EECS 110: Discover CS Syllabus

Fall 2024

Course Overview

Welcome to Discover CS! In this class, you will begin to explore some of the different areas of computer science. Using the programming language Python, we will teach basic CS concepts, as well as showcase the wide range of real-world, interdisciplinary applications of CS. This class is designed to be interactive, and much of our class time will be spent programming and problem-solving collaboratively. Our hope is that you will walk away from this class excited about the possibilities available to you in computer science!

While all are welcome, this class is particularly designed for students from groups that have been historically underrepresented in computer science with no formal programming experience.

Staff

Instructor
Madelyn Gatchel, gatchel@umich.edu

Instructional Aide (IA)
Ena Mestry, emestry@umich.edu

Contact

Please direct your technical questions to Piazza (more information on Piazza is in the *Online Tools* section). We want to save everyone time, and we want all students to have the benefit of seeing each question and its answer. For anything other than technical questions, including advice on majors, that you need to miss class, etc., please do reach out – either through email or private Piazza post.

Please do not send us emails asking "Can I get partial credit on this assignment even though the regrade request due date has passed?" or "I'm only X% away from an A-, is there anything I can do?". We do not adjust grades based on requests from individual students, and it is inappropriate to ask. Please refer to the Regrade Policy section for more information.

Course Meeting Time

EECS 110 meets in person on **Tuesdays 3:30 - 5:30 pm in DOW 1014.** The class will be divided into two parts, with lectures during the first half (~3:30-4:30 pm) and problem-solving

labs in small groups or mini lessons for the second half (~4:30-5:20 pm). The lecture will be recorded and available to view on Canvas after the class is complete.

Attendance Policy

There are 11 class periods during which attendance will be taken (highlighted in yellow on the schedule). Each student will have 2 free skip days which may be used to miss class, no questions asked. Missing more than this will result in points being deducted. There will also be 2 class periods, November 26 (virtual) and December 3, with mandatory attendance for all (see schedule for more info). These class periods do not count as possible skip days and will be used for project group check-ins and presentations, respectively. Missing either of these classes will impact your final project grade (on an individual basis).

If you must miss additional classes for personal emergencies or health/medical reasons, etc., please contact Madelyn directly.

Attendance will be graded based on the completion of in-class quizzes. To get attendance credit, a reasonable quiz attempt must be completed during the time provided in class. Further attempts can be made to improve accuracy for the quiz grade, but attendance points can only be earned by completing the quiz before the end of class at least once, inputting the correct word of the day. **If you miss class, you are still responsible for completing the quiz (for accuracy) prior to the deadline unless the instructors give you an extension prior to the due date.**

Office Hours

Madelyn's Office Hours:
Monday: 2:00-3:30 pm BBB 2725
Wednesday: 3:00-4:30 pm BBB 2901
Thursday: 10:30 am-12:00 pm BBB 2725

Ena's Office Hours:
Tuesday: 2:00-3:30 pm - BBB Learning Center Table #1
Sunday: 4:00-5:30 pm – BBB Learning Center Table #1

For assistance locating office hours, please refer to the Bob and Betty Beyster building map. In case of illness, room conflicts, or inclement weather, instructors may host office hours remotely on Zoom. In this case, the instructor will make an announcement with a Zoom link on Canvas and Piazza with as much notice as possible. If office hours are busy, we will limit each student or group to 15-minute time slots. Once the 15 minutes are up, you can rejoin the line if you need more help.

If you are unable to attend office hours during the scheduled times, please send an email to Madelyn or Ena with the subject line 'EECS 110 office hours' to set up an individual meeting. We will do our best to accommodate your schedule.

Course Schedule

This schedule is tentative and subject to change. Please refer to Canvas for the most up-to-date schedule.

