

MCA- C202 Computer Networks				
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Course objective:				
<ol style="list-style-type: none"> 1. To develop an understanding of modern network architectures from a design and performance perspective. 2. To introduce the student to the major concepts involved in wide-area networks (WANs), local area networks (LANs) and Wireless LANs (WLANs). 				
Course outcomes:				
<ol style="list-style-type: none"> 1. Explain the functions of the different layer of the OSI Protocol. 2. Draw the functional block diagram of wide-area networks (WANs), local area networks (LANs) and Wireless LANs (WLANs) describe the function of each block. 3. For a given requirement (small scale) of wide-area networks (WANs), local area networks (LANs) and Wireless LANs (WLANs) design it based on the market available component 4. Configure DNS, TELNET, EMAIL, File Transfer Protocol (FTP), WWW, HTTP, SNMP, Bluetooth, Firewalls using open source available software and tools. 				
Data communication Components: Representation of data and its flow Networks, Various Connection Topologies, Protocols and Standards, OSI model, Transmission Media				
LAN: Wired LAN, Wireless LANs, Connecting LAN and Virtual LAN				
Techniques for Bandwidth utilization: Multiplexing - Frequency division, Time division and Wave division, Concepts on spread spectrum.				
Data Link Layer and Medium Access Sub Layer: Error Detection and Error Correction - Fundamentals, Block coding, Hamming Distance, CRC; Flow Control and Error control protocols - Stop and Wait, go back – N ARQ, Selective Repeat ARQ, Sliding Window, Piggybacking, Random Access, Multiple access protocols -Pure ALOHA, Slotted ALOHA, CSMA/CD, CDMA/CA				
Network Layer: Switching, Logical addressing – IPV4, IPV6; Address mapping – ARP, RARP, BOOTP and DHCP-Delivery, Forwarding and Unicast Routing protocols.				
Transport Layer: Process-to-Process Communication, User Datagram Protocol (UDP), Transmission Control Protocol (TCP), SCTP Congestion Control; Quality of Service, QoS improving techniques: Leaky Bucket and Token Bucket algorithm.				
Application Layer: Domain Name Space (DNS), DDNS, TELNET, EMAIL, File Transfer Protocol (FTP), WWW, HTTP, SNMP, Bluetooth, Firewalls, Basic concepts of Cryptography				
Recommended Books:				
<ol style="list-style-type: none"> 1. Behrouz A. Forouzan, Data Communication and Networking, McGraw- Hill 2. William Stallings, Data and Computer Communication, Pearson 				

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