NAME OF THE FACULTY : POOJA

DISCIPLINE : Computer Engineering

SEMESTER : 5 th

SUBJECT : Computer Networks

LESSON PLAN DURATION : 15 weeks (from Aug- 2024 to Nov- 2024)

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

WEEK S.N.	THEORY		PRACTICAL		
	Lecture / Hrs	TOPIC (Including Assignment/Test)	Practical / Hrs		Experiment
1st	1	**Introduction** Networks Basics	Group-1	1	Recognize the physical topology and cabling (coaxial, OFC, UTP, STP) of a network.
				2	
	2	Concept of network		3	
			Group-2	1	Recognize the physical topology and cabling (coaxial, OFC, UTP, STP) of a network.
	3	Models of network computing		2	
	4	Networking models		3	
2nd	5	Peer-to –peer Network	Group-1	1	Recognition and use of various types of connectors RJ-45, RJ-11,BNC and SCST
				2	
	6	Client-Server Network		3	
			Group-2	1	Recognition and use of various types of connectors RJ-45, RJ-11,BNC and SCST
	7	LAN, MAN and WAN		2	
	8	Network Services		3	
3rd	9	Topologies	Group-1	1	Making of cross cable and straight cable
				2	
	10	Switching Techniques		3	
			Group-2	1	Making of cross cable and straight cable
	11	Networking Models		2	
	12	OSI model: Definition, Layered Architecture		3	
4th	13	Functions of various layers	Group-1	1	Install and configure a network interface card in a workstation.
				2	
	14	TCP/IP Model: Definition		3	
			Group-2	1	Install and configure a network interface card in a workstation.
	15	Functions of various layers Comparison between OSI and TCP/IP model		2	
	16	Introduction to TCP/IP Addressing		3	
5th	17	Concept of physical and logical addressing	Group-1	1	Identify the IP address of a workstation and the class of the address and configure the IP Address on a workstation
				2	
	18	IPV4 addresses – Address space, Notations		3	
			Group-2	1	Identify the IP address of a workstation and the class of the address and configure the IP Address on a workstation
	19	**Assignment-1**		2	
	20	**Sessional Test-1**		3	

6th	21	Classful Addressing- Different IP address classes	Group-1	1 2 3	Managing user accounts in windows and LINUX
	22	Classes & Blocks, Net-id & Host-Id, Masks, Address depletion Classes & Blocks, Net-id & Host-Id, Masks, Address depletion	Group-2	1	Managing user accounts in windows and LINUX
	23	Classless Addressing – Address blocks, Masks		2	
	24	Special IP Addresses Subnetting and Supernetting		3	
7th	25	Loop back concept	Group-1	1 2 3	Sharing of Hardware resources in the network.
	26	Network Address Translation	Group-2	1	Sharing of Hardware resources in the network.
	27	IPV4 Header, IPV6 Header		2	
	28	Comparison between IPV4 and IPV6		3	
8th	29	Comparison between IPV4 and IPV6	Group-1	1 2 3	Use of Netstat and its options.
	30	Network Architecture- Ethernet specification and standardization	Group-2	1	Use of Netstat and its options.
	31	10 Mbps (Traditional Ethernet), 10 Mbps(Fast Ethernet)		2	
	32	1000 Mbps (Gigabit Ethernet)		3	
9th	33	Network Connectivity	Group-1	1 2 3	Connectivity troubleshooting using PING, IPCONFIG, IFCONFIG
	34	Network connectivity Devices NICs	Group-2	1	Connectivity troubleshooting using PING, IPCONFIG, IFCONFIG
	35	Hubs, Switches, Routers, Repeaters		2	
	36	Modem, Gateway Configuration of Routers & Switches		3	
10th	37	Network Administration- Network Security Principles	Group-1	1 2 3	Connectivity troubleshooting using PING, IPCONFIG, IFCONFIG
	38	Cryptography, using secure protocols	Group-2	1	Connectivity troubleshooting using PING, IPCONFIG, IFCONFIG
	39	**Assignment-2**		2	
	40	**Sessional Test-2**		3	

11th	41	Trouble Shooting Tools: PING,IPCONFIG	Group-1	1 2 3	Installation of Network Operating System(NOS)
	42	IFCONFIG, NETSTAT, TRACEROOT			
	43	Wireshark, Nmap, TCPDUMP	Group-2	1 2	Installation of Network Operating System(NOS)
	44	ROUTEPRINT DHCP Server		3	
12th	45	Workgroup/Domain Networking	Group-1	1 2 3	Installation of Network Operating System(NOS)
	46	Introduction to Wireless Networks			
	47	Introduction to wireless LAN IEEE 802.11	Group-2	1 2	Installation of Network Operating System(NOS)
	48	WiMax ad Li-Fi Wireless Security		3	
13th	49	Introduction to bluetooth - architecture, application	Group-1	1 2 3	Visit to nearby industry for latest networking techniques
	50	Comparison between bluetooth and Wifi			
	51	Introduction to Cloud Computing	Group-2	1 2	Visit to nearby industry for latest networking techniques
	52	Definition of Cloud Computing		3	
14th	53	Advantages of Cloud Computing	Group-1	1 2 3	Create a network of at least 6 computers.
	54	Cloud Computing service model- SaaS			
	55	Cloud Computing service model- PaaS	Group-2	1 2	Create a network of at least 6 computers.
	56	Cloud Computing service model- Iaas		3	
15th	57	Recap- Cloud Computing	Group-1	1 2 3	Practicing and Recap
	58	**Assignment- 3**			
	59	**Sessional Test- 3**	Group-2	1 2	Practicing and Recap
	60	Revision		3	