VNR VIGNANA JYOTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY

B.Tech. V Semester

(22PC2CB301) COMPUTER NETWORKS LABORATORY

TEACHING SCHEME		
L	T/P	C
0	2	1

EVALUATION SCHEME					
D-D	PE	LR	CP	SEE	TOTAL
10	10	10	10	60	100

COURSE OBJECTIVES:

- To learn and use network commands
- To learn and understand various error correction and detection mechanisms, Socket programming
- To implement and analyse various network protocols
- To learn and use simulation tools

COURSE OUTCOMES: After completion of the course, the student should be able to

CO-1: Implement error correction and error detection mechanisms

CO-2: Acquire the required skill to design simple computer networks

CO-3: Implement socket programming

CO-4: Use simulation tools to analyze the performance of various network protocols

COURSE ARTICULATION MATRIX:

*(Correlation of Course Outcomes with Program Outcomes and Program Specific Outcomes using **mapping levels 1 = Slight, 2 = Moderate and 3 = Substantial**)*

CO	PROGRAM OUTCOMES (PO)												PROGRAM SPECIFIC OUTCOMES (PSO)		
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	PO-12	PSO-1	PSO-2	PSO-3
CO-1	3	2	1	-	-	-	-	-	2	1	-	-	3	-	-
CO-2	3	2	1	1	2	-	-	2	2	1	-	2	3	1	2
CO-3	2	-	1	2	3	1	1	1	3	2	-	2	3	2	1
CO-4	2	-	3	3	3	2	1	-	3	3	1	3	3	3	3

LIST OF PROGRAMS:

WEEK 1:

Basic Networking commands, implement cross-wired cable and straight through cable clamping tool.

WEEK 2:

Implement on a data set of characters the three CRC polynomials – CRC 12, CRC 16

WEEK 3:

Implement the data link layer framing methods such as character stuffing and bit stuffing.

WEEK 4:
Establishing a network between computers.

WEEK 5:
Configuring FTP Server for file sharing.

WEEK 6:
Implement Dijkstra's algorithm to compute the Shortest path through a graph.

WEEK 7:
Study of Socket Programming and Client – Server model

WEEK 8:
Write a HTTP web client program to download a web page using TCP sockets.

WEEK 9:
Implementation of Subnetting

WEEK 10:
Study of Network Simulators

WEEK 11:
Write a Program to implement RSA Algorithm.

WEEK 12:
Simulate different types of Network Topologies.

WEEK 13:
Study of TCP/UDP performance using Simulation tool.

WEEK 14:
Simulation of Distance Vector/ Link State Routing algorithm.

WEEK 15:
Lab internal

TEXT BOOKS:

1. Computer Networks, A. Tannenbaum
2. Data and Computer Communication, William Stallings
3. Data communications and networking, Forouzan, 4th Edition, Mc Graw Hill Education

REFERENCES:

1. Network Security, Kaufman, R. Perlman and M. Speciner
2. UNIX Network Programming, Vol. 1,2 & 3, W. Richard Stevens
3. Computer Networking: A Top-Down Approach by James F. Kurose, Keith W. Ross Pearson Education, Inc

4. Cryptography and Network Security: Principles and Practice by William Stallings Pearson Education Limited
5. Networking for Systems Administrators (IT Mastery) by Michael W Lucas