COP5611.01: Operating Systems Design Principles

Department of Computer Science, College of Engineering and Computer Science
3 Credit Hours

Instructor	**Dr. John Aedo**
Term	Spring 2023
Office Location	N/A
Class Meeting Days and times	Friday, 4:30pm - 7:00pm
Class Location	CB1 O107
Open Office Hours	Tu, Th 5:00pm-6:00pm
Private Office Hours	via Zoom by Appointment
E-mail	john.aedo@ucf.edu

Course Description

In this course, we will cover classic operating system (OS) design principles, including structure, abstractions (processes, virtual memory), concurrency, I/O, as well as broader and more recent areas including distributed systems, security, and virtualization.

Student Learning Outcomes

By the end of this course, you will have in-depth exposure to core operating system concepts as well as their historical roots and experimental innovations.

Enrollment Requirements

- COP 4600 - Operating Systems

Course Activities

- Weekly topic presentations and write-ups
- Weekly quizzes on OS fundamentals (from the text)
- Semester project
  - Project Milestones

Important Dates

- Friday, March 24: Withdrawl Deadline
- Friday April 21 (4:30-7:00) and Friday, April 28 4:00pm-6:50pm: Final Presentations

Assignment Submission

All assignments are to be turned in through Webcourses. Each assignment will have its own specific submission requirements in the assignment description.

Assessment and Grading Procedures

Grading Method

Assignments will each have their own point value, depending on its complexity or length. Assignments may have more points to support a more detailed rubric. However, that does not necessarily reflect on the assignment's contribution to your overall grade. Refer to the table below for course activity weights:

Activity	Contribution
Paper Summaries	30%
Project Milestones	20%
Project Write-Up	20%
Project Presentation	20%
Quizzes	10%

The above criteria represent the lowest grade you will receive in the course. Several other factors may raise your grade, including but not limited to overall class performance and improvement in your performance over the semester.

Grading Scale

Grade		Min
A	100	89.5
B	< 89.5	79.5
C	< 79.5	69.5
D	< 69.5	59.5
F	< 59.5	0

Late Turn-in Policy

Each assignment will have a due date and points will be subtracted for submission after that date (10% off per day late, until score is 0). However, if late turn-in is unavoidable due to extenuating and documented life circumstances (i.e. illness, car accident, etc.), please contact me *prior to the deadline* to work out an extension plan. If an extension is given for any assignment, late policy does not apply).

Quizzes are intended as review aids on the pre-requisite core concepts. Quizzes will have a set due date to encourage you to keep pace with the course topics, but with no late policy. Please complete all quizzes before the end of the semester.

Attendance/Participation

Since course discussion is driven by student presentations, class attendance is mandatory out of respect for the presenters.

Zoom participation will be allowed, but please be advised that it will be a less than optimal experience. You will have difficulty hearing students participating in the classroom.

Extra Credit

Extra credit may be available on a contingency basis.

Grade Dissemination

All course grades will be available for review within Webcourses as soon as they are posted.

Course Materials and Resources

- **Required:** Operating Systems: Three Easy Pieces (OSTEP)
    - https://pages.cs.wisc.edu/~remzi/OSTEP/
- **Optional:** Silberschatz, Galvin and Gagne, Operating System Concepts (10th Edition, 2018). Wiley. ISBN 978-1118063330. Errata at http://codex.cs.yale.edu/avi/os-book/OS10/.

Policy Statements

Academic Integrity

Students should familiarize themselves with UCF's Rules of Conduct at <https://scai.sdes.ucf.edu/student-rules-of-conduct/Links to an external site.>. According to Section 1, "Academic Misconduct," students are prohibited from engaging in

1. Unauthorized assistance: Using or attempting to use unauthorized materials, information or study aids in any academic exercise unless specifically authorized by the instructor of record. The unauthorized possession of examination or course-related material also constitutes cheating.

2. Communication to another through written, visual, electronic, or oral means: The presentation of material which has not been studied or learned, but rather was obtained through someone else's efforts and used as part of an examination, course assignment, or project.

3. Commercial Use of Academic Material: Selling of course material to another person, student, and/or uploading course material to a third-party vendor without authorization or without the express written permission of the university and the instructor. Course materials include but are not limited to class notes, Instructor's PowerPoints, course syllabi, tests, quizzes, labs, instruction sheets, homework, study guides, handouts, etc.

4. Falsifying or misrepresenting the student's own academic work.

5. Plagiarism: Using or appropriating another's work without any indication of the source, thereby attempting to convey the impression that such work is the student's own.

6. Multiple Submissions: Submitting the same academic work for credit more than once without the express written permission of the instructor.

7. Helping another violate academic behavior standards.

8. Soliciting assistance with academic coursework and/or degree requirements.

Responses to Academic Dishonesty, Plagiarism, or Cheating

Students should also familiarize themselves with the procedures for academic misconduct in UCF's student handbook, *The Golden Rule* <https://goldenrule.sdes.ucf.edu/Links to an external site.>. UCF faculty members have a responsibility for students' education and the value of a UCF degree, and so seek to prevent unethical

behavior and respond to academic misconduct when necessary. Penalties for violating rules, policies, and instructions within this course can range from a zero on the exercise to an "F" letter grade in the course. In addition, an Academic Misconduct report could be filed with the Office of Student Conduct, which could lead to disciplinary warning, disciplinary probation, or deferred suspension or separation from the University through suspension, dismissal, or expulsion with the addition of a "Z" designation on one's transcript.

