

# Syllabus

## CSE 120: Operating Systems Principles, Winter 2025

### About the Course

#### Course Description

This is an introductory course on the principles of operating systems. Topics include processes, scheduling, synchronization, memory management, virtual memory, file systems, and depending on time availability, I/O, protection, security, networking, and distributed systems.

#### Prerequisites

- Either of:
  - CSE 15L: Software Tools and Techniques Lab
  - CSE 29: Systems Programming and Software Tools
- CSE 30: Computer Organization and Systems Programming
- CSE 100: Advanced Data Structures
- CSE 101: Design & Analysis of Algorithms

#### Learning Outcomes

You will learn the essential design and implementation principles that underlie modern general-purpose operating systems.

### Course Logistics

#### Instructor

- Prof. Joseph Pasquale  
EBU3B, 3112  
858 534-2673  
pasquale@cs.ucsd.edu

#### Course Resources

- Textbook: Operating System Principles, J. Pasquale, 2025 (free to students)
- Lecture Slides: provided to all students the evening prior to lecture
- Computer system and software: provided to all students via ITS

#### Times and Locations

- Lectures on Mon/Wed 5:00 PM-6:20 PM, held in CTL 0125
- Discussion Sections on Fri 5:00 PM-5:50 PM, held in WLH 2001
- Monday, 3/17/25, 7:00 PM-9:59PM, location to be determined

## Coursework and Grades

### Assignments/Coursework

- There are four programming labs. Students are required to design and implement some core kernel functions in the programming language C:
  - context switching
  - multi-threading
  - scheduling
  - synchronization

### Exams

- Midterm exam
  - held during class time (date to be determined)
  - covers all lecture topics up to the midterm date
  - voluntary: affects final grade only if works to student's advantage
- Final exam
  - covers all course topics, ~1/3 pre-midterm and 2/3 post-midterm
  - mandatory: all students must take the final exam

### Grading

- Midterm 30% if taken and works to student's advantage, else 0%
- Final exam 40% if midterm counted, else 70%
- Labs 30%

Final grades are determined using the UCSD standard grading scale.

## Course Policies

### Lecture Attendance

Lecture attendance is voluntary. While you are strongly encouraged to attend (e.g., to take advantage of asking questions during lecture), you do not have to attend, and there will be no negative connotation. In addition, comments may be made during lecture (e.g., in response to an unanticipated question) that provides valuable information not available in the course slides or textbook, and if you don't attend, you will naturally miss out. While lectures will generally be recorded (podcast or video), you cannot always rely on this as sometimes there are problems with the technology working, and so some lectures may go unrecorded. In that case, if you chose to not attend class, you will have to rely on the course slides, textbook, and your classmates who attended and took notes to make sure you did not miss any material.

### Academic Integrity

In general, students are expected to follow the UC San Diego Integrity of Scholarship Policy ([senate.ucsd.edu/Operating-Procedures/Senate-Manual/Appendices/2](http://senate.ucsd.edu/Operating-Procedures/Senate-Manual/Appendices/2)). Specific to this course, if you use someone else's work and represent it as your own (e.g., you hand in code that is not your own, or you rely on someone else during an exam, etc.), you are violating academic integrity, and will be reported to the Academic Integrity Office. See [cseweb.ucsd.edu/classes/wi25/cse120-a/CSE120AIPW25.pdf](http://cseweb.ucsd.edu/classes/wi25/cse120-a/CSE120AIPW25.pdf) for further details.

### Collaboration Policy

You may discuss ideas on how to do assignments (determining what the assignment is about and what is expected, approaches on how to do them, and general algorithms, e.g., the first-in-first-out scheduler will be implemented using a queue, but *you must not share any code*). Any evidence of sharing your code with others or using code by others is a violation of academic integrity, and will be strictly enforced.

### Regrade Policy

You may request a regrade of any assignment within three days of receiving the grading results. The detailed policy and procedure will be made available on the class's Piazza online forum.

### Late or Missed Assignments/Missed Exam Policy

No assignment will be accepted beyond its posted deadline, no exceptions. This is strict because each assignment builds on the previous ones, and correct implementations of past assignments will be made available and relied upon for the new assignments.

If you miss the midterm for whatever reason, you forfeit the opportunity to have it apply to your final grade (just as if you chose not to take it and are relying solely on the final exam – see Grading policy above).

If you miss the final exam, it must be for a documented reason according to UCSD policy (e.g., medical emergency with doctor's letter provided). The final exam will then be made up at some time during the next quarter.

For situations beyond those mentioned above, UCSD Policy will be followed.

### Technology Policy

This class has a liberal technology policy, e.g., you may use your laptop or smartphone during class, e.g., to follow slides, take notes, etc., *as long as you do not create a disturbance to other students*. If other students complain (including for reasons such as keyboard clicks being too loud, or screen display being distracting), you will be asked to refrain from using your smartphone or laptop.

## Resources for Students

### Getting Help

The IDEA Engineering Student Center, located just off the lobby of Jacobs Hall, is a hub for student engagement, academic enrichment, personal/professional development, leadership, community involvement, and a respectful learning environment for all. The Center offers a variety of programs, listed in the IDEA Center Facebook page at <http://www.facebook.com/ucsdidea/> and the Center web site at <http://idea.ucsd.edu/>. The IDEA Center programs support both undergraduate students and graduate students.

### Diversity and Inclusion

We are committed to fostering a learning environment for this course that supports a diversity of thoughts, perspectives and experiences, and respects your identities (including race, ethnicity, heritage, gender, sex, class, sexuality, religion, ability, age, educational background, etc.). Our goal is to create a diverse and inclusive learning environment where all students feel comfortable and can thrive.

Our instructional staff will make a concerted effort to be welcoming and inclusive to the wide diversity of students in this course. If there are additional ways we can make you feel more included, please let one of the course staff know, either in person, via email/discussion board, or even in a note under the door. Our learning about diverse perspectives and identities is an ongoing process, and we welcome your perspectives and input.

We also expect that you, as a student in this course, will honor and respect your classmates, abiding by the UCSD Principles of Community (<https://ucsd.edu/about/principles.html>). Please understand that others' backgrounds, perspectives and experiences may be different than your own, and help us to build an environment where everyone is respected and feels comfortable.

If you experience any sort of harassment or discrimination, please contact the instructor as soon as possible. If you prefer to speak with someone outside of the course, please contact the Office of Prevention of Harassment and Discrimination: <https://ophd.ucsd.edu/>.

### Students with Disabilities

We aim to create an environment in which *all* students can succeed in this course. If you have a disability, please contact the Office for Students with Disability (OSD), which is located in University Center 202 behind Center Hall, to discuss appropriate accommodations right away. We will work to provide you with the accommodations you need, but you must first provide a

current Authorization for Accommodation (AFA) letter issued by the OSD. You are required to present their AFA letters to Faculty (please make arrangements to contact me privately) and to the OSD Liaison in the department in advance so that accommodations may be arranged. Also, when you make a specific request for an accommodation, please do so in advance according to the proper notification time according to the guidelines in your AFA letter so that we have enough time to arrange the accommodation.

#### Basic Needs/Food Insecurities

If you are experiencing any basic needs insecurities (food, housing, financial resources), there are resources available on campus to help, including The Hub and the Triton Food Pantry. Please visit <http://thehub.ucsd.edu/> for more information.