



Muzaffarpur Institute of Technology (MIT), Muzaffarpur

(Under the Department of Science & Technology Govt. of Bihar, Patna)

Department of Information Technology

COURSE NAME: OPERATING SYSTEM LABORATORY

COURSE CODE: 061503

List of Experiments(Mandatory):

1. Installation of Linux based Operating System.
2. Demonstration of uses of some Linux Commands: ls, cd, rm, mv, cp, du, md, pwd, ps, kill, etc.
3. Demonstration of Process management
 - a) Creation [Fork]
 - b) Program execution [Execvp]
 - c) Child Process handling [wait]
 - d) Termination [exit/_exit with return from child]
 - e) Event Handling [Signal]
4. Demonstration of Process Synchronization using Mutex and Semaphores.
 - a) Polling System/Railway reservation system
 - b) Producer-Consumer Problem: One Buffer & N Buffer
5. Implementation of CPU Scheduling Algorithms
 - a) Non-pre-emptive: - FCFS (First Come First Serve) & SRN (Shortest Request Next)
 - b) Preemptive: - Round Robin & LCN (Least Completed Next)
6. Implementation of Memory Management Algorithms
 - a) First fit
 - b) Best fit
 - c) Next fit
7. Implementation of Page Replacement Algorithms
 - a) FIFO (First In First Out)
 - b) LRU (Least Recently Used)
 - c) Optimal
8. Implementation of Resource Allocation Algorithm: Banker's Algorithm.
9. Implementation of Disk Scheduling Algorithms
 - a) FCFS (First Come First Serve)
 - b) SSTF (Shortest Seek Time First)
10. Configuration of Following Servers in Linux based Operating System
 - a) DHCP
 - b) FTP
 - c) Apache/Nginx

List of some advance Experiments:

1. Demonstration of Process Management using pthread.
2. Demonstration of Synchronization: Dining Philosopher's problem.
3. Implementation CPU Scheduling Algorithms
 - a) Non-Pre-emptive: - HRN (Highest response ratio Next)
 - b) Pre-emptive: - STG (Shortest Time to Go)
4. Implementation of Page Replacement Algorithms
 - a) Clock
 - b) Second Chance
 - c) LRU
 - d) NRU
5. Implementation of Disk Scheduling Algorithms
 - a) SCAN
 - b) C-SCAN
6. Configuration of Following Servers in Linux based Operating System
 - a) DNS
 - b) SAMBA
 - c) SMTP