

# Syllabus: CS 212 Operating Systems - Fall 2022

**Class Time:** MWF 2 – 2:50 pm in Taylor 200

**Website:** <http://csweb.wooster.edu/dguarnera/cs212/>

**Professor:** Drew Guarnera ([dguarnera@wooster.edu](mailto:dguarnera@wooster.edu))

**Office:** Taylor 313

**Office Hours:** Tues 9:30am-10:30am, Mon and Fri 3:00pm - 4:00pm [by appointment](#)

**Textbook:** Operating Systems: Three Easy Pieces by Remzi H. Arpaci-Dusseau and Andrea C. Arpaci-Dusseau. The book is available for free online at <http://ostep.org>. If you want a physical copy you may order one from the same site, but that is not required. Other resources will be made available as needed.



**Course Description:** A survey of the structure and organization of modern operating systems. Topics include process management, memory management, concurrency, interrupts, file systems, I/O devices, and system calls. Programming projects will involve using operating system services as well as writing modules for the Linux kernel.

**Course Goals:** Upon completion of this course, a successful student will be able to:

- Describe the essential components of an operating system and their respective responsibilities.
- Recognize how different algorithms for core operating system components affect the performance of application software.
- Write modules for the Linux kernel using the C programming language.
- Design and implement software consisting of components that operate concurrently.

**Prerequisites:** C or better in CS 120. Offered biennially in fall.

**Grading:** Your final grade will be calculated as follows.

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| 10% | <i>Quizzes.</i> Regular Moodle quizzes assess whether you are engaging with the material outside of class, and to highlight important takeaways from the material. Quizzes, which are to be completed individually, will typically close at 2pm on class days to encourage everyone to complete readings prior to class.  |
| 5%  | <i>Participation.</i> You are expected to attend class, ask and answer questions, and participate in group discussion. At the beginning of class session, I'll pose a question to the class using plickers. Each class session will be worth one point, plus one point for each question that has an answer I expect you to know based on the reading for the day. This will serve as an attendance mechanism and as a way to give small quizzes. You will not be able to make up plicker points. If you provide a valid reason why you cannot make it to class, I'll exclude that day's plicker points from your grade. To have your plicker points excluded, you must notify me <i>before</i> class. If you lose your plicker card or forget to bring it to class, you will not earn any plicker points for that day. If your card is lost, you can come to my office and I'll print you out another one, but I won't bring replacement plicker cards to class for you. |
| 30% | <i>Homework and Programming Projects.</i> All assignments are to be individually completed, unless otherwise explicitly stated. <i>Homework</i> will generally be assigned one class period and due the next; it will consist of some combination of small programming tasks, written exercises, short answer questions, and reading responses. <i>Programming Projects</i> will be more involved than the homework assignments and you will be given more time to complete them; completion time and grading will vary from project to project.  |
| 25% | <i>Midterm Exam.</i> See course website for tentative date.   |
| 30% | <i>Final Exam.</i> A cumulative exam scheduled during the College final exam period.  |


This class uses the standard grading scale:


A	A-	B+	B	B-	C+	C	C-	D	F
93%	90%	87%	83%	80%	77%	73%	70%	60%	below


Note that the main purpose of homework assignments is to give students opportunities to practice what they learn. It is expected that much of your learning will come from practice! I hope that you understand the value of this work, and do not regard it solely as a grading source. With this in mind, the instructor will choose to grade a subset of homework assignments. The remaining subset may be graded partially or based on whether the work was submitted.

**Pass/Fail option.** Students are permitted to elect the equivalent of four courses (in addition to Senior Independent Study) graded S/NC out of 32 courses required for graduation [excluding courses taken S/NC in Spring 2020, Fall 2020, and Spring 2021]. The minimum equivalent grade to earn S in courses graded S/NC is C-. The deadline for electing a Pass-Fail grading option is one week after final grades are posted.


**Course Drop.** The College is temporarily extending the deadline for dropping a course. Students may drop any course without petition by Tuesday, October 4, 2022. Students may drop a course with petition by Friday, December 9, 2022. The minimum enrollment of 3.0 credits remains in effect. Requests to drop enrollment below 3.0 credits will require additional documentation via [Other academic petitions](#).


**Attendance:** We work best as a learning community when everyone participates. As such, it is expected that you will attend  class at scheduled times and in accordance with health and safety protocols. If you are unable to attend, I encourage you to check the course website and get notes from a classmate to catch up on missed materials. I will communicate to you in a timely manner any changes to this schedule.


**Technology:** Our class works best when we use our devices to further our learning. I encourage you to only use technology  during class time to enable, rather than to distract from, our learning and community building. During class, we'll write code. Bring your laptop to every day.

**Communication:** Communication is the key to success. Contact me as soon as possible if you are struggling with material or  if a conflict arises. The best way to contact me outside of class by coming to my office hours, or asking a question on the Q&A channel on Teams. It is so often the case that when one student has a question, several others have the same or similar question. We use the Q&A channel so that the entire class can collectively benefit from questions, and so that your classmates can see that they are not alone in their struggle. **I encourage you to share your understanding with your classmates by answering questions as well.** If you have a private concern, such as a question about your grade, we can discuss it in a private setting.


