DATA COMMUNICATION AND NETWORKING LABORATORY	
Course Code: CSL47	**Credits: 0:0:1**
Pre – requisites: Data Communication and Networking Course	**Contact Hours: 14P**
Course Coordinator: Dr. Shilpa Chaudhari	

Course Contents

Sl. No.	Topics Covered
	Cycle I
1.	Trace Hypertext Transfer Protocol using packet sniffer and packet analyser.
2.	Trace Domain Name Server using packet sniffer and packet analyser.
3.	Trace Internet Protocol and Internet Control Message Protocol using packet sniffer and packet analyser.
4.	Trace Dynamic Host Configuration Protocol using packet sniffer and packet analyser.
5.	Write a program for error detection using CRC-CCITT (16-bits).
6.	Write a program to find the shortest path between vertices using bellman-ford algorithm.
7.	Write a program for congestion control using leaky bucket algorithm.
	Cycle II
8.	Using TCP/IP sockets, write a client – server program where the client send the file name and the server send back the contents of the requested file if present.
9.	Write a program for Time Division Multiplexing Simulator. Show how the time division multiplexing technique works.
10.	Design and simulate a wired network with duplex links between ‘n’ nodes with CDR over UDP. Set the queue size vary the bandwidth and find the number of packets dropped.
11.	Design and simulate a four node point-to-point network, and connect the links as follows: n0-n2, n1-n2 and n2-n3. Apply TCP agent between n0-n3 and UDP agent between n1-n3. Apply relevant applications over TCP and UDP agents by changing the parameters and determine the number of packets sent by TCP/UDP.
12.	Design and simulate simple Extended Service Set with transmitting nodes in wireless LAN and determine the performance with respect to transmission of Packets.
13.	Design and simulate infrastructure less network, generate two traffic flows between nodes and analyse its performance.
14.	Design a wired network with ‘n’ nodes to observe the performance of two TCP variants (Reno and Tahoe). Simulate the designed network and observe the network performance.