

INF2300H Biodesign, emerging technologies, and social impact

Instructor Information

Instructor: Matt Ratto
Office hours: by appt.
Office: Robarts, 7020
Tel: 416 946-5415
Email: matt.ratto@utoronto.ca

Dates: Jan 12, 2017 – April 6, 2017 (13 in-person sessions, can be rescheduled)
Time: Thursdays, 9-12; Location: Bissell 417

Required texts: Stanford Biodesign textbook (2nd ed), IDEO Human-Centered Design Toolkit.

Course Website: <http://www.criticalmaking.com/biodesign/>

Statement of Acknowledgement of Traditional Land

I wish to acknowledge this land on which the University of Toronto operates. For thousands of years it has been the traditional land of the Huron-Wendat, the Seneca, and most recently, the Mississaugas of the Credit River. Today, this meeting place is still the home to many Indigenous people from across Turtle Island and we are grateful to have the opportunity to work on this land.

Course Description and Objectives

This course provides a multi-disciplinary team-based approach to the identification of needs, development of ideas, and the potential integration of information technology-based solutions within biomedical contexts. Fundamental perspectives and skills of design will be explored within a project-based format with particular focus placed on methods and processes of ideation, including needs assessment and filtering, stakeholder analysis and specification, brainstorming and concept selection. Current methodologies will be surveyed and analyzed in order to better understand their strengths and weaknesses, particularly as they relate to understandings of technology and social organization, values, and ethics. Current and emerging computational innovations will be explored using hands-on constructive exercises in order to familiarize students with the potentials and challenges associated with them. A specific focus of this course will be on the development of solutions aimed at social impact rather than primarily aimed at market generation and profit.

Course learning outcomes

Students who have successfully completed the course will be able to:

- Learn to apply the conceptual and philosophical foundations of design, as they correspond to biomedical contexts;

- Deploy problem-solving and human-centered design techniques in project-based work;
- Develop an understanding of current and emerging digital technologies;
- Increase their awareness of the social and ethical contexts of information and technology as applied in biomedical contexts.

Relationship between Course Learning Outcomes and Program Learning Outcomes

(<http://current.ischool.utoronto.ca/studies/learning-outcomes>): Developing and requires students to be able to apply concepts, theories, and practices derived from a range of information-related disciplines (Program Outcome 1). Moreover, understanding how socio-cultural issues and technological systems are co-constructed is a core concern for information professionals, especially those who work to ensure access to knowledge through both the development of information systems as well as those who have a decision-making role in information institutions (Program Outcome 2). Critical making, the main pedagogical impetus for the class, requires a synthesis of theoretical and practical knowledge, linking theories of information and culture specific to the social construction of technical systems. (Program Outcomes 4 & 5).

Organization

The course is organized in a 'flipped classroom' format. Online lectures and practitioner interviews will be used to supplement course readings, while in-person scheduled course times will be used for team-based project work and hands-on technical training. The course is currently scheduled to meet Thursday mornings from 9-12, though this may change depending on student need.

Please note: No previous technical knowledge is required to take this course. Students with little or no technical background but with an interest in developing basic understanding of emerging digital technologies are encouraged to attend.

Assignments

Course deliverables include written work that reflects on course readings and lectures and design artifacts including posters and presentations.

Assignment	Due	%	Group grade?
Strategic Focus and Team post	Week 2	10%	YES
Interview questions and video post.	Week 3	10%	YES
Observations, problems, and need statements.	Week 4	20%	NO
Needs Selection Criteria and relevant data	Week 6	20%	YES

Concept (individual)	Week 8	10%	NO
Concept selection (group) post	Week 9	10%	YES
Design presentation	Week 13	20%	YES

Group Project and dynamics

In the initial classes, students will organize into groups depending on class size. It is expected that students will self-organize into groups that leverage the skills and expertise that each student brings to the course. To assist with this process, we will devote class time during the first week to sharing backgrounds and setting up associations. Problems with group dynamics that emerge during the course will be addressed at the discretion of the instructor.

Space

The course will take place in BL520. In addition, Studio307, the faculty makerspace will be available at select times for additional project work. Studio307 and the iSkills workshops will also be holding technical workshops that may be useful. Check their schedules for more information.

Readings and schedule

All readings will be available in electronic form on the web, on the course blackboard site, or in U of T libraries. Please consult the Blackboard site for the week-by-week schedule, and <http://www.criticalmaking.com/biodesign> for the video lectures and class posts.

Grading

Please consult the iSchool's Grade Interpretation Guidelines (<http://current.ischool.utoronto.ca/grade-interpretation>) and the University Assessment and Grading Practices Policy (<http://www.governingcouncil.utoronto.ca/Assets/Governing+Council+Digital+Assets/Policies/PDF/grading.pdf>). These documents will form the basis for grading in the course.

Writing Support

As stated in the iSchool's Grade Interpretation Guidelines, "work that is not well written and grammatically correct will not generally be considered eligible for a grade in the A range, regardless of its quality in other respects". With this in mind, please make use of the writing support provided to graduate students by the SGS Office of English Language and Writing Support (<http://www.sgs.utoronto.ca/currentstudents/Pages/English-Language-and-Writing-Support.aspx>). The services are designed to target the needs of both native and non-native speakers and all programs are free. Please consult the current workshop schedule (<http://www.sgs.utoronto.ca/currentstudents/Pages/Current-Years-Courses.aspx>) for more information.

Academic integrity

Please consult the University's site on Academic Integrity (<http://academicintegrity.utoronto.ca/>). The iSchool has a zero-tolerance policy on plagiarism as defined in section B.I.1.(d) of the University's Code of Behaviour on Academic Matters (<http://www.governingcouncil.utoronto.ca/Assets/Governing+Council+Digital+Assets/Policies/PDF/ppjun011995.pdf>). You should acquaint yourself with the Code. Please review the material in Cite it Right and if you require further clarification, consult the site How Not to Plagiarize (<http://www.writing.utoronto.ca/advice/using-sources/how-not-to-plagiarize>). Cite it Right covers relevant parts of the U of T *Code of Behaviour on Academic Matters (1995)*. It is expected that all iSchool students take the Cite it Right workshop and the online quiz. Completion of the online Cite it Right quiz should be made prior to the second week of classes. To review and complete the workshop, visit the orientation portion of the iSkills site: uoft.me/iskills

Accommodations

Students with diverse learning styles and needs are welcome in this course. If you have a disability or a health consideration that may require accommodations, please feel free to approach me and/or the Accessibility Services Office (<http://www.studentlife.utoronto.ca/as>) as soon as possible. The Accessibility Services staff are available by appointment to assess needs, provide referrals and arrange appropriate accommodations. The sooner you let them and I know your needs, the quicker we can assist you in achieving your learning goals in this course.