

Course Syllabus

17200/17684/19211/05200/05674: Ethics and Policy Issues in Computing (Spring 2022)

Time: Tuesdays and Thursdays 1:25-2:45pm

Location:

In-person: GHC 4307

Remote: <https://cmu.zoom.us/j/94566123351?pwd=NTZvdFZ4dXRzMWhZYnM5UG1VUE5YZz09>
(<https://cmu.zoom.us/j/94566123351?pwd=NTZvdFZ4dXRzMWhZYnM5UG1VUE5YZz09>)

- **Please be attentive to course announcements as we anticipate changes to remote and in-person instruction throughout the semester**

Professors: [Dr. Michael Skirpan](http://www.mwskirpan.com) (<http://www.mwskirpan.com>)(he/they) and [Dr. Sarah Fox](https://sarahfox.info/) (<https://sarahfox.info/>)(she/they)

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- Office hours
 - Thursdays 12PM-1PM in Dr. Skirpan's [Zoom Room](https://cmu.zoom.us/j/2681686691) (<https://cmu.zoom.us/j/2681686691>)(once in-person is safe, they will move to his office, TCS 314) or by appointment
 - Thursdays 4-5PM in Dr. Fox's [Zoom Room](https://cmu.zoom.us/my/sefox) (<https://cmu.zoom.us/my/sefox>)(once in-person is safe, office hours will move to NSH 3611) or by appointment

Teaching Assistants:

Rahila Sule (rsule@andrew.cmu.edu (<mailto:rsule@andrew.cmu.edu>))

Kele Isibor (kisibor@andrew.cmu.edu (<mailto:kisibor@andrew.cmu.edu>))

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TA Office Hours:

Rahila: Fridays at 3:45pm - 5pm EST via [Zoom](https://cmu.zoom.us/j/95976787543?pwd=NG5TSEEvbGM2Nk5hc0RZZVI0UfFg1QT09) (<https://cmu.zoom.us/j/95976787543?pwd=NG5TSEEvbGM2Nk5hc0RZZVI0UfFg1QT09>) or by appointment

Kele: Wednesdays at 3:30pm - 4:30pm EST via [Zoom](https://cmu.zoom.us/j/3761751812) [_\(https://cmu.zoom.us/j/3761751812\)](https://cmu.zoom.us/j/3761751812) or by appointment

Jasmine: Mondays at 3:30pm - 4:30pm EST via [Zoom](https://cmu.zoom.us/j/95364309811?pwd=bmYybytuY216cURycWIWN2pZRHFkUT09) [_\(https://cmu.zoom.us/j/95364309811?pwd=bmYybytuY216cURycWIWN2pZRHFkUT09\)](https://cmu.zoom.us/j/95364309811?pwd=bmYybytuY216cURycWIWN2pZRHFkUT09) or by appointment

Grading:

- Final Paper: 30%
- Midterm Assignment: 25%
- Weekly Assignments [Due Weekly on Fridays by 11:59 PM]: 20%
- Group Presentation: 15%
- Class Participation: 10%

Course Structure

Each of these elements will be discussed more thoroughly on Canvas, but the following overviews the primary elements and expectations of the course:

Lectures: Tuesdays & Thursdays 1:25-2:45pm. Will be held either in person or on Zoom and involve critical points of engagement. Each week's class time will roughly follow the same structure: Lecture 45-50 mins // Class Polling 5 mins // Class Activity 20-25 mins. Some days may deviate as we invite guest lectures, do special activities such as student presentations, or have time slated for midterm or final preparations. Slides from each class will go up on Canvas within 24 hours.

Weekly Assignments: Each week, assignments will be posted before Friday at 11:59 PM and due by the following Friday at 11:59PM on Canvas. All weekly assignments will contain 3 short answer questions related to the assigned readings and usually 1 long response prompt. The long response is where you get your practice writing or speaking out your ideas and arguing succinctly. Sometimes assignments will be in video format or occasionally we will give you 2 weeks to submit a prompt for a more in-depth consideration. Written responses can be single-spaced using a 12 point font with only your name and the assignment number in the header of the page – length will be specified in the assignment. Video formats could be media files uploaded to Canvas or links to an online platform such as a private YouTube link or Vimeo.

Class Participation: Class participation points will be gained by completing the in-class exercise. If you have to miss a class, you can still get the points by completing and submitting online as the in-class exercises will be available in Canvas by the time class begins each Tuesday or Thursday..