Attendance taken – free skip days can be used
Attendance required – free skip days cannot be used

Date:	**In-class:**	**Due:**
August 27	Class Intro & Programming Intro Lab #0: Getting Started & Using Colab Quiz #1: About You	
September 3	Python Lesson #1: I/O, Math, Variables Lab #1: I/O, Math, Variables Quiz #2: Syllabus	
September 10	Python Lesson #2: Booleans, Conditionals Lab #2: Booleans, Conditionals Quiz #3: I/O, Math, Variables	*Homework 0 due*
September 17	Python Lesson #3: Loops Lab #3: Loops Quiz #4: Booleans, Conditionals	*Homework 1 due*
September 24	Python Lesson #4 : Lists, Dictionaries Lab #4: Lists, Dictionaries Quiz #5: Loops	
October 1	Python Lesson #5: Functions, Libraries Lab #5: Functions, Libraries Quiz #6: Lists, Dictionaries	*Homework 2 due*
October 8	Undergraduate Student Panel Mini Lesson: Debugging Quiz #7: Functions, Libraries	
October 15	No Class – Fall Break	
October 22	Industry Tour Atomic Object	*Homework 3 due*
October 29	Faculty Guest Speaker: Emily Mower Provost Mini Lesson: Image Manipulation Quiz 8: Undergraduate Panel, Debugging	

November 5	Project Work Day Quiz 9: Faculty Guest Speaker, Image Manipulation	
November 12	PhD Student Panel Mini Lesson: Common Libraries Quiz 10: Final Project Details	*Homework 4 due*
November 19	Project Work Day Quiz 11: PhD Student Panel, Common Libraries	*CS Interview due* (11/22)
November 26	Final Project Check-In - Virtual	
December 3	Final Project Presentations *Attendance Mandatory*	*Engagement points due (12/3)* *Final projects due (12/6)*

Online Tools

We will be using a variety of online tools and platforms in EECS 110, described in this section.

Canvas & Announcements

Course information such as the schedule, assignments, etc. can be found on Canvas. Lecture slides and in-class materials will be posted before the start of lecture. The solutions to in-class exercises will be posted after class. The solutions to homeworks and labs will be posted after the due date.

Google Drive

We will place course material, such as lecture slides and lab worksheets + starter code, on Google Drive, accessible via direct links from Canvas.

Class Forum – Piazza

We will use Piazza to answer questions and post announcements/reminders. Piazza will be a significant source of help and hints for class assignments. You are expected to check Piazza regularly throughout the course.

Find our class signup link at: https://piazza.com/umich/fall2024/eecs110001fa2024

Please use the forum to post your technical questions and allow other students the benefit of seeing questions and answers. Technical questions will not be answered over email. Before posting your question, it is advised that you search the forum for previously posted questions to avoid duplicates. Students are encouraged to answer each others' questions. This is *not* a curved class, so help each other out! Answers by instructors will typically be provided within 24 hours.

Please do not post your own solutions, code, test cases, or output to the public forum. If you have a specific question about your code/answer, please make a **private post** or stop by office hours.

Gradescope

Gradescope is an online platform that we will use for submitting assignments and labs. Gradescope is accessible directly or from Canvas.

Programming Environment

We will use the programming environment Google Colab for this course, which can be accessed through Google Drive with your University of Michigan email account. To turn in programming assignments, you must download your code to your computer and upload it to Gradescope. We will use Visual Studio Code as an extra debugging resource.

Assignments

Weekly Assignments

Each week, you will have several assignments to complete. If you are unable to come to class, you are still responsible for turning in the class period's weekly assignments.

If you are missing the class period due to personal emergencies or health/medical reasons, etc. that will make meeting the deadline difficult, please reach out to Madelyn to discuss your options.

Labs

For class periods with labs, you will turn in (as a group) the Colab notebook worked on in class. These are due each Wednesday at 11:59 pm. **Missing the lecture does not excuse you from labs.**

Quizzes

The in-class quizzes are used to determine grades for two separate grade categories: Attendance and Quiz. Attendance credit is given if the student makes a reasonable first attempt before the end of class, as determined by the timestamp. If your first quiz attempt is submitted outside of the time allotted in class, you will not receive attendance credit for that day, but you will still earn points for the Quiz category. See the Attendance Policy for more information.

