THE UNIVERSITY OF TEXAS AT TYLER
DEPARTMENT OF COMPUTER SCIENCE
COSC 3355 – Operating Systems
Spring 2022

Instructor: Nary Subramanian, Ph.D.
COB 315.11
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Lecture: TR 9.30 am to 10:50 am COB 211

Office Hours: TR 10.50 am to 12.20 pm

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

Catalog Description: Fundamentals of operating systems design and implementation. Topics include an overview of the components of an operating system, mutual exclusion and synchronization, implementation of processes, scheduling algorithms, memory management, operating system security, and file systems. Prerequisites: COSC 2315 and COSC 2336.

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, homework, and programming assignments. All homework and programming assignments should be submitted 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	20%
Second Midterm Exam	25%
Final Exam	25%
Programming Assignments	15%
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:

Week	Chapter	Topic
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	6	Concurrency: Deadlock and Starvation
6	FIRST MIDTERM EXAM, Thursday, February 17th, 2022	
7	7	Memory Management
8	8	Virtual Memory
9	9 & 10	Scheduling
10	11	I/O Management and Disk Scheduling
11	12	File Management
11	SECOND MIDTERM EXAM, Thursday, March 31st, 2022	
12	12	File Management
13	14	Virtual Machines
14	16	Cloud and IoT Operating Systems
15	FINAL EXAM, Thursday, April 28th, 2022 from 9.30am to 11.30am	

Census Date: January 24th, 2022

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.

University Policies
University policies can be seen at https://www.uttyler.edu/academic-affairs/files/syllabuspolicy.pdf. They are given below as well.