

Program: MBA Tech. (Computer Engineering)				Semester : V	
Course : Computer Networks				Code :	
Teaching Scheme				Evaluation Scheme	
Lecture Hours per week	Practical Hours per week	Tutorial Hours per week	Credit	Internal Continuous Assessment (ICA) (Marks -50 marks)	Term End Examinations (TEE) (Marks- 100 in Question paper)
3	2	0	4	Marks Scaled to 50	Marks Scaled to 50
Pre-requisite: Operating system(BTCO04016), Computer Organization and Architecture(BTCO03011)					
Objectives: This course provides the fundamental knowledge of computer networks through the understanding of ISO-OSI model.					
Course Outcomes: After successful completion of this course, students will be able to: <ol style="list-style-type: none"> 1. Discuss the fundamentals of computer networks, its types, transmission modes and different reference models. 2. Implement error free transmission of data and analyse data collision with various protocols. 3. Implement various routing and congestion control algorithms over a network. 4. Identify Quality of service parameters and addressing techniques. 					
Detailed Syllabus:					
Unit	Description				Duration
1	Introduction: Communicating in a network centric world, network as a platform, Architecture of the internet, Classification of Networks, Layered Models, Network Addressing, components of network, topology, and transmission mode, Internetworking devices				06
2	The physical Layer: Communication Signals, Purpose of the Physical Layer, Physical Layer Operation, Physical Layer Standards, Physical Layer Fundamental Principles, Physical Signaling and Encoding Physical Media: Types of Physical Media and Media Connectors, transmission impairment, Performance, Circuit and Packet Switching				04

3	The Data Link Layer: Data link layer design issues, error detection and correction, elementary data link protocols, Sliding Window Protocols, Example of Data Link Protocol: HDLC.	06
4	Medium Access Sub-layer: The channel allocation problem, Multiple Access Protocols, Ethernet, Data link layer switching, The LAN, WAN design issues.	06
5	The Network Layer: Network Layer Design issues, Routing Algorithms Congestion Control Algorithms, and Quality of Service, IPv4 and IPv4 Addresses : Introduction, Classful Addressing, Classless Addressing	09
6	The Transport Layer: Introduction to TCP, The TCP Service, Elements of Transport Protocols, A simple Transport Protocol, The TCP Segment Header, Connection Establishment, connection release, Modeling TCP Management. The Transport: UDP, Performance Issues.	08
7	The Application Layer: Client Server Paradigm, Peer to peer paradigm DNS, E-Mail Services and SMTP/POP Protocols, File Transfer Protocol (FTP), WWW Service and HTTP, SNMP Protocol.	06
	Total	45
Text Books: 1. Andrew S. Tanenbaum, "Computer Networks", Pearson Education, Fourth Edition, 2009. 2. TCP/IP Protocol Suite, Fourth Edition, Behrouz A. Forouzan, Mc Graw Hill Education.		
Reference Books: 1. Mark Dye et.al, "Network Fundamentals", CCNA Exploration Companion Guide, Cisco Press, 2011. 2. Kurose, Ross, "Computer Networking: A Top-Down Approach ", 5th Edition, 2009, Pearson Education. 3. D.E. Comer, "Computer Networks with Internet Applications", 5th edition, Prentice Hall, 2008. 4. B.F. Forouzan, "Data Communications and Networking", TMH, second edition, 2008.		

Term Work: As per Internal Continuous Assessment (ICA) norms of the institute

1. Minimum 10 practical experiments covering all the topics. (Open source tools such as Wireshark, Cisco Packet Tracer can be used)
2. Minimum three Assignments.
3. Two class tests.

Signature

(Prepared by Concerned Faculty/HOD)

Signature

(Approved by Dean)