

EECS 376: Foundations of Computer Science

Fall 2020

Instructors:	Amir Kamil Ilya Volkovich	akamil@umich.edu ilyavol@umich.edu
GSIs:	Anthony Liu	Ethan Zell
IAs:	Mollie Bakal Lily Ge Scott Guest Reuben Gutmann Ali Baker Anzhelika Iugai Charmee Kamdar Katie Knister	Thomas Larsen Juliet Levesque Peter Ly Hadley Peterson Ian Robinson Misha Sashko Anjali Vyas Sam Zayko

Lecture 1, 2	12:00 PM - 01:30 PM M,W	Kamil	https://umich.zoom.us/j/95082498787
Lecture 3	03:00 PM - 04:30 PM M,W	Volkovich	https://umich.zoom.us/s/93401505598
Lecture 4	10:30 AM - 12:00 PM M,W	Volkovich	https://umich.zoom.us/s/93401505598
Discussion 11	02:30PM - 03:30PM Th	TBD	
Discussion 12	11:30AM - 12:30PM Th		
Discussion 13	01:30PM - 02:30PM Fr		
Discussion 14	02:30PM - 03:30PM Fr		
Discussion 15	12:30PM - 01:30PM Th		
Discussion 16	12:30PM - 01:30PM Fr		
Discussion 17	11:30AM - 12:30PM Fr		
Discussion 18	08:30AM - 09:30AM Th		
Discussion 19	09:30AM - 10:30AM Fr		
Discussion 20	10:30AM - 11:30AM Fr		
Discussion 21	04:00PM - 05:00PM Th		
Discussion 22	05:00PM - 06:00PM Th		
Discussion 23	09:30AM - 10:30AM Th		
Discussion 24	10:30AM - 11:30AM Th		
Discussion 25	06:00PM - 07:00PM Th		
Discussion 26	03:30PM - 04:30PM Fr		
Discussion 27	01:30PM - 02:30PM Th		

Office Hours:

- All office hours will be conducted remotely over Zoom.
- We will hold both Individualized and group office hours as indicated below.
- See the Google Calendar linked from Canvas for the most up-to-date information.
- The times below are tentative and will be finalized shortly. This document will be updated as things change.
- Zoom links will be added when we start holding office hours at the end of the first week of the term.

Monday: Anjali (10:30am-11:30am), Katie (12:00pm - 2:00pm), Prof. Kamil (2:00pm - 3:00pm), Scott (3:00pm - 4:00pm), Lily (4:30pm - 6:30pm), Reuben (5:00pm - 7:00pm)

Tuesday: Mollie (10am - 12pm), Scott (12:00pm - 1:00pm), Ian (1:00pm - 3:00pm), Charmee (3:00pm - 5:00pm), Hadley (5:00pm - 7:00pm)

Wednesday: Misha (10:00am - 12:00pm), Juliet (12:00pm - 2:00pm) Sam (4:30pm - 6:30pm)

Thursday: Anjali (10:30am-11:30am), Anzhelika (12:00pm - 2:00pm), Prof. Volkovich (2:00pm - 3:00pm)

Friday: Ethan (10:00 am - 12:00pm), Thomas (2:00pm - 4:00pm), Peter (4:00pm - 6:00pm)

Zoom: You will need a Zoom account through the university. You can sign up for one here: <https://umich.zoom.us/>. If you have a personal Zoom account using your UM email, you will have to convert your account to a university one. Please follow the instructions here: <https://documentation.its.umich.edu/zoom-account-switch>

Textbook: Although the course does not have a required textbook, the following books will be good references:

Michael Sipser, *"Introduction to the Theory of Computation,"* 2nd or 3rd editions.

Cris Moore and Stephan Mertens, *"The Nature of Computation"* (free online through the U-M Library).

Both course slides and additional materials will be posted online.

Prerequisites: EECS 203 and EECS 280 or equivalent.

General Info:

EECS 376 provides an introduction to the theory of computation, including: algorithms, computability, complexity, and cryptography.

By the end of the course, students are expected to understand the fundamental results about the power and limits of computation, including: algorithmic paradigms, upper and lower bounds, undecidability, and NP-completeness. Students should also be able to apply this knowledge to problems that they encounter in the future.

A detailed schedule for the class can be found on the Canvas page.