The Quiz category grade is determined by the best quiz attempt, graded for accuracy, before the deadline, which is the **Wednesday after class at 11:59 pm.** You will have unlimited attempts to complete the quiz for accuracy before this deadline. The lowest 2 quiz grades will be dropped from the "Quiz" category. **Quiz drops and skip days are separate.**

Speaker Questions

For classes with guest lectures/panels you are required to individually submit a Canvas Survey with **one question** to ask the guests. These surveys will be due the day before class (Monday) at 11:59 pm, in order to allow instructors time to look over and make a list of the questions submitted before class. You will have 3 opportunities to submit questions, 2 of which will count towards your grade. If you submit more than one question for a given survey, the extra questions will count as engagement points.

Homeworks

There will be four homework assignments at the beginning of the semester to demonstrate your grasp of basic computer science principles. There will also be one "mini" assignment at the beginning of the semester to make sure everyone is comfortable with the Colab environment we will be using. Each assignment will specify the material to be turned in. Homework is due by 11:59 pm on the due date.

Homeworks 2 and 4 will be completed with partners as pair programming assignments. You may select a partner up to two weeks before the assignment is due; if you have not selected a partner with less than one week before the deadline, we will assign one.

CS Interview Assignment

Each student must interview someone further along in the field of computer science and engineering (e.g., an older undergraduate student, a graduate student, a faculty member, a computing professional). We encourage you to interview someone that you can relate to (e.g., interviewing a woman if you are a woman). The interview should focus on the career path and experiences of the person you are interviewing. After the interview, each student must write a two-page paper (single-spaced) about what they learned from the interview. This paper will be due on November 22nd.

Final Project

Each student will work with a team to complete a final project of their choice. There will be a set of projects to choose from and groups will rank their preferred projects. This project will have four milestones: project selection, a check-in, final presentation, and code submission. More details will be forthcoming about the requirements for this project.

CS Engagement Points

In order to get full credit in the class, you must earn at least 15 CS Engagement Points throughout the semester. These points can be earned through participating in activities related to the class, as well as other computer science activities. All points must be earned by the last day of class, December 3rd. No points will be accepted after this deadline. A full list of activities available for CS Engagement Points may be found in this document.

We will track CS Engagement Points points on Canvas. Some activities will require you to fill out a Google Form and others will be tracked automatically. Many of these points are graded using the honor system. Please note that it is a violation of the honor code to tell us that you've attended an event when you really have not; such violations will be reported to the Honor Council (see section *Acceptable Resources, Collaboration, and the Honor Code* below).

Grading

Your grade in this class is determined by your performance on the assignments in the course. We use a "threshold grading" scheme, in which points are assigned based on your understanding of course concepts and ability to apply those concepts to solve engineering problems.

In threshold grading, grades are not curved: your grade depends solely on your own work, regardless of the performance of your peers. Our goal in teaching this class is to provide each student with all the resources necessary to show competency in the course material and therefore earn an A.

Course Grade Breakdown

Category	% of Final Grade	Notes
Attendance	3%	9 out of 11 classes (2 skip days)
Labs	4%	No lab drops
Speaker Questions	1%	3 opportunities, only 2 counted

Quizzes	2%	Lowest 2 grades will be dropped
Homeworks	40%	Some extra credit opportunities
CS Interview	10%	
Final project	25%	
CS Engagement Points	15%	Each point = 1% of final grade

Grading Scale

Final letter grades are calculated according to the following table (grades are NOT rounded up):

