

LESSON PLAN (PVPSIT/ACD/01)

ACADEMIC YEAR : 2024-25
SUBJECT CODE & NAME : Computer Networks (20CS3503)
YEAR & SEMESTER : III B. Tech / I Semester / S1 / PVP20 Regulation
FACULTY NAME : Dr. Ravuri Daniel

CO	COURSE OUTCOMES	LEVEL
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.	L4

Unit No.	Topic of Syllabus to be covered	Learning outcomes	Teaching Mode	Hours Required		Total No. of Hours (Cumulative)	Expected date of completion (for each unit)	Review / Remarks (By HOD)
				L	T			
I	Introduction: -Networks, Network Types, Network Models: The Protocol Layering	• Able to Understand different types of networks, introduces networks and able to define the criteria and structures. L2 (CO1, CO3) • Able to understand four different network topologies, concepts of protocol layering. L2 (CO1, CO3) • Able to identify two principles of protocol layering. L2 (CO1, CO3)	BB/LCD	1		1		
I	TCP/IP Protocol Suite, The OSI Model	• Able to understand the functioning of the five layers of the TCP/IP protocol suite, and OSI model. L2 (CO1, CO3)	BB/LCD	1		2		
I	Physical Layer :- Transmission Media - Guided Media, Un-Guided Media	• Summarize various types of Transmission media. L2 (CO1, CO3)	BB/LCD	1		3		

I	Data-Link Layer: Introduction toDLC: Introduction	• Able to understand the DLL Nodes and links, services, categories of links and two sublayers. L2 (CO1, CO3)	BB/LCD	1		4		
I	Link Layer Addressing	• Able to understand and Apply ARP protocol on an example. L3 (CO1, CO3) • Understand Link Layer Addressing. L2 (CO1, CO3)	LCD	1		5		
I	Error Detection and Correction Introduction	• Able to recognize various the Types of Errors. L3 (CO1, CO3) • Able Apply CRC Error Detection and Correction method on a given example L3 (CO1, CO3)	BB/LCD	2		7		
I	Data Link Control: DLC Services	• Able to understand the services provided by DLC. L2 (CO1, CO3) • Able to implement Framing service of DLC on a given example. L3 (CO1, CO3)	LCD	1		8		
I	Media Access Control (MAC)	• Able to understand how to handle access to a shared link. L2 (CO1,CO3) • Able to identify and calculate the network performance using the various protocols in Media access control sublayer such as Random Access and Controlled Access. L3 (CO1,CO3)	LCD	3		12		
II	Network Layer : Introduction, Network Layer Services, PacketSwitching	• Able to understand various services provided by network layer. L2 (CO1, CO2)	LCD	1		13		
II	Network Layer Performance	• Able to calculate the performance of the givenNetwork. L3 (CO1, CO2)	BB/LCD	1		14		
II	IPv4 Addresses	• Understand about the address space of the IPv4 and two address distribution mechanisms: classful and classless addressing and develop the network model using the classful and classless	BB/LCD	3		17		

		addressing mechanisms. L3 (CO1, CO2)						
II	DHCP and NAT	Apply DHCP protocol to find the IP address corresponding to domain name. Apply NAT to find public address and private address. L3 (CO1,CO2)	Seminar Method	2		19		
II	Next Generation IP- IPv6 Addressing, The IPv6 Protocol.	Apply to find next generation internet protocol and IPV6 addressing. L3 (CO1, CO2)	LCD	2		21		
III	Network Layer Protocols: Internet Protocols(IP)	Identify the fields of IPv4 Datagram and fragmentation mechanism used in IPv4. L3(CO1, CO2, CO4)	BB/LCD	1		22		
III	ICMPv4	Able to understand the functionality of ICMPv4 protocol and its messages L2. (CO1,CO2, CO4)	LCD	1		23		
III	Unicast Routing Algorithms	Apply the unicast routing algorithms such as DVR, LSR, and PVR for any given network. L3 (CO1, CO2,CO4)	BB/LCD	3		26		
III	Unicast Routing Protocols	Able to understand the functionalities of RIP, OSPF, and BGP. L3 (CO1, CO2, CO4)	LCD	3		29		
IV	Transport Layer: Introduction	Identify the services provided by TL. L3 (CO1, CO3)	LCD	1		30		
IV	Transport Layer Protocols	Analyze the working of elementary and sliding window protocols. L3 (CO1, CO3)	BB/LCD	2		32		
IV	User Datagram Protocol (UDP)	Able to identify the Services, Port Numbers fields of UDP Header. L3 (CO1, CO3)	LCD	1		33		
IV	Transmission Control Protocol(TCP)	- Able to Identify the Services and Features of TCP. L3 (CO1, CO3) - Able to understand about the TCP, Segment. L3 (CO1, CO3)	BB/LCD	7		40		

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		• Able to analyze the TCP Connection, Flow Control, Error Control, congestion control, concepts in TCP. L3 (CO1, CO3) • Able to understand about TCP Timers and Options fields. L2 (CO1, CO3)						
V	Application Layer: World Wide Web, Hyper Text Transfer Protocol (HTTP)	• Able to understand the Application layer protocols like WWW & HTTP. L2 (CO1, CO3)	LCD / FC	3		43		
V	File Transfer Protocol (FTP)	• Able to understand the Control Connection, Data Connection. L2 (CO1, CO3) • Able to understand the Security of FTP. L2 (CO1, CO3)	LCD	1		44		
V	Electronic Mail	• Able to understand the architecture of email, Web-Based Mail, E-Mail security. L2 (CO1, CO3)	LCD	1		45		
V	TELNET & Secure Shell (SSH)	• Able to understand the TELNET in Local versus Remote Logging, and usage of SECURE SHELL (SSH): Components, Applications. L2 (CO1, CO3)	LCD	1		46		
V	Domain Name System (DNS)	• Illustrate the DNS, Name Space, DNS in the Internet, Resolution, Caching, Domain Name System, Resource Records, DNS Messages, Registrars, DDNS, Security of DNS. L2 (CO1, CO3)	LCD / GD	2		48		

Legend: Teaching mode:

BB: Black Board
L: Lecture Hours

LCD: Power Point Presentation
T: Tutorial Hours

GD: Group Discussion

FC: Flip class

Signature of Faculty

Date:

Signature of HOD

Date: