

Course Number	CS 335	Course Title	Operating Systems			
Semester Hours	3	Course Coordinator SP20	Khaled Ahmed			
Catalog Description	An extended treatment of the components of operating systems including process management, concurrency, memory management, device management, file management, and security.					
Textbooks						
SP20						
Silberschatz, A. (2013). <i>Operating Systems Concepts</i> , Wiley, 9 th Edition. ISBN: 978-1118063330.						
References						
Course Learning Outcomes						
<ul style="list-style-type: none"> To learn the different components of a modern operating system. To design or simulate various modules of an operating system. 						
Assessment of the Contribution to Student Outcomes						
SP20						
Outcome →	1	2	3	4	5	6
Assessed →	X	X			X	X
Prerequisites by Topic						
CS 220 and CS 221 with a grade of C or better or consent of the instructor.						

Major Topics Covered in the Course, Continued

1. Introduction: mainframe, desktop, multiprocessor, distributed, clustered and real-time systems
{3 classes}
2. Process management: job and process scheduling, race conditions, deadlock, mutual exclusion, concurrency problems including critical regions and their different solutions, parallel machine environment {9 classes}
3. Memory management: dynamic partitioning, paging, demand paging, segmentation, thrashing
{9 classes}
4. Device management: device characteristics, scheduling, traffic control, device handling
{8 classes}
5. File management: file structures, directories, protection {8 classes}
6. Security: authentication, intrusion detection, etc. {3 classes}