

COMPUTER NETWORKS
(Common to CSE & IT)

Course Code	20IT3503	Year	III	Semester	I
Course Category	PC	Branch	IT	Course Type	Theory
Credits	3	L-T-P	3-0-0	Prerequisites	--
Continuous 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 concepts and protocols of different layers.	L2
CO2	Apply Error Correction or MAC Protocol mechanism for a given scenario.	L3
CO3	Apply various Addressing mechanisms /Routing protocols for a given network.	L3
CO4	Apply appropriate Transport & Application layer protocol for a given context.	L3
CO5	Analyze the given scenario and use appropriate methods/mechanisms/protocols for designing a network.(Assignment)	L4

Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (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	
CO3	3							3					3	
CO4	3							3					3	
CO5		3							3	3			3	

Syllabus		Mapped CO
Unit No.	Contents	
I	Introduction :- Networks, Network Types, Network Models :-The Protocol Layering , TCP/IP Protocol Suite, The OSI Model. Physical Layer :-Transmission Media - Guided Media, Un-Guided Media Data-Link Layer: Introduction to Data-Link Layer - Introduction, Link-Layer Addressing. Error Detection and Correction - Introduction, Cyclic Redundancy Check. Data Link Control (DLC) - DLC Services. Media Access Control (MAC) - Random Access, Controlled Access.	CO1, CO2
II	Network Layer: Introduction to Network Layer - Network-Layer Services, Packet Switching, Network-Layer Performance, IPv4 Addresses Next Generation IP- IPv6 Addressing, The IPv6 Protocol.	CO1, CO2, CO5
III	Network-Layer Protocols - Internet Protocol (IP), Unicast Routing - Introduction, Routing Algorithms- Distance vector and Link State Routing, Unicast Routing Protocols.	CO1, CO2, CO5
IV	Transport Layer: Introduction to Transport Layer-Introduction, Transport-Layer Protocols. Transport Layer Protocols-Introduction, User Datagram Protocol(UDP), Transmission Control Protocol(TCP)	CO1, CO3, CO4, CO5
V	Application Layer: Standard Client-Server Protocols-World Wide Web and HTTP, FTP, Electronic Mail, Telnet, Secure Shell (SSH), Domain Name System (DNS)	CO1, CO3, CO4

Learning Resources
Text Books
1.Data Communications and Networking, Behrouz A. Forouzan, Fifth Edition, McGrawHill
References
1. Computer Networking A Top-Down Approach, James F. Kurose, Keith W. Ross, Sixth Edition, Pearson Education
2. Computer Networks - A Systems Approach, Larry L. Peterson, Bruce S. Davie, Fifth Edition, Morgan Kaufmann.
e-Resources& other digital material
1. https://nptel.ac.in/courses/106/105/106105183/
2. https://nptel.ac.in/courses/106/105/106105081/
3. https://www.youtube.com/playlist?list=PLEAYkSg4uSQ2NMmzNNsEK5RVbhxqx0BZF