5TH SEMESTER B.Tech.(CSE/IT)

F.M.- 70

BCS-302   **OPERATING SYSTEMS (3-0-0) Cr.-3**

Module – I
Introduction: What is an Operating Systems?

Simple Batch Systems, Multiprogramming and Time-Sharing systems. Personal Computer Systems, Parallel Systems, Distributed systems and Real time Systems.

Operating Systems structures: systems components, protection system, O.S. Services, system calls.

Process Management: Process concept, process scheduling, Operation on process, Cooperating Processes, Inter process communication. Threads CPU Scheduling: Basic concepts, scheduling algorithms.

Module - II
Deadlocks: System model, Deadlock Characterization Methods for Handling Deadlocks, Deadlock Prevention, Deadlock avoidance, Deadlock Detection, recovery from Deadlock.

Memory management: Background, Logical versus Physical Address space, swapping, contiguous Allocation. Paging, Segmentation.

Virtual memory: Background, Demand paging, performance of Demand paging, Page Replacement, page Replacement Algorithms. Allocation of frames, Thrashing, Demand Segmentation.

Module - III
File – system Interface : file concept, Access Methods Directory implementation, Recovery.

Module - IV

I/O systems: Overview, I/O Hardware, Application of I/O interface, Kernel I/O – subsystem Transforming I/O requests to Hardware operations. Secondary storage Structure: Disk Structure. Disk scheduling, Disk management, Swap space management, Disk Reliability, Case Studies LINUX, WINDOW NT.

TEXT BOOK
Operating System Concepts: Abraham Silberschatz and Peter Bear Galvin, Addison wesley
Chapter – 1, Chapter –3 (3.1,3.2,3.3), Chapter – 4, chapter – 5 (5.1, 5.2, 5.3) , Chapter –7 (7.1,-7.7), Chapter-8, chapter – 8, Chapter – 9, Chapter-10, Chapter- 11, Chapter-12, (12.1-12.5), Chapter-13(13.1-1.35)

Reference Book :
1. Operating System, McGraw Hill, Madnik & Donovan.
2. Operating Systems and system progamming, SCITECH, P. Blkeiahn Prasad.
3. Moswen O.S. – PHI, Andrew, S. Tannenbaum