

Administration

CS 537: Introduction to Operating Systems

Louis Oliphant & Tej Chajed

University of Wisconsin - Madison

Spring 2024

CS 537 : Introduction to Operating Systems

Tell Me About Yourself (Quiz 0)

You must use your UW-Madison account to access.

<http://tinyurl.com/cs537-sp24-q0>



Instructors – Who Are We?

Tej Chajed

PhD @ MIT, 2022

Thesis: *Verifying a concurrent, crash-safe file system with sequential reasoning*

Postdoc @ VMware Research, 2022–2023

Professor at UW–Madison since Sep 2023

Instructors – Who Are We? (cont.)

Louis Oliphant

BA in Mathematics Education @ BYU, 1995

Taught High School for several years

MS and PhD in Computer Science @ UW-Madison

Dissertation in Machine Learning, 2009

Adaptively Finding and Combining First-Order Rules for Large, Skewed Datasets

Taught at Hiram College from 2009 - 2023

Started at UW-Madison Fall 2023

Who Are You?

Levels	
Freshman	0
Sophomore	2
Junior	90
Senior	261
Graduate	16
Special or Guest	8

Program	count
General Course - BS Degree	299
Computer Engineering	27
General Course - BA Degree	19
Computer Sciences (grad)	9
Special Capstone Course (USPC)	9
Electrical Engineering (grad)	4
Biomedical Engineering	3
Electrical Engineering	3
Applied Math & Engr Physics	2
G246	1
Mathematics (grad)	1
Statistics (grad)	1

Today's Agenda

- What will you do in this course?
- What is an OS and why do you want one?
- Why study operating systems?

Outcomes and Prerequisites

Course Learning Outcomes

- Explain fundamental Types of OS abstractions
- Design and implement OS components (system libraries and kernel calls)
- Assess system performance
- Explain the impact of algorithms and data structures

Pre-requisites

- CS 354 (Computer Systems)
- CS 367 (Data Struct.) or 400 or graduate standing or capstone certificate

Familiarity with **basic computer organization** (e.g. processors, memory, and I/O devices) and data structures (e.g. **stacks and hash tables**). Need to **program in C in Linux** environment.

Assessments

- Quizzes (5%) (Best 20 out of ~25)
- Projects (50%)
- Code Review (5%)
- Exams (40%)

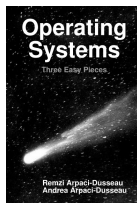
Three exams, all in-person

- Exam 1 – Feb 23, Evening (15%)
- Exam 2 – Mar 20, Evening (10%)
- Exam 3 – May 8, (Lec 001 – 12:25-2:25 PM) (15%)

Projects

- **Project 1 - C Basics (Released Today) (50 pts)**
 - **Due Jan 30th at 11:59pm**
- Project 2 - XV6 System Call (50 pts)
- Project 3 - Shell Program (100 pts)
- Project 4 - XV6 Memory Management (100 pts)
- Project 5 - XV6 Scheduler (100 pts)
- Project 6 - Concurrency (100 pts)
- Project 7 - File System (100 pts)

Materials & Resources



Textbook:

Operating Systems: Three Easy Pieces

cs.wisc.edu/~remzi/OSTEP/

Course Website:

cs.wisc.edu/~oliphant/cs537-sp24/

Canvas: <https://canvas.wisc.edu/>

Piazza: <https://piazza.com/class/lrl9gion4s33ro>

Computer Lab:

Linux Labs & Basement 109 (past vending machines)

Format

Lecture

Tuesday & Thursday

Lec 2: 9:30-10:45am

180 Science Hall

Lec 1: 1:00-2:15pm

5206 Social Sciences

In-person, Synchronous

Discussion

Wednesdays

Many sections

- Explain program projects
- Practice for exams

Personnel - 16 Course Staff!

Instructors: Louis Oliphant and Tej Chajed

Teaching Assistants: Abigail Matthews, John Shawger, Yurun Yuan, Danial Saleem, Omid Rostamabadi, Sunaina Krishnamoorthy, Fariha Tabassum, Aditya Sarma

Peer Mentors: Richik Sinha Choudhury, Arnav Jhingran, Peter Yang, Xinxi You, Yunhao Jiang, Ankit Joju

Office Hours

- Louis Oliphant Office Hours:
 - Office: 7358 Computer Sciences
 - MWF 11-12pm
 - Or By Appointment
- TA/Peer Mentor Hours
 - At CSL Labs and Basement 109
 - Check Piazza, Canvas

Course Policies

Time Management

- Projects are back-to-back so **start early**. 10 percentage points lost per day late, max of 3 days late.
- Slip Days: 2 for projects 1-3 (individual), 3 for projects 5-7 (group)

Academic Integrity

- It is **OK** to:
 - Discuss projects in general terms
 - Discuss how library routines / system calls work
 - Ask the TA or professor for as much help as you need!
- It is **NOT OK** to:
 - Bug someone else for a lot of help
 - Share your code

Course Policy: Inclusion

- Create an environment where everyone can learn and thrive
- Always feel free to ask a question!
- Create a climate where we treat everyone with respect

Administration Summary

- Quizzes, Programming Projects, Code Review, Exams
- Materials & Resources
- Course Policies (Academic Integrity, Time Management, Inclusion)
- Action Items
 - Check out Course Website, Syllabus (Under files on Canvas)