FSU COP 4610 Principles of Operating Systems
Course Syllabus (Version 8/26/2025)

Lecture: MCH 201 TuTh 11:35 am-12:50 pm

Contact Information

Instructor

Andy Wang (aawang@fsu.edu)
Zoom office hours: https://fsu.zoom.us/j/94916718263 M 4-5 pm, Th 4-5 pm, and by appointment
Class website: http://www.cs.fsu.edu/~awang/courses/cop4610_f2025

Teaching Assistants (cop4610t@cs.fsu.edu, subject: cop4610)
Michael Nguyen, Bharadwaj Manne, Rasheeq Ishman

Objectives

- Define, explain, and apply introductory operating systems concepts: process management, interprocess communication, memory management, I/O systems, file systems, and the like
- Use the UNIX operating system interface to implement a user-level shell in the C language
- Design and implement a correct concurrent program requiring synchronization
- Gain experience in implementing and debugging operating system components, including the kernel module, system calls, synchronization primitives, and the file system

Prerequisites

- COP 4530, or an equivalent level of understanding of data structures
- CDA 3100 (co-requisite), or an equivalent level of maturity in understanding the principles of computer hardware design and implementation

Course Material

- Lecture notes (posted on the class Web site)
- Required textbooks: Silberschatz, Galvin, and Gagne, *Operating System Concepts*, 10th Edition (ISBN 978-1-119-32091-3)

Class Grading

The following coursework components contribute to your final grade and the degree shown:

Projects	35%
Homework Assignments	5%
Exam 1	15%
Exam 2	15%
Final Exam	30%

Assignments consist of short-answer questions, essays, or problems. The purpose of these assignments is to prepare you for exams.

There will be three to four increasingly challenging projects due during this course. You are expected to work in teams of two to three people. For both homework and projects, if you receive help from others or if you find helpful information from various sources, please include appropriate acknowledgments.

On exams, 80% of the questions will be based on lecture materials, assignments, and projects; 20% will test your ability to apply various principles learned in the class.

The final exam will be comprehensive.

To receive a grade above the passing grade for the overall course, you must earn a passing grade on the final exam and a passing grade on the projects.

Computer Accounts

You will need a computer science account. If you don't have one, use the following link to obtain one: https://system.cs.fsu.edu/newuser/cs-account-setup/.

You will also need an fsu.edu account for receiving class emails and using the discussion board. If you want, you can forward your email to other accounts (see http://its.fsu.edu/Email/EmailAccounts/Email-Account-Management-Information).

Your Responsibilities

- Understand the lecture slides and reading assignments
- Attend office hours for extra help, as needed
- Uphold academic honesty in completing your assignments, projects, and exams
- Turn in your projects on time
- Check the class Web page and your email account regularly

Course Calendar (Tentative)

In recitation sessions, the TAs will present materials pertaining to the course projects.

Lecture	Week	Date	Lecture	
1	1	8/26	Course overview; Introduction and history;	
2		8/28	Concurrency: threads, address space, and processes; Genesis: from raw hardware to processes	
3	2	9/2	CPU scheduling; Cooperating threads	HW1 due
4		9/4	Synchronization; Implementing mutual exclusion; Semaphores and bounded buffer	HW1 debrief
5	3	9/9	More on semaphores; Monitors, condition variables, and readers-writers	HW2 due
6		9/11	Deadlocks	HW2 debrief
7	4	9/15		HW3, HW4 due
		9/16	Exam review	HW3, HW4 debrief
		9/17		
8		9/18	Exam 1 in class (please bring your ID)	
9	5	9/23	Project 2 release	
10		9/25	Exam 1 debrief	
11	6	9/30	Memory protection; Address translation	HW5 due
12		10/2	Address translation, Caching and TLBs	HW5 debrief
13	7	10/7	Demand-paged virtual memory, Device management	HW6 due
14		10/9	File systems and disk management, Naming and directories	HW6 debrief
15	8	10/13		HW7 due
		10/14	Exam review	HW7 debrief
16		10/16	Exam 2 in class (please bring your ID)	
17	9	10/21	Project 3 release	
18		10/23	Exam 2 debrief	
19	10	10/28	Transactions: reliability from unreliable components, Protection and security, Cashtags	
20		10/30	TrueErase, Composite-file file system	
21	11	11/4	Network protocols, Networks, and distributed systems	HW8 due
22		11/6	Remote procedural call, Distributed file systems	HW8 debrief
23	12	11/11	Veteran's Day Observed—no classes	
24		11/13	Final review	
25	13	11/18	Automated worm fingerprinting, BitCoin	HW9 due

26		11/20	LFuzz: Exploiting Locality-enabled Techniques for File-system Fuzzing	HW9 debrief
27	14	11/25	Finding bugs in persistent memory file systems	HW10 due
28		11/27	Thanksgiving Day Holiday—no classes	
29	15	12/2	TBA	
30		12/4	TBA	
	16	12/8	**10 am** final exam **in class** (please bring your ID)	

Course Policies

Attendance: Excused absences include documented illness, deaths in the family and other documented crises, call to active military duty or jury duty, religious holy days, and official University activities. These absences will be accommodated in a way that does not arbitrarily penalize students who have a valid excuse. Consideration will also be given to students whose dependent children experience serious illnesses.

Academic Honor Policy: The Florida State University Academic Honor Policy outlines the University's expectations for the integrity of student's academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process. Students are responsible for reading the Academic Honor Policy and for living up to their pledge to "...be honest and truthful and...[to] strive for personal and institutional integrity at Florida State University." (Florida State University Academic Honor Policy, found at http://fda.fsu.edu/Academics/Academic-Honor-Policy)

Americans with Disability Act: Students with disabilities needing academic accommodation should: (1) register with and provide documentation to the Student Disability Resource Center; and (2) bring a letter to the instructor indicating the need for accommodation and what type. Please note that instructors are not allowed to provide classroom accommodation to a student until appropriate verification from the Student Disability Resource Center has been provided. This syllabus and other class materials are available in an alternative format upon request. For more information about services available to FSU students with disabilities, contact the: Student Disability Resource Center 874 Traditions Way 108 Student Services Building Florida State University Tallahassee, FL 32306-4167 (850) 644-9566 (voice) (850) 644-8504 (TDD) sdrc@admin.fsu.edu http://www.disabilitycenter.fsu.edu.

Syllabus change policy: Except for changes that substantially affect the implementation of the evaluation (grading) statement, this syllabus is a guide for the course and is subject to change with advance notice.