

CS for Social Change Syllabus

Instructor: Ugur Cetintemel

Date/Time: MW 3-4:20PM

Location: CIT Center (Thomas Watson CIT) 316

Course Description:

In this course, students will work in a studio environment to iteratively design, build, and test technical projects in partnership with different social change organizations. Students will be placed in small teams to collaboratively work on projects that will range from, for example, developing a chatbot to aid community engagement to building a mobile app to teach STEM to refugee kids. Through the course, we will also reflect on our positionality and ethics in engaging in social impact work and what it practically means to leverage technology to create social change on an everyday basis. Enrollment limited to 12. Entry to this course is through application only.

Learning Goals:

- Gain experience working closely with a nonprofit organization on a highly technical and impactful project.
- Be able to use human-centered design and rapid prototyping as tools to conduct social impact work.
- Gain awareness of the nuanced social, ethical, and cultural issues surrounding using computer science for social change, especially in the specific social sector each project is in.
- Critically learn and discuss the field of public interest technology through guest lectures, class discussions and course readings.

Prerequisites:

CSCI 0320, 0330 or 1320 or minimum score of WAIVE in 'Graduate Student PreReq'. This course will be primarily intended for students in their third or fourth year.

Time commitment:

Students should expect to put in 8-10 hours weekly outside group meetings to complete their assigned readings and work on their projects. There are 15 weeks in this semester, so students can expect to spend approximately 150 hours doing work for this course outside of lecture time.

Course Requirements:

Grade Breakdown

Section	Percentage of Final Grade
Attendance and Participation	20
Reading Comments	10
Mid-Point Presentation	20
Final Delivery and Presentations	45
Final Reflection	5

Attendance and Participation

Attendance at weekly group sessions and guest lectures will factor into the final grade. Students will be expected to attend and write reflections for 3 social change related lectures/workshops from an approved list provided at the beginning of the semester. Reflections can be submitted here :

<https://goo.gl/forms/WEhGPUjzwhkdOWth2>.

Two unexcused absences at seminar are permitted. All other absences require documentation from health services, a physician, or a dean. Two unexcused absences will affect a student's grade and three will result in an NC.

Participation will mean different things for different people. Studio classes are a collaborative process and can take time to develop a comfortable rhythm. However, all students are required to actively participate in the product development process, and contribute a proportionate amount of work towards the final project. Students are also expected to keep up with readings in preparation for group sessions. Most meetings will have about 45 minutes dedicated to discussion. Think about this as an opportunity for perspectives on the material to be shared for the purpose of collective learning.

This will be worth 20% of your grade.

Reading Comments

Students will be assigned readings (listed on the course website) for most weeks of class. Reading comments will be due Fridays at 6pm for the week that they were assigned and can be submitted here: <https://goo.gl/forms/7cCncipKcdWAFGGD3>

These will count towards 10% of your final grade.

Mid Point Presentation

During Week 7, student teams will present the work they've done on their projects thus far. This process will be used to solicit feedback and advice from the other student teams and from their mentors at the organization they are working with. These presentations will be worth 20% of the final grade.

Final Delivery and Presentations

Hand off their final project to the project partner by the end of the quarter. The handed off project is expected to be complete in all respects. This means:

- A. The project should be in a deployable format such that it can be released either to the nonprofit or general public and meet expectations.
- B. Documentation is written to support the use and management of this project after the class is finished.
- C. Appropriate steps have been taken to ensure a smooth handing off of project back to the nonprofit partner.

On final demo day, we will open up the course to interested students and faculty members to come hear about the projects we have been working on over the course of the semester.

The final delivery and demo will be worth 45% of your grade.

Final Reflection

Each student will submit a final reflection paper of about 3-5 pages (double-spaced with 12pt font) summarising their experiences with the class, readings and product development process. This will be worth 5% of the final grade.

Course Schedule:

Week 1 (Jan. 24 - 26): **Community Technology**

Introduction to NGOs and Projects

- Learn about your assigned NGO
- Understand the project requirements and specifications -- [draft a memorandum of understanding \(MoU\) with the project partner.](#)
- Meet your mentor engineers

Readings:

[Community Technology Handbook](#) - Pg 1-16 (what is community tech?)

[\(Re\)building Technology Zine](#) - Pg 11-21 (methods for working in a studio environment)

Week 2 (Jan. 29 - Feb. 2): **Development Ethics**

Background Research on Projects

- Ethics of design research
- Digital Development Principles

Readings:

[Little Book of Design Ethics](#)

[Principles of Digital Development](#) (Chapter 2)

Week 3 (Feb. 5 - 9): **Design Research & Rapid Prototyping**

- Conduct user interviews and/or research
- Study human-centered design and learn about tools used
- Produce a non-working demo that shows the expected features, screens, and functionalities of your project using online tools or paper

Readings:

[US Digital Services PlayBook](#)

[Prototyping](#)

Week 4 (Feb. 12 - 16): **Postcolonial Computing**

Design

- Plan out project implementation and divide tasks amongst members
- Set up repository and outline structure of code

[Postcolonial Computing](#) (What does it mean to design technology for the “other”)

[M-Pesa Case Study](#)

Week 5 (Feb. 19-23): **Inclusivity**

Project Implementation & Check-ins with NGO mentors

- Meet with NGO mentors to discuss high level design
- Begin coding

Readings:

[Microsoft Inclusivity Manual](#) (how universally-designed is your project?)

Week 6 (Feb. 26 - Mar. 1):

Project Implementation & Check-ins with NGO mentors

- Meet with NGO mentors to discuss high level design
- Keep coding

Week 7 (Mar. 5 - 9): **Mid-point Presentations**

Week 8 (Mar. 12 - 16):

Project Implementation & Check-ins with NGO mentors

- Take feedback from mid-point presentations and alter design/implementation choices
- Meet with NGO mentors and report mid-semester progress

Week 9 (Mar. 19-23): **Feminist Technology**

Project Implementation

Readings:

[Feminist Tech Tools](#)

[Feminist tech](#)

Week 10 (Apr. 2 - 6): **Civic Technology**

Project Implementation

Readings:

[18F](#)

[A new API for Medicare](#)

Week 11 (Apr. 9 - 13): **Urban Technology**

Project Implementation

Readings: (Spend about 20-30 minutes reading blog posts)

[Sidewalk labs blog](#) (what are they doing right? Where can they improve? How should they prepare for Toronto?)

[MIT Civic Media Lab](#)

Week 12 (Apr. 16 - 20):

Project Implementation & Check-ins with NGO mentors

Week 13 (Apr. 23 - 27):

Project Finalizations & Practice Demos

- Deploy project and make final adjustments
- Run through demo presentation

Week 14 (Apr. 30 - May 4):

Final Presentations

Week 15 (May 7 - May 11):

Final Reflections

Academic Integrity:

For questions regarding plagiarism and ethical research practices, please refer to Brown's Academic Code linked below. Offenses in relation to this code are serious infractions for both the student and University.

http://www.brown.edu/Administration/Dean_of_the_College/academic_code/code.html

Accommodations:

Brown University is committed to full inclusion of all students. Please inform me early in the term if you have a disability or other conditions that might require accommodations or modification of any of these course procedures. You may speak with me after class or during office hours.

For more information, please contact Student and Employee Accessibility Services at 401-863-9588 or SEAS@brown.edu. Undergraduate students in need of short-term academic advice or support can contact one of the deans in the Dean of the College office. Graduate students can contact one of the deans in the Dean of the Graduate School office.

Inclusion and Diversity:

The Office of Institutional Diversity and Inclusion works to promote a diverse and inclusive community at Brown. If you have any concerns about these issues or would

like to know about their resources, please see:

<https://www.brown.edu/about/administration/institutional-diversity/student-resources>

If you have concerns about sexual or gender-based discrimination, harassment, and/or violence, please contact Brown's Title IX office; see:

<https://www.brown.edu/about/administration/title-ix/>