

**SREENIVASA INSTITUTE of TECHNOLOGY and MANAGEMENT STUDIES**

<b>II MCA - I Semester</b>	<b>L</b>	<b>P</b>	<b>C</b>
	<b>4</b>	<b>0</b>	<b>4</b>

**16MCA211**

**COMPUTER NETWORKS**

**Course Objectives:**

- To introduce the basics and various types of Computer Networks
- To understand the functionality of each layer of OSI and TCP/IP models and interactions between them with merits and demerits.
- To gain basic insight of various Protocols and Services.
- To introduce TCP and UDP Models

**Syllabus:**

**UNIT I : Introduction**

Uses of Computer Networks- Network Hardware- Network Software- References Models- The Physical Layer: Guided Transmission Media- wireless Transmission- Communication Satellites.

**UNIT II : The Data Link Layer**

Data link Layer Design Issues- Elementary Data Link Protocols- Sliding Window Protocols - The Medium Access Control Sublayer: Multiple Access protocols- Ethernet- Ethernet Cabling- Manchester Encoding- The Ethernet MAC Sublayer Protocol- Ethernet Performance, Wireless Lans

**UNIT III : The Network Layer**

Network Layer Design Issues- Routing Algorithms, Congestion Control Algorithms- Internetworking- The Network Layer in the Internet

**UNIT IV : The Transport Layer**

The Transport Service- Elements of Transport Protocols- The Internet Transport Protocols: UDP- TCP.

**UNIT V : The Application Layer**

DNS-The domain name system - Electronic mail- The world wide web – Multimedia.

### **Course Outcomes:**

- An understanding of various principles, protocols and design aspects of Computer Networking.
- After this course students could understand and explore the basics of Computer Networks and Various Protocols. She/he will be in a position to understand the World Wide Web concepts.
- After this course he/she will be in a position to administrate a network and flow of information further he/she can understand easily the concepts of network security, Mobile and Wireless networks.

### **TEXT BOOKS:**

1. Computer Networks, 4/e, 2008, Andrew S. Tanenbaum, Pearson Education, New Jersey.
2. Data Communications and Networking, 4/e, 2006, Behrouz A. Forouzan, Tata McGraw Hill, New Delhi.

### **REFERENCE BOOKS:**

1. Computer Communications and Networking Technologies, 1/e, 2001, Michael A. Gallo, William M. Hancock, Cengage Learning, New Delhi.
2. Computer Networks: Principles, Technologies and Protocols for Network Design, 1/e, 2006, Natalia Olifer, Victor Olifer, Wiley India, New Jersey.
3. Computer and Communication Network, 1/e, 2007, Nader F. Mir, Pearson Education, New Jersey.
4. Computer Networking: A Top-Down Approach Featuring the Internet, 3/e, 2005, James F. Kurose - K.W. Ross, Pearson Education, New Jersey.
5. Data and Computer Communications, 1/e, 2001, G.S. Hura and M. Singhal, CRC Press, Taylor and Francis Group, FL United States.

#### **Dr. S .Jyothi**

Professor, Dept. of Computer Science,  
Sri Padmavathi Mahila University,  
Tirupathi

University BOS Member

#### **Dr. N. Ch. S. N. Iyengar**

Sr. Professor,  
School of SCSE,  
VIT University,  
Vellore, T.N.

Academic Expert member