3/4 B.Tech. FIFTH SEMESTER

EM5L3 **OPERATING SYSTEMS LAB** **Credits: 2**

Lab/Practice: 3 Periods/week **Internal assessment : 25 marks**
Semester end examination: 50 marks

Course Objectives:

- To understand the implementation of various CPU scheduling algorithms.
- To understand the implementation of different memory management schemes.
- To learn Deadlock algorithms and page replacement algorithms
- To understand the operating System functionalities

Learning Outcomes:

Students will be able to:

- Implement CPU scheduling algorithms
- Implement different memory management schemes.
- Be familiar with virtual memory.
- Be familiar with device interrupts and how they are used in an operating system implementation.

LIST OF PROGRAMS

1. Program to implement FCFS scheduling algorithm.
2. Program to implement SJF scheduling algorithm.
3. Program to implement Round Robin scheduling algorithm.
4. Program to implement Dining Philosophers Problem using Semaphores.
5. Program to implement Producer Consumer Problem using Semaphores.
6. Program to implement Page Replacement algorithms.
   a) FIFO b)LRU c)Optimal
7. Program to implement for shared variables using Monitors.
8. Program to implement paging Techniques of Memory management.
9. Program to implement Bankers algorithm for Deadlock Prevention.
10. Program to implement Bankers algorithm for Deadlock Avoidance.

Learning resources

Text Book:

1. Abraham Silberschatz, et al., Operating System Concepts, 8 ed.: John Wiley.

Reference Books:

1. P. Chandra and Bhatt, An Introduction to Operating Systems Concepts and Practice: PHI.
2. C. Crowley, Operating Systems : A Design-Oriented Approach: Tata McGraw HillCo, 1998.
3. Stallings and Operating Systems'- Internal and Design Principles, 5 ed.: PHI, 2005.