Faculty of Computer Science
Goldberg CS Building, 6050 University Ave.
Tel: 902.494.2093

Course Title: Designing User Interfaces
Course Number: CSCI 3160
Course Section: 1
Semester & Year: Fall 2023
Class Day & Time: Tue/Thu 5:35–6:55pm
Class Location: Dentistry 3156
Lab Day & Time: Various
Lab Location: MC 1201

Credit Value: 3.00
Pre-requisites: CSCI 1170 or CSCI 1206 or permission of instructor

Instructor: Dr. Derek Reilly
Email: reilly@cs.dal.ca
Office Location: MS Teams
Office Hours: by appointment

TAs: Oladapo Oyebode (oladapo.oyebode@dal.ca), Pratyasha Bhattacharya (pratyasha.bhattacharya@dal.ca), Rowland Goddy-Worlu (rowland.goddy-worlu@dal.ca), Ravishankar Subramani Iyer (rv505461@dal.ca), Raza Muhammad (m.raza@dal.ca), Jinkun Chen (jinkun.chen@dal.ca), Xuemin Yu (xuemin.yu@dal.ca)

Course Website: on Brightspace
Course Announcements: on Brightspace

IMPORTANT DATES *

- Final withdrawal dates:
  - without academic penalty (no "W"): Oct 4
  - with academic penalty ("W"): Nov 2
- Reading week (no classes or labs): Nov 12-17
- Quiz dates: Sept 26, Oct 17, Nov 7, Nov 28
- Assignment due dates: Sept 22, Oct 6, Oct 27, Nov 24
- Milestone due dates: Oct 12, Nov 2, Nov 30

* *quiz, assignment, and milestone dates are **subject to change**; any changes will be posted on Brightspace*

CALENDAR DESCRIPTION

This course deals with concepts and techniques underlying the design of interactive systems. Both human factors and the technical methods of user interface design are covered. Students will learn how to apply various techniques through the design, creation, and testing of a prototype system.

LEARNING OUTCOMES

- Apply principles of human cognition and design theory to create efficient, enjoyable, and useful designs;
- Design an interactive prototype with peers on a project following a User-Centered Design (UCD) process;
- Select and Use appropriate tools and techniques for communicating design concepts and evaluating designs;
- Understand the role of design in technical innovation and product development.

COURSE RATIONALE

To understand the role of design within software systems development, to learn and apply theory and techniques for considering human experience within design, to gain a foundation for further courses in human-computer interaction and related areas.

TEXTBOOK

There is no required textbook for the course; assigned readings will be made available on the course website and are listed at the end of the syllabus. Lecture slides will be posted on Brightspace. For students wishing additional structured coverage of course material, there are several very good textbooks on this topic, including:

1. Jennifer Preece, Helen Sharp, and Yvonne Rogers (2015). Interaction design: beyond human-computer interaction (4e). John Wiley & Sons.
2. Bill Buxton (2011). Sketching User Experiences: Getting the Design Right and the Right Design. Morgan Kaufmann. **AND** Saul Greenberg, Sheelagh Carpendale, Nicolai Marquardt, and Bill Buxton. (2011). Sketching User Experiences: The Workbook. Morgan Kaufmann.
3. Alan Dix, Janet E. Finlay, Gregory D. Abowd, and Russell Beale (2004). Human-Computer Interaction (3e). Prentice-Hall.

ADDITIONAL RESOURCES

Students are required to have a paper notebook and pencil/pen during labs. These will be used in several lab activities. Additional materials and tools will be listed and/or made available on the course website as necessary.

COURSE EVALUATION

Assignments (4)……..... 28% (A1 4%, A2-A4 8% each)
Quizzes (4) ……..... 28% (7% each)
Project Milestones (3)……..…….... 30% (10% each)
Final Project Presentation and Demo..... 4%
Participation ……..…….....10% (5% lab participation, 5% contribution*)
* contribution to in-class discussion and/or Brightspace discussion board threads throughout term

Notes:

- a student must pass (50%) the quiz component to pass the course.
- as of January 2015, students must obtain a grade of C or better in required courses.
- as of 2019, students who receive a grade lower than C in the same required CS course twice will be dismissed.
- the grade conversion scale in Section 17.1 of the Academic Regulations, Undergraduate Calendar, will be used.

MIDTERM AND FINAL EXAMINATION

There is no midterm or final exam in this course.

POLICY ON LATE ASSIGNMENTS

Unless otherwise specified, assignments and project submissions are expected by 11:59 pm the day on which they are due. Each student has 7 late points at the start of the semester, worth a 24-hour extension on any assignment. Late points are to be used due to legitimate absences (e.g. illness), as well as work schedule flexibility. Project submissions must be submitted by the deadline, or late points will be deducted from *each* group member. Requests for extensions *are not required* if you have sufficient late points remaining. If you use all late points and anticipate further issues completing work on time, contact the course instructor to discuss your situation.

COURSE PROJECT

Working in teams is an important part of this course. You may assign design tasks and responsibilities to individual team members where appropriate. *Do not* then work independently of each other: the project's success depends on frequent group engagement and discussion. It is also useful for you to learn from each other's experiences with individual tasks. Discussing design ideas and process details with others in the class is also encouraged.

Part of working in a successful project team is managing and capitalizing on individual strengths so everyone can make a meaningful contribution. Team members have a shared responsibility to do this. In this course, disproportionate contributions by individual team members **do not constitute a reason for a higher individual mark;** however, there may be cases where one student falls far short of their responsibilities to the team. Such cases will be determined through peer evaluation and by reviewing group work and can lead to a significant reduction in a student's marks (typically a full letter grade).

Each project team will have a dedicated TA. Your project TA will meet with you weekly to provide support and monitor progress. These weekly check-ins will be scheduled so that all team members can attend, and attendance is mandatory. Check-ins last from 15 mins to 1