

King Saud University
College of Computer and Information Sciences
Department of Computer Science
CSC 227 – Operating Systems (3-0-1) - Required Course

Instructor: Dr. Abdullah Alshalan (alshalan@ksu.edu.sa)

Office hours: Check the Blackboard

Semester: Spring 2018

Course description:

This is an introductory course in Operating Systems. As such, it is intended to cover many of the concepts related to most of the actual Operating Systems. Although the study of a particular Operating System is out of the scope of this course, we will cover most of the concepts found in any existing Operating System. We will review computer system and operating system structures, processes and threads (concepts of communication, synchronization and deadlocks), CPU scheduling, memory management and virtual memory.

Prerequisite: Data Structures (CSC 212)

Prerequisite to: CSC 329 Computer Networks, CSC320 Systems Programming, CSC453 Parallel Processing.

Co-requisite to: None.

Textbook:

Operating System Concepts, A. Silberschatz, P.B. Galvin, Ninth Edition, John Wiley & Sons Inc., ISBN 1118063333

Course Learning Outcomes:

After completing this course successfully, student should have the following capabilities:

1. The students will have a working knowledge of operating system theory and operation.
2. The students will demonstrate knowledge of operating system services and be able to use system calls.
3. Students will be able to provide solutions for real problems that affects the performance and capabilities of modern operating systems including multiprogramming, memory management
4. The students will be able to design and implement some components of modern operating systems in team projects.
5. Students will demonstrate capabilities to work in groups in order to design, build and test an OS related SW component.

Topics:

1. Introduction to Operating Systems and computer systems
2. Operating Systems Structure
3. Process
4. Process Scheduling
5. Main Memory
6. Threads
7. Process Synchronization
8. Virtual Memory

Schedule:

15 weeks of three 50-minute lectures/week and one 50-minute tutorial per week.

Evaluation:

- Group Term Project and assignments: 20 points
- Midterm exams (2): 20 + 20 points
- Final exam: 40 points

Notes for email communication:

- Your email header must start with CSC227:
- Send your email to alshalan@ksu.edu.sa.
- Please write your name and your ID at the end of the email.

Notes for office hours with appointment:

- Send me an email to make an appointment with a brief description of the reason for the appointment so I can allocate the appropriate amount of time for the meeting.

Policies:

- **Academic dishonesty and plagiarism:**

Any misconduct that violate the University's policies on academic dishonesty and plagiarism will not be tolerated. A **minimum** penalty of grade **F** will be recommended in accordance with the University's student disciplinary policy found at <http://sa.ksu.edu.sa/ar/Rules-regulations/disciplining-list>.

Examples include, but are not limited to, cheating in assignments, quizzes, exams or projects, falsely reporting yourself or someone else as present in class, or using someone else's work while crediting it to yourself.

- **Electronic devices usage in class:**

The use of the electronic devices including mobile phones, tablets, laptops etc. is prohibited except for the use of tablets or laptops for taking class notes only, as long as noise and distraction to others are completely avoided.

- **Attendance:**

You are expected to attend the class on time. Attending the class after the attendance has been taken and before 10 minutes has passed will be marked as "**late**". Any attendance after **10 minutes** from the beginning of the class will be considered as **absence**.