



Jordan University of Science and Technology
Faculty of Computer & Information Technology
Computer Science Department

CS375 Operating Systems

First Semester 2021-2022

Course Catalog

3 Credit Hours. The goal of this course is to present the basic concepts involved in constructing computer operating systems such as Computer-System Structures, Operating-Systems Structures, process concepts and models, CPU scheduling, Process synchronization, deadlocks, memory management, virtual memory, and mass-storage management.

Text Book

Title	Operating System Concepts
Author(s)	Abraham Silberschatz & Peter Galvin
Edition	10th Edition
Short Name	Textbook
Other Information	

Instructor

Name	Mr. Abedl-Rahman Almodawar
Office Location	A1 L3
Office Hours	Mon : 10:00 - 11:30 Tue : 14:00 - 15:30 Wed : 10:00 - 11:30 Thu : 14:00 - 15:30
Email	aaalmodawar@just.edu.jo

Class Schedule & Room

Section 1:

Lecture Time: Mon : 11:30 - 13:00
Room: N4201

Section 2:

Lecture Time: Mon : 13:00 - 14:30
Room: N4201

Section 3:

Lecture Time: Wed : 11:30 - 13:00
Room: N4201

Section 4:

Lecture Time: Wed : 13:00 - 14:30
Room: N4201

Prerequisites

Line Number	Course Name	Prerequisite Type
1712520	CPE252 Computer Organization And Design	Prerequisite / Study
1732841	CS284 Analysis And Design Of Algorithms	Prerequisite / Study

Tentative List of Topics Covered

Weeks	Topic	References
Weeks 1, 2	Introduction to Operating Systems	chapter 1 From Textbook
Week 2	Introduction to Linux and C language	Chapter 20 From Textbook
Week 3	Operating-Systems Structures	chapter 2 From Textbook
Week 4	Processes	chapter 3 From Textbook
Week 5	Threads & Concurrency	chapter 4 From Textbook
Weeks 6, 7	CPU Scheduling	chapter 5 From Textbook
Weeks 8, 9	Process Synchronization Tools	chapter 6 From Textbook
Week 10	Deadlocks	chapter 8 From Textbook
Weeks 11, 12	Main Memory	chapter 9 From Textbook
Week 13	Virtual Memory	chapter 10 From Textbook
Week 14	Mass-Storage Structure	Chapter 11 From Textbook

Mapping of Course Outcomes to Program Student Outcomes

Course Outcome Weight (Out of 100%)

Assessment method

Describe many types of computing environments, the basic organization of computer systems and its major components. Also know basic terms associated with operating systems, and recognize their main services, basic structure, and design. [1SO1]	20%	
Understand the process concepts and their various features including scheduling, creation, and termination, and main inter-process communication methods. Also, understand threading and issues related to multi-threaded programming. [1SO1]	20%	
Understand the concept of CPU-scheduling, describe various CPU-scheduling algorithms and discuss evaluation criteria for selecting a CPU-scheduling algorithm for a particular system. In addition, understand the concept of process synchronization and the concept of deadlocks. [1SO1]	25%	
Know different schemes of memory management such as paging, segmentation, segmentation with paging, and identify their performance. Also, understand the concept of virtual memory and its benefits. Moreover, understand Mass-storage structure, performance characteristics, and various disk scheduling algorithms. [1SO1]	25%	
Practice and implement several Operating systems-related topics such as Linux shell, kernel implementation, multithreading, Process synchronization, CPU scheduling. [1SO2]	10%	

Relationship to Program Student Outcomes (Out of 100%)					
SO1	SO2	SO3	SO4	SO5	SO6
90	10				

Evaluation	
Assessment Tool	Weight
Mid-term exam	30%
Quizzes & Assignments	20%
Final Exam	50%

Policy	
Attendance	Attendance is very important for the course. In accordance with university policy, students missing more than 20% of total classes are subject to failure. Penalties may be assessed without regard to the student's performance. Attendance will be recorded at the beginning or end of each class
Exams	Each student is expected to solve the exams individually. All exams will be CLOSE-BOOK. Any necessary algorithms/equations/relations will be supplied if required.
Quizzes and Assignments	Each student answers quizzes and assignments individually. Cheating is prohibited under JUST strict laws. No makeup for quizzes. No late submissions are accepted.