

Course Code	Course Title	L	T	P	C
OLMCA507	Computer Networks	3	1	0	4
Pre-requisite	NIL	Syllabus version			
		1.0			
Course Objectives:					
1. To learn the fundamental concepts of computer networking, protocols, architectures, and applications. 2. Gain expertise and knowledge about ISO-OSI layered Architecture. 3. To explain the major issues of the ISO-OSI layered Architecture.					
Course Outcomes:					
1. Understand the basic concepts of OSI Layer architecture, network topologies and switching. 2. Illustrate various techniques for error detection, correction, flow and error control mechanisms. 3. Analyze the concepts of Media Access Control, LAN technologies. 4. Design subnetting and enhance the performance of routing mechanisms. 5. Analyze Transport Layer Protocols, Congestion control mechanisms and identify various application layer protocols for specific applications.					
Module:1Physical Layer					
Introduction to Data Communication Networks - Topologies - Protocols and Standards - ISO / OSI model – TCP/IP Protocol suite- Addressing- Physical Address, Logical Address, Port address. Switching - Circuit switching- Datagram Networks- Virtual Circuit Networks- Structure of switch.					
Module:2Data Link Layer					
Introduction- Block Coding- Error detection and correction, Hamming Distance , Cyclic Redundancy Check, Checksum, Data Link Control – Framing, Flow and Error Control.					
Module :3Media Access Control					
Multiple Access – Random Access, ALOHA, CSMA, CSMA/CD, CSMA/CA, Controlled Access, Channelization- Frequency-Division Multiple Access (FDMA), Time-Division Multiple Access (TDMA) Code-Division Multiple Access (CDMA).					
Module :4LAN Technologies					
Wired LAN – IEEE standards, Standard Ethernet, Fast Ethernet, Gigabit Ethernet, Wireless LAN- Ethernet - IEEE 802.11 – Bluetooth.					
Module:5Network Layer					
Internetworking- Internet Protocol V4, Internet Protocol V6- Transition from IPv4 TO IPv6- Routing – Delivery- Forwarding- Unicast Routing Protocols – Multicast Routing Protocols.					
Module:6Transport Layer					
Process-to-Process delivery- User Datagram Protocol (UDP) – Transmission Control Protocol (TCP) – Congestion Control – Quality of services (QoS).					
Module:7Application layer					
Name Space- Domain Name Space –TELNET-Email- File Transfer Protocol (FTP),- Hypertext Transfer protocol (HTTP), Simple Network Management Protocol (SNMP).					

	Total Lecture hours:		120 Hours	
Text Book(s)				
1.	Behrouz A Forouzan, Data Communications and Networking, Tata Mc-Grawhill, 2017 5 th Edition.			
Reference Books				
1.	W. Stallings, Data & Computer Communications, Pearson, 2017 10 th Edition			
2.	J.F.Kurose and K.W.Ross, Computer Networking: A Top-Down Approach Featuring the Internet, Pearson Education, 2021 8 th Edition.			
Mode of evaluation:				
Recommended by Board of Studies			29-07-2022	
Approved by Academic Council			No. 67	Date 08-08-2022