

# CSE 2050 Syllabus Fall 2021

*Excluding materials for purchase, syllabus information may be subject to change. The most up-to-date syllabus is in HuskyCT.*

<b>Course Title</b>	Data Structures and Object-Oriented Design	
<b>Credits</b>	3	
<b>Format</b>	Distance Learning	
<b>Prerequisites</b>	CSE 1729. Not open to students who have passed CSE 2100.	
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\*Use Discord for questions about assignments

## Course Objectives

By the end of the semester, students should be able to:

1. Write programs in python using imports, functions, and object-oriented programming.
2. Compare data structures and algorithms based on time and space complexity and choose the correct ones for a given problem.
3. Implement abstract data types (stacks, queues, dequeues, mappings, priority queues) using various data structures (lists, linked lists, doubly linked lists, heaps, trees, graphs) and algorithms.
4. Use recursive algorithms to solve problems.

## Minimum Technical Skills

To be successful in this course, you will need the following technical skills:

- Install python and third party packages (like Matplotlib) on your local computer
- Use a terminal on your local computer ([Linux](#), [MacOS](#), [Windows](#))
- Write and run python programs on your local computer

## Office Hours/Availability

Office hours will be determined and posted online by the end of the second week of class.

Instructors and TAs will strive to respond during business hours Monday-Friday:

- Discord posts within 24 hours
- Emails within 48 hours

## Course Materials

Required course materials should be obtained before the first day of class. All items except a personal computer are available for free, but you should download programs and register for platforms before the semester begins.

### Textbook

- *A First Course on Data Structures in Python* (free)
  - PDF: <https://donsheehy.github.io/datastructures/fullbook.pdf>
  - Github Repo: <https://github.com/donsheehy/datastructures>

### Hardware/Physical Items

- Computer with (per [university requirements](#))
  - internet access
  - webcam
  - microphone

### Software

- **HuskyCT/Blackboard** (free) - Hosts all class materials and meetings
  - [Sign-in](#)
  - [Accessibility Statement](#)
  - [Privacy Statement](#)
- **Mimir** (free) - Online programming platform
  - Use HuskyCT links to join the Mimir site and access assignments
  - Accessibility: contact Mimir at [hello@mimirhq.com](mailto:hello@mimirhq.com)
  - [Privacy Statement](#)
- **Discord** (free) - Communication platform for assignment questions
  - [Install](#)
  - [Accessibility Options](#)
  - [Privacy Statement](#)
- **Python3** (free) - Programming language used in course
  - [Install](#)
  - Accessibility: contact Python Software Foundation at [psf@python.org](mailto:psf@python.org)
  - [Privacy Statement](#)

For information on managing your privacy at the University of Connecticut, visit the [University's Privacy page](#).

**NOTE:** This course has NOT been designed for use with mobile devices.

## A Typical Week

Each week will cover one learning module in HuskyCT.

A typical week in this course:

### Asynchronous activities

- 1 hour                Read the book actively (typing out examples as you go)
- 1~1.5 hrs           Video Quizzes
- 4 hours              Homework

### Synchronous activities

- 100 minutes        2 Lectures (optional, recorded)
  - 75 minutes          1 Lab (mandatory)
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- 9~10 hrs              Weekly time expectation (average)**

### Due Dates

All due dates are posted in the **Course Schedule** available in HuskyCT.

### A note on time

It's tough to estimate time commitments for this course - students come in with a wide breadth of abilities and experience and grow at different rates. The estimates above are for a student who:

- did well in CSE 1729
- invests time in CSE 2050 every week
- invests time constructively (think: how do *you* learn best?)

Falling behind will quickly ramp up the hours spent on following weeks, and the cost to catch up will be greater than the cost to have stayed up to date from the beginning.

You can grow into a great computer scientist in this course, but growth takes time. Go slow early on and focus on mastering concepts (writing good tests, structuring programs in object-oriented fashion) rather than completing assignments as quickly as possible.

## Assessments

### Formative

#### Video Quizzes (5 %)

Each module contains 1~1.5 hours of videos with embedded quiz questions. This asynchronous activity takes the place of the Monday lectures.

**Video Quizzes are typically due Tuesday at 11:59 PM EST.**

#### Labs (5 % participation + 5 % coding = 10 %)

Labs are weekly collaborative programming exercises.

You will be randomly assigned a new partner every week, and your final lab grade will be 50 % participation and 50 % coding. You must attend your lab during the scheduled time to be eligible for participation credit.

Feel free to share code with your partner. Partners must submit **individually** to Mimir.

**Labs are typically due Sunday at 11:59 PM EST.**

### Summative

#### Homework (25%)

Homework assignments are tough programming problems designed to assess your mastery of each module.

Homework is not collaborative; you should not share any code (including test cases).

**Homework is typically due Wednesday at 11:59 PM EST.**

#### 3 Exams (15% + 20% + 25% = 55%)

Exams may include conceptual quiz questions and programming problems similar in difficulty to those on Homework assignments.

Exams are closed book and closed notes.

Exams are held in lab during your scheduled lab period.

The standard time allotment for exams 1 and 2 is 75 minutes. The standard allotted time for exam 3 will be determined by the finals schedule.

## Academic Misconduct

The penalty for academic misconduct in this course is an F.

We will use Stanford's MOSS ([privacy policy](#)), a tool developed to detect similarities in programming assignments, on all programming assignments.

