

**PVP SIDDHARTHA INSTITUTE OF TECHNOLOGY, KANURU, VIJAYAWADA**  
**(AUTONOMOUS)**  
**INFORMATION TECHNOLOGY**

**COMPUTER NETWORKS**  
**(Common to CSE & IT)**

<b>Course Code</b>	20IT3503	<b>Year</b>	III	<b>Semester</b>	I
<b>Course Category</b>	PC	<b>Branch</b>	IT	<b>Course Type</b>	Theory
<b>Credits</b>	3	<b>L-T-P</b>	3-0-0	<b>Prerequisites</b>	--
<b>Continuous Evaluation :</b>	30	<b>Semester End Evaluation:</b>	70	<b>Total Marks:</b>	100

**Course Outcomes**

Upon successful completion of the course, the student will be able to

<b>CO1</b>	Understand the basic concepts and protocols of different layers.	<b>L2</b>
<b>CO2</b>	Apply Error Correction or MAC Protocol mechanism for a given scenario.	<b>L3</b>
<b>CO3</b>	Apply various Addressing mechanisms /Routing protocols for a given network.	<b>L3</b>
<b>CO4</b>	Apply appropriate Transport & Application layer protocol for a given context.	<b>L3</b>
<b>CO5</b>	Analyze the given scenario and use appropriate methods/mechanisms/protocols for designing a network.(Assignment)	<b>L4</b>

**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
<b>CO1</b>	3												3	
<b>CO2</b>	3												3	
<b>CO3</b>	3							3					3	
<b>CO4</b>	3							3					3	
<b>CO5</b>		3							3	3			3	

Syllabus		Mapped CO
Unit No.	Contents	
I	<b>Introduction :-</b> 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	<b>Network Layer:</b> Introduction to Network Layer - Network-Layer Services, Packet Switching, Network-Layer Performance, IPv4 Addresses, Forwarding of IP Packets. Next Generation IP- IPv6 Addressing, The IPv6 Protocol.	CO1, CO2, CO5
III	<b>Network-Layer Protocols</b> - Internet Protocol (IP), Unicast Routing - Introduction, Routing Algorithms- Distance vector and Link State Routing, Unicast Routing Protocols.	CO1, CO2, CO5
IV	<b>Transport Layer:</b> 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	<b>Application Layer:</b> 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
<b>Text Books</b>
1.Data Communications and Networking, Behrouz A. Forouzan, Fifth Edition, McGrawHill
<b>References</b>
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.
<b>e-Resources&amp; other digital material</b>
1. <a href="https://nptel.ac.in/courses/106/105/106105183/">https://nptel.ac.in/courses/106/105/106105183/</a>
2. <a href="https://nptel.ac.in/courses/106/105/106105081/">https://nptel.ac.in/courses/106/105/106105081/</a>
3. <a href="https://www.youtube.com/playlist?list=PLEAYkSg4uSQ2NMmzNNsEK5RVbhxqx0BZF">https://www.youtube.com/playlist?list=PLEAYkSg4uSQ2NMmzNNsEK5RVbhxqx0BZF</a>