

**UNIT I****Chapter 1 : Overview of Operating System 1-1 to 1-38**

Syllabus : Operating System : Concepts, Components of Operating system, Operations of OS : Program management, Resource management, Security and Protection. Views of OS : User view, System view Pending. Different Types of Operating systems : Batch operating system, Multi Programmed, Time Shared OS, Multiprocessor Systems, Distributed Systems, Real time systems, mobile OS (Android, iOS). Command line based OS : DOS, UNIX, GUI Based OS : Windows, Linux

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UNIT II**Chapter 2 : Services and Components of Operating System 2-1 to 2-22**

Syllabus : Different Services of Operating System. System Calls- Concept, Types of system calls. OS Components: Process Management, Main Memory Management, File Management, I/O System Management, Secondary Storage Management. Use of Operating system Tools- User Management, Security policy, Device management, Performance Monitor, Task Scheduler.

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UNIT III

Chapter 3 : Process Management 3-1 to 3-16

Syllabus : Process : Process States, Process Control Block (PCB). Process Scheduling : Scheduling Queues, Schedulers, Context Switch. Inter-Process Communication (IPC) :Introduction, Shared Memory Systems and Message Passing Systems. Threads :Benefits, User and Kernel Threads, multithreading models: Many to one, One to One, Many to Many. Execute Process Commands : like ps, wait, sleep, exit, kill

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UNIT IV

Chapter 4 : CPU Scheduling and Algorithms

4-1 to 4-40

Syllabus : Scheduling Types : Scheduling Objectives, CPU and I/O burst Cycles, Pre-emptive, Non-Pre-emptive Scheduling, Scheduling criteria. Types of Scheduling Algorithms :First Come First Served (FCFS), Shortest Job First (SJF), Shortest remaining time Next (SRTN), Priority Scheduling, Round Robin (RR), Multilevel Queue scheduling. Deadlock : System Model, Necessary Conditions Leading to deadlocks, Deadlock handling: Prevention, Avoidance.

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Syllabus : Basic Memory Management: Partitioning, Fixed and Variable, Free Space management Techniques: Bitmap, Linked List Virtual Memory : Introduction to Paging, Segmentation, fragmentation and Page Fault. Page Replacement Algorithms : FIFO, LRU, Optimal

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Syllabus : File : Concepts, Attributes, Operations, Types and File System Structure. Access Methods : Sequential, Direct, Swapping, File Allocation Methods: Contiguous, Linked, and Indexed. Directory Structure : Single-Level, Two levels, Tree Structured directory, Disk Organization and Disk structure: Physical Structure, Logical Structure, RAID Structure of Disk, RAID levels 0 to 6.

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