

**MARIS STELLA COLLEGE (AUTONOMOUS),VIJAYAWADA-8**  
**(Affiliated to Krishna University, Machilipatnam)**  
**SYLLABUS**

**Subject: Computer Science**

**Semester: VI**

**Course Title: Computer Networks**

**Course Code: COMPC083**

**No. of Hours: 45**

**Credits: 3**

**Objectives**

- To enable the students to gain knowledge in computer networking basics.
- To develop an understanding of different components of computer networks, various protocols, modern technologies and their applications.

**Course Outcomes**

**CO1:** Understand different components of computer networks, various protocols, modern technologies and their applications.

**CO2:** Identify different types of network topologies and protocols.

**CO3:** Describe the functions of each layer in OSI and TCP/IP model.

**CO4:** Explain the types of transmission media with real time applications

**CO5:** Describe the different layers with their protocols

**UNIT – I**

**(9 Hrs.)**

**Basic concepts:** Components of Data Communication, Protocols and Standards, Categories of Networks, Network Topologies; the OSI model; TCP/IP protocol suite.

**UNIT – II**

**(9 Hrs.)**

**Physical Layer:** Guided media, Transmission Media Devices- Repeater, Hub, Bridge, Switch, Router, and Gateway, Network Interface Card

**Data Link Layer:** Framing, Flow and Error Control, Protocols Shared media protocols - CSMA/CD and CSMA/CA.

**UNIT – III**

**(9 Hrs.)**

**Network Layer:** Circuit Switched Networks, Virtual Circuit Networks and Datagram networks.

**Congestion Control & Quality of Service:** Congestion, Congestion Control, Quality of Service.

**UNIT – IV****(9 Hrs.)**

**Transport Layer:** Transport services, Transport Layer protocol of TCP and UDP.

**UNIT – V****(9 Hrs.)**

**Application Layer:** Domain name space, WWW and HTTP, telnet, FTP, SMTP

**Network Security:** Common Terms- Firewalls, Virtual Private Networks

**Prescribed Book:**

**Title:** “Data Communication and Networking”

**Author:** BEHROUZ FOROUZAN

**Edition:** IV Edition, Tata Mc.Graw Hill.

**Reference Books:**

1. **Title:** “Data Networks”

**Author:** Dimitri Bertseks, Robert Gallager

**Edition:** 2<sup>nd</sup> Edition, Prentice Hall India.

2. **Title:** “Data & Computer Communication”

**Author.** W. Stalling,

**Edition:** 8<sup>th</sup> Edition, Prentice Hall of India, 2006.