

Operating System Concept / CYS 1112

First year

# Instructor Information

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| Instructor | Email | Office Location and Office Hours |
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# General Information

## Description

This is an online course that teaches the basics of the operating system (OS) concept, as a guide toward understanding the design, implementation and the role of managing the different resources. The course start with an introduction overview of the operating system, showing the importance of the different types of operating system at the present time and the use of virtual machine, moving to the role of the operating system managers of the core resources, including CPU scheduling, memory management, device management, file system and the foundation of operating system security and protection. Technical lab session would be integrated in the course, with exposer to modern operating system and virtual machine.

## Course Objectives

The objective of this class is to be able to explain the role and aim of operating system and the basic services it would provide.

At the end of the course, the student will be able to:

* Understand the structure and components of the operating system.
* Distinguishing the basic properties of different types of operating system.
* Comprehending the role of resource manager.
* Understand the different types of scheduling algorithms and the use of policies.
* Understand the different file attributes.
* Knowing the implementation of protection and security mechanisms in operating system.
* Basic implementation of hypervisor.

## Course Structure

This course will be delivered entirely online through Blackboard. You will use your KSU account to login to the course from [Blackboard page](http://lms.ksu.edu.sa/). If you are facing any technical problems, please contact KSU [technical support](http://etc.ksu.edu.sa/ar/node/11580). You can also use Blackboard application (for [iOS](https://apps.apple.com/app/blackboard-app/id950424861) or [Android](https://play.google.com/store/apps/details?id=com.blackboard.android.bbstudent&hl=en)).

In Blackboard, you will attend online classes through the Virtual Classroom, access course material and resources, participate in activities, and you will submit your assignments and quizzes.

# Course Requirements

## Technical Requirements

* Computer and internet connection
* Microphone and headphones
* Windows operating system

## Digital Literacy Skills Requirements

* Knowing how to use Blackboard virtual classes.
* Knowing how to send emails through Blackboard.
* Knowing how to submit assignments and take quizzes in Blackboard.
* Knowing how to use digital libraries.
* Knowing how to write the source of information properly.

## Prerequisite Knowledge

What the student should know

Basic computer organization, data structure and high-level programming language.

# Course Materials

## Required Textbook

A. Silberschatz, P.B. Galvin, G. Gagne, Operating System Concepts, Addison-Wesley, 10th Edition. (2018)

## Additional Resources (Optional)

W. Stallings, Operating Systems: Internals and Design Principles, Prentice-Hall, 9th Edition.(2018)

R. H. Arpaci-Dusseau and A. Arpaci-Dusseau, Operating Systems: Three Easy Pieces, (online book)

A. S. Tanenbaum and H. Bos, Modern Operating Systems, 4th Edition. Prentice-Hall. (2015).

# Course Schedule

| Week | Topic | Reading | Online Meeting |
| --- | --- | --- | --- |
| 1 | Introduction to Operating system | Ch01, ch02 | Yes |
| 2 | Types of Operating system | Ch01, ch02 | Yes |
| 3 | Operating system resource management | Ch01, ch02 | Yes |
| 4 | Operating System Process Viewpoint and Machine Hierarchical View | Ch03 | Yes |
| 5 | Process Management | Ch04 | Yes |
| 6 | Non-multiprogram and Multiprogram Job Scheduling | Ch05 | Yes |
| 7 | Process Scheduling and Policies | Ch05 | Yes |
| 8 | Memory Management  | Ch09, ch10 | Yes |
| 9 | Device and Storage Management  | Ch11, ch14 | Yes |
| 10 | Protection and Security | Ch16, ch17 | Yes |

# Exam Schedule

| Date | Subject |
| --- | --- |
| Week 1-10 | Quizzes. |
| Week 1-10 | Assignments. |
| Week 7 | Major Exam. |
| Week 12 | Final Exam. |

# Course Policies

## Attendance Policy

This course is delivered completely online; you will not attend classes on campus. Instead, you must attend the online classes and lab sessions through Blackboard Virtual Classroom. The attendance policy follows the guidelines stated in [KSU Regulations](https://dl.ksu.edu.sa/ar/Regulations).

## Grading Policy

Note: Not attending virtual classes for %25 of total course hours will result in banning you from taking the final exam.

| Subject  | Grade |
| --- | --- |
| Quiz I | 5 |
| Quiz II | 5 |
| Assignment I | 5 |
| Assignment II | 5 |
| Assignment III | 5 |
| Midterm I | 10 |
| Lab assignment | 10 |
| Participation | 5 |
| Final Exam | 50 |

## Netiquette Guidelines

Netiquette is a set of rules for behaving properly online. Your instructor and fellow students wish to foster a safe online learning environment. All opinions and experiences, no matter how different or controversial they may be perceived, must be respected in the tolerant spirit of academic discourse. You are encouraged to comment, question, or critique an idea but you are not to attack an individual. Working as a community of learners, we can build a polite and respectful course community.

The following netiquette tips will enhance the learning experience for everyone in the course:

* Do not dominate any discussion.
* Give other students the opportunity to be involved in the discussion.
* Do not use offensive language. Present ideas appropriately.
* Be cautious in using Internet language. For example, do not capitalize all letters since this suggests shouting.
* Popular emoticons such as :) or :/ can be helpful to convey your tone but do not overdo or overuse them.
* Avoid using vernacular and/or slang language. This could possibly lead to misinterpretation.
* Never make fun of someone’s abilities.
* Share tips with other students.
* Keep an “open-mind”; minority opinions must be respected.
* Think and edit before you press the “Send” button.
* Do not hesitate to ask for feedback.
* Using humor is acceptable

## Academic Integrity

As a student in this course (and at KSU) you are expected to maintain high degrees of professionalism, commitment to active learning and participation in this class and also integrity in your behavior in and out of the classroom. Maintaining academic honesty and integrity are fundamental.

Students are responsible for the honest completion and representation of their work, for the appropriate citation of sources, and for respect of others’ academic endeavors. Students who violate these standards must be confronted and must accept the consequences of their actions.

Examples of academic misconduct include, but are not limited to: cheating on an examination; collaborating with others in work to be presented as one’s own work, contrary to the stated rules of the course; submitting a paper or assignment as one's own work when a part or all of the paper or assignment is the work of another; submitting a paper or assignment that contains ideas or research of others without appropriately identifying the sources of those ideas; stealing examinations or course materials; submitting, if contrary to the rules of a course, work previously presented in another course; tampering with the laboratory experiment or computer program of another student; knowingly and intentionally assisting another student in any of the above, including assistance in an arrangement whereby any work, classroom performance, examination or other activity is submitted or performed by a person other than the student under whose name the work is submitted or performed.

# Additional Information and Resources

## Important Note

This syllabus is subject to change with prior notice through course announcements or through email.