

CSC 251 - Operating System Outline

General Information

Course Number	CSC-251- Operating System
Credit Hours	4 (Theory Credit Hour = 3, Lab Credit Hour = 1)
Prerequisite	None
Course Instructor	Dr. Raheel Ahmed Memon

Course Objectives

The main objectives of the course are to give students the basic concepts of an operating system, types of an operating system, computer system structures, process management, CPU Scheduling, Process synchronization, Deadlock, Memory management and Virtual memory management. Furthermore, the students will learn the operating system design algorithms often based on those used in existing commercial operating systems. Our aim is to present these concepts and algorithms in general setting that are not tied to one particular operating system.

Catalog Description

CSC-251

Course Content

Week	Topics	Suggested Reading
1	Introduction to course What Operating Systems Do, Computer-System Organization, Computer-System Architecture, Operating-System Operations, Resource Management, Security and Protection, Virtualization, Distributed Systems, Kernel Data Structures, Computing Environments	Chapter 1
2-3	Operating-System Structures Operating-System Services, User and Operating-System Interface, System Calls, System Services, Linkers and Loaders, Why Applications are Operating-System Specific, Operating-System Design and Implementation, Operating-System Structure, Building and Booting an Operating System	Chapter 2
4-5	Processes Process Concept, Process Scheduling, Operations on Processes, Interprocess Communication, IPC in Shared-Memory Systems, IPC in Message-Passing Systems, Examples of IPC Systems, Communication in Client– Server Systems	Chapter 3
6	First Midterm Examination	
7	Threads & Concurrency Multicore Programming, Multithreading Models, Thread Libraries, Implicit Threading, Threading Issues, Operating-System Examples	Chapter 4
8	CPU Scheduling	Chapter 5

Approvals

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Updated by	Dr. Raheel Ahmed Memon
Approved by	Not Specified
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