Course code	Computer Networks	L	T	P	J	C
xxxx		3	0	0	0	3
Pre-requisite	**xxxxxxxx**	**Syllabus version**				
		v. XX.XX				

Course Objectives:

- Build an understanding of the fundamental concepts of computer networking, protocols, architectures, and applications

- Gain expertise in design, implement and analyze performance perspective of ISO-OSI layered Architecture

- Deal with the major issues of the layers of the model.

- Implement new ideas in Networking through semester long projects.

Expected Course Outcome:

After successfully completing the course the student should be able to

- Describe the layered structure of a typical networked architecture

- Identify and analyze the different types of network topologies, switching, error and flow control mechanisms.

- Design subnetting and enhance the performance of routing mechanisms.

Student Learning Outcomes (SLO):	**2,5,7**

Module:1	**PHYSICAL LAYER**	**6 hours**	**SLO:2**

Introduction to Data Communication Networks - Topologies - Protocols and Standards - ISO / OSI model – Switching.

Module:2	**DATA LINK LAYER**	**9 hours**	**SLO: 2**

Error detection and correction -CSMA-CSMA/CD-CSMA/CA- LAN - Ethernet IEEE 802.3 - IEEE 802.4 - IEEE 802.5 - IEEE 802.11 – FDDI.

Module:3	**NETWORK LAYER**	**12 hours**	**SLO: 5**

Internetworking-IP addressing methods –Internet Protocol (IPv4,IPv6)- Routing – Distance Vector Routing – Link State Routing.

Module:4	**TRANSPORT LAYER**	**9 hours**	**SLO: 5,7**

Duties of transport layer User Datagram Protocol (UDP) – Transmission Control Protocol (TCP) – Congestion Control – Quality of services (QOS).

Module:5	**APPLICATION LAYER AND INTRODUCTION TO WIRELESS COMMUNICATION**	**9 hours**	**SLO: 2**

DNS –TELNET-Email-SNMP -Cryptography- Fundamentals of wireless communication.

	Total Lecture hours:	**45 hours**	

Text Book(s)			
1.	Behrouz A Forouzan, Data Communications and Networking, Tata Mc-Grawhill, 2015.		
Reference Books			
1.	J.F.Kurose and K.W.Ross, Computer Networking: A Top-Down Approach Featuring the Internet, Pearson Education, 2014.		
2.	W. Stallings, Data & Computer Communications, Prentice-Hall, 2015.		
3.	Asoke K. Talukder, Roopa R.Yavagal, Mobile Computing-Technology, Applications and Service Creation, Tata McGraw Hill, 2010.		
Mode of Evaluation:			

List of Challenging Experiments (Indicative)		SLO: 14,17	
1.	Experiment title		X hours
2.	Experiment title		X hours
3.	Experiment title		X hours
4.	Experiment title		X hours
5.	Experiment title		X hours
		Total Laboratory Hours	X hours
Mode of evaluation:			
Recommended by Board of Studies	DD-MM-YYYY		
Approved by Academic Council	No. xx	Date	DD-MM-YYYY