

MTCE 604A

RESOURCE MANAGEMENT OF COMPUTER SYSTEMS

L	T	P
4	0	0

Credits : 4

Historical perspectives, concurrent processes; mutual exclusion and synchronization, system calls and protection; context switching and the notion of a process and threads; synchronization and protection issues; scheduling; memory management including virtual memory and paging techniques; architecture and device management, process deadlocks-models of deadlocks, resources; graph reduction method, deadlock detection, prevention and avoidance.

Distributed operating systems: Architecture, design issues, Lamport's logical clocks, vector clocks, causal ordering of messages, distributed mutual exclusion, token and non token based algorithms. Distributed file system: Mechanism for building DFS, design issues of DFS, case studies. Protection and security, access matrix model, implementation of access matrix model using the capabilities, access control list, lock key methods.

Advance models: Take grant method, Bell La Padula model.

Case studies. Laboratory experiments on internals of Linux, Windows NT.

References:

- | | |
|--|-------------------|
| 1. Design of the Unix operating system | Maurich Bach |
| 2. Distributed Operating System. | Tanenbaum |
| 3. Principles of Operating Systems | William Stallings |