LESSON PLAN

Subject: Operating Systems **Subject code: MCA 20-13**
Semester: I

SNo	Topic	No. of Lectures	CO Covered	Teaching Methodology
1	Introduction to Operating Systems	1		Board
2	OS Structure: Monolithic, Layered, Microkernel	1		PPT
3	Types of OS: Batch Processing Systems, Multi-programming Systems	1		Board
4	Types of OS: Time-sharing, Desktop Systems	1		PPT
5	Types of OS: Multi-processor, Distributed Systems	1	**CO1**	Board
6	Types of OS: Clustered, Real-time, Handheld Systems	1		PPT
7	Open-source Operating Systems: Linux, FreeBSD	1		Video
8	OS Services: Types of Services, User and System Interface	1		Board
9	System Calls: Process Control, File Manipulation	1		PPT
10	Doubt Clearing Session & Test for Unit I	1		Board
11	Process Concepts: Process, Process State, Process Control Block	1		Video
12	Process Operations: Creation, Termination, Fork, Wait	1		Board
13	CPU Scheduling: Scheduling Criteria	1	**CO2**	PPT
14	Scheduling Algorithms: FCFS, Shortest Job Next	1		Video
15	Scheduling Algorithms: Priority Scheduling, Round Robin	1		Board
16	Comparative Study of Scheduling Algorithms, Multiple Processor Scheduling	1		PPT

17	Concurrent Processes: Critical Section Problem	1	**CO2**	Video
18	Semaphores and Monitors: Concept, Implementation	1		PPT
19	Classical Process Coordination Problems: Bounded Buffer, Readers-Writers	1		Video
20	Doubt Clearing Session & Test for Unit II	1		Board
21	Deadlock Concepts: Characterization, Mutual Exclusion, Hold and Wait	1	**CO3**	PPT
22	Deadlock Handling: Prevention, Avoidance, Detection, Recovery	1		Video
23	Memory Management Concepts: Swapping, Paging, Segmentation	1		Board
24	Virtual Memory Concepts: Demand Paging, Page Replacement	1		PPT
25	Page Replacement Algorithms: FIFO, Optimal, LRU	1		Video
26	File Concepts: File Attributes, Operations, Types	1		Board
27	Directory Structure & Implementation	1		PPT
28	File System Implementation: File Allocation Methods, Recovery	1		Video
29	Disk Scheduling: Disk Scheduling Algorithms	1		PPT
30	Doubt Clearing Session & Test for Unit III	1		Board
31	Protection Concepts: Goals, Mechanisms	1	**CO4**	Video
32	Security: Security Problems, Authentication, Encryption	1		PPT

33	Security Tools: Intrusion Detection, Virus Protection	1	**CO4**	Video
34	Distributed Systems: Types, Network Structures, Topologies	1		PPT
35	Distributed File Systems: File Replication, Design Issues	1		Board
36	Distributed Synchronization: Concurrency Control	1		Video
37	Distributed Deadlock Handling: Prevention, Detection, Recovery	1		PPT
38	Case Studies of Distributed Systems	1		Video
39	Doubt Clearing Session & Revision	1		Board
40	Comprehensive Test for All Units	1	**CO1 TO CO4**	Board