

**JYOTI NIVAS COLLEGE AUTONOMOUS
SYLLABUS FOR 2018 BATCH AND THEREAFTER**

Programme: B.Sc.

Semester: VI

COMPUTER SCIENCE - VII

COMPUTER NETWORKS

Course Code: 18VICS7

No. of Hours: 45

COURSE OBJECTIVES:

- To deliver comprehensive view of Computer Network.
- To enable the students to understand the Network Architecture, Network type and topologies.
- To understand the design issues and working of each layer of OSI model.
- To familiarize with the benefits and issues regarding Network Security.
- Understanding of analog and digital transmission of data.

LEARNING OUTCOMES:

- Explain how communication works in data networks and the Internet.
- Recognize the different internetworking devices and their functions.
- Explain the role of protocols in networking.
- Analyze the services and features of the various layers of data networks.

UNIT I

(10 HRS)

Introduction: Data Communication – Networks – Protocols and Standards.

Basic Concepts: Line Configuration – Topology – Transmission Mode – Categories of Networks – Internetworks. **The OSI Model:** The Model – Functions of the Layers

UNIT II

(09 HRS)

Transmission of Digital Data: Digital data transmission – DTE-DCE interface – MODEMS
Transmission media: Guided media – Unguided media – Transmission impairment – performance.

UNIT - III

(09 HRS)

Data Link Control: Line Discipline-ENQ-ACK- Poll-Select-- Flow Control - Stop and Wait-Sliding Window – Error Control --Stop and Wait ARQ-Sliding Window ARQ.

UNIT IV

(09 HRS)

Local Area Networks: Ethernet –Token Bus – Token Ring – FDDI.

Switching: Circuit Switching – Packet Switching – Message Switching.

UNIT V

(08 HRS)

Transport Layer: Process to Process delivery–UDP-TCP-TCP services-TCP connection-Flow Control-Error Control-Congestion Control.

Upper OSI Layers: Session Layer – Presentation Layer –Translation-Encryption-Authentication-DataCompression – **Application Layer-** Email-Architecture-SMTP-Message Access Agent POP and IMAP-Web Based Mail- FTP.

REFERENCES:

1. Behrouz A. Forouzan. *Data Communications and Networking*. Tata McGraw-Hill Edition. 4th Edition.
2. Andrew s. Tanenbaum .*Computer Networks*. Pearson Education .4th Edition.
3. Alberto Leon- Garcia and Indra Widjaja.*Communication Networks- Fundamental Concepts and key Architectures*. Tata Mcgraw-Hill. 2nd Edition.