Mid-term Assignment: The Midterm is broken up into two pieces – (1) a presentation of an ethically-charged scenario caused by an engineer/technologist choice; (2) an educational article or video that explains the ethical concern and provides advice on how to think through it.

- Part 1: The Ethical Scenario is a ~4 page write-up either in the format of a Case Study or a piece of short fiction. A Case Study would be a close overview of a real world situation where an engineering

or technology choice created an ethical challenge. A short fiction would describe a hypothetical situation or technology as a short story or a design fiction. The goal of the piece is to show that you can articulate how the choices of technologists led to a circumstance where an individual or group of people were harmed in some manner. The submission should be in 12 pt common font (e.g. Arial, Times New Roman, Georgia, Helvetica), 1.15 line spacing, 3-4 pages (not including bibliography) in length, the student's name in the header, and have a separate page with citations (for a case study) or articles that motivate the fiction.

- Part 2: Educational Content in the form of either a 3-4 page article (think wikipedia or a short magazine article) or a ~5 minute video. The goal of this piece would be to provide an audience with background information necessary to understanding your Part 1 scenario (ie., explanations of the relevant technology, examples of how this technology has caused real world issues) and then offer them an ethical reflection that helps them think about and unpack the issues. This could be a series of prompts and discussion questions with a reading list, an activity, or even a game a group could go through to grapple with the situation and come up with possible solutions. At least 5 citations should be referenced where no more than 2 can be the same as was referenced in your Part 1.

Final Project: The final project will **have two components: a) a group class presentation and b) an individual paper.** The overall project will be to go both broad and deep on an area of tech ethics: doing a broad overlook and summary presentation of the area as a group and developing a deeper viewpoint on a particular problem or question on your own. The group will create a presentation for the class that overviews the area broadly such that a non-expert could gain a primer on major questions, themes, and problems available in the general area (e.g., Algorithms and Government Decisions). Then the individual will write a long paper (undergrads ~8 pgs and masters students ~15 pgs) on a particular topic or problem within the broader area on which the group focused. A topic area submission for each student is due on Canvas by Friday April 1 at 11:59PM.

- The **group** portion will be submitted as a set of presentation slides or a poster, and it will be presented to the full class in the final week of class. We will be inviting some outside, non-expert community members to listen, ask questions, and be part of the final grading panel to bring a lens of communicative accessibility and relevance to the grading.
- The **individual** portion will be submitted separately prior to the final deadline. The paper should include an overview of the ethical problem you are focusing on, including definition of key terminology, you will then have to make clear what side you take on the issue, and giving an exposition of your perspective using real examples, speculations, and counter-arguments to potential critiques. (e.g., Social Media and Misinformation -- you would explore the general issue, select a framing problem such as "Regulating the content of advertisements on social media platforms" and you would explore a variety of positions to this, provide your position -- "for regulation", argue why it is superior to others, then discuss the practical implications of this position -- ie., what the regulation should look like).

Course Objectives

This course is expected to introduce students to ethical thinking and writing as it relates to technology and engineering. We will take a very applied approach to teaching ethics where our goals will be more about supporting each student in adopting practical and reproducible mental habits that allow you to go about your specialized work with an ethical lens or mindset. We will also reinforce writing and communication skills such that each student is better prepared to both speak and write about ethical concepts and frameworks in their discussion of technology and engineering. The learning outcomes you can expect are:

1. Increased communication skills in writing and speaking about ethics in the technology and engineering context
2. An improved awareness of current events related to technology ethics issues and science and technology policy
3. An improved awareness of differing perspectives around different ethical dilemmas and issues
4. Translational skills for converting ethical concepts into engineering examples, choices, and practices, and vice versa.
5. Ability to reason through and creatively interpret engineering problems and scenarios using ethical frameworks and concepts
6. Develop your own personal ethical standards around how you approach computing issues within your future career.

On Tolerance and Respect

In this course students will be expected to engage in discussion about ethics, which is a notoriously thorny and personal matter. Taking this course implies you are interested in improving your comprehension and awareness of ethical issues in computing. Part of developing a viewpoint and set of ethics is understanding the landscape of thought. In order to tread this together and learn from one another, we must listen to each other and fundamentally give one another respect and the benefit of the doubt.

It is anticipated that cultural viewpoints are going to be bound into how we each interpret this material and so we expect that people will practice the art of careful listening. Students who feel certain discussions may be challenging for them to hold in a group setting are welcome to join the TAs in office hours as a replacement to group discussion. For particularly personal topics, we are also open to scheduling separate small-group or individual discussions to offer a safe space to work out your ideas.

