

Winter 2022 CS 162 syllabus

Course: CS 162 – Introduction to Computer Science II

Credits: 4

Instructors (for all sections):

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Required textbook: None

### **Two fundamental rules**

1. You are responsible for knowing the contents of the syllabus and all of the information about the course provided on Canvas.
2. You are responsible for knowing the contents of instructor announcements made on Canvas, which means that you should make sure you receive such announcements and that you check for new ones at least once a day.

### **Response times**

When you email your ULA or us (the instructors), you should expect a response within two days. You should usually expect your assignments to be graded within five days of the due date. Projects 2 and 8b require more manual grading from the ULAs, so they may need one additional day. Some extra time may also be needed to grade the portfolio project, due to its complexity.

### **OSU catalog course description, including pre-requisites/co-requisites**

Basic data structures. Computer programming techniques and application of software engineering principles. Introduction to analysis of programs. Lec/lab.

Prerequisites: CS 161 or EECS 161.

A minimum grade of C is required in CS 161 and EECS 161.

## Course content

- modules
- exception handling
- unit testing
- inheritance, composition, polymorphism
- searching, sorting, algorithm analysis
- file handling, serializing objects using pickle or json
- more on recursion
- linked lists, stacks, queues
- generators
- first-class functions
- decorators

## Course Learning Outcomes

At the completion of the course, students will be able to...

1. **Design** and **implement** programs that require:
  - multiple classes, structures
  - hierarchies of classes that use inheritance and polymorphism
  - understanding of abstraction, modularity, separation of concerns, exception handling
2. **Construct** and **use** basic linear structures (arrays, stacks, queues, and various linked lists) in programs, and be able to describe instances appropriate for their use.
3. **Classify** moderately complicated algorithms in these complexity classes:  $O(1)$ ,  $O(\log n)$ ,  $O(n)$ ,  $O(n \log n)$ , and  $O(n^2)$ .
4. **Develop** test-data sets and testing plans for programming projects
5. **Produce recursive** algorithms and **choose** appropriately between iterative and recursive algorithms.

## Course tools

- Canvas is the course management software used for this course.
- PyCharm is an IDE (integrated development environment) for Python. It's where you'll write your programming assignments.
- GradeScope is the site where you'll submit your code for the assignments.
- Repl.it is a Python environment that can be embedded in Canvas pages. It's what runs the interactive exercises at the end of each lesson page.
- Ed Discussion is an asynchronous Q&A forum.

- Microsoft Teams is a synchronous discussion forum where the ULAs will hold their office hours, and which is also for more casual conversation with fellow students.
- GitHub is a popular tool for hosting version-controlled code repositories.

More information about these tools is available on the "Tools you will need" page, in the "Start here" module in Canvas.

## Coursework and Grading Policies

- Your code will be tested to make sure it works correctly. It is your job to make sure that your code will behave correctly for any possible tests. One simple test is provided on GradeScope, for which you get immediate feedback. The remaining tests are "hidden" until the due date has passed.
- You may submit assignments and quizzes up to 48 hours late for half-credit, **with the exception of the portfolio project and the end of course conversation**. If you have extenuating circumstances, please contact your instructor about them as early as possible.
- All assignments are due at **11:59pm Pacific Time**. Be aware of what time zone Canvas is using to display deadlines. If it's not your local time zone, you can set it to be. The Canvas phone app always displays times for the time zone the phone is in. This is important to keep in mind if you will be traveling.
- In this course you may use commands or techniques that haven't been covered in the course, but **only** what is available without importing **any** modules, except where the specifications say that you can use specific modules. Always ask first before using any other modules or packages, otherwise you may lose points. The reason for this is so you don't circumvent using material that the assignment was designed to make you practice.
- If you disagree with a score on any coursework, contact your ULA by email within one week of receiving your grade. If you are dissatisfied with your ULA's response (or if they neglect to respond at all), then you should contact your instructor about it.
- We don't plan to "curve" the grades, but that's something we will reassess at the end of the term.
- Makeup exams will only be given for exams excused in advance by the instructor.
- Incompletes will be given very rarely. If you have been doing well in the course so far, but an emergency comes up that prevents you from continuing according to schedule, let your instructor know as soon as possible.

