CIS 6170 – Human Computer Interaction (Winter 2023), 0.5 credits

Lectures: TBD (see Webadvisor), Room REYN 1101

Instructor: Prof. Stacey D. Scott, Associate Professor, School of Computer Science
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Office Hours: Virtually, TBD (will be based on a poll of students' availability)

Course Delivery Notes:
This course is scheduled to be delivered in-person. **Lectures** will be conducted in-person, with necessary shifts to remote delivery as needed due to COVID disruptions. To accommodate students with health concerns or life complications arising from COVID, course materials will be posted online whenever possible. However, as an advanced concepts course that relies heavily on in-class discussion, we will rely on the communication richness provided by the in-person format to enable deeper conversations and activities than tend to happen in remote or hybrid format. **Office Hours** will be conducted virtually.

- **Lectures: In person attendance and participation is expected.** Please arrange your schedule and commit to attending all lectures in this course, barring illness or emergencies. Lectures will include regular in-class discussions. Full, active participation is a key learning vehicle in this course.
- If you have health issues or life circumstances that that warrant **accommodation**, please contact Student Accessibility Services and Prof. Scott as soon as possible.

Course Website: http://courselink.uoguelph.ca (Login with Central login ID and password)
The course website will be used for all distributions and all submissions for this course. I will use it to post announcements, additional readings, assignment descriptions, grades, and Zoom links for any virtual components (e.g. office hours).

Required Text:
Jonathan Lazar, Jinjuan Heidi Feng, and Harry Hochheiser. (2017). *Research Methods in Human-Computer Interaction, 2nd ed.*, Morgan Kauffman.
** Digital version of the book is freely available through the UofG library via ScienceDirect (https://www.sciencedirect.com/book/9780128053904/research-methods-in-human-computer-interaction). You will have to be on campus or log-in using your Central UofG ID to access the book. If you would like to purchase the print version, copies are available at the UofG Bookstore.*

Course Calendar Description: This course concentrates on the theoretical and practical issues related to the design and study of interactive technologies for human use. Topics will include general principles of design, qualitative and quantitative research methods, prototyping techniques, theoretical issues underlying designing to individuals and groups, and ethical issues related to conducting research involving humans.

Course Overview:
This course is designed to introduce graduate students in technical programs to the principles and research methods used in human-computer interaction (HCI). HCI is an interdisciplinary field concerned with the study of the interaction between humans and interactive computing systems. Research in HCI looks at major cognitive and social phenomena surrounding human use of computers with the goal of understanding their impact and creating guidelines for the design and evaluation of software and physical products and services in industry. As computers are incorporated into almost every aspect of our society, and as those computers become more and more complex, the need for human-centred computing is increasingly relevant to more and more application domains beyond the traditional office work domain, including health, automotive, manufacturing, sports, and domestic applications.

While the course is designed primarily for graduate students in computer science and engineering, advanced undergraduates in these programs and graduate students from other programs may take the course with the permission of the instructor. No prerequisites are required to take the course.

Course Objectives:
Course components and the evaluation criteria are designed to reflect the learning objectives of the course. The objectives of the course are as follows. This course is designed so that by the end, you should be able to:

a. *Read* and *critique* a diverse set of research from the interdisciplinary traditions of HCI research.
b. *Select* and *Use* appropriate tools and techniques for communicating design concepts (e.g., prototyping) and for evaluating system usability (e.g., heuristic evaluation, controlled user studies).
c. *Analyze* research data and user feedback and *Integrate* into relevant design modifications or research improvements.
d. *Explain* the relevance and process for conducting ethical research with human subjects.
e. *Present* and *communicate* system design concepts and evaluations through a project report, project presentation, and project video – similar to how human-computer interaction research are presented in the international HCI research community.
f. *Understand* basic human-computer interaction concepts through self-teaching from the textbook and other resources.

Course Topics (tentative, subject to change):

- Introduction to HCI and HCI Research Methods
- Ethics and Working with Human Participants
- Experimental Research Methods (e.g., A/B testing, User Studies)
- Qualitative Research Methods (e.g., Ethnography, Surveys, Interviews & Focus groups, Diaries)
- Quantitative & Qualitative Data Analyses
- HCI Design Methods (e.g., Prototyping, Research though Design)
- Information Visualization
- Evaluating without Users: Usability inspections and Automated Data Collection
- Future Trends in HCI and HCI Research

Grading Scheme:

- ***Assignments: 30%***
- ***In-Class Presentations: 20%***
- ***Project (can be completed individually or in a group of 2): 50%***

Estimated Weekly Course Commitment (10-12 hours per week for this 0.5 credit course):

- 3 hours lectures
- 4-5 hours assignments
- 3-4 hours course preparation (e.g. readings, academic tasks)

University of Guelph expects students to spend 10-12 hours per week on a 0.5 credit course. This time commitment represents student workload rather than contact hours. In this course, key learning vehicles are chapter and paper readings and written critiques, and the assignments and term project. These will all take significant independent work and reflection by each student.