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## OPERATING SYSTEM-II

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**Paper Code**                      **CEN-506**

**Course Credits**                **4**

**Lectures / week**               **3**

**Tutorial / week**                **1**

**Course Description**        **UNIT – I**

Introduction, defining deadlocks, modeling of deadlocks, Conditions for deadlock, dealing with deadlock, Deadlock avoidance and deadlock prevention, Recovery from deadlock.

### **UNIT- II**

Introduction, Files and File System, File Structure, File naming and file types, File attributes, File Operation, Implementation of File Operations, File Access, Directories- Single Level, Two level, hierarchical or Tree Structure, Acyclic Graph structure and file sharing, File Protection, File system Mounting. File system implementation- introduction, file system structure, Implementation of data structures, Implementation of FILE Operations, File allocation Methods, Free Space Management, Directory implementation, File System Inconsistency, File system Performance Issues.

### **UNIT- III**

Introduction, Disk Scheduling, Disk Scheduling Criteria, Disk Scheduling algorithms, Raid Structure- Raid levels. Security Issues- Introduction, Security Objectives, Security Problems, Intruders, some standard security attacks, Security levels, Inside system attacks, Outside system attacks- Viruses, types of Viruses, worms, bots, mobile code, Root kit.

### **UNIT- IV**

Distributed Operating system: Introduction, Characteristics of distributed systems, Network operating Systems, Issues in Distributed Operating system, Communication in Distributed

Systems- Message passing model, Remote Procedure Calls

## **UNIT – V**

Introduction, introduction to Mobile Devices, Characteristics of mobile devices, Mobile OS, Android OS- power Management, memory management, scheduling, IPC, File management, Security. Case- Studies- Linux- Design Principles, Kernel Modules, Process Management, Scheduling, Memory Management, File Systems, Input and Output, interprocess Communication, Security.

### **References / Text**

#### **Books:**

- Operating System Concepts: 8<sup>th</sup> Edition: Avi Silberschatz, Galvin, Greg Gagne.

#### **Computer Usage / Software Requires:**

- Principles of Operating Systems: Naresh Chauhan
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