

Operating Systems (CS: 3620 : 0001)

Class time: TTh (9 : 30 am - 10 : 45 am)

Class location: 110 MLH (MacLean Hall)

Course Webpage: <http://homepage.divms.uiowa.edu/~comarhaider/osfall117/schedule.html>

Instructor: Omar Haider Chowdhury

Office: 201G MLH (MacLean Hall);

Email: omar-chowdhury@uiowa.edu;

Phone: 319-335-0745 (Office)

Teaching assistant: Mitziu A. Echeverria (mitziu-echeverria@uiowa.edu)

Instructor's office hours: Monday (10:00 am - 11:00 am), Tuesday (11:00 am - 12:00 pm), Wednesday (3:00 pm - 4:00 pm) or by email appointment (201G MLH)

Teaching assistant's office hours: Thursday (12:30 pm - 1:30 pm), Friday (11:30 am - 12:30 pm), Friday (1:30 pm - 2:30 pm) or by email appointment (101N MLH)

DEO contact information: Alberto Segre, 14 MLH (MacLean Hall), Phone: 319 – 335 – 0713, Email: CS-INFO@list.uiowa.edu

Course description and objective: This course provides an introduction to the design and implementation of modern operating systems. Students will learn how the operating system manages devices including I/O systems, secondary storage, and peripherals. Memory management is introduced including file systems, virtual memory, segmentation, paging, and addressing. Process scheduling and inter-process communication is covered including related issues of interrupts, deadlock, synchronization, and locks. Additional topics may include concepts from Computer Security and Privacy (*e.g.*, access control, sandboxing).

Course resources: As part of the class we will be using the book titled “*Operating Systems: Three Easy Pieces*” by Remzi H. Arpaci-Dusseau and Andrea C. Arpaci-Dusseau. The book has a free online version at the website: <http://pages.cs.wisc.edu/~remzi/OSTEP/>. It is also possible to order a hardcover or paperback version of the book from the above website.

The textbook will be complemented by the *Advanced Programming in the UNIX Environment* (3rd Edition) by Stevens, Rago. We will also consult relevant research papers that will be made available through ICON.

Students are encouraged to discuss the course material and challenges they face in solving the assigned homework. For group discussions we will use ICON. Prior to asking questions, as a courtesy to the instructor and the TA, the students are advised to make sure that their questions have not been previously answered.

The course webpage will be shared with the students through ICON.

Grading Policies: Exams will be comprehensive, covering everything up to the exam date, emphasizing integrating material from recent assignments. Exam may include both multiple-choice, numerical problems, and understanding/writing snippets of code. The exams will be closed book that you may bring two pages of notes. Students that cannot attend the exam due to conflicts (*e.g.*, illness, religious holidays) may make alternate arrangements (in advance, if at all possible).

For the programming assignments student will be required to use C. **Programming assignments will be the hardest part of the class.** Students are encouraged to start early. Grading will mainly focus on automated test and emphasize correctly completing all or a part of the assignment. Partial points will not be awarded for source code that does not compile or does not achieve the intended objective. A software program will automatically check for cheating in all

student submissions. Cheating will not be tolerated and will result in a grade of zero for that assignment. Students are requested to consult the instructor to ensure whether collaboration is allowed in particular assignments.

Communication Policies: Most of the emails regarding grades, homework, programming projects, and exams should be first directed to the Teaching Assistant. The teaching assistant will forward relevant emails to the instructor as needed. For other emails (e.g., scheduling one-on-one meetings) and also emails of personal nature containing sensitive information, should be directed to the instructor directly. The instructor leaves the decision of determining the sensitivity of an email to the students. All emails directed to the instructor should have the prefix “[CS:3620]” (without the quotes) in the subject line. Complying with this requirement will enable the instructor to process emails faster. **For any matter that requires the instructor’s immediate attention, do not hesitate to schedule a face-to-face meeting or call the instructor’s office phone number.**

Grading: The course grade will be assigned based on the student’s performance on the following testing criteria.

- Homework assignments, including written and programming assignments, will contribute to the **40%** of the course grade.
- Midterm examination 1 will contribute to the **15%** of the course grade.
- Midterm examination 2 will contribute to the **15%** of the course grade.
- Final examination will contribute to the **30%** of the course grade.

Dates and times of midterms: This will be shared in class at least two weeks before the exam.

