SYLLABUS

PRINCIPLES OF COMPUTER COMMUNICATIONS AND NETWORKS

(Open Elective-II)

IV-I:CSE(CS)								
CourseCode	Category	Hours/Week			Credits	MaxMarks		
EC4121OE	Open Elective-II	L	T	P	C	CIE	SEE	Total
		3	0	0	3	30	70	100
Contact Classes:45	Tutorial classes:15	Practical classes: Nil				Total Classes:60		
Prerequisites:None								

Course Objectives:

- To understand the concept of computer communication.
- To learn about the networkingconceptlayeredprotocols.
- Tounderstandvariouscommunicationsconcepts.
- To get the knowledge of various networking equipment.

CourseOutcomes:

- The student can get the knowledge of networking of computers, data transmission between computers.
- Willhavetheexposureaboutthevariouscommunicationconcepts.
- Willgetawarenessaboutthestructureandequipmentofcomputernetwork structures.
- Will get thorough awareness of physical and mac sublayer concepts.
- Thorough understanding of analog and digital systems.

UNIT-I

Overview of Computer Communications and Networking: Introduction to Computer Communications and Networking, Introduction to Computer Network, Types of Computer Networks, Network Addressing, Routing, Reliability, Interoperability and Security, Network Standards, the Telephone System and Data Communications.

UNIT-II

Essential Terms and Concepts: Computer Applications andapplication protocols, Computer Communications and Networking models, Communication Service Methods and data transmission modes, analog and Digital Communications ,Speed and capacity of a Communication Channel, Multiplexing and switching, Network architecture and the OSI reference model.

UNIT-III

Analog and Digital Communication Concepts: Representing data as analog signals, representing data as digital signals, data rate and band width reduction, Digital Carrier Systems.

UNIT-IV

Physical and data link layer Concepts: The Physical and Electrical Characteristics of wire, Copper media, fiber optic media, wireless Communications. Introduction to data link Layer, the logical link control and medium access control sub-layers.

UNIT-V

Network Hardware Components: Introduction to Connectors, Transreceivers and media convertors, repeaters, network interference cards and PC cards, bridges, switches, switches Vs Routers.

TEXTBOOKS:

1. Computer Communications and Networking Technologies, Michel A. Gallo and William H. Hancock, Thomson Brooks/Cole.
2. Data Communications and Networking–Behrouz A. Forouzan, Fourth Edition MC GRAW HILL EDUCATION,2006.

REFERENCEBOOKS:

1. Principles of Computer Networks and Communications, M. Barry Dumas, Morris Schwartz, Pearson.
2. Computer Networking: A Top-Down Approach Featuring the Internet, James F. Kurose, K.W. Ross, 3rd Edition, Pearson Education