CSE 543: Ethics of AI and Robotics

Winter 2027

Course Staff

Primary Instructor: Elizabeth Bondi-Kelly (she/her/hers)
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Meeting Times and Location

Lectures: Mondays, 2:30pm-5:30pm, 1670 BBB
Discussion: Fridays, 1:30pm-2:30pm, 1013 Dow

Course objectives

The purpose of this course is to help graduate students **develop the skills to critically reason about the potential socio-technical impacts** of deploying AI systems—what can go wrong, what can go right, and how they can shift power in a local community. Students will engage with relevant research literature to understand existing approaches to identifying and evaluating AI impacts, while gaining practical experience with strategies they can apply in their own research and real-world practice.

Teams will select an AI system of interest, identify its potential ethical concerns and impacts from the literature, and interview stakeholders to gain experience understanding the nuances of deploying AI systems in real-world contexts. Through these activities, students will practice and strengthen their ability to anticipate potential impacts, consider different stakeholder perspectives, and reason about the ethical implications of AI systems. We expect that the stakeholders we speak with will also benefit from the "AI Impact Report" that teams share back with them as part of the outcome of this course.

Prerequisites

Graduate standing. Some programming experience, particularly in Python, may be beneficial but is not required.

Schedule

A *tentative* schedule of planned lectures, discussion sessions, and assignments is available via the online resources detailed below. *Please bear in mind that the schedule will likely be revised several times over the course of the term.*

Because attendance will be so important, we will have participation quizzes each session (please see Course Components for more). However, the instructor may make some sessions Zoom only in hopes of fostering flexibility. These will be listed in the tentative schedule as well.

Textbook

We will not have a textbook, but will instead read a collection of literature, found (and often updated in) the tentative course schedule.

Online resources

Canvas. This course will use the Canvas Learning Management System. If you are enrolled in the course, you will have automatic access to the associated Canvas site that houses links to all important course materials, including assignments, slides and recordings, etc.

Piazza. We will also use Piazza as a platform for announcements, Q&A, and other discussions involving all students and instructors. Please enable notifications for announcements and/or check it regularly, as **the instructor will assume that any update or announcement made on the course Piazza by instructors is known to all students within 24 hours of it being posted**. Note that Piazza is integrated with Canvas and should appear on the left-hand navigation menu – you should be able to click on it to enroll and then use the platform within the Canvas site.

Piazza is a great forum for engaging with and having your queries addressed quickly by the community of students and instructors. It also gives students the opportunity to deepen their understanding by helping fellow students who have queries. You are strongly encouraged to use it to ask any question regarding assignments, readings, discussion sessions, or any aspect of the contents and logistics of the course, that you cannot resolve by yourself in reasonable time. You should also feel free to occasionally share things like AI-relevant news, a paper/book you think the class might be interested in, any research project you might be working on that relates to the material covered in class, etc. *However*, Piazza is also easy to misuse or overuse, so please be mindful of the following issues when using it:

- Check to see if a question you have (or some variant of it) has already been asked before posting it. If yes, try to follow and participate in the follow-up discussion.
- You can create private postings that only the instructors can see for questions that you are not comfortable sharing with other students, but you can also email the primary instructor directly.
- **Always be respectful and professional** in how you address others on Piazza, just like you should be in all other encounters at the University.
- The instructor will endeavor to check Piazza periodically, but you should not expect responses in less than 24 hours. In addition, you should not expect (though you may occasionally receive) responses from the instructor within one hour of posting your question, or over the weekend.

Peerceptiv. Assignment submissions will be primarily handled in Peerceptiv, which can be found in the Canvas menu. Detailed instructions for submitting will be provided in assignment instructions.

Course Modality

Course meetings will be in the form of primarily in-person lectures or reading discussions and primarily in-person discussion sessions focused on project development (e.g., methods for community engagement such as interviews, focus groups, and participatory workshops; midterm check-ins with course staff; and guest speakers). The instructor may also organize some remote sessions to better meet with guest speakers and accommodate class flexibility, which would be posted at the start of the course. The instructor will announce any changes to the schedule via Piazza.

All lectures will be recorded and made automatically available in the Lecture Recordings section on Canvas within 24 hours of the end of the corresponding in-person meeting (keep an eye on the left-hand navigation menu on Canvas).

