

Syllabus		
Unit No	Contents	Mapped CO
I	Overview of Networks and Data Communication : Data Communication, components, data representation, data flow; Networks: physical structures, network models, categories of network, inter connection of networks, Network Models: Layered Tasks, sender, receiver, carrier, and hierarchy. The OSI models: layered architecture, peer to peer process, encapsulation, Layers in OSI model, TCP/IP protocol suite, Addressing: physical address, logical address, port address, specific address.	CO1
II	Datalink Layer: fixed size framing, variable size framing, Flow control, Error control Error detections Error correction: block coding, linear block codes, cyclic codes: cyclic redundancy check, polynomials, cyclic code analysis, advantages, Checksum: idea, one's complement internet check sum, Elementary Data link Layer protocols: Noiseless Channels, Simplest protocol, Stop-and Wait protocol.	CO2
III	Data Link Control & Network Layer: Noisy Channels, Stop and Wait Automatic repeat request, Go Back N Automatic Repeat Request, Selective Repeat Automatic Repeat Request, and Piggybacking, Network Layer, IPV4 Addresses, Address space, Notations, Classful addressing, Classless Addressing, Internetworking, IPV4, Datagram, fragmentation, checksum, options, IPV6, advantages, packet format, Extension Headers	CO2
IV	Network Layer: Delivery, forwarding: Forwarding Techniques, and, Forwarding Process, Routing Table routing, Unicast Routing Protocols: Optimization, Intra and Inter domain Routing distance vector routing algorithm, Link State Routing Algorithm, Multicast Routing Algorithms: Unicast, Multicast, Broadcast, Multicast Routing.	CO3
V	Transport Layer: Process to process Delivery: Client/Server Paradigm, Multiplexing and Demultiplexing, Connectionless Versus Connection-Oriented Service, Reliable Versus Unreliable, User datagram Protocol: Well known ports for UDP, User Datagram, Checksum, UDP Operations, and Transmission Control Protocol (TCP): TCP Services, TCP Features, Segment, A TCP Connection, Flow Control, Congestion Control.	CO2

Learning Resources
Text Books
<ol style="list-style-type: none"> 1. Data communications and networking 4th Edition Behrouz A Fourzan, TMH 2. Computer networks 4th Edition Andrew S Tanenbaum, Pearson
References
<ol style="list-style-type: none"> 1. Computer networks, A system Approach, 5th Edition, Larry L Peterson and Bruce S Davie, Elsevier
E-Resources and other Digital Material
<ol style="list-style-type: none"> 1. http://nptel.iitm.ac.in/courses/Webcourse-contents/IIT%20Kharagpur/Computer%20networks/New_index1.html