You should allow at least 24 hours response time for any communication. I usually respond faster than that, but you should not count on it. Please keep this in mind when contacting me late at night or over the weekend.

**Late Policy:** I will do my best to grade and return assignments to you as soon as I can. Late submissions make timely grading  much more difficult. As such, late assignments will be subject to a 30% penalty if the assignment is turned in after the submission time on the due date (e.g. an assignment due before class is turned in after class), and a 50% penalty if it is turned in the following day (e.g. an assignment is due on the 10<sup>th</sup>, but is submitted on the 11<sup>th</sup>). **No late assignments are accepted after this point.**

**Accommodations:** Your success in this class is important to me. We all need accommodations to learn effectively. If there  are aspects of this course that prevent you from learning or exclude you, please let me know as soon as possible. You do not need to share specifics, but we can work together to develop strategies to meet both your needs and the requirements of the course, and to identify specific resources that may assist you.

**Names and Pronouns.** All people have the right to be addressed and referred to in accordance with their personal identity.  We include pronoun introductions to avoid gender-based assumptions and to ensure that the correct pronoun is used when referring to you. I will do my best to address and refer to all students by the names and pronouns shared in class, regardless of what is listed on the roster, and I support classmates doing so as well.

In this class, we will have the chance to indicate the name that you would like to be called and, if we choose, to identify pronouns with which we would like to be addressed. The name and pronoun(s) that you use may change and, if they do, please let us know you would like us to change how we address you. If you are interested in changing your chosen name and pronoun(s) in the College of Wooster system, you can find additional information [here](#).

**Other Class Policies & Academic Integrity:** You are expected to know and abide by the rules of the institution as described  in The Scot's Key and the Handbook of Selected College Policies (found [here](#)). Dishonesty in any of your academic work is a serious breach of the Code of Academic Integrity and is grounds for an F in this course. Such violations include turning in another person's work as your own, sharing code, copying from any source without proper citation, and

violating expectations for a group project. You may discuss ideas with your peers. However, sharing your code or accepting code from other students is not allowed under any circumstance.

For this class to be effective, you must be an active learner. You are expected to contribute to each class session. This includes arriving on time, actively working on the in-class activity, asking questions, and answering others' questions. Students that are successful in this course are those who are responsible in their preparation. This means reading the assigned chapters, checking the course website for updates and upcoming deadlines, and completing assignments in a timely manner.

Behavior that is discouraged includes but is not limited to disrespectful interactions such as yelling/cursing, intolerant language, tardiness, and misuse of technology for purposes unrelated to the class. Students that don't abide by my standards of classroom interaction and who engage in behaviors which disrupt and distract in the learning environment will be subject to the procedures laid out in Scot's Key.

**Conflicts with Academic Responsibilities:** When conflicts arise between academic commitments and complementary programs (including athletic, cultural, educational, and volunteer activities), students, faculty, staff, and administrators all share the responsibility of minimizing and resolving them. The College expects students to give the highest priority to their academic responsibilities. As a student you have the responsibility to inform me of potential conflicts as soon as you are aware of them, and to discuss and work with me to identify alternative ways to fulfill your academic commitments without sacrificing the academic integrity and rigor of the course.

**Title IX:** The College is committed to fostering a campus community based on respect and nonviolence. To this end, we recognize that all Wooster community members are responsible for ensuring that our community is free from discrimination, gender bias, sexual harassment, and sexual assault. In accordance with Title IX, Wooster is legally obligated to investigate incidents of sexual harassment and sexual assault that occur on our campus. Faculty who become aware of an incident of sexual violence, including harassment, rape, sexual assault, relationship violence, or stalking, are required by law to notify Wooster's Title IX Coordinator. The purpose of this disclosure is to ensure that students are made aware of their reporting options and resources for support. For more information about your rights and reporting options at Wooster, including confidential and anonymous reporting options, please visit [here](#).

**MCS Department:** The College of Wooster is committed to inclusive excellence in undergraduate education, and our department seeks to actively foster a welcoming learning environment in which diversity and individual differences are valued, respected, and celebrated. Diversity comes in many forms, including but not limited to, race, color, national origin, ancestry, sex, gender identity and expression, sexual orientation, socioeconomic status, religion, age, and physical and/or mental abilities. The diversity that students and staff bring to the classroom is an invaluable resource, strength, and benefit to everyone at the College of Wooster. As such, we are vigilant and attentive about issues of diversity, equity, and inclusion in the classroom. Expressions or actions disparaging others are contrary to the mission of the department and will not be tolerated.

**Additional Resources.** Please view the course website for additional links and resources, including information on Moodle, the Academic Resource Center, Library Support, health and safety guidelines, Title IX, and discriminatory or bias-related harassment reporting.

**We're All Human.** Let's all practice empathy, kindness, and understanding - towards each other and ourselves. Although every effort has been made to make this syllabus as complete as possible, changes may occur regarding the course schedule, grading, assignments, and office hours. I reserve the right to make changes to this syllabus and other course resources if necessary. Any changes will be communicated in a timely manner.