Interacting with Instructor

The instructor strongly encourages in-person attendance in lectures and discussions that are scheduled to take place in person. We will have ample interaction opportunities in the classroom, as well as in-class participation quizzes, which will count towards your overall course score (for details, see **Grading**).

Office hour meetings can be requested via email, and are primarily meant for discussing questions about assignments. There will also be regular opportunities for instructor feedback in class.

To send messages to the instructor, students should send email to the instructor's institutional email address provided above. The instructor will make every effort to reply within 48 business hours, and welcomes follow-ups if needed.

Course Components

Topic Discussions	**Group Project**	**Quizzes**
A large component of the class will be discussions of papers. The discussions will take place during the majority of our lecture meetings. Check out the course schedule for further details about topics, and the assignment document for more details on the format. Lowest 2 grades will be dropped.	Teams of 4 students will work on a service-learning project throughout the term. Teams will be assigned based on survey responses, will select an AI system of interest (an existing deployed system, one they are building, or one from a list we provide), will interview stakeholders about its impacts, and will share an "AI Impact Report"	We will have in-class participation quizzes each lecture and discussion. The quizzes will be administered during class via Canvas with an access code (so please endeavor to have a charged device available). Submitting the quiz by the end of class will result in full credit for the quiz, regardless of answer accuracy. Not submitting will result in no credit. We will drop the lowest 5, so in other words, you can miss 5 sessions without penalty. There is no need to inform the instructor if

	with them. The teaching staff will provide support and feedback. Detailed instructions will be provided.	missing a quiz.

Grading

The breakdown of the overall score for the course is as follows (all percentages are with respect to the overall course score):

1. Topic Discussions: 30%
2. Group Project (including milestones and evaluations, to be detailed in a separate document): 50%
3. Quizzes: 19%
4. **Course evaluation**: 1% (**see below**)

Grades will be returned online (via Canvas) within 2 weeks unless otherwise announced online or in class. The thresholds for the conversion of overall weighted course scores to letter grades will be finalized by the instructor later in the term, and the instructor may curve to benefit students.

Course evaluation. You will be asked by the school to submit your official, anonymous evaluation of the course and the instructors twice, once around the middle and once towards the end of the term. To encourage you to provide timely feedback, the instructor will award you **0.5 of a point for each of your two evaluations** (mid-term and end-term) that will count towards your overall course score of 100; you will need to upload a PDF of the system-generated email acknowledgment you receive upon successfully submitting the evaluation form. **Please DO NOT share your evaluation (scores or comments) with the teaching staff**. Remember that the point you get is for providing feedback only and does not depend in any way on the content of your feedback. *However, please remember to keep your responses respectful and professional; this is greatly appreciated.*

After letter grades are released, any request for a reevaluation, additional work, etc. to improve your letter grade will also be ignored.

Late policy

To be considered on time, assignments **must be turned in by 11:59pm ET on the due date**, based on the final submission timestamp. This means that even if you update only a portion of your assignment after the turn-in time, the entire assignment will still be considered late.

After that, project assignments will have a penalty of 5 points off of the assignment score each day until two weeks after the original due date, at which point no credit will be given. No late submissions will be accepted for topic discussion and project presentations or quizzes out of fairness to all students.

Because the course moves quickly, some assignments are dependent on prior assignments, and there will be working time on the project in class, the instructor anticipates that *few exceptions to these late policies will be made*. You should start early and ask questions often, including scheduling questions. Please refer to **Absences, extensions, concerns** below for more details.

