Introduction to Computer Networks	L	T	P	Operating systems, Algorithm Design and Analysis
	3	2	0	

Course Objective: To understand design and application of layered architechture and protocols of computer networks.

S. NO	Course Outcomes (CO)
CO1	Understand basic concepts, OSI reference model, services and role of each layer of OSI model and TCP/IP, networks devices and transmission media.
CO2	Apply channel allocation, framing, error and flow control techniques.
CO3	Functions of Network Layer i.e. Logical addressing, subnetting & Routing Mechanism.
CO4	Transport & Application Layer function i.e. Port addressing, Connection Management, Error control and Flow control mechanism.

S. NO	Contents	Contact Hours
UNIT 1	Introductory Concepts: Goals and applications of networks, Categories of networks, Organization of the Internet, ISP, Network structure and architecture (layering principles, services, protocols and standards), The OSI reference model, TCP/IP protocol suite, Network devices and components. Physical Layer	8

UNIT 2	Link layer: Framing, Error Detection and Correction, Flow control (Elementary Data Link Protocols, Sliding Window protocols). Medium Access Control and Local Area Networks: Channel allocation, Multiple access protocols, LAN standards, Link layer switches & bridges	**8**
UNIT 3	Network Layer: Point-to-point networks, Logical addressing, Basic internetworking (IP, CIDR, ARP, RARP, DHCP, ICMP), Routing, forwarding and delivery, Static and dynamic routing, Routing algorithms and protocols, Congestion control algorithms, IPv6.	**9**
UNIT 4	Transport Layer: Process-to-process delivery, Transport layer protocols (UDP and TCP), Multiplexing, Connection management, Flow control and retransmission, Window management, TCP Congestion control, Quality of service.	**9**
UNIT 5	Application Layer: Domain Name System, World Wide Web and Hyper Text Transfer Protocol, Electronic mail, File Transfer Protocol, Remote login, Network management.	**8**
	TOTAL	**42**