MANGALORE UNIVERSITY

DEPARTMENT OF ELECTRONICS
MSc Electronics
ELS 455 -COMPUTER NETWORK

Course Outcomes:

1. To get familiar with basic of data communication and various type of computer network.
2. Describes the difference type of system and identifying ability to describe suitable model.
3. Design a small or medium sized computer network including media types, end devices, and interconnecting devices that meets a customer's specific needs.
4. To perform basic configurations on routers and Ethernet switches.
5. To demonstrate knowledge of programming for network communications and learn to simulate computer networks and analyze the simulation results
6. To troubleshoot connectivity problems in a host occurring at multiple layers of the OSI model

UNIT I

Introduction to Computer Networks-Uses of Computer NetworksNetwork, Hardware, Network Software, Reference Models, Example Networks, Network Standardization
The Physical Layer: -The Theoretical Basis For Data Communication, Guided Transmission Media, Wireless Transmission, Communication Satellites, Digital Modulation And Multiplexing, The Public Switched Telephone Network, The Mobile Telephone System, Cable Television.

12 Hours

UNIT II

The Data Link Layer - Data Link Layer, Design Issues, Error Detection and Correction, Elementary Data Link Protocols, Sliding Window Protocols, Example Data Link Protocols.
The Medium Access Control Sub layer - The Channel Allocation Problem, Multiple Access Protocols, Ethernet, Wireless LANs, Broadband Wireless.

12 Hours

UNIT III

The Network Layer -Network Layer Design Issues, Routing Algorithms, Congestion Control Algorithms. **The Transport Layer** - The Transport Service, Elements of Transport Protocols, Congestion Control. **The Application Layer:** - The Domain Name System, Electronic Mail, the World Wide Web.   **12 Hours**

Books:-

1. "Computer Networks" Andrew S. Tanenbaum, 5th Edition, Prentice Hall.
2. "Computer Networking: A Top-Down Approach" James F. Kurose 5th Edition Pearson India
3. "Data Communications and Networking" Ehrouz A. Forouzan 5th Edition McGraw-Hill