PANIPAT INSTITUTE OF ENGINEERING AND TECHNOLOGY PANIPAT

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

LESSON PLAN

Subject Name: - Computer network

Branch/Semester: - 5th Sem **Subject Code:- EC-CS-AIML-305A**

Sr No.	Lecture No.	Topics To Be Covered	CO covered	Assignment No	Teaching Methodology
1	L 1	**Unit I: Introduction to Computer Networks:** Data Communication System and its components	CO1	Assignment 1	Smart Board
2	L 2	Data Flow, Computer network and its goals. Types of computer networks: LAN, MAN, WAN	CO1		White Board
3	L 3	Wireless and Wired networks. Broadcast and point-to-point networks	CO1		White Board
4	L 4	Network topologies, protocols. Interfaces and services.	CO1		Smart Board
5	L 5	ISO- OSI reference model.	CO1		White Board
6	L 6	TCP/IP architecture.	CO1		
7	L 7	**Physical Layer** Concept of Analog Digital Signal. Bandwidth, Transmission Impairments: Attenuation, Distortion, Noise	CO1		Smart Board
8	L 8	Multiplexing: Frequency Division, Time Division, Wavelength Division.	CO1		Smart Board
9	L 9	Transmission Media: Twisted pair, Coaxial cable, Fiber optics. Wireless	CO1		White Board

		transmission (Radio, microwave, infrared)			
10	L 10	Switching: Circuit Switching, Message Switching ,Packet Switching & comparisons. Narrowband ISDN, Broadband ISDN.	CO1		White Board
11	L 11	**Unit II: Data link layer**: Error Control, Types of errors. Framing (Character and Bit stuffing)	CO2	Assignment 2	Smart Board
12	L 12	Error detection & correction methods; Flow control	CO2		Smart Board
13	L 13	Protocols: Stop & wait ARQ, Go-Back- N ARQ. Sliding window protocols.	CO2		Smart Board
14	L 14	**Medium access sub layer**: Point to point protocol. FDDI	CO2		White Board
15	L 15	Token bus, token ring, Reservation, polling	CO2		Smart Board
16	L 16	Multiple access protocols: Pure ALOHA, Slotted ALOHA,	CO2		Smart Board
17	L 17	CSMA, CSMA/CD, FDMA, TDMA.	CO2		White Board
18	L 18	FDMA, TDMA, CDMA, LLC	CO2		Smart Board
19	L 19	Traditional Ethernet, fast Ethernet. Network devices-Repeaters, Hubs, Switches, Bridges, Router, Gateway	CO2		Smart Board
20	L 20	**Unit III: Network layer**: Addressing : Internet address, sub-netting	CO3	Assignment 3	Smart Board
21	L 21	Routing techniques, static vs. dynamic routing, Routing table.	CO3		Smart Board
22	L 22	DHCP, IEEE standards 802.x	CO3		Smart Board
23	L 23	Routing algorithms: shortest path algorithm, flooding, Distance vector routing, Link state routing	CO3		Smart Board

24	L 24	Protocols: ARP, RARP, IP, ICMP, IGMP, IPV4, IPV6	CO3		Smart Board
25	L 25	Unicast and multicast routing protocols, ATM	CO3		White Board
26	L 26	**Unit IV: Transport layer**: Process to process delivery, UDP; TCP, RPC	CO4	Assignment 4	Smart Board
27	L 27	Congestion control algorithm: Leaky bucket algorithm, Token bucket algorithm, choke packets	CO4		Smart Board
28	L 28	Quality of service: techniques to improve QoS	CO4		White Board
29	L 29	**Application layer**: DNS,SMTP, FTP, HTTP & WWW.	CO4		Smart Board
30	L 30	S/MIME, IMAP, Firewalls, Bluetooth, Email	CO4		White Board
31	L 31	**Network Security**: Cryptography, User authentication, Security protocols in internet	CO4		Smart Board
32	L 32	Public key encryption algorithm, Digital Signature.	CO4		Smart Board

(Course Incharge)