PVP-19

COMMUNICATION NETWORKS

Course Code	19EC3701	**Year**	IV	**Semester**	I
Course Category	Program Core	**Branch**	ECE	**Course Type**	Theory
Credits	3	**L-T-P**	3-0-0	**Prerequisites**	Nil
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	Identify the components required to build various networks. (L2)
CO2	Choose the required functionality at each layer for a given application (L3)
CO3	Trace & detect errors in the flow of information in a network (L4)
CO4	Build the skills of sub netting and routing mechanisms (L3)

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							1	2	1
CO2	2	3	2	2	2							1	2	1
CO3	2		2	2	2							1	2	1
CO4	3	3	3	2	3							1	2	1
Average* (Rounded to nearest integer)	3	3	3	2	3							1	2	1

Syllabus		
Unit No.	**Contents**	**Mapped CO**
I	Computer Networks and the Internet: Services description and definition of protocol, Network Edge and Network Core. Delay, Loss, and Throughput in Packet-Switched Networks, Protocols layers and their service models.	CO1
II	Application Layer: Principles of Network Applications, The Web and the HTTP, Electronic Mail, Domain Naming Systems, Socket Programming.	CO2
III	Transport Layer: Introduction to transport layer services, multiplexing and demultiplexing, connectionless transport: UDP, principles of reliable data transfer, connection-oriented transport: TCP	CO1, CO3
IV	Network Layer (Data Plane): Overview of network layer, Internals of a Router, Internet Protocol: IPv4, Addressing, IPv6. Network Layer (Control Plane): Routing algorithms, IntraAS routing (OSPF), Routing among ISPs (BGP), Internet control message protocol (ICMP).	CO1, CO4

V	Link Layer and LANs: Introduction to the link layer, error detection and correction techniques, multiple access links and protocols, switched local area networks. Wireless links and network characteristics, 802.11 Wireless LANs, Cellular Internet Access.	CO1,CO3, CO4

Learning Resources
Text Books
1. J.F. Kurose and K. W. Ross, "Computer Networking – A top down approach featuring the Internet", 5/e, Pearson Education, 2017.
Reference Books
1. L. Peterson and B. Davie, "Computer Networks – A Systems Approach", 5/e, Elsevier India, 2011. 2. A. Forouzan, "Data Communications and Networking", 4/e, Tata McGraw Hill, 2013. 3. Andrew Tanenbaum, "Computer networks", 7/e, Prentice Hall, 2015 4. D. Comer, "Computer Networks and Internet/TCP-IP", Prentice Hall of India, 2007. 5. William Stallings, "Data and computer communications", 4/e, Prentice Hall of India, 2010.
e- Resources & other digital material
1. http://home.iitk.ac.in/~navi/sidbinetworkcourse/lecture1.ppt 2. http://nptel.iitm.ac.in/courses/IIT-MADRAS/Computer_Networks/index.php

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