Course Format and Requirements:

The class time will be spent in lecture, having discussion and working in small groups. All aspects of the course will be conducted remotely, and recordings will be made available for at least one lecture and one discussion section. While we do not require synchronous participation, we recommend attending and participating in classes (both lectures and discussions) live, if possible.

All times and deadlines for this course are in Ann Arbor (Eastern) time.

A Piazza page has been established to help with discussion outside of class. Any question that is not private and might be of interest to other students in the class should be posted to Piazza. Please note that the staff might ask you to post your questions on Piazza if we feel it will be beneficial to other students.

<https://piazza.com/umich/fall2020/eecs376>

For other questions, you can reach the course staff at: eeecs376-F20@umich.edu

If you send the course staff an email that requires more than a few sentences of reply, you might be asked to attend office hours or set up an individual meeting.

If you do not get a reply within 48 hours, please resend your email. The course staff will work very hard to be respectful of you. Please be respectful and professional in your emails.

Course Grading:

Homework	40%
Midterm	24%
Final	32%
Course Evaluation and Computing CARES Surveys	4%

Below are the *guaranteed* grade thresholds: if your final raw score exceeds the threshold for grade X, your final letter grade will be X **or better**. The actual thresholds will be determined after the final exam, but will be **no higher** than what appears below. (E.g., a score of 87% or above is **guaranteed** to receive a B+ or better.) A failing grade on the final exam is grounds for failing the course.

A:	94% and above
A-:	90%
B+:	87%
B:	83%
B-:	80%
C+:	77%
C:	70%

Grading Philosophy:

In any humanities or social science class, you must write clearly and concisely to get your point across. It is not sufficient that a correct argument appears *somewhere* in your answer, if it is also accompanied by incorrect or faulty reasoning. The same applies for this course: your responses must be *clear, concise, and correct* to receive full credit.

Components of Grade:

Homework Assignments (40%)

Homework assignments play an important role in the learning process.

There will be 12 weekly assignments HW0 - HW11, due at 10:59PM on Wednesdays (except HW11, which will be due 11:59PM on Tuesday due to the end of the semester).

Late assignments will receive **no credit**. However, the two lowest homework scores will be dropped. Therefore, each homework assignment is worth 4% of your final grade. Unfortunately, exceptions can only be made for emergency situations (e.g. family or medical), and should be requested with as much notice as possible and/or be evidenced by documentation. Please plan accordingly and/or be ready to provide documentation of medical appointments, etc.

Each assignment will consist of both **effort-based** and **regular** problems.

The **effort** questions are graded subjectively on the perceived effort. That is, getting full points on effort questions amounts to making an attempt at a valid argument or approach but, perhaps, missing some details along the way. However, each problem will be graded differently. For example, if you are asked to do an induction proof and do not state either a base case or an induction hypothesis, that almost certainly will not count as a "reasonable effort" - even if you find some other way to do the proof. In the same way, if your proposed hypothesis is a clear misunderstanding of the question, you might get some or no points. Grading on effort questions is often going to be subjective (beyond correct and complete answers of course being objectively correct).

Regular problems are designed to test your understanding of the material and will typically be deeper and/or more challenging problems.

Midterm (24%) and Final Exam (32%)

One midterm and a cumulative final exam will be given. A large fraction of the questions on these exams will be similar to homework and class problems or very slight variations/extensions. Thus a good way to study is to make sure you know how to solve these problems.

Course Evaluation and Computing CARES Surveys (4%)

The course evaluations and Computing CARES surveys are important to us and count 4% towards your final grade. Students will receive two points by submitting the midterm and the final course evaluations (one point each) **and** uploading the receipts from the course evaluations to Canvas as separate assignments. Students will receive two points (one point each) by submitting the Computing CARES surveys before their deadlines.

Regrading Policy:

If a student feels that credit has been inappropriately allocated, then they should ask for a regrade. The student should submit a request via Gradescope along with an explanation of what was incorrectly graded and why. Regrade requests must be made within **one week** of an assignment being graded.

*****No oral and/or e-mail regrade requests will be accepted*****

Students are cautioned that they have the possibility of both gaining and losing points (i.e., if the regrade determines that the answer was more incorrect than marked). Students are reminded that accuracy alone is not sufficient; the answer should also be clear and concise.

