Administration

CS 537: Introduction to Operating Systems

Louis Oliphant

University of Wisconsin - Madison

Fall 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-fa24-q0

Instructors – Who Are We?

Shivaram Venkataraman

PhD @ UC-Berkeley, 2017

Research in designing systems and algorithms for large scale data analysis and machine learning.

Louis Oliphant

BA in Mathematics Education @ BYU, 1995

PhD @ UW-Madison, 2009

Research in machine learning and bioinformatics.

Who Are You?

Levels	
Freshman	0
Sophomore	0
Junior	29
Senior	125
Graduate	25
Special or Guest	4

Program	count
General Course - BS Degree	128
Computer Engineering	19
Electrical Engineering(GRAD)	12
Computer Sciences(GRAD)	11
General Course - BA Degree	5
Univ Spcl-Capstone Cert(USPC)	2
Business Undergraduate	1
Univ Spcl-Intl Ugrd Visitor(USPC)	1
Statistics(GRAD)	1
G246	1
Applied Math & Engr Physics	1
Univ Spcl-Prof/Person Develop(USPC)	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%)
- Projects (50%)
- Code Review (5%)
- Exams (40%)

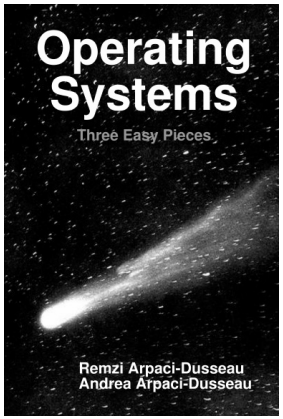
  Three exams, all in-person

  - Exam 1 – 10/15, Evening (15%)
  - Exam 2 – 11/7, Evening (10%)
  - Exam 3 – 12/19, (10:05-12:05) (15%)

Projects

- **Project 1 - C Basics (Released Today) (6%)**
  - **Due Sep 13th at 11:59pm**
- Project 2 - XV6 System Call (6%)
- Project 3 - Shell Program (9%)
- Project 4 - XV6 Memory Management (9%)
- Project 5 - XV6 Scheduler & Concurrency (10%)
- Project 6 - File Systems (10%)

Materials & Resources



Textbook:
Operating Systems: Three Easy Pieces
cs.wisc.edu/~remzi/OSTEP/

Course Website:
https://pages.cs.wisc.edu/~shivaram/cs537-fa24/

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

Piazza: https://piazza.com/wisc/fall2024/cs537

Computer Lab:
Linux Labs & Basement 109 (past vending machines)

Format

Lecture

Tuesday & Thursday

Lec 1: 9:30-10:45am

AB 20 Weeks Hall for Geo Sciences

Lec 2: 11:00-12:15pm

132 Noland Hall

In-person, Synchronous

Discussion

Wednesdays

Many sections

- Explain program projects
- Practice for exams

Personnel - 22 Course Staff!

Instructors: Louis Oliphant and Shivaram Venkataraman

Teaching Assistants: John Shawger, Seunghyun An, Vojtech Aschenbrenner, Leshna Balara, Aditya Das Sarma, Fariha Tabassum Islam, Robert Nagel, Omid Rostamabadi

Peer Mentors: Chia-Chen Kuo, Lucas Abreu Sernik, Arnav Jhingran, Nikhil Sethuram Thenmozhi, Shangyuan Yang, Mengze Teng, Zeren Yang, Dhruv Pratik Desai, Samad Abdul Syed, Naman Sogani, William Xia, Anh Thi Dao

Office Hours

- Louis Oliphant Office Hours:
  - Office: 7358 Computer Sciences
    - TH - 11-12pm
    - W - 2:30-3:30pm
  - Or By Appointment
- TA/Peer Mentor Hours
  - CS Basement Room 109
  - Check Course Web Page, Piazza

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), 2 for projects 4-6 (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