Being found in violation of academic conduct standards could result in a student having to disclose such behavior on a graduate school application, being removed from a leadership position within a student organization, the recipient of scholarships, participation in University activities such as study abroad, internships, etc.

Let's avoid all of this by demonstrating values of honesty, trust, and integrity. No grade is worth compromising your integrity and moving your moral compass. Stay true to doing the right thing: take the zero, not a shortcut.

Unauthorized Use of Websites and Internet Resources

There are many websites claiming to offer study aids to students, but in using such websites, students could find themselves in violation of academic conduct guidelines. These websites include (but are not limited to) Quizlet, Course Hero, Chegg Study, and Clutch Prep. UCF does not endorse the use of these products in an unethical manner, which could lead to a violation of our University's Rules of Conduct. They encourage students to upload course materials, such as test questions, individual assignments, and examples of graded material. Such materials are the intellectual property of instructors, the university, or publishers and may not be distributed without prior authorization. Students who engage in such activity could be found in violation of academic conduct standards and could face course and/or University penalties. Please let me know if you are uncertain about the use of a website so I can determine its legitimacy.

Unauthorized Distribution of Class Notes

Third parties may attempt to connect with you to sell your notes and other course information from this class. Distributing course materials to a third party without my authorization is a violation of our University's Rules of Conduct. Please be aware that such class materials that may have already been given to such third parties may contain errors, which could affect your performance or grade. Recommendations for success in this course include coming to class on a routine basis, visiting me during my office hours, connecting with the Teaching Assistant (TA), and making use of the Student Academic Resource Center (SARC), the University Writing Center (UWC), the Math Lab, etc. If a third party should contact you regarding such an offer, I would appreciate your bringing this to my attention. We all play a part in creating a course climate of integrity.

In-Class Recording

Students may, without prior notice, record video or audio of a class lecture for a class in which the student is enrolled for their own personal educational use. A class lecture is defined as a formal or methodical oral presentation as part of a university course intended to present information or teach enrolled students about a particular subject. Recording class activities other than class lectures, including but not limited to lab sessions, student presentations (whether individually or part of a group), class discussion (except when incidental to and incorporated within a class lecture), clinical presentations such as patient history, academic exercises involving student participation, test or examination administrations, field trips, private conversations between students in the class or between a student and the faculty member, and invited guest speakers is prohibited. Recordings may not be used as a substitute for class participation and class attendance, and may not be published or shared without the written consent of the faculty member. Failure to adhere to these requirements may constitute a violation of the University's Student Code of Conduct as described in the Golden Rule.

Course Accessibility Statement

The University of Central Florida is committed to providing access and inclusion for all persons with disabilities. Students with disabilities who need access to course content due to course design limitations should contact the professor as soon as possible. Students should also connect with Student Accessibility Services (SAS) <http://sas.sdes.ucf.edu/Links to an external site.> (Ferrell Commons 185, sas@ucf.edu, phone 407-823-2371). For students connected with SAS, a Course Accessibility Letter may be created and sent to professors, which informs faculty of potential course access and accommodations that might be necessary and reasonable. Determining reasonable access and accommodations requires consideration of the course design, course learning objectives and the individual academic and course barriers experienced by the student. Further conversation with SAS, faculty and the student may be warranted to ensure an accessible course experience.

Campus Safety Statement

Emergencies on campus are rare, but if one should arise during class, everyone needs to work together. Students should be aware of their surroundings and familiar with some basic safety and security concepts.

·   In case of an emergency, dial 911 for assistance.

·   Every UCF classroom contains an emergency procedure guide posted on a wall near the door. Students should make a note of the guide's physical location and review the online version at <https://centralflorida-prod.modolabs.net/student/safety/index (Links to an external site.)>.

·   Students should know the evacuation routes from each of their classrooms and have a plan for finding safety in case of an emergency.

·   If there is a medical emergency during class, students may need to access a first-aid kit or AED (Automated External Defibrillator). To learn where those are located, see <https://ehs.ucf.edu/automated-external-defibrillator-aed-locationsLinks to an external site.>.

·   To stay informed about emergency situations, students can sign up to receive UCF text alerts by going to <https://my.ucf.eduLinks to an external site.> and logging in. Click on "Student Self Service" located on the left side of the screen in the toolbar, scroll down to the blue "Personal Information" heading on the Student Center screen, click on "UCF Alert", fill out the information, including e-mail address, cell phone number, and cell phone provider, click "Apply" to save the changes, and then click "OK."

·   Students with special needs related to emergency situations should speak with their instructors outside of class.

·   To learn about how to manage an active-shooter situation on campus or elsewhere, consider viewing this video (<https://youtu.be/NIKYajEx4pk (Links to an external site.) Shape, arrow Description automatically generated>).

Deployed Active Duty Military Students

If you are a deployed active duty military student and feel that you may need a special accommodation due to that unique status, please contact your instructor to discuss your circumstances.