## Weights for Grading

Assignments	70%
Quizzes	30%

## Letter Grade Percentages

93-100%	A	80-83%	B-	67-70%	D+
90-93%	A-	77-80%	C+	63-67%	D
87-90%	B+	73-77%	C	60-63%	D-
83-87%	B	70-73%	C-	0-60%	F

## Being Mentally Prepared

The projects in CS 162 are larger and more challenging than the projects in CS 161, so you will need to budget your time accordingly.

Other people in the course may have more background in the subject than you do. Don't feel intimidated or put off if other students talk on the discussion board about topics that we haven't covered yet (or may not cover in this class at all). What's important is that you understand what we have covered.

Taking online courses tends to feel more isolated than taking on-campus courses. Even though there are still all the normal course elements - lectures, readings, homework, a teacher whom you can ask questions, etc. - sometimes students in an online course will feel like they are "teaching themselves" because interactivity in such a course is less forced and less immediate. We can't see or hear you, so we can't judge whether you're having trouble by your tone or expression. We are always happy to help, but you have to take the initiative and let us know when you run into problems.

## Getting Help

When you have a question about something, the order of steps you should take to pursue answers is roughly the following:

1. Review the relevant materials (assignment description, readings, lectures).
2. Search the class discussion board on Ed Discussion (it can take some practice to learn how to refine your searches well) to see if your question has been answered already.
3. Post to the class discussion board on Ed Discussion (by doing #1 and #2 first, you might save yourself asking a question, and you might also then be better able to help others). When you post a question on Ed Discussion and it's answered there, that benefits other people who have the same question (if you're shy, you can post anonymously).
4. If you've tried #1-3 and feel like your question hasn't been fully addressed, please email your assigned ULA or the Instructors. Or attend one of the office hours on Microsoft Teams.
5. For questions about assignment grading, first ask your ULA. If that doesn't resolve the issue, then ask the Instructors.
6. For questions relating to course policies, or to request an extension, email the instructor **for your section** and **in advance** of the due date.

You are allowed to post small snippets of non-working code as discussed in the section on Academic Integrity below. That also applies to answering other students' questions - please use pseudocode or give hints so the student will have the satisfaction (and learning reinforcement) of figuring out the solution for themselves. When you are willing to help others on the discussion board and take pains to not make anyone feel like they asked a dumb question, you are reinforcing both your technical knowledge and your people skills, both of which are highly valued not just here, but out in the real world.

The College of Engineering (COE) offers a variety of academic support resources for students. There are remote tutoring services available through the COE by appointment and drop-in. There are also tutoring services available through the College of Science. More information about these and other academic support services can be found on the COE's Academic Support website. For writing assistance, the Oregon State Online Writing Suite is a great resource for students enrolled in Ecampus courses. If you have additional tutoring needs, or have questions about these services, please contact Casey Patterson at [casey.patterson@oregonstate.edu](mailto:casey.patterson@oregonstate.edu).

### **Reach Out for Success**

University students encounter setbacks from time to time. If you encounter difficulties and need assistance, it's important to reach out. Consider discussing the situation with an instructor or academic advisor. Learn about resources that assist with wellness and academic success at [oregonstate.edu/ReachOut](https://oregonstate.edu/ReachOut). If you are in immediate crisis, please contact the Crisis Text Line by texting OREGON to 741-741 or call the National Suicide Prevention Lifeline at 1-800-273-TALK (8255)

### **Technical Assistance**

If you experience any errors or problems while in your online course, contact 24-7 Canvas Support through the Help link within Canvas. If you experience computer difficulties, need help downloading a browser or plug-in, or need assistance logging into a course, contact the IS Service Desk for assistance. You can call 541-737-8787 or visit the IS Service Desk online.

## Academic Integrity

The Code of Student Conduct prohibits Academic Misconduct and defines it as:

Any action that misrepresents a student or group's work, knowledge, or achievement, provides a potential or actual inequitable advantage, or compromises the integrity of the educational process.