Academic misconduct includes, but is not limited to:

- Sharing any code, including test cases, with classmates on homework assignments. Screen sharing code on any platform (Discord, VS Code LiveShare, ...) counts as sharing code.
- Unintentionally sharing code through platforms mentioned above, or sharing more code than you intend. It is your responsibility to be mindful of who can access your files and which files they can access. Note that it may be easy for strangers to access voice channels on a Discord server and that many code sharing platforms (e.g. VS Code LiveShare) give participants access to all files and directories within the directory you share.
- Discussing any information about exams with classmates before all grades are posted.
- Posting questions on forums like Reddit, StackOverflow, or Chegg. You can refer to previously posted questions on these forums, but not create new ones for this course.
- Violating the spirit of an assignment (e.g. using a series of `if` statements to pass test cases in Mimir)

## Grading

### Grading Weights

Category	Component	Weight
Formative	Video Quizzes	5 %
	Labs	10 %
Summative	Homework	25 %
	Exam 1	15 %
	Exam 2	20 %
	Exam 3	25 %

### Grading Scale

Numeric floors are estimates based on previous semesters. Instructors reserve the right to modify the floors *up or down* to match the appropriate level of mastery.

Level of Mastery	Letter	Floor (estimate)
Excellent	A	93
	A-	90
Very Good	B+	87
Good	B	83
	B-	80
	C+	77
Average	C	73
Fair	C-	70
Poor	D+	67
	D	63
Merely Passing	D-	60
Failing	F	NA

### Due Dates and Late Policy

All course due dates are identified in the course schedule and HuskyCT. Deadlines are based in Eastern Standard Time; if you are in a different time zone, please adjust your submittal times accordingly. *The instructors reserve the right to change dates accordingly as the semester progresses. All changes will be communicated in an appropriate manner.*

We do not offer extensions on a case-by-case basis in this class due to its size - we do not have the resources to handle the large number of health and technical issues that will arise with the care that they require.

Instead, we offer a generous late forgiveness policy to all students that should cover the majority of extenuating circumstances. If you have circumstances that are not adequately covered by the policy below (it happens!), please reach out to the [Dean of Students](#) office. They have the resources to offer you adequate support and can reach out to us when more assistance is appropriate.

- Late Tokens
  - Student's have **5 late day tokens** in Mimir.
  - Use a token to submit a lab or homework up to 24 hours after the deadline with no penalty. Assignments cannot be submitted more than 24 hours late because we release solutions then.
  - Mimir will prompt you for a late token when you try to access an assignment after the deadline.
  - Tokens cannot be used on exams.
- Other
  - We will drop the lowest lab and homework.
  - We do not offer makeup exams outside of exceptional circumstances. If you cannot take an exam, contact your professor as soon as possible. The earlier you contact us, the more likely we can provide a better alternative than a 0.

### Feedback & Grades

See **My Grades** in HuskyCT for an up to date summary of your grades.

Note that the cumulative scores for Homework and Labs give you your current average for all assignments of the appropriate type with the lowest of the 11 dropped. Because HuskyCT considers you to have zeros for all non-graded assignments, the lowest grade will always be a zero until all 11 modules are graded.

For instance, if you score 100, 75, and 85 on the first three homework assignments, HuskyCT will calculate your homework average as 25.5 %:

$$\frac{((100 + 75 + 85 + 0 + 0 + 0 + 0 + 0 + 0 + 0 + 0) - 0)}{10} = 25.5 \%$$

while the max you could have at that point is 30 %:

$$\frac{((100 + 100 + 100 + 0 + 0 + 0 + 0 + 0 + 0 + 0 + 0) - 0)}{10} = 30.0 \%$$

We attempt to provide feedback and grades within two weeks for exams and one week

for labs and homework.



## Student Responsibilities and Resources

As a member of the University of Connecticut student community, you are held to certain standards and academic policies. In addition, there are numerous resources available to help you succeed in your academic work. Review these important [standards, policies and resources](#), which include:

- The Student Code
  - Academic Integrity
  - Resources on Avoiding Cheating and Plagiarism
- Copyrighted Materials
- Credit Hours and Workload
- Netiquette and Communication
- Reporting Policy
- Adding or Dropping a Course
- Academic Calendar
- Policy Against Discrimination, Harassment and Inappropriate Romantic Relationships
- Sexual Assault

### Students with Disabilities

The University of Connecticut is committed to protecting the rights of individuals with disabilities and assuring that the learning environment is accessible. If you anticipate or experience physical or academic barriers based on disability or pregnancy, please let me know immediately so that we can discuss options. Students who require accommodations should contact the Center for Students with Disabilities, Wilbur Cross Building Room 204, (860) 486-2020 or <http://csd.uconn.edu/>.

Blackboard measures and evaluates accessibility using two sets of standards: the WCAG 2.0 standards issued by the World Wide Web Consortium (W3C) and Section 508 of the Rehabilitation Act issued in the United States federal government.” (Retrieved March 24, 2013 from [Blackboard's website](#))

### Help

[Technical and Academic Help](#) provides a guide to technical and academic assistance.

This course is completely facilitated online using the learning management platform, [HuskyCT](#). If you have difficulty accessing HuskyCT, you have access to the in person/live person support options available during regular business hours through the [Help Center](#). You also have [24x7 Course Support](#) including access to live chat, phone, and support documents.

### Evaluation of the Course

Students will be provided an opportunity to evaluate instruction in this course using the University's standard procedures, which are administered by the [Office of Institutional Research and Effectiveness](#) (OIRE). Additional informal formative surveys may also be administered within the course as an optional evaluation tool.