

**THE UNIVERSITY OF TEXAS AT TYLER**  
**DEPARTMENT OF COMPUTER SCIENCE**  
**COSC 5330 – Operating Systems**  
**Fall 2024**

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**Lecture:** MW 2.30 pm to 3:55 pm COB 255

**Office Hours:** MWF 10.00 am to 11.00 am; and by appointment using phone or Zoom

**Text:** *Operating Systems: Internals and Design Principles* by William Stallings, 9th Edition, Pearson Publishing, ISBN 9780134670959

**Catalog Description:** Analysis of operating systems software for computing systems, and resource management procedures and techniques used in all types of computing environments. Topics include processes, synchronization, scheduling algorithms, memory management, security, device management, deadlocks, and file systems.

**Course Description:** Computing devices have become almost omnipresent in our lives and we interact with a variety of different devices on almost a daily basis. Smartphones, digital home assistants, tablets, laptop, desktops, servers, drones, IoTs, and so on – the list is long. But the software that is common to these devices is the operating system (OS). OS is the software that controls accesses to hardware and other software resources. So if an application wants to read user input from the keyboard, it is the OS that sends the keystrokes to the application. Likewise, if an application wants to make a system call then, again, it is to the OS that the application makes this request. Therefore, OS is the most important software on a computing device. There are several different OSes including Windows, Mac OS X, Linux, iOS, and Android, besides others and we will study some of these OSes in detail in this course. All relevant course material will be posted on Canvas.

**Grading:** Grading will be based on exams and homework. All homework submissions should be made electronically to Canvas – no physical paper submissions will be accepted. Late submissions will not be graded. There will be two mid-term exams as per schedule given later. Weights are given below:

First Midterm Exam	25%
Second Midterm Exam	25%
Final Exam	35%
Homework	15%

**Grading Policy:**

Points	Grade
≥85	A
≥75, < 85	B
≥65, < 75	C

**Course Objectives:**

1. Understand the components of a modern operating system
2. Understand concurrency and file management
3. Analyze differences between operating systems

**Tentative Schedule:**

<u>Week</u>	<u>Chapter</u>	<u>Topic</u>
1	1	Computer System Overview
2	2	Operating System Overview
3	3	Process Description and Control
4	4	Threads
5	5	Concurrency: Mutual Exclusion and Synchronization
6	FIRST MIDTERM EXAM, Wednesday, October 2nd, 2024	
6	6	Concurrency: Deadlock and Starvation
7	7	Memory Management
8	8	Virtual Memory
9	9 & 10	Scheduling
10	11	I/O Management and Disk Scheduling
11	SECOND MIDTERM EXAM, Wednesday, November 6th, 2024	
11	12	File Management
13	14	Virtual Machines
14	16	Cloud and IoT Operating Systems
15	FINAL EXAM, Wednesday, December 11th, 2024, from 2.45pm to 4.45pm	

**Census Date:** September 9th, 2024

**Attendance and Make-up Policy**

It is in your interest to attend all classes. There will be no make-ups for missed exams; missed exams will get a grade of zero.