

Name Of the Faculty :	Rohit Sharma
Discipline:	MCA
Semester:	1st Sem
Subject:	Computer Networks
Lesson Plan Duration :	15 weeks
**Work Load (Lecture/Practical) per week (In Hours):Lecture -04+1 (Of One Sections)- 03 Lab of One S	
Week	Topic (including assignment/test) (In Each Section)
1	Introduction to Computer Networks and its uses; Netw
	Network categorization and Hardware;
	Topologies; Network Software: Protocols, Services
	Topologies; Network Software: Protocols, Services
2	Topologies; Network Software: Protocols, Services
	Network Architecture,
	Design issues for the layers,
	OSI Reference model,
3	OSI Reference model,
	OSI Reference model, TCP/IP Reference model
	TCP/IP Reference model
	Comparison of OSI and TCP/IP Models. Intr
4	Introduction to Example Networks: Internet, ISDN
	X.25, Frame Relay, ATM
	X.25, Frame Relay, ATM
5	ATM
	Introduction to Example Networks: Internet, ISDN, X.25, Frame Relay, ATM
	UNIT-1 REVISION
	Data Communication Model, Digital and Analog data and signals
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6	Asynchronous and Synchronous transmission
	bit rate, baud, bandwidth, Transmission impairment;
	Channel Capacity; Guided Transmission Media
	Channel Capacity; Guided Transmission Media
	Wireless transmission
7	Wireless transmission
	Satellite communication.
	Satellite communication.
	Switching; Multiplexing;
8	Switching; Multiplexing;
	Spread Spectrum; local loop; Modems and ADSL;
	Spread Spectrum; local loop; Modems and ADSL;
	Encoding: NRZ, NRZ-I, Manchester and Differential Manchester encoding;
	Encoding: NRZ, NRZ-I, Manchester and Differential Manchester encoding;
9	Encoding: NRZ, NRZ-I, Manchester and Differential Manchester encoding;
	Internet over Cable; ADSL Versus Cable;
	Internet over Cable; ADSL Versus Cable;
	The Mobile Telephone System;
	UNIT-2 REVISION
	Data Link Layer Design issues; Framing, Error Detection and Correction;

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Week	Topic (including assignment/test) (In Each Section)
10	Data Link Layer Design issues; Framing, Error Detection and Correction;
	Flow Control: Sliding Window Protocols;
	Flow Control: Sliding Window Protocols;
	Medium Access Control: Aloha, CSMA protocols, Collision free protocols,
11	Medium Access Control: Aloha, CSMA protocols, Collision free protocols,
	Limited Contention Protocols; Wavelength Division Multiple access protocol,
	Limited Contention Protocols; Wavelength Division Multiple access protocol,
	Wireless LAN Protocol: MACA; High Speed LANs;
12	Wireless LAN Protocol: MACA; High Speed LANs;
	Ethernet LAN, Fast Ethernet, Gigabit Ethernet
	Binary Exponential Backoff algorithm; Token Ring and FDDI
	Binary Exponential Backoff algorithm; Token Ring and FDDI
13	Introduction to Wireless LANs;
	UNIT-3 REVISION
	Network Layer Design issues , Virtual Circuit and Datagram Subnet, Routing
	Routing Algorithms: Optimality principle, Shortest path Routing,
14	Routing Algorithms: Optimality principle, Shortest path Routing,
	Flooding , Distance Vector Routing,
	Link State Routing, Hierarchical Routing,
	Broadcast and Multi Cast Routing, Routing for Mobile hosts,
15	Congestion Control Algorithms:
	General Principals;
	Congestion control in Virtual – Circuit Subnets;
	Congestion Control in Datagram Subnets
16	Choke packets, Load Shedding
	Random Early Detection, Jitter Control
	Quality of Service: Over provisioning, Buffering,
	Traffic Shaping, Leaky bucket,
	token bucket, Resource Reservation,
	Admission Control, Packet Scheduling
	UNIT-4 REVISION