

MCA I Year I Semester Subject Code: 24MCA1004 Operating Systems

Contact Hour	Unit No.	Topic Name	Teaching Methodology	Remarks
1	1	Overview of Operating System	Blackboard	
2	1	Operating System Services	Blackboard	
3	1	Types of Operating Systems	Blackboard	
4	1	System Calls – Concepts	Blackboard	
5	1	Types of System Calls	Blackboard	
6	1	Process Concept	Blackboard	
7	1	Process Scheduling – Introduction	Blackboard	
8	1	Operations on Processes	Blackboard	
9	1	Scheduling Criteria	Blackboard	
10–11	1	Scheduling Algorithms (FCFS, SJF, Priority, Round Robin, etc.)	Blackboard	
12	1	Evaluation of Scheduling Algorithms	Blackboard	
13	2	Threads: Overview & Multithreading Models	Blackboard	
14	2	Thread Libraries, Java Threads	Blackboard	
15	2	Threading Issues & OS Examples	Blackboard	
16	2	CPU Scheduling – Recap & Multiprocessor Scheduling	Blackboard	
17	2	Thread Scheduling	Blackboard	
18	2	OS Examples in Scheduling	Blackboard	
19	2	Process Synchronization – Introduction & Critical Section Problem	Blackboard	
20	2	Peterson’s Solution & Synchronization Hardware	Blackboard	
21–22	2	Semaphores & Classic Synchronization Problems (Readers-Writers, Dining Philosophers, etc.)	Blackboard	
23	2	Monitors and Atomic Transactions	Blackboard	
24	3	Swapping & Contiguous Memory Allocation	Blackboard	
25–26	3	Paging – Concepts, Address Translation, Page Table Structures	Blackboard	
27	3	Segmentation	Blackboard	
28	3	Virtual Memory: Background & Demand Paging	Blackboard	
29	3	Copy-on-Write & Page Replacement Algorithms	Blackboard	
30	3	Allocation of Frames	Blackboard	
31	3	Thrashing & Memory-Mapped Files	Blackboard	
32	4	File-System Interface: Concept, Access Methods	Blackboard	

33	4	Directory Structure, Mounting, File Sharing, Protection	Blackboard	
34	4	File System Structure & Implementation	Blackboard	
35	4	Directory Implementation	Blackboard	
36–37	4	Allocation Methods: Contiguous, Linked, Indexed	Blackboard	
38	4	Free-Space Management	Blackboard	
39	5	Deadlocks – System Model & Characterization	Blackboard	
40	5	Deadlock Prevention	Blackboard	
41	5	Deadlock Detection & Avoidance	Blackboard	
42	5	Recovery from Deadlock	Blackboard	
43	5	Overview of Mass Storage Structure	Blackboard	
44	5	Disk Structure & Attachment	Blackboard	
45	5	Disk Scheduling Algorithms	Blackboard	
46	5	Block vs Character Devices	Blackboard	
47–48	5	Summary of Storage Management Concepts & Problem Solving	Blackboard	