Please Note: Course topics and dates are subject to change. We will do some student surveys and planning in the first week and will hope to have this finalized by week 2.

Class Schedule

- **Topic Cluster 1: Ethical Thinking for Engineers**
 - Week 1 [Tues 1/18 & Thurs 1/20]: Introduction to Course
 - Tues: Course Overview, Goals, Q&A, and Motivations

- Thurs: Defining Engineer Ethics and Overviewing Practical Ethicals
- Week 2 [1/25 & 1/27]: Deepening your ethical perspective
 - Tues: Unique concerns of technology ethics: “Risk,” “Machine Action,” and “Computational Power”
 - Thurs: Communicating Technology Ethics Ideas and Arguments
- **Topic Cluster 2: How is Technology Governed?**
 - Week 3 [2/1 & 2/3]: Policy & Law
 - Tues: Privacy as a Right and Invasion as a Harm – A primer on privacy torts and legislation
 - Thurs: Federal and International Policy: HIPAA, FCRA, and GDPR
 - Week 4 [2/8 & 2/10]: Contracts and Content
 - Tues: User Rights via Contracts and Consent
 - Thurs: Content Moderation
 - **Midterm Topic Summary Due by Friday 2/11 at 11:59PM**
- **Topic Cluster 3: The Harms & Biases of Technology Power**
 - Week 5 [2/15 & 2/17]: Identity Perspectives on Technology
 - Tues: Introduction to Perspecivalism and Issues of Gender
 - Thurs: Race and Technology
 - **Midterm Part 1 Due by Saturday 2/19 at 11:59PM**
 - Week 6 [2/22 & 2/24]: Technology Violence and Oppression: Past and Present
 - Tues: History of Technology and Violence
 - Thurs: Surveillance and Policing
 - Week 7 [3/1 & 3/3]: Biased Technology and Anthropocentric Development
 - Tues: Human & Data Bias and Algorithmic Fairness
 - Thurs: Environmental Destruction
- **NO CLASSES 3/8 & 3/10: SPRING BREAK**
- **Topic Cluster 4: Markets, Monopolies, and Capital**
 - Week 8 [3/15 & 3/17]: Big Tech
 - Tues: Surveillance Capital, Manipulation, and Addiction
 - Thurs: Tech Monopolies and Dark Patterns
 - Week 9 [3/22 & 3/24]
 - Tues: Money, Financial Incentives, and the True Cost of Technology
 - Thurs: Labor & the Technology Sector
- **Topic Cluster 5: Making Reliable Machines**
 - Week 10 [3/29 & 3/31]: Preventing Mistakes in Computing
 - Tues: Accountability and Reliability
 - Thurs: Explainability and Transparency

- **Midterm Part 2 Due by Friday 4/1 at 11:59PM**
- Week 11 [4/5 & 4/7]: Trusted Engineering
 - Tues: Robot Trust and Automated Systems
 - Thurs: Infrastructure and Engineering for the Public
 - **Final Project Topic Submission due by 4/8 at 11:59PM**
- **Topic Cluster 6: Unprecedented Technology & the Future**
 - Week 12 [4/12 & 4/14]: Handling Emergent Challenges
 - Tues: Uncertainty, Unprecedented Innovation, and Risk
 - Thurs: Issues in Emerging Tech: CRISPR, Deep Fakes, Crypto, & other new trends
 - Week 13 [4/19 & 4/21]: Thinking about the Future
 - Tues: Practical Speculation and Alternative Futures
 - Thurs: Sci-Fi, Creative Media, & Cultural Change
 - [*Thursday 4/21 may need to be reserved for class presentations pending on the final number of groups*]
- **Week 14 is Reserved for Final Group Presentations**
 - **Week 15 is FINALS WEEK = NO CLASS; OFFICE HOURS BY APPOINTMENT ONLY**
- **Final Papers Due Saturday May 7 by 11:59PM**

DEI Statement

We must treat every individual with respect. We are diverse in many ways, and this diversity is fundamental to building and maintaining an equitable and inclusive campus community. Diversity can refer to multiple ways that we identify ourselves, including but not limited to race, color, national origin, language, sex, disability, age, sexual orientation, gender identity, religion, creed, ancestry, belief, veteran status, or genetic information. Each of these diverse identities, along with many others not mentioned here, shape the perspectives our students, faculty, and staff bring to our campus. We, at CMU, will work to promote diversity, equity and inclusion not only because diversity fuels excellence and innovation, but because we want to pursue justice. We acknowledge our imperfections while we also fully commit to the work, inside and outside of our classrooms, of building and sustaining a campus community that increasingly embraces these core values.

