COMPUTER NETWORKS

Course Code	20EE4601E	Year	III	Semester(s)	II
Course Category	Professional Elective-II	Branch	EEE	Course Type	Theory
Credits	3	L-T-P	3-0-0	Prerequisites	-
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	Illustrate the OSI and TCP/IP reference model. (L2)
CO2	Analyze various protocols in Data link layer, Transport Layer, and their mechanisms. (L3)
CO3	Implement routing and congestion control algorithms. (L3)
CO4	Analyze the real applications like electronic mail, www and multimedia. (L3)

Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (3:High, 2: Medium, 1:Low)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3												3	3
CO2	3	3											3	3
CO3			3				3						3	
CO4		3											3	

SYLLABUS		
Unit No.	**Contents**	**Mapped CO**
I	**Introduction:** Uses of Computer Networks, Network hardware, Network software, Networks Topologies, OSI, TCP/IP Reference models. **Physical Layer:** Guided Transmission media: twisted pairs, coaxial cable, fiber optics, Wireless transmission.	**CO1**
II	**Data link layer:** Design issues, framing, Error detection and correction. **Elementary data link protocols:** simplex protocol, A simplex stop and wait protocol for an error-free channel, A simplex stop and wait protocol for noisy channel. Sliding Window protocols: A one-bit sliding window protocol, A protocol using Go-Back-N, A protocol using Selective Repeat.	**CO1,CO2**
III	**Network Layer: Design issues, Routing algorithms:** shortest path routing, distance vector routing, Link State routing, Broadcastrouting, Multicastrouting. **Congestion Control Algorithms**, Internet working, The Network layer in the internet.	**CO1,CO3**

IV	**Transport Layer:** The transport service, Elements of Transport protocols, The internet transport protocols: UDP, The internet transport protocols :TCP.	**CO1,CO2**
V	**Application Layer:Domain name system, Electronic Mail;** The World WEB, Streaming audio and video.	**CO1,CO4**

Learning Resources
Text Books
1. Computer Networks -- Andrew S Tanenbaum, David. j. Wetherall, 5th Edition. Pearson Education/PHI
Reference Books
1. An Engineering Approach to Computer Networks-S. Keshav, 2nd Edition, Pearson Education. 2. Computer Networks, A Top-Down Approach –Behrouz A Forouzan, Firouz Mosharraf. 3. Data Communications and Networking – Behrouz A. Forouzan. Third Edition TMH.
Web Links 1. http://home.iitk.ac.in/~navi/sidbinetworkcourse/lecture1.ppt. 2. http://nptel.iitm.ac.in/courses/IIT-MADRAS/Computer_Networks/index.php