

Course Syllabus



CMPM 80H: Human-Centered AI

MW 1:00-4:30pm

GE designation: Technology and Society (PE-T code)

Course Overview

As AI technologies integrate and permeate our everyday lives, we become aware of how they impact our lives and the biases inherent in these systems. This class will introduce Human-Centered AI - investigating how AI design can integrate or incorporate human, societal, environmental, and economic needs. This course will explore humanistic values and issues of various current AI systems, from ones that integrate into your car or your phone to ones generative AI systems that are starting to incorporate into the workplace to the ones that you see in the streets (e.g., delivery robots) or at different vendors. We will introduce various issues that have arisen from the use of these systems, such as biases, trust, and accountability issues. We will further discuss these issues and the impact of this technology on our society, environment, and economy. We will also discuss design methods used to mitigate these issues. Students will learn about these issues through various projects that span critical analysis of a specific system, integrating and analyzing what users say on particular systems to discussing new methods of design that mitigate these issues.

Pre-requisites: None

Learning Objectives

After the course, you should be able to:

1. Enumerate different AI systems that are currently embedded in our lives
2. Understand and be able to discuss the impact such AI systems have now on people's lives, from lifestyle to work schedule to workplace optimizations, etc.
3. Recognize and understand ethical and bias issues with current AIs and ML algorithms.
4. Be able to critique one or more AI systems to uncover bias and ethical issues
5. Understand and discuss data and privacy issues with current AI systems
6. Be able to conduct studies and analyze results and reviews from users about the user experience with AI
7. Be able to enumerate various issues with trust, transparency, or other problems with AI systems through analysis of previous work and user reviews
8. Understand different ways of design that can mitigate trust issues with AI

GE (PE-T) Specific Learning Objectives

- Develop and demonstrate an appreciation of how AI induces a change in people's everyday lives, which has an impact on our economy, environment, and culture.
- Gain an appreciation for the skills to develop culturally sensitive and human-centered AI technologies to advance the current issues with ethics and AI.
- Through applying design skills to design scenarios around human-centered AI, students should develop an understanding of the necessary advances and multidisciplinary skills needed to develop Humanistic AI-based technologies.

Textbooks

- O'neil, C. (2017). *Weapons of math destruction: How big data increases inequality and threatens democracy*. Crown.
- Shneiderman, B. (2022). *Human-centered AI*. Oxford University Press.

Assignments

Students will be expected to submit several assignments:

- **Readings and Reflections.** These would be 1-page reflections on the class material presented for each module and for the argument (project 1) presented by each group
- **Project 1: Argument Development and Presentation**
- **Project 2: Qualitative Analysis of Users' Review**

Evaluation and Grading

- Attendance and Participation (10%)
- Readings and Reflections (3 tentative) (30%)
- Project 1: Argument Development (30%)
- Project 2: Qualitative Analysis (30%)

Course Communication and Content

- Activities Google Folder [[Link](https://drive.google.com/drive/u/1/folders/1BhtYP7PLX1zMOhL1l-XttSD1sbHqH1oq) → (https://drive.google.com/drive/u/1/folders/1BhtYP7PLX1zMOhL1l-XttSD1sbHqH1oq)]
- Lecturers Google Folder [[Link](https://drive.google.com/drive/u/1/folders/1ge8Ys35o-3zV0J7DQDWHrJQ6c3efjC8n) → (https://drive.google.com/drive/u/1/folders/1ge8Ys35o-3zV0J7DQDWHrJQ6c3efjC8n)]
- Slack ([link TBD](#))

Course Snap Shot

06/24/24 - 07/26/24 MW 1-4:30

Module 1: Class 1 (June 24): Intro, What is AI?

Homework: Reading Reflection #1 - Due before next class

Module 2: Class 2 (June 26): Human-Centered AI**Module 3: Class 3 (July 1):** Argument Development (Due iteration 1)

Class 4 (July 3): Argument Development (Due iteration 2)

Class 5 (July 8): Presentations and discussions (**Project 1 Due**)

Homework: Reading Reflection #2 - Due before next class

Module 4: Class 6 (July 10): Types of AI and Design Metaphors

Homework: Reading Reflection #3 - Due before next class

Module 5: Class 7 (July 15): Ethics**Module 6: Class 8 (July 17):** Study Design (Due end of class)

Class 9 (July 22): Study Implementations

Class 10 (July 24): Presentations (**Project 2 Due**)

Class Conduct

Cell phones and Texts: No use or cell phones, texting is permitted.

