

PANIPAT INSTITUTE OF ENGINEERING AND TECHNOLOGY

PANIPAT

DEPARTMENT OF CYBER SECURITY

LESSON PLAN

Subject:Computer Networks

Subject CodePC-CS-CYS-311A

Semester:5th

Lecture No	Topic	Mode of Delivery
L1	Introduction to Computer Networks: Data Communication System and its components, Data Flow, Computer network and its goals,	Class Room
L2	Types of computer networks: LAN, MAN, WAN, Wireless and Wired networks, broadcast and point-to- point networks	Smart Class Room
L3	Network topologies, protocols, interfaces and services, ISO- OSI reference model, TCP/IP architecture.	Class Room
L4	Concept of Analog & Digital Signal, Bandwidth, Transmission Impairments: Attenuation, Distortion,Noise	Class Room
L5	Multiplexing: Frequency Division, Time Division, Wavelength Division	Smart Class Room
L6	Transmission Media: Twisted pair, Coaxial cable, Fiber optics, Wireless transmission (radio, microwave,infrared)	Class Room
L7	Switching: Circuit Switching, Message Switching, Packet Switching & comparisons, narrowband ISDN,broadband ISDN	Smart Class Room
L8	Data Link Layer: Error Control, Types of errors, framing (character and bit stuffing)	Class Room
L9	Error detection & correction methods	Class Room
L10	Flow control; Protocols: Stop & wait ARQ	Class Room
L11	Go-Back- N ARQ	Class Room
L12	sliding window protocols, Selective repeat ARQ	Class Room
L13	HDLC	Class Room
L14	Point to point protocol, FDDI	Smart Class Room
L15	Token bus, token ring; Reservation, polling	Class Room
L16	Multiple access protocols: Pure ALOHA, Slotted ALOHA	Smart Class Room
L17	CSMA, CSMA/CD	Class Room
L18	FDMA, TDMA, CDMA	Smart Class Room

L19	LLC, Traditional Ethernet, fast Ethernet	Class Room
L20	Network devices-repeaters, hubs, switches, Bridges, Router, Gateway.	Class Room
L21	Network layer: Addressing: Internet address	Class Room
L22	Sub-netting	
L23	Routing techniques, static vs. dynamic routing, routing table	Class Room
L24	DHCP, IEEE standards 802.x	Class Room
L25	Routing algorithms: shortest path algorithm	Class Room
L26	Flooding, distance vector routing, link state routing	Class Room
L27	Protocols: ARP, RARP, IP, ICMP, IGMP, IPV6;Unicast and multicast routing protocols, ATM.	Class Room
L28	Transport layer: Process to process delivery; UDP; TCP, RPC	Class Room
L29	Congestion control algorithm: Leaky bucket algorithm, Token bucket algorithm, choke packets	Class Room
L30	Quality of service: techniques to improve QoS	Class Room
L31	Application layer: DNS; SMTP, SNMP, FTP, HTTP & WWW	Class Room
L32	Firewalls, Bluetooth, Email, S/MIME, IMAP	Class Room
L33	Network Security: Cryptography	Class Room
L34	User authentication, security protocols in internet	Class Room
L35	public key encryption algorithm, digital signatures.	Class Room