Govt. Polytechnic Education Society, Manesar

Lesson Plan

NAME OF THE FACULTY : Pooja
DESCIPLINE : Computer Engineering
SEMESTER : 5th
SUBJECT : Computer Networks
DURATION OF LESSON PLAN : 15 weeks (from Aug- 2025 to Nov- 2025)

WORK LOAD (LECTURE/PRACTICAL) PER WEEK (IN HOURS):- LECTURE-03, PRACTICAL-04 PER GROUP

WEEK S.N.	THEORY		PRACTICAL		
	Lecture / Hrs.	TOPIC (Including Assignment/Test)	Practical /Hrs.		Lab Experiments
1st	1	**UNIT I: NETWORKS BASICS** Concept of network.	Group-1	1-2-3-4	Recognize the physical topology and cabling (coaxial, OFC, UTP, STP) of a network.
	2	Models of network computing			
	3	Networking models	Group-2	1-2-3-4	
2nd	4	Peer-to –peer Network	Group-1	1-2-3-4	Recognition and use of various types of connectors RJ-45, RJ-11, BNC and SCST
	5	Client-Server Network			
	6	LAN, MAN and WAN	Group-2	1-2-3-4	
3rd	7	Network Services	Group-1	1-2-3-4	Making of cross cable and straight cable
	8	Topologies			
	9	Switching Techniques.	Group-2	1-2-3-4	
4th	10	**NETWORKING MODELS:** OSI model: Definition, Layered Architecture.	Group-1	1-2-3-4	Install and configure a network interface card in a workstation.
	11	Functions of various layers TCP/IP Model: Definition			
	12	Functions of various layers of TCP/IP model Comparison between OSI and TCP/IP model	Group-2	1-2-3-4	
5th	13	**UNIT II: TCP/IP ADDRESSING** Introduction to TCP/IP Addressing, Concept of physical and logical addressing	Group-1	1-2-3-4	Identify the IP address of a workstation and the class of the address and configure the IP Address on a workstation
	14	IPV4 addresses-Address space, Notation **Assignment-1**			
	15	**Sessional Test-1**	Group-2	1-2-3-4	
6th	16	Classful Addressing- Different IP address classes	Group-1	1-2-3-4	Managing user accounts in windows and LINUX
	17	Classes & Blocks, Net-id & Host-Id, Masks, Address depletion			
	18	Classless Addressing – Address blocks, Masks	Group-2	1-2-3-4	
7th	19	Special IP Addresses, Sub netting and Super netting	Group-1	1-2-3-4	Sharing of Hardware resources in the network.
	20	Loop back concept, Network Address Translation			
	21	IPV4 Header, IPV6 Header	Group-2	1-2-3-4	

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8th	22	Comparison between IPV4 and IPV6	Group-1	1-2-3-4	Use of Netstat and its options.
	23	**UNIT III: NETWORK ARCHITECTURE** Ethernet specification and standardization			
	24	10 Mbps (Traditional Ethernet), 10 Mbps (Fast Ethernet)	Group-2	1-2-3-4	
9th	25	1000 Mbps (Gigabit Ethernet), Network Connectivity	Group-1	1-2-3-4	Connectivity troubleshooting using PING, IPCONFIG, IFCONFIG
	26	**Network connectivity Devices:** NICs, Hubs, Switches, Routers			
	27	Repeaters, Modem, Gateway, Configuration of Routers & Switches	Group-2	1-2-3-4	
10th	28	**UNIT IV: Network Administration** Network Security Principles	Group-1	1-2-3-4	Connectivity troubleshooting using PING, IPCONFIG, IFCONFIG
	29	Cryptography using secure protocols, Trouble Shooting Tools: PING, IPCONFIG			
	30	**Assignment-2** **Sessional Test-2**	Group-2	1-2-3-4	
11th	31	Trouble Shooting Tools: PING, IPCONFIG	Group-1	1-2-3-4	Installation of Network Operating System (NOS)
	32	IFCONFIG, NETSTAT, TRACEROOT			
	33	Wireshark, Nmap, TCPDUMP, ROUTEPRINT	Group-2	1-2-3-4	
12th	34	DHCP Server, Workgroup /Domain Networking	Group-1	1-2-3-4	Installation of Network Operating System (NOS)
	35	**UNIT V: Introduction to Wireless Networks** Introduction to wireless LAN IEEE 802.11			
	36	WiMAX ad Li-Fi, Wireless Security	Group-2	1-2-3-4	
13th	37	Introduction to Bluetooth - architecture, application	Group-1	1-2-3-4	Visit to nearby industry for latest networking techniques
	38	Comparison between Bluetooth and Wi-Fi			
	39	**Cloud Computing:** Introduction, Definition and Advantages.	Group-2	1-2-3-4	
14th	40	Cloud Computing service model- SaaS	Group-1	1-2-3-4	Create a network of at least 6 computers.
	41	Cloud Computing service model- PaaS			
	42	Cloud computing service model- IaaS	Group-2	1-2-3-4	
15th	43	Deployment Model - Private Cloud Public Cloud	Group-1	1-2-3-4	Practicing and Recap
	44	Hybrid and Community Cloud **Assignment- 3**			
	45	**Sessional-3**	Group-2	1-2-3-4	