Social Networking: social networking is not allowed unless specified by the instructor.

Attendance: attendance is required. Absence without a pressing and convincing excuse will result in 5% deduction from your grade.

Academic Integrity is the cornerstone of a university education. Academic dishonesty diminishes the university as an institution and all members of the university community. It tarnishes the value of a UCSC degree. All members of the UCSC community have an explicit responsibility to foster an environment of trust, honesty, fairness, respect, and responsibility. All members of the university community are expected to present as their original work only that which is truly their own. Plagiarism of any kind is unacceptable. All members of the community are expected to report observed instances of cheating, plagiarism, and other forms of academic dishonesty in order to ensure that the integrity of scholarship is valued and preserved at UCSC. Any student found in violation of the UCSC Academic Integrity policy may face both academic sanctions imposed by the instructor of record and disciplinary sanctions imposed by the graduate division. Violations of the Academic Integrity policy can result in dismissal from the university and a permanent notation on a student's transcript. For the full policy and disciplinary procedures on academic dishonesty, students and instructors should refer to the [Academic Integrity page \(https://www.ue.ucsc.edu/academic_misconduct\)](https://www.ue.ucsc.edu/academic_misconduct) at the [Division of Undergraduate Education \(https://ue.ucsc.edu/\)](https://ue.ucsc.edu/) or [Graduate Division \(https://www.ucsc.edu/academics/academic-integrity/\)](https://www.ucsc.edu/academics/academic-integrity/)

Excellent resources to support your academic integrity appear on the UC Santa Cruz library webpage. These include guidelines for citing sources, citing and using data and statistics, and understanding

plagiarism.

- [Citing Sources \(https://guides.library.ucsc.edu/citesources\)](https://guides.library.ucsc.edu/citesources)
- [Data & Statistics \(https://guides.library.ucsc.edu/citedata\)](https://guides.library.ucsc.edu/citedata)
- [Understanding Plagiarism \(https://guides.library.ucsc.edu/citesources/plagiarism\)](https://guides.library.ucsc.edu/citesources/plagiarism)

In addition, you can find links to checklists so you can double-check whether you have cited everything in your work properly and thoroughly

Reviewing lecture and reading materials and studying for exams can be enjoyable and enriching things to do together with your peers. I encourage this effort to build community in the class and to study with others. However, homework assignments should be completed independently and materials turned in as homework should be the result of your own independent work. Some assignments are meant to be done together in a group. Make sure you check with your instructor or TA if you are not sure about the level of collaboration allowable for any given assignment.

Support for students with disabilities: UC Santa Cruz is committed to creating an academic environment that supports its diverse student body. If you are a student with a disability who requires accommodations to achieve equal access in this course, please submit your Accommodation Authorization Letter from the Disability Resource Center (DRC) to me privately during my office hours or by appointment, preferably within the first two weeks of the quarter. At this time, I would also like us to discuss ways we can ensure your full participation in the course. I encourage all students who may benefit from learning more about DRC services to contact DRC by phone at 831-459-2089 or by email at drc@ucsc.edu.

Support for students with other difficulties: While we sincerely hope that you will be able to pursue your studies peacefully and worry-free, we are aware that in some cases difficulties happen that are beyond your control. You should always feel free and comfortable to bring up any problem with the instructor, but if this is not sufficient, or if you prefer professional help, here are several campus resources that you may want to consider contacting:







- [UC Care \(https://care.ucsc.edu/who-we-are/about-care.html\)](https://care.ucsc.edu/who-we-are/about-care.html) is a confidential space to discuss issues of dating violence, sexual assault, and stalking.
- [Slug Support, \(https://deanofstudents.ucsc.edu/slug-support/program\)](https://deanofstudents.ucsc.edu/slug-support/program) where you can ask for help on many practical issues, including dealing with a financial crisis, problems with your living situation, computers, books, etc.
- [CAPS \(https://caps.ucsc.edu/\)](https://caps.ucsc.edu/), which provides counseling and psychological services to students

Title IX prohibits gender discrimination, including sexual harassment, domestic and dating violence, sexual assault, and stalking. If you have experienced sexual harassment or sexual violence, you can receive confidential support and advocacy at the Campus Advocacy Resources & Education (CARE) Office by calling (831) 502-2273. In addition, Counseling & Psychological Services (CAPS) can provide


confidential, counseling support, (831) 459-2628. You can also report gender discrimination directly to the University's Title IX Office, (831) 459-2462. Reports to law enforcement can be made to UCPD, (831) 459-2231 ext. 1. For emergencies call 911.

Course Summary:

Date	Details	Due
Mon Jun 24, 2024	 Human-Centered AI (https://canvas.ucsc.edu/calendar?event_id=514031&include_contexts=course_74379)	1pm to 5:30pm
	 Activity 1: AI Examples and Stories (https://canvas.ucsc.edu/courses/74379/assignments/601746)	due by 11:59pm
Wed Jun 26, 2024	 Human-Centered AI (https://canvas.ucsc.edu/calendar?event_id=514032&include_contexts=course_74379)	1pm to 5:30pm
	 Reading Reflection # 1 - Module 2 (https://canvas.ucsc.edu/courses/74379/assignments/567857)	due by 1:59pm
	 Activity 2: AI Tools (https://canvas.ucsc.edu/courses/74379/assignments/567856)	due by 11:59pm
	 Activity 3: HCAI: AI Tools (https://canvas.ucsc.edu/courses/74379/assignments/601755)	due by 11:59pm
Mon Jul 1, 2024	 Activity 4: AI UX (https://canvas.ucsc.edu/courses/74379/assignments/567941)	due by 11:59pm
	 Human-Centered AI (https://canvas.ucsc.edu/calendar?event_id=514033&include_contexts=course_74379)	1pm to 5:30pm
	 Human-Centered AI (https://canvas.ucsc.edu/calendar?event_id=514034&include_contexts=course_74379)	1pm to 5:30pm
Mon Jul 8, 2024	 Human-Centered AI (https://canvas.ucsc.edu/calendar?event_id=514035&include_contexts=course_74379)	1pm to 5:30pm

Date	Details	Due
	 Project 1: Argument Project 1: Argument Project 1: Argument	due by 11:59pm
Wed Jul 10, 2024	 Human-Centered AI Human-Centered AI Human-Centered AI	1pm to 5:30pm
	 Reading Reflection # 2 - Module 4 Reading Reflection # 2 - Module 4 Reading Reflection # 2 - Module 4	due by 11:59pm
Mon Jul 15, 2024	 Human-Centered AI Human-Centered AI Human-Centered AI	1pm to 5:30pm
	 Reading Reflection #3 - Module 5 Reading Reflection #3 - Module 5 Reading Reflection #3 - Module 5	due by 11:59pm
Wed Jul 17, 2024	 Human-Centered AI Human-Centered AI Human-Centered AI	1pm to 5:30pm
	 Study Protocol (Project 2 - Part 1) Study Protocol (Project 2 - Part 1) Study Protocol (Project 2 - Part 1)	due by 11:59pm
Mon Jul 22, 2024	 Human-Centered AI Human-Centered AI Human-Centered AI	1pm to 5:30pm
	 Data Collection (Project 2 - Part 2) Data Collection (Project 2 - Part 2) Data Collection (Project 2 - Part 2)	due by 11:59pm
Wed Jul 24, 2024	 Human-Centered AI Human-Centered AI Human-Centered AI	1pm to 5:30pm
	 Project 2 - Final Project 2 - Final Project 2 - Final	due by 11:59pm

Date	Details	Due
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 [Syllabus Acknowledgement \(New Quiz\)](#)
<https://canvas.ucsc.edu/courses/74379/assignments/563198>
