PVP SIDDHARTHA INSTITUTE OF TECHNOLOGY

LESSON PLAN (PVPSIT/ACD/01)

ACADEMIC YEAR : 2024-25
SUBJECT CODE & NAME : Computer Networks (20CS3503)
YEAR & SEMESTER : III B. Tech / I Semester / S3 / 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 Datagramand fragmentation mechanism used in IPv4. L3(CO1, CO2, CO4)	BB/LCD	1		22		
III	ICMPv4	• Able to understand the functionality of ICMPv4protocol 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		

		• 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 LCD: Power Point Presentation GD: Group Discussion FC: Flip class
L: Lecture Hours T: Tutorial Hours

Signature of Faculty Signature of HOD

Date: Date: