MCA-201 - Operating System & Linux Progarmming [2022-23] :: Lesoon Plan

UNIT	Topic	Approx. lectures
1	**Computer System Overview, Operating System Overview**	
	Basic Elements, Processor Registers,	**7**
	Instruction Execution, Interrupts	
	Memory Hierarchy, Cache Memory	
	Operating System: Introduction, Objectives, Functions, Evolution, Major Achievements,	
	Characteristics of Modern Operating System.	
2	**Process and Threads, Concurrency, Deadlock and Scheduling**	
	Process Concept, Process States,	**16**
	Process Control, System Calls for Process Management (fork, wait),	
	Process Scheduling: Types and Algorithms	
	Introduction to Threads	
	Principles of Concurrency, Semaphores	
	Monitors, Reader/Writer Problem	
	Deadlock: Introduction, Principles of Deadlock, Deadlock Prevention	
	Deadlock Avoidance, Deadlock Detection.	
3	**Memory Management**	
	Memory Management Requirements	**13**
	Memory Partitioning,	
	Paging	
	Segmentation	
	System Calls for Memory Management(shmget, shmat, shmdt, shmctl)	
	Hardware and Control Structures, Virtual Memory	
	Operating System Software.	
4	**Input/Output and File Management**	
	Overview, Disk Scheduling	**9**
	Redundant Array of Independent Disks	
	File Management Overview	
	File Organization and Access	
	System Calls for File Management (open, close, read, write, lseek)	
5	**Linux Basic Commands and Shell Scripts**	**Lab Practicals**
	Basic commands: who, whoami , man, ps ,pwd,echo	
	Directory Handling Command: cd ,mkdir,rmdir	
	File Handling Command: cat,cp,mv,rm,wc	
	Shell Script: read Command, Command Line Arguments, if, case, expr (artithmetic operation),	
	while Loop, for Loop.	
	TOTAL	**45**