Syllabus

Unit-I: Introduction (06 Hrs.): Evolution of OS, Types of OS, Basic hardware support necessary for modern operating systems, services provided by OS, system programs and system calls, system design and implementation.

Unit-II: File Systems (10 Hrs.): File systems: File concept, Access methods, Disk space management and space allocation strategies, directory structures, Recovery, Log structured File System, disk arm scheduling strategies.

Unit-III: Process and Its Scheduling (10 Hrs.): Process concept, process control block, Types of scheduler, context switch, threads, multithreading model, and goals of scheduling and different scheduling algorithms.

Unit-IV: Memory Management (10 Hrs.): Contiguous allocation, Relocation, Paging, Segmentation, Segmentation with paging, demand paging , Virtual Memory Concepts, page faults and instruction restart , page replacement algorithms, working sets , Locality of reference, Thrashing, Garbage Collection.

Unit-V: Process management and synchronization (10 Hrs.): Concurrency conditions, Critical section problem, software and hardware solution, semaphores, conditional critical regions and monitors, classical inter process communication problems.

Unit-VI: Deadlocks detection & avoidance (10 Hrs.) : Deadlock definitions, Prevention, Avoidance, detection and Recovery, Goals of Protection, access matrix, Deadlock implementation.

Content beyond the syllabus (04 Hrs.) : Recent trends in Operating System, Introduction to Advanced OS & its Application.

Text Books: 1. Operating System concepts – Silberchatz & Galvin, Addison Wesley, 6th Edn. 2. Modern Operating Systems – Tanenbaum,