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***CSL4404 Operating System Lab***

**L-T-P-Cr: 0-0-3-1**

**Pre-requisites:** Basic knowledge of LINUX Commands, C language, enrollment in Operating System course

**Objectives/Overview:**

* To learn implementing UNIX system calls using C
* To implement various CPU scheduling and page replacement techniques
* To implement various memory management schemes

**Course Outcomes:**

At the end of the course, a student should:

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| **S.NO** | **Outcomes** | **Mapping to PO** |
| CO-1 | Be able to implement various UNIX system calls using C | PO1, PO2 |
| CO-2 | Be able to implement various CPU scheduling algorithms | PO2, PO3, PO4 |
| CO-3 | Be able to implement various memory management schemes | PO1, PO2, PO4 |
| CO-4 | Be able to implement some page replacement algorithms | PO2, PO3, PO4 |

**List of Experiments:**

1. Perform an in-depth analysis of a C program compilation.
2. Write a C program to demonstrate the usage of following UNIX system calls: open, read, write, close.
3. Write a C program to demonstrate the usage of stat system call
4. Write a C program to demonstrate the working of fork system call.
5. Write a C program to demonstrate the usage of wait and exit system calls.
6. Write a C program to demonstrate the working of exec system call.
7. Write a C program for using signal system call
8. Write a C program to implement Inter-Process communication using pipes
9. Mini project allocation
10. Write C programs to implement the following CPU Scheduling Algorithms:

a. FCFS b. Shortest Job First

1. Write a C program to implement the following CPU Scheduling Algorithms:

a. Round Robin b. Priority based

1. Write a C program for solving Producer-Consumer problem using Semaphores.
2. Write a C program to implement bankers’ algorithm.
3. Write a program for FIFO page replacement algorithm.
4. Write a program for LRU page replacement algorithm.