COMPUTER NETWORKS

Course Code	20EC4601D	**Year**	III	**Semester**	II
Course Category	Program Elective II	**Branch**	ECE	**Course Type**	Theory
Credits	3	**L-T-P**	3-0-0	**Prerequisites**	Linear, algebra, Statistics and Probability
Continuous Internal Evaluation :	30	**Semester End Evaluation:**	70	**Total Marks:**	100

Course Outcomes		
Upon successful completion of the course, the student will be able to		
CO1	Understand the basic functions and protocols of different layers.	L2
CO2	Apply appropriate Packet switching mechanism/Addressing Formats for a given scenario.	L3
CO3	Select protocols for computer communications.	L3
CO4	Analyze sub netting and routing mechanisms.	L4

Mapping of course outcomes with Program outcomes (CO/ PO/PSO Matrix)

Note: 1- Weak correlation 2-Medium correlation 3-Strong correlation

* - Average value indicates course correlation strength with mapped PO

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	2									2		2	2	
CO2	3									3			3	
CO3	3									3			3	
CO4		2								2			2	
Average* (Rounded to nearest integer)	3	2								3		2	3	

Syllabus		
Unit No.	**Contents**	**Mapped CO**
I	Introduction: Uses of Computer Networks, OSI, TCP/IP, Examples of Networks: Novell Networks, Arpanet, Internet, Network Topologies WAN, LAN, MAN. Physical Layer: Transmission media copper, twisted pair wireless, switching techniques; ISDN and ATM	CO1, CO2
II	Data link layer: Design issues, framing, error detection and correction, CRC, Elementary Protocol-stop and wait, Sliding Window, Data link layer in HDLC Medium Access sub layer: ALOHA, Carrier sense multiple access. IEEE 802.X Standard Ethernet, wireless LANS. Bridges	CO1, CO2, CO3

III	Network Layer-Design and Routing: Virtual circuit and Datagram subnets-Routing algorithm shortest path routing, Flooding, Hierarchical routing, Broad cast, Multi cast, distance vector routing Network Layer-Congestion control and IP: Rotary for mobility. Congestion control Algorithms. The Network layer in the internet	CO1, CO4
IV	Transport Layer: Transport Services, Connection management, TCP and UDP protocols	CO1, CO3
V	Application Layer: Domain name system, Electronic Mail; the World WEB, Basics of Multi Media	CO1, CO3

Learning Resources
Text Books
1. Computer Networks—Andrew S Tanenbaum, Pearson Education, PHI, 4th Ed., 2003. 2. Data Communications and Networking–Behrouz A. Forouzan. TMH, 3rd Ed.,2002
References
1.An Engineering Approach to Computer Networks-S. Keshav, Pearson Education, 2nd Ed., 2005. 2. Understanding communications and Networks, W.A. Shay, Thomson, 3rd Ed., 2006
E- Resources
1. http://home.iitk.ac.in/~navi/sidbinetworkcourse/lecture1.ppt 2. http://nptel.iitm.ac.in/courses/IIT-MADRAS/Computer_Networks/index.php