

**Lecture Plan**  
**Data Communication Networks (EC-701)**

**LTP**  
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<b>Units</b>	<b>Lecture</b>	<b>Topics Covered</b>
<b>Unit 1</b>		<b>Basic concepts</b>
	Lecture 1	Components, Networks, Protocols and standards
	Lecture 2	Line configuration, Topologies, Transmission modes, Categories of networks
	Lecture 3	<b>ISO-OSI Model</b> -OSI layered architecture, Function of each layer.
	Lecture 4	<b>TCP/IP Protocols</b> , Design issues for different layers
	Lecture 5	Physical layer- Analog/Digital modulation formats
	Lecture 6	Data rate, Baud rate, Mediums for communication,
	Lecture 7	Synchronous/Asynchronous communication
	Lecture 8	Surprise Test 1
<b>Unit 2</b>		<b>Data Link Layer</b>
	Lecture 1	Services provided to network layer
	Lecture 2	Framing, Flow Control: stop & wait,
	Lecture 3	sliding window, Error control: ARQ, go-back n,
	Lecture 4	selective repeat, SLIP, PPP
	Lecture 5	<b>MAC sub layer</b> -contention protocols: ALOHA, CSMA
	Lecture 6	CSMA/CD contentions free protocols; a bitmap protocol
	Lecture 7	binary countdown, Limited contention protocols;
	Lecture 8	adaptive tree walk
<b>Unit 3</b>		<b>Project IEEE 802-802.1</b>
	Lecture 1	Internetworking, 802.2: LLC, 802.3: CSMA/CD, 802.4: token Bus,
	Lecture 2	802.5: Token Ring, 802.6: DQDB, 802.11: Wireless LAN
	Lecture 3	Ethernet LAN, Switched Ethernet,
	Lecture 4	Fast Ethernet Internetworking Devices: Repeaters,
	Lecture 5	Bridges,
	Lecture 6	Switches, Routers, Gateways
	Lecture 7	Quiz1
	Lecture 8	Surprise Test 2
<b>Unit 4</b>		<b>Network Layer</b>
	Lecture 1	Services provided to Transport layer, Logical Addressing,
	Lecture 2	Routing: Distance vector routing, Link state routing, Dijkstra Algorithm,
	Lecture 3	Hierarchical Routing, Routing for mobile hosts,
	Lecture 4	Congestion control; Leaky Bucket, Token Bucket
	Lecture 5	Algorithm, Congestion control in virtual circuit subnet,
	Lecture 6	choke packets,.
	Lecture 7	IP addresses

	Lecture 8	IP protocols
<b>Unit 5</b>		<b>Transport layer</b>
	Lecture 1	Services provided to user support layers,
	Lecture 2	Connection and Connection less services,
	Lecture 3	addressing, establishing releasing connection,
	Lecture 4	Flow control & buffering
	Lecture 5	Multiplexing
	Lecture 6	Crash recovery TCP & UDP
	Lecture 7	Introduction to Network Security
	Lecture 8	Quiz 2

**References:**

1. Data Communication & Networking, IV Edition, B.A.Forouzan, TMH
2. Computer Networks; Tanenbaum, PHI

Reference Book: Understanding Data Communication & Networking; William A. Shay, Vikas Publishing House Pvt. Ltd.

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