To support understanding of what can be included in this definition, the Code further classifies and describes examples of Academic Misconduct, including cheating, plagiarism, assisting and others. See the Code of Student Conduct for details: <https://beav.es/codeofconduct>

You are expected to do your own work and demonstrate academic integrity in every aspect of this course. Familiarize yourself with the standards set forth in the OSU Code of Student Conduct Section 4.2. You must only access sources and resources authorized by the instructor. You may not show your work to any other current or future students without the instructor's authorization. Violations of these expectations or the Code of Student Conduct will be reported to the Office of Student Conduct and Community Standards. If there is any question about whether an act constitutes academic misconduct, it is your responsibility to seek clarification and approval from the instructor prior to acting.

### Academic Integrity DOs and DON'Ts

- Do feel free to discuss course content with each other, even including general discussion of homework assignments and how to fix specific issues.
- Do feel free to post small snippets of non-working assignment code to Ed Discussion or the official course Microsoft Teams. If you have trouble narrowing the problem down to a small snippet, just describe the problem as well as you can and/or ask your ULA for help.
- Do feel free to ask conceptual questions related to assignments on Ed Discussion or the official course Microsoft Teams.
- Do feel free to post code for the exploration exercises on Ed Discussion or the official course Microsoft Teams.
- **Don't** post any quiz questions or answers in any form.
- **Don't** make your code publicly accessible, for example by posting it on Stack Overflow, Chegg, a public GitHub repository, etc. Any GitHub repository you post assignment code on must be **private**. The Portfolio assignment can be made public **after your final course grades have been posted to the Registrar**.
- Do feel free to share and compare your assignment code with other students on Ed Discussion or the official course Microsoft Teams **starting the Sunday after the assignment was due**. Keep in mind that there's not just one correct way to write a program - there's almost always a variety of correct approaches. As you compare with others' code, try to notice what seem to be advantages or disadvantages of a particular approach, and don't be afraid to ask questions about why someone made a certain design decision.

- **Don't** copy someone else's code, in whole or in part, whether someone else in the course, a previous student in the course, or code you found somewhere online. **It's easy for us to detect plagiarism, it will get you a zero on the assignment, and it goes on your academic record.** This also includes detailed plans for code, such as pseudocode.

## Students with Disabilities

Accommodations for students with disabilities are determined and approved by Disability Access Services (DAS). If you, as a student, believe you are eligible for accommodations but have not obtained approval please contact DAS immediately at 541-737-4098 or at <http://ds.oregonstate.edu>. DAS notifies students and faculty members of approved academic accommodations and coordinates implementation of those accommodations. While not required, students and faculty members are encouraged to discuss details of the implementation of individual accommodations.

## Establishing a Positive Community

It is important that you feel safe and welcome in this course. If you are the victim of discrimination, sexual harassment, or are otherwise made to feel unwelcome, there are several resources available to you: (1) You may schedule a private meeting with your instructor or your academic advisor. (2) You may contact the University Ombuds Office(<http://oregonstate.edu/ombuds>) for confidential guidance and advice. (3) You may contact the Office of Equal Opportunity and Access(<https://eo.oregonstate.edu/>) to file an informal or formal complaint.

## For Financial Hardship

Any student whose academic performance is impacted due to financial stress or the inability to afford groceries, housing, and other necessities for any reason is urged to contact the Director of Care for support ([studentassistance@oregonstate.edu](mailto:studentassistance@oregonstate.edu)) or 541-737-8748

## **Student Conduct Code**

This program strives to prepare students for careers in computer science, which includes preparing students to communicate professionally. Therefore, students in this class are expected to communicate in a professional manner in discussion forums, email messages and all communications for this course. Critiques, disagreements, problems, or other topics of a sensitive nature can be addressed but should be addressed civilly and professionally. If a student's communications become unprofessional, disruptive, abusive, inflammatory, or if they otherwise obstruct the learning process of the class, the instructor may restrict the student from participating in the electronic forums associated with the class and notify Ecampus and the OSU Office of Student Conduct and Community Standards. Productive learning communities and workplaces depend on civil, professional discourse. It is our hope that this policy strengthens your learning community and prepares you for the professional workplace.

## **Online Privacy**

Posts to Canvas or Ed Discussion discussions, Microsoft Teams or Canvas groups are public messages, and all such posts will be viewable by the entire class or the assigned group members. If you prefer that only the instructor sees your communication, use a private message or email.

Posting of personal contact information is strictly at your own risk.