Late and Incomplete Work: *Each student will be entitled to 3 late days.* One late day may be used to delay the homework submission for a single day. A student can use all the 3 late days for a single homework assignment submission. Note that, **late submissions for which students have no late days available will not be accepted.** Students should exercise the use of late days wisely as the homework assignments and projects are likely to be progressively harder. If the student (or, his/her group) submits the assignment 1 minute late, a late day will be counted. **There will not be any fractional late days.**

The class grades will be curved. CLAS expects that senior-level undergraduate classes to have the below grade distribution. Grades with +/- will be assigned. The final grade distribution will roughly adhere to the CLAS suggested grade distribution. Note that, **the instructor, however, holds the right to alter this distribution in appropriate circumstances.**

Grade	Percentage
A	22%
B	38%
C	36%
D	3%
F	1%

CLAS Important Policies and Procedures

Administrative Home

The College of Liberal Arts and Sciences is the administrative home of this course and governs matters such as the add/drop deadlines, the second-grade-only option, and other related issues. Different colleges may have different policies. Questions may be addressed to 120 Schaeffer Hall, or see the CLAS Academic Policies Handbook at <http://clas.uiowa.edu/students/handbook>.

Electronic Communication

University policy specifies that students are responsible for all official correspondences sent to their University of Iowa e-mail address (@uiowa.edu). Faculty and students should use this account for correspondences (Operations Manual, III.15.2, k.11 available at <http://opsmanual.uiowa.edu/human-resources/professional-ethics-and-academic-responsibility#15.2>).

Accommodations for Disabilities

The University of Iowa is committed to providing an educational experience that is accessible to all students. A student may request academic accommodations for a disability (which include but are not limited to mental health, attention, learning, vision, and physical or health-related conditions). A student seeking academic accommodations should first register with Student Disability Services and then meet with the course instructor privately in the instructor's office to make particular arrangements. Reasonable accommodations are established through an interactive process between the student, instructor, and SDS. See <http://sds.studentlife.uiowa.edu/> for information

Nondiscrimination in the Classroom

The University of Iowa is committed to making the classroom a respectful and inclusive space for all people irrespective of their gender, sexual, racial, religious or other identities. Toward this goal, students are invited to optionally share their preferred names and pronouns with their instructors and classmates. The University of Iowa prohibits discrimination and harassment against individuals on the basis of race, class, gender, sexual orientation, national origin, and other identity categories set forth in the University's Human Rights policy. For more information, contact the Office of Equal Opportunity and Diversity, diversity@uiowa.edu, or visit diversity.uiowa.edu.

Academic Honesty

All CLAS students or students taking classes offered by CLAS have, in essence, agreed to the College's Code of Academic Honesty (available at <https://clas.uiowa.edu/students/handbook/academic-fraud-honor-code>): "I pledge to do my own academic work and to excel to the best of my abilities, upholding the IOWA Challenge (<http://newstudents.uiowa.edu/iowa-challenge>). I promise not to lie about my academic work, to cheat, or to steal the words or ideas of others; nor will I help fellow students to violate the Code of Academic Honesty." Any student committing academic misconduct is reported to the College and placed on disciplinary probation or may be suspended or expelled (CLAS Academic Policies Handbook available at <https://clas.uiowa.edu/students/handbook>).

CLAS Final Examination Policies

The final examination schedule for each class is announced by the Registrar generally by the fifth week of classes. Final exams are offered only during the official final examination period. No exams of any kind are allowed during the last week of classes. All students should plan on being at the UI through the final examination period. Once the Registrar has announced the date, time, and location of each final exam, the complete schedule will be published on the Registrar's web site and will be shared with instructors and students. It is the student's responsibility to know the date, time, and place of a final exam.

Making a Suggestion or a Complaint

Students with a suggestion or complaint should first visit with the instructor (and the course supervisor), and then with the departmental DEO. Complaints must be made within six months of the incident (CLAS Academic Policies Handbook available at <https://clas.uiowa.edu/students/handbook>).

Understanding Sexual Harassment

Sexual harassment subverts the mission of the University and threatens the well-being of students, faculty, and staff. All members of the UI community have a responsibility to uphold this mission and to contribute to a safe environment that enhances learning. Incidents of sexual harassment should be reported immediately. See the UI Office of the Sexual Misconduct Response Coordinator at <http://osmrc.uiowa.edu/> for assistance, definitions, and the full University policy.

Reacting Safely to Severe Weather

In severe weather, class members should seek appropriate shelter immediately, leaving the classroom if necessary. The class will continue if possible when the event is over. For more information on Hawk Alert and the siren warning system, visit the Department of Public Safety website at <http://police.uiowa.edu/emergency-communications>.