Each of us is responsible for creating a safer, more inclusive environment.

Unfortunately, incidents of bias or discrimination do occur, whether intentional or unintentional. They contribute to creating an unwelcoming environment for individuals and groups at the university.

Therefore, the university encourages anyone who experiences or observes unfair or hostile treatment on the basis of identity to speak out for justice and support, within the moment of the incident or after the incident has passed. Anyone can share these experiences using the following resources:

- **Center for Student Diversity and Inclusion:** csdi@andrew.cmu.edu, (412) 268-2150
- **Report-It (Links to an external site.)** [\(http://www.reportit.net/\)](http://www.reportit.net/) **online anonymous reporting platform: [reportit.net \(Links to an external site.\)](http://www.reportit.net/)** [\(http://www.reportit.net/\)](http://www.reportit.net/) username: *tartans* password: *plaid*

All reports will be documented and deliberated to determine if there should be any following actions. Regardless of incident type, the university will use all shared experiences to transform our campus climate to be more equitable and just.

Academic Integrity

Any work that you submit should be your own work (i.e., not borrowed/copied from any other source, including our assigned readings and your classmates). When using other people's ideas to substantiate your own, please properly cite the original source. We will review proper citation procedures in class, and you should ask for clarification whenever needed. While you will be interacting with other students' perspectives through the course, when writing your weekly assignments, midterm, and final paper, you should be expressing your own ideas and not theirs.

Any act of cheating or plagiarism will be treated in accordance with Carnegie Mellon's Policy on Academic Integrity, which can be found here: <http://www.cmu.edu/policies/student-and-student-life/academic-integrity.html> [_\(http://www.cmu.edu/policies/student-and-student-life/academic-integrity.html\)](http://www.cmu.edu/policies/student-and-student-life/academic-integrity.html). Depending upon the individual violation, students could face penalties ranging from failing the assignment to failing the class.

Use of Laptops and Cellphones in Class

As research has shown in many ways, learning is diminished for yourself and others when you are distracted by screens and devices. We all like to think we're the best multi-taskers, but the reality is that focus is required to apply your best thoughts and ideas to a task. For these reasons and more, I ask that there be no **use of cell phones during the lecture and class activities**. If you're dying for a break or to see a message, the class polling portion should provide you with a moment.

Laptops are allowed throughout class, but **during lecture they should only be for taking notes**. If I suspect you are drifting away from the class on your laptop, I will likely call on you and ask where we are in class and to answer a question.

Attendance

In general, it is expected that students will come to all class sessions, in-person or remote, ready to engage. If you are experiencing any symptoms of illness of any kind, please feel free to skip class. I recommend finding at least one buddy that you can reach out to when you miss class to review what was discussed.

Participation points will be easily obtained if you're in class, but if you are not in class you will be required to go onto Canvas and do the in-class exercise yourself within 48 hours of when it happened in class.

If something occurs where there will be a need for an extended absence, please reach out to me and we can figure out the appropriate accommodations.

Accommodations for Students with Disabilities

If you have a disability and have an accommodations letter from the Disability Resources office, I encourage you to discuss your accommodations and needs with me as early in the semester as possible. I will work with you to ensure that accommodations are provided as appropriate. If you suspect that you may have a disability and would benefit from accommodations but are not yet registered with the Office of Disability Resources, I encourage you to contact them at access@andrew.cmu.edu.

Take care of yourself

Take care of yourself. Do your best to maintain a healthy lifestyle this semester by eating well, exercising, avoiding drugs and alcohol, getting enough sleep and taking some time to relax. This will help you achieve your goals and cope with stress.

All of us benefit from support during times of struggle. You are not alone. There are many helpful resources available on campus and an important part of the college experience is learning how to ask for help. Asking for support sooner rather than later is often helpful.

If you or anyone you know experiences any academic stress, difficult life events, or feelings like anxiety or depression, we strongly encourage you to seek support. Counseling and Psychological Services (CaPS) is here to help: call 412-268-2922 and visit their website at <http://www.cmu.edu/counseling/> (<http://www.cmu.edu/counseling/>). Consider reaching out to a friend, faculty or family member you trust for help getting connected to the support that can help.