NARSIMHA REDDY ENGINEERING COLLEGE
UGC AUTONOMOUS INSTITUTION
Maisammaguda (V), Kompally - 500100, Secunderabad, Telangana State, India

UGC - **Autonomous** Institute
Accredited by **NBA & NAAC** with **'A'** Grade
Approved by **AICTE**
Permanently affiliated to **JNTUH**

School of Computer Science

1: SYLLABUS (NR21)

III-II:CSE(CSE)									
Course Code	**Category**	**Hours/Weak**			**Credits**	**Max Marks**			
CS3103PC	**Core**	**L**	**T**	**P**	**C**	**CIE**	**SEE**	**Total**	
		3	**0**	**0**	**3**	**30**	**70**	**100**	
Contact Classes:45	**Tutorial classes:15**	**Practical classes: Nill**			**Total Classes:60**				
1. **Prerequisites: A course on "Programming for problem solving"** 2. **A course on "Data Structures"**									

Course Objectives

- The objective of the course is to equip the students with a general overview of the conceptsand fundamentals of computer networks.
- Familiarize the students with the standard models for the layered approach to communicationbetween machines in a network and the protocols of the various layers.

Course Outcomes

- Gain the knowledge of the basic computer network technology.
- Gain the knowledge of the functions of each layer in the OSI and TCP/IP reference model.
- Obtain the skills of subnetting and routing mechanisms.
- Familiarity with the essential protocols of computer networks, and how they can be applied innetwork design and implementation.

UNIT - I

Network hardware, Network software, OSI, TCP/IP Reference models, Example Networks:

ARPANET,Internet.

Physical Layer: Guided Transmission media: twisted pairs, coaxial cable, fiber optics, Wireless transmission.

UNIT - II

Data link layer: Design issues, framing, Error detection and correction.

Elementary data link protocols: simplex protocol, A simplex stop and wait protocol for an error-freechannel, A simplex stop and wait protocol for noisy channel.

Sliding Window protocols: A one-bit sliding window protocol, A protocol using Go-Back-N, A protocolusing Selective Repeat, Example data link protocols.

Medium Access sub layer: The channel allocation problem, Multiple access protocols: ALOHA, Carrier sense multiple access protocols, collision free protocols. Wireless LANs, Data link layer switching.

UNIT - III

Network Layer: Design issues, Routing algorithms: shortest path routing, Flooding, Hierarchical routing, Broadcast, Multicast, distance vector routing, Congestion Control Algorithms, Quality of Service, Internetworking, The Network layer in the internet.

UNIT - IV

Transport Layer: Transport Services, Elements of Transport protocols, Connection management, TCPand UDP protocols.

UNIT - V

Application Layer –Domain name system, SNMP, Electronic Mail; the World WEB, HTTP, Streaming audio and video.

TEXT BOOK:

1. Computer Networks -- Andrew S Tanenbaum, David. j. Wetherall, 5th Edition. Pearson Education/PHI

REFERENCE BOOKS:

1. An Engineering Approach to Computer Networks-S. Keshav, 2nd Edition, Pearson Education
2. Data Communications and Networking – Behrouz A. Forouzan. Third Edition TMH.