Honor Code and Collaboration:

Unless otherwise specified in an assignment, all submitted work must be your own, original work. If you are referencing others' work, put it in quotes! If you are directly quoting, or building on others' writing, provide a citation. See the Rackham Graduate policy on Academic and Professional Integrity for the definition of plagiarism, and associated consequences. Violations of the Honor Code will be taken seriously; please see details at <http://honorcode.engin.umich.edu/>

Students are **encouraged to collaborate** (except when taking exams). Please use Piazza to this effect and also to find other students to work with on assignments, i.e., create study/homework groups. However, when turning in work that benefited from a collaboration, the student must state that clearly. Students **must write their solutions on their own** and **may not look at any other student's write-up.**

Course Technology Policy:

Students who need loaner laptops and reside in the United States may request one from ITS:
<https://its.umich.edu/computing/computers-software/sites-at-home>

We encourage you to attend lectures and discussion sections synchronously if possible. When participating in remote lecture, discussion, or office hours, please keep yourself muted unless you are actively talking to the other participants. Background noise can be distracting to your peers.

Course lectures and discussions may be audio/video recorded and made available to other students in this course. As part of your participation in this course, you may be recorded. If you do not wish to be recorded, you may keep yourself muted during class sessions. Chat transcripts will also be recorded. If you would like to ask a question in chat but do not want it in the recording, you can send a private chat message to the instructor, which will not show up in the recording.

Students may not record or distribute any class activity without written permission from the instructor, except as necessary as part of approved accommodations for students with disabilities. Any approved recordings may only be used for the student's own private use.

Student Sexual Misconduct

Policy Title IX prohibits discrimination on the basis of sex, which includes sexual misconduct — including harassment, domestic and dating violence, sexual assault, and stalking. We understand that sexual violence can undermine students' academic success and we encourage anyone dealing with sexual misconduct to talk to someone about their experience, so they can get the support they need. Confidential support and academic advocacy can be found with the Sexual Assault Prevention and Awareness Center (SAPAC) on their 24-hour crisis line, (734) 936-3333 and at sapac.umich.edu.

Alleged violations can be non-confidentially reported to the Office for Institutional Equity (OIE) at institutional.equity@umich.edu

Student Mental Health and Wellbeing

We want you to be successful in and outside of this class. If you or someone you know is feeling overwhelmed, depressed, and/or in need of support, services are available. For help, contact Counseling and Psychological Services (CAPS) at (734) 764-8312 and caps.umich.edu during and after hours, on weekends and holidays, or through its counselors physically located in schools on both North and Central Campus. You may also consult University Health Service (UHS) at (734) 764-8320 and <https://www.uhs.umich.edu/mentalhealthsvcs>, or for alcohol or drug concerns, see www.uhs.umich.edu/aodresources. For a listing of other mental health resources available on and off campus, please visit: <http://umich.edu/~mhealth/>

Accommodations for Students with Disabilities

If you think you need an accommodation for a disability, please let the course staff know at your earliest convenience by completing the online form:

<https://forms.gle/W8iQNdPsB7iU9iwN7>

Some aspects of this course, the assignments, the in-class activities, and the way we teach may be modified to facilitate your participation and progress. As soon as you make any of the staff aware of your needs, we can work with the Office of Services for Students with Disabilities (SSD) to help us determine appropriate accommodations. SSD (734-763-3000; <http://www.umich.edu/~sswd/>) typically recommends accommodations through a Verified Individualized Services and Accommodations (VISA) form. The course staff will treat any information you provide as private and confidential.

Exam Conflicts

Everyone is expected to take all exams at the scheduled times. The times of the exams can be found on the course schedule. It is departmental, college, and university policy that travel schedules and holiday activities **never** take precedence over exam schedules. Alternate exam will be given **only** in very *exceptional cases* such as serious illness or a similarly serious family emergency.

We will accommodate people residing in time zones that necessitate an alternate time.

In a case of a conflict due to a university sponsored event (such as participation in a sponsored sports event or a competition) a university official in charge of the event should contact the instructors **at least three weeks** in advance to determine how the missing grade will be made up.

Note that end-of-term transportation matters, such as the availability of inexpensive air tickets in mid-December, are **not** acceptable reasons for an absence.

Research Disclosure

Your class work might be used for research purposes. For example, we may use anonymized student assignments to design algorithms or build tools to help programmers. Any student who wishes to opt out can contact the course staff (eeecs376-F20@umich.edu) to do so at any time up to seven days after final grades have been issued. This has no impact on your grade in any manner.

Right to Revise

The course staff reserve the right to make changes to the syllabus at any time as they see fit. When a revision occurs, it will be announced, and it is your responsibility to be informed of such.

Good luck!