Collaboration and academic integrity

Adherence to the **Engineering Honor Code** (https://ecas.engin.umich.edu/honor-council/honor-code/) is required in all assignments (quizzes, discussions, project). You are encouraged to *discuss ideas and techniques* with other class and team members, but all written work, whether in scrap or final form, and all code must be written by your team, unless otherwise expressly stated in the assignment document or below in the Generative AI and Online Resources policy. **Interviewees, partners, and other scholars are welcome but not expected to contribute, and their contributions *must* be acknowledged.**

Violation of this policy is grounds to initiate action that would be filed with the Dean's office and would come before the College of Engineering's Honor Council. **It is *your responsibility* to familiarize yourself with the Honor code and to contact the course staff for clarification if you find any ambiguity about this policy.**

Generative AI and Online Resources

ChatGPT and similar technologies are rapidly becoming part of our professional lives, and it is important for us to learn to use them. As such, you may submit material that contains AI-generated content, or is based on or derived from it. This includes for example coding support, drafting an outline, etc. However, you must take complete responsibility for the content and properly document this use. Specifically, you should include the model, the prompt(s), the significant parts of the response, and changes made, as we'd like to emphasize that more work may be required in an AI-assisted mode. Online resources such as search engines may be used, but any resources found and used must be cited. For the group project in particular, every team member must be able to talk with the course staff about how AI was used in their work (for example, at the midterm check-in and in the final presentation), and AI tools may not replace conversations with stakeholders.

Absences, extensions, concerns

If illness or other emergencies lead to (or are likely to lead to) prolonged absences from classes, missing multiple assignment deadlines, and/or other concerns about performance, please get in touch as soon as you can with the Michigan **C.A.R.E. Center** (https://care.engin.umich.edu/) if you are a student in the College of Engineering and the **Dean of Students** (https://deanofstudents.umich.edu/) otherwise.

For other concerns, please contact instructors via email as soon as you can. Please keep in mind that extensions to assignment deadlines beyond the late policy are unlikely to be granted outside of emergencies.

Recordings and privacy

Please note that lecture recordings will automatically be made available on Canvas for the entire class to see, and you may be recorded (video and audio) as part of your participation in class. Moreover, the microphones in the classroom are sensitive and may pick up conversations among students during class. On Piazza, your name (unless you make an anonymous post) and posts (except private posts for instructors) will be visible to other students. If any of the above are privacy concerns for you, feel free to reach out to the teaching staff by email within the first two weeks of class.

Students **may not record or distribute any class activity** without written permission from the primary instructor, unless it is in accordance with approved accommodations for students with disabilities (see next section). Any approved recordings are for the student's own private use only.

Accommodations for Students with Disabilities

If you need special accommodations for any component of the course (lectures, discussions, quizzes, homework, exam, project), please inform the primary instructor by email as well as the **Services for Students with Disabilities** (SSD) office (http://ssd.umich.edu) at your earliest convenience to help us determine the best course of action for your case. Any information you provide in this vein will be treated as private and confidential, and used only for the purpose of accommodating your needs. If you have concerns about presentations, please reach out to the primary instructor at the beginning of the semester.

Commitment to Equal Opportunity and Diversity, Equity, and Inclusion

As indicated in the General Standards of Conduct for Engineering Students, we are committed to a policy of equal opportunity for all persons and do not discriminate on the basis of race, color, national origin, age, marital status, sex, sexual orientation, gender identity, gender expression, disability, religion, height, weight, or veteran status. Please feel free to contact us with any problem, concern, or suggestion in this vein. We ask that all students treat each other with respect and professionalism. You may report any misconduct or concerns via https://cse.engin.umich.edu/about/reporting-concerns-and-misconduct/.

Student mental health and well-being

You are strongly encouraged to familiarize yourself with the on- and off-campus mental health resources listed here: https://caps.umich.edu/article/um-mental-health-resources. If you or anyone you know needs help due to stress or any other academic, professional, or personal reasons, do not hesitate to seek help. You should also feel free to contact the course instructors in this vein, and anything you reveal will be treated as private and confidential.

Please note that the primary instructor is an Individual with Reporting Obligations (IRO), obligated to share with the Equity, Civil Rights & Title IX Office any information disclosed about sexual assault, sexual/gender based harassment, intimate partner violence, stalking, violation of protective measures.

Research

Your class work might be used for research purposes. For example, we may use anonymized student assignments to analyze the effectiveness of the course. Any student who wishes to opt out can contact the instructor after final grades have been issued. This has no impact on your grade in any manner.

(This syllabus is adapted from previous syllabi by Elizabeth Bondi-Kelly, Mithun Chakraborty, Ed Durfee, Lu Wang, and Wes Weimer. Some components have been borrowed from the syllabi of other EECS courses at University of Michigan.)