Numerical Grade (%)	Letter Grade
$98 \leq \% \leq 100$	A+
$93 \leq \% < 98$	A
$90 \leq \% < 93$	A-
$87 \leq \% < 90$	B+
$83 \leq \% < 87$	B
$80 \leq \% < 83$	B-
$77 \leq \% < 80$	C+
$73 \leq \% < 77$	C
$70 \leq \% < 73$	C-
$67 \leq \% < 70$	D+
$63 \leq \% < 67$	D
$60 \leq \% < 63$	D-
$\% < 60$	E

Deadlines & Late Submission

All assignments must be turned in by 11:59 pm on the date that they are due. They must be submitted electronically using Canvas or Gradescope and we will use the later timestamp to validate turn-in time. We will only accept homework, labs, and the CS Interview late, outside of

granted extensions, using the following policy: Late assignments will be penalized 10% per day (where each day starts at 11:59pm on the due day). **Assignments turned in after three days will not be accepted.**

Late Day Tokens – Use them wisely!

To accommodate for coinciding deadlines you may have from other courses, or personal unforeseen events such as sickness, **each person has 3 late day tokens total.** Each token provides an automatic extension of 1 calendar day---no questions asked. We will automatically use them on your late assignments. When you are out of tokens, the late penalties will apply.

- Late days are rounded up to the nearest integer. For example, a submission that is 4 hours late will count as one day late.
- Extreme circumstances, like medical emergencies, etc.: In such cases, additional, no-penalty extensions will be granted. Contact Madelyn with some written documentation (like a doctor's note).
- For group assignments, all team members must use an individual late day token for each day the assignment is late.

To avoid any confusion, here are some examples:

Number of late days of assignment	Tokens used in assignment	Penalty
1	0	10%
1	1	0%
2	0	20%
2	1	10%
2	2	0%
3	0	30%
3	1	20%
3	2	10%
3	3	0%
4 or more	Not accepted	100% (not accepted)

Note that the only method of submission is Canvas/Gradescope. It is your responsibility to ensure that the assignments have been uploaded successfully by the due date. Assignments not successfully uploaded by the due date will not be accepted.

Also, note that any changes you make to the homework already submitted on Canvas/Gradescope counts as a resubmission. If you make any changes to the assignment after the due date has passed you will be assigned a late penalty based on the number of days that have passed. For example, if you edit an assignment on September 20 and it was due on September 17 you will be assigned a 30% penalty (10% per day) as explained above. This is non-negotiable.

Grade Return Policy

Our goal is to return all graded assignments to you within one week. However, sometimes things happen and we might get behind a bit (we are busy, too)! You will be notified by Canvas when grades are posted. **Do not post on Piazza asking when grades will be out** unless it has been 3 weeks since the assignment was due.

Regrade Policy

Once the grades for an assignment are published, you will have one week to request regrades on the assignment. You can request on Gradescope, via email, or by speaking to Madelyn or Ena in class or office hours. Typically regrade requests are for if you think we made a mistake while grading, however we also allow regrade requests to be an opportunity to earn some partial credit on points you have lost. You will need to show the instructors that you understand why you lost points and what the correct answer is. You can do this via Gradescope, email, or talking to Madelyn or Ena. We will give you up to 75% partial credit of the points you earn back (ie. if you lost 2 points, but show us effort and understanding you will earn 1.5 points back). Note: for regrade requests where the instructors make a mistake in grading, full points are given back.

Acceptable Resources, Collaboration, and the Honor Code

Learning from your peers, and learning as you teach them, is an excellent way to become comfortable with the computing skills we cover in EECS 110. However, we also want you to be able to accurately self-assess where you are at in your own skill level. In other words, can you actually do this stuff? Here, we describe the collaboration that is allowed and encouraged in EECS 110, the collaboration that is not allowed, and which online resources are and are not allowed. All Honor Code violations will be reported to the Engineering Honor Council as appropriate.

If you are at all unsure whether an online resource or collaboration is allowed, **please contact the course staff via Piazza, Office Hours, or email *before* you do anything**. We will help you determine if what you're thinking of doing is in the spirit of EECS 110.

Acceptable Online Resources

The following are acceptable online resources in EECS 110: course materials on EECS 110 FA 2024 Canvas page, answers and hints from students and instructors on Piazza (remember: no sharing code), the official Python documentation, and results from search engine queries. Search engines (e.g., Google, Bing, Yahoo, DuckDuckGo, etc.) may be used to:

- Understand an error message you are getting in your code.
- Resolve a point of confusion about a concept (e.g., how list slicing works).
- Look up a built-in function (e.g., String join() method).
- Find educational tutorials and videos (e.g., W3Schools, GeeksforGeeks, YouTube)

While limited external resource use is encouraged to help you get unstuck, using online resources to write the majority of your code is not. **Note that generative AI models such as ChatGPT are not considered search engines, and are not permitted in this course.** *See Why We Are Not Allowing Generative AI in This Course section for more information.*

Encouraged Collaboration

We want students to learn from and with each other, and we encourage you to collaborate. We also want to encourage you to reach out and get help when you need it. You are encouraged to:

- Give or receive help in understanding course concepts covered in lecture or lab.
- Help others understand compiler errors or how to debug parts of their code.
    - We are giving you permission to look at another student's code to help them understand what is going on with their code. You are not allowed to tell them what to write for their code, and you are not allowed to copy their work to use in your own solution.
- Consult with other students to better understand assignment specifications.
- Discuss general ideas as they relate to the project.

Honor Code Violations

The following are considered honor code violations:

- Submitting others' work as your own.
- Copying or deriving portions of your code from others' solutions, including solutions from generative artificial intelligence (GenAI) platforms such as ChatGPT or GitHub Copilot.

- Collaborating with others (not in your group, if group assignment) to write your code, such that your solutions are identifiably similar.
- Not following proper pair programming practices when pair programming is required.
- Sharing your code with others to use as a resource when writing their code.
- Receiving help from others to write your code.
- Sharing test cases with others if they are turned in as part of your solution.
- Sharing your code in any way, including making it publicly available in any form (e.g. a public GitHub repository or personal website).
- Getting the Word of the Day from a friend and using it to fill out the quiz during the class time period to receive attendance credit when you are not in attendance.
- Making a CS Engagement Points submission for an event that you did not really attend, a book/article you did not really read, or a practice problem you did not actually write.

You are still responsible for following these rules even after finishing the course. Students may be nervous about being reported for coincidental similarities between their code and others, but we only report clear cases of academic misconduct (e.g. when there is overwhelming evidence code was copied from another student or online source). You will not be reported for:

- Using starter code provided by course instructors.
- Having the same idea as someone else.
- Receiving similar help/guidance from the same course staff member in office hours.
- Helping another student understand compiler errors or debug part of their code. (You may NOT give/receive help with the process of writing the code originally.)

If you are retaking the course, you may reuse your own code, presuming it was wholly written by you and/or your partner and not derived from another source, following all the rules outlined here. It is possible for instructors to miss an honor code violation in a previous term, but catch and report it when the code is reused on a course retake.

If you have any questions as to what is allowed, please talk to an instructor right away.

Why We Are Not Allowing Generative AI In This Course

Generative AI is a technology that has the potential to be a very useful tool in computing. But like any tool, you need to know enough of the basics to be able to use it correctly and ethically. We can't help you in office hours if you bring us Generative AI-created code that you don't understand. We are there to help you, not your code.

This is an introductory computing course, and we want you to learn the basics of computing so that later on you will be able to leverage the capabilities of platforms like U-M GPT or Github Copilot to create your computer programs. We encourage you to learn more about U-M's

Generative AI Guidance, including the biases inherent in Generative AI and how to protect your data when using these tools.

Accommodations for Students with Disabilities

If you need accommodations for a disability, we are happy to work with you. Some aspects of this course may be modified to facilitate your participation and progress. As soon as you make us aware of your needs, we can work with the Services for Students with Disabilities (SSD) office to help us determine appropriate academic accommodations. SSD (734-763-3000; http://ssd.umich.edu) typically recommends accommodations through a Verified Individualized Services and Accommodations (VISA) form that SSD will upload to the Accommodate online platform which then notifies us of the needed accommodations. Any information you provide is private and confidential and will be treated as such.

Religious and Cultural Observance

Anyone with religious or cultural observances that coincide with this class or any deadlines (see Course Schedule) should let the instructor know by email by September 16th. I strongly encourage you to honor your cultural and religious holidays! However, if I do not hear from you by September 16th, I will assume you plan to attend all class meetings.

Diversity, Equity, and Inclusion

The University of Michigan is committed to student learning and the development of the whole student in a diverse and multicultural campus community. We seek to engender a diverse community that is accessible, safe, and inclusive. We value a community that appreciates and learns from our similarities and differences. We pledge our commitment to support the success of all community members. **If you experience anything, directly or indirectly, that goes against this commitment, please talk to your instructor, GSI, an IA… anyone that you feel comfortable talking to. We want to know!** We try hard not to knowingly do or say something that will cause harm or stress to you. Many of us are constantly going to workshops and reading papers about how to have the most inclusive classroom that we can have. But we are human and sometimes we mess up! If we do, we sincerely hope you will come talk to one of us so that we can see things from your point of view, and we can learn how to improve our class for the next semester.

Student Wellness and Mental Health

As a student, you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce your ability to participate in daily activities. If you are experiencing concerns, seeking help is a courageous thing to do for yourself and those who care about you. If the source of your stressors is academic, please contact me so that we can find solutions together.

The University of Michigan is committed to advancing the mental health and well-being of its students. If you or someone you know is feeling overwhelmed, depressed, and/or in need of support, services are available through Counseling and Psychological Services ("CAPS") and UWill. You may also find helpful the well-being resources for students offered through the University's Office of Student Life.

If you have an urgent matter when CAPS is closed, please call 734-764-8312 (Press 0) to connect with CAPS After Hours.

Basic Needs

If you don't have stable housing and/or are skipping meals, concerned about spending money on food and/or having difficulties with other basic needs, learn about the many resources available to support you at the University of Michigan. We can provide you with immediate food, housing and emergency funding support, and access to additional resources.

If I can help you in any way to access the resources above, or if you have any questions about student care resources, please contact me or the UM Resource Navigators so that we can assist you. I am committed to ensuring that all students have the resources they need to be able to participate in this course.

Updating Your Preferred Name, Name Pronunciation, and Pronouns in U-M Online Tools

If you have not updated your preferred name and pronouns, or if those descriptions of you have since changed, we would greatly appreciate it if you could take a minute to make sure this information is up to date for us.

Updating/setting preferred name and pronoun in Wolverine Access

Go to *Student Business*. Then select *Campus Personal Information*. The option to change your preferred name will be under *Names*. The option to add or change your preferred pronouns will

be under the tab *Gender Identity*. Your preferred name and pronoun will now show up on our course roster and in Canvas, helping us to learn who you are faster!

Updating/setting pronouns in Zoom

When you log into U-M's Zoom, Zoom will display the preferred name that you have listed in Wolverine Access. However, it currently won't bring over your pronoun. To update/set your pronoun in Zoom, go to umich.zoom.us and log in with your U-M Google account. Then go to *Profile* on the left-hand sidebar, and click *Edit* next to your name. Adding your picture and your pronouns will help your instructors (including us!) learn who you are faster!

Recording your name in Canvas

You can record yourself saying your name in Canvas using NameCoach so that we know how to correctly pronounce your name. Here are instructions on how to record your name in NameCoach. Hearing your voices will help us to learn who you are faster, and we appreciate your taking the time to set all this stuff up!