BHAI GURDAS INSTITUTE OF ENGINEERING & TECHNOLOGY

Department of Information Technology

LESSON PLAN

Subject Name: - Computer Networks **Subject Code: - BTIT401-18**

Year: - 2023 **Semester: - 4th**

Lecture No.	Unit	Date/ Week	Topic	Teaching Aids	Reference
1.	I	8 Days	Introduction of computer network, Data Communication Components Representation of data and its flow Networks.	Projector, chalk, green board, duster	Text book , notes
2.			Introduction to Topology, Various types of Connection Topology: Bus, Ring, Star, Mesh, Tree and hybrid topologies. Protocols and Standards,		
3.			OSI model, Working and explanation of layers:- Physical layer, Data link layer		
4.			Working and explanation :Network layer, transport Layer, Session layer		
5.			Working and explanation: Presentation layer, Application layer		
6.			Transmission Media and types of data transmission: Guided and Unguided media		
7.			LAN: Wired LAN, Wireless LANs, Connecting LAN and Virtual LAN		
8.			Techniques for Bandwidth utilization: Multiplexing - Frequency division, Time division and Wave division, Concepts on spread		

			spectrum.		
9.	II	10 days	Introduction of Data Link Layer: design issues, Framing		
10.			Error Detection: types of errors, techniques:VRC ,LRC, CRC, Checksum		
11.			Error Correction - Fundamentals, Block coding, Hamming Distance, CRC;		
12.			Flow Control : Stop and Wait and sliding window protocol		
13.			Error control protocols - Stop and Wait ARQ, Sliding window ARQ: Go back – N ARQ,		
14.			Selective Repeat ARQ, Piggybacking, Random Access		
15.			Medium Access Sub Layer : Introduction, Cannel allocation Problem: Statioc and dynamic		
16.			Multiple access protocols – Random access protocol : Pure ALOHA, Slotted ALOHA,		
17.			CSMA: 1 –persistent, non-presistant, p-persistent		
18.			CSMA/CD and CDMA/CA.		
19.	III	8 Days	Introduction to Network layer, design issues, logical addressing: IP address format		
20.			Classfull addressing and subnetting, Internet protocol		
21.			IPV4 AND IPV6 , frame format		
22.			Routing Algorithm- Static Routing Algorithm: Shortest path algo		
23.			Flooding, Flow Bases Algorithm, distance Vector algorithm		

24.			Multicasting Routing: IGMP AND DVMRP		
25.			Address mapping – ARP, RARP, BOOTP		
26.			DHCP–Delivery, Forwarding and Unicast Routing protocols		
27.	IV	8 Days	Transport layer Introduction, design issues, connection oriented and connectionless Services.		
28.			Elements of Transport Protocols: Addressing, Multiplexing and Demultiplexing, connection establishment		
29.			Protocols: TCP segment, format of TCP Segment.		
30.			User Datagram Protocol (UDP): UDP datagram, Format of UDP datagram		
31.			SCTP, Congestion Control: introduction, causes of congestion		
32.			open loop congestion control and closed loop congestion control		
33.			Congestion control algorithm: Leaky bucket and token bucket		
34.			Quality of Service, QoS improving techniques		
35.	V	8 Days	Introduction to application layer, design issues, working		
36.			Introduction top domain name system (DNS): Domain Name System, Domain name Space.		
37.			Name Server, DDNS, TELNET		
38.			Introduction to Email , Basic function of Email, MIME		
39.			Introduction to File Transfer Protocol (FTP): How FTP work, Importance of FPT		

40.			Introduction of WWW, working of WWW, Introduction of HTTP		
41.			Introduction to SNMP, Introduction to Bluetooth, working and importance .		
42.			Basic concepts of Cryptography: public and private key concept		