

III/IV B. TECH. FIRST SEMESTER**COMPUTER NETWORKS AND OPERATING SYSTEMS LAB(Required)****Course Code:CS5L3****Credits: 2****Lab Hours : 3 periods/ week****Internal assessment: 25 Marks****Semester end examination: 50 Marks**

Prerequisites: Computer Networks, Operating Systems

Computer Networks**Course Objectives:**

1. To provide students with a theoretical and practical base in computer networks.
2. To Understand the functionalities of various layers of OSI model

Course Outcomes:

At the end of this course student will:

- CO1) Implement DLL functionalities like framing, error detection mechanisms
- CO2) Implement basic routing Algorithms

Operating Systems**Course Objectives:** to provide students a theoretical and practical base in Operating Systems.**Course Outcomes:** At the end of the course students will

- CO1) Implement CPU Scheduling algorithms.
- CO2) Implement memory management schemes.
- CO3)Implement Banker's Algorithm for deadlock Avoidance.

Syllabus:**Part - A**

1. Implement the data link layer framing methods such as character, character stuffing and bit stuffing.
2. Implement on a data set of characters the three CRC polynomials – CRC 12, CRC 16 and CRC CCIP.
3. Implement Dijkstra's algorithm to compute the Shortest path thru a graph.

4. Take an example subnet graph with weights indicating delay between nodes. Now obtain Routing table at each node using distance vector routing algorithm
5. Take an example subnet of hosts. Obtain broadcast tree for it.

PART-B

6. Implement CPU Scheduling Algorithms: First Come First Serve & Shortest Job First.
7. Implement CPU Scheduling Algorithms : Priority & Round Robin
8. Memory Management Scheme- I : First Fit & Best Fit
9. Memory Management Scheme-II : FIFO & LRU
10. Implement Banker's Algorithm for deadlock Avoidance.

Learning Resource**Text Books**

1. Computer Networks Top Down Approach by Behrouz A Forouzan, Fourth Edition. TMH.
2. Operating Systems Concepts – Abraham Silberchatz, Peter B. Galvin, Greg Gagne , 8th Edition