queues, semaphores		
	UNIT-III	12 Hours
Sockets: Sockets system calls, reserved ports, stream pipes, socket option, asynchronous I/O, Sockets and signals. Understanding the Internet Protocols SLIP versus PPP. Understanding the Socket interface. Concepts of the Windows sockets API. Importance of Raw Sockets. Internet Application Services, E-Mail, File Transfer Protocols, Characteristic Features of the Firewall.		

	UNIT-IV	12 Hours
Transport Layer Interface: Elementary TLI functions, stream and stream pipes, asynchronous I/O multiplexing. Remote Procedure calls: Remote login, remote command execution, external data representation. UUCP.		
REFERENCE BOOKS 1. A. Stevens, "TCP/IP Illustrated", Vol. 1-3, Addison Wesley, 1998. 2. R. Stevens, "Unix Network Programming", PHI, 1998 3. J. Martin, "TCP/IP Networking – Architecture, Administration and programming", Prentice Hall, 1994. 4. D.E. Comer, "Internetworking with TCP/IP, Vol. 1, Principles, Protocols, and architecture, PHI, 2000. 5. Internet Programming by Kris Jamsa, Galgotia publishers, 2001.		

