Course Outline

Chapter	Topics	Labs
1	Intro to OS Computer-System Architecture Basic OS Security	
2	System Calls API Mechanisms and Policies OS Structure	
3	Process Schedulers	Creating a Shell
4	Threads Multithreading Models Thread Libraries	
	Test 1	
5	CPU Scheduler Pre-emptive scheduling Non-preemptive scheduling Thread Scheduling Multiple- Processor Scheduling Algorithm Evaluation	
6	Process synchronization Critical Section Problem Semaphores Deadlock and Starvation Classic Problems of Synchronization Monitors Atomic Transactions	Producer-Consumer Problem Write with semaphore Then with monitor
7	Deadlocks Necessary Conditions Deadlock Prevention Deadlock Advoidance Deadlock Detection Deadlock Recovery	
	Test 2	
8	Dynamic Loading Dynamic Linking Fragmentation Paging Segmentation	
9	Virtual Memory Demand paging Page Replacement Algorithms Frame Allocation Algorithms Thrashing	Memory Manager

Note five projects in Bic and Shaw's OS book

1) Process/Thread Synchronization
2) Process and Resource management
3) Main Memory Management
4) Page Replacement Algorithms
5) File System
6) Other 1) Timer Facility, 2) Process Scheduling, 3) Banker's Algorithm, 4) Disk Scheduling Algorithm, 5) Stable Storage

Dhamdhere

1) Implementing a shell
2) Interprocess Communication – could generate deadlock
3) Disk scheduler
4) Simulation of Virtual Memory