

## **Name of the laboratory: Operating System**

The purpose of this lab is to provide a general understanding of the structure and key functions of the operating system. Compare and contrast the common algorithms used for both pre-emptive and non-pre-emptive scheduling of tasks in operating systems, such as priority and performance comparison.

### **List of the equipment:**

1. 36 number of Zenith Pentium PC Dual Core CPU E5300 @ 2.70 GHz
2. 2 GB RAM
3. 500 GB
4. SATA Hard Disk @ 7200 RPM
5. 18.5" LCD Monitor
6. Microsoft Windows 7 Academic Get Genuine Legalization License
7. PUTTY SSH Telnet client for Linux
8. Dev C++ / Borland C++ Compiler.

### **List of experiments:**

- 1 Write C programs to simulate the following CPU scheduling algorithms:  
a) Round Robin b) SJF
- 2 Write C programs to simulate the following CPU scheduling algorithms:  
a) FCFS b) Priority
- 3 Write C programs to simulate the following File organization techniques:  
a) Single level directory b) Two level c) Hierarchical
- 4 Write C programs to simulate the following File allocation methods:  
a) Contiguous b) Linked c) Indexed
- 5 Write a C program to copy the contents of one file to another using system calls.
- 6 Write a C program to simulate Bankers Algorithm for Dead Lock Avoidance
- 7 Write a C program to simulate Bankers Algorithm for Dead Lock Prevention
- 8 Write C programs to simulate the following page replacement algorithms:  
a) FIFO b) LRU c) LFU
- 9 Write C programs to simulate the following techniques of memory management:  
a) Paging b) Segmentation
- 10 Write a C program to implement the ls | sort command. (Use unnamed Pipe)
- 11 Write a C program to solve the Dining- Philosopher problem using semaphores.
- 12 Write C programs to implement ipc between two unrelated processes using named pipe.