COMPUTER NETWORKS

(MINOR)

Course Code		Year	III	Semester	I
Course Category	Minor	Branch	IT	Course Type	Theory
Credits	4	L-T-P	4-0-0	Prerequisites	-
Continuous Internal Evaluation :	30	Semester End Evaluation:	70	Total Marks:	100

Course Outcomes	
Upon Successful completion of course, the student will be able to	
CO1	Understand the basics of computer networks and the functions of 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

ContributionofCourseOutcomestowardsachievementofProgramOutcomes&Strengthofcorrelations(3:Substantial,2: Moderate, 1:Slight)

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

	Syllabus	
Unit No	**Contents**	**Mapped CO**
	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, Broadcast routing, Multicast routing. **Congestion Control Algorithms**, Internetworking, 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 Recourses
Text Books
1. Computer Networks -- Andrew S Tanenbaum, David. j. Wetherall, 5thEdition. Pearson Education/PHI
References
1. An Engineering Approach to Computer Networks-S. Keshav, 2ndEdition, Pearson Education. 2. Computer Networks, A Top-Down Approach –Behrouz A Forouzan, FirouzMosharraf. 3. Data Communications and Networking – Behrouz A. Forouzan. Third Edition TMH.
E-Recourses and other Digital Material
NPTEL VIDEO LECTURES : https://www.youtube.com/watch?v=O--rkQNKqls&list=PLbRMhDVUMngf-peFloB7kyiA40EptH1up