OPERATING SYSTEMS SYLLABUS

UNIT I

Introduction:

- **Operating System** :
  - User View
  - System View
- Operating System Operations
- Operating-System Services
- System Calls.

Process Concept:

- Process Concept
- Process Scheduling
- Operations on Processes
- Inter Process Communication

Multithreaded Programming:

- Overview
- Multicore Programming
- Multi-Threading
- Models
- Threading Issues

UNIT II

Process Scheduling:

- Basic Concepts
- Scheduling Criteria
- Scheduling Algorithms

Synchronization:

- Background
- The Critical-Section Problem
- Peterson's Solution
- Synchronization Hardware
- Mutex Locks
- Semaphores
- Classic Problems of Synchronization.

UNIT III:

Deadlocks:

- System Model
- Deadlock Characterization
- Methods for Handling Deadlocks
- Deadlock Prevention
- Deadlock Avoidance
- Deadlock Detection
- Recovery from Deadlock.

Memory Management Strategies:

- Background
- Swapping
- Contiguous Memory Allocation
- Segmentation
- Paging

Virtual Memory Management:

- Background
- Demand Paging
- Copy-on-Write
- Page Replacement-FIFO, LRU, OPTIMAL
- Thrashing

UNIT IV:

File System:

- File Concept
- Access Methods
- Directory and Disk Structure

Implementing File Systems:

- Allocation Methods
- Free-Space Management

Mass-Storage Structure:

- Overview of Mass-Storage Structure
- Disk Scheduling
- RAID Structure.