Prerequisite	ITE <del>317</del>	Data Communication and Computer	L	Т	P	С	
Objectives  - To study the foundational principles, architectures, and techniques employed in computer networks To study the concepts of communication networks, protocols and their performance.  Students shall be able to - Understand about working of Intranet, LAN, WAN, MAN setups, different topologies Gain familiarity with common networking protocols and algorithms - Implement network protocols and analyze its performance.  INTRODUCTION TO COMPUTER NETWORKS Networking principles; switching: circuit switching, packet switching, frame relay, cell switching, multiple access.  Unit II - COMMUNICATIONS NETWORK PROTOCOLS Network protocol (syntax, semantics, and timing); Protocol suites (OSI and TCP/IP); Layered protocol software (stacks): Physical layer networking concepts; data link layer concepts; network layer concepts; transport and application layer concepts; Network Standards and standardization bodies.  Unit III - LOCAL AND WIDE AREA NETWORKS - LAN topologies (bus, ring, star), LAN technologies (Ethernet, token Ring, Gigabit Ethernet), Error detection and correction, Carrier sense multiple access networks (CSMA), Lang networks and wide areas. Protocols addressing, congession control, virtual circuits, quality of service). Internet - addressing, routing, end point control; Internet protocols - IP, TCP, UDP, LCP, W. HTTP, CIDR  Unit IV - ROUTING AND CONGESTION CONTROL ALGORITHMS - Hooding Minimal spanning trees; Bellman Ford, Dijkstera's, OSPF, BGP shortest path algorithms; The leaky bucket, floyd warshall and Random Early Detection congestion methods; Data security and integrity: Fundamentals of secure networks; cryptography: Encryption and privacy: Public key, protate key, symmetric key; Authentication protocols; Packet filtering; Firewalls, Virtual private networks; Transport layer security.  Unit V - NETWORK MANAGEMENT AND PERFORMANCE ANALYSIS OF NETWORKS - Overview of the issues of network management; Domain names and name services; Issues for Internet service providers (ISPs); Quality of service iss		_			_		
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