**13CS4108-OPERATING SYSTEMS**

 Credits: 4

Hours /week: 4 Hrs Sessional Marks: 40

Univ.Exam.Duration: 3Hrs Univ.Examination.Marks: 60

**UNIT-I**

**Computer System & Operating System Overview:** Overview of Computer System hardware- instruction execution- I/O function- Interrupts – Memory hierarchy- I/O Communication Techniques. Operating System Objectives and functions, Evaluation of operating systems- Example systems.

**UNIT-II**

**Process Description**- Process Control- Process states- Process and Threads- Examples of process description and control.

**Concurrency:** Principles of Concurrency- Mutual Exclusion – Software and hardware approaches- semaphores- Monitors- Message Passing- Readers Writers problem.

 **UNIT-III**

**Principles of deadlock**- deadlock prevention, detection and avoidance dining philosophers problem- Example Systems.

**Memory Management**: Memory Management requirements- loading programmes into main memory – virtual memory- hardware and Control structures- OS software- Examples of Memory Management.

 **UNIT-IV**

**Uni-processor Scheduling:** Types of Scheduling- Scheduling algorithms- I/O Management and Disc Scheduling- I/O devices- Organization- of I/O function- OS design issues- I/O buffering- Disk I/O – disk scheduling policies- examples System.

**UNIT-V**

**File management and Security:** Overview of file management- file organization and access- File Directories- File sharing- Record blocking- secondary storage Management- Example system.

**Security:** Security threats- Protection- Intruders- Viruses- trusted Systems

**TEXT BOOKS:**

1. Operating. System`- Internal and Design Principles, Fifth Edition- 2005, Pearson

 Education. / PHI

1. Operating System Principles- Abraham Silberchatz, Peter B.Galvin, Greg Gagne, 7th Edition John Wiley.

**REFERENCES:**

1. Operating Systems A design approach- Crowley, TMH.
2. Modern Operating Systems, Andrew S Tanenbaum, 2nd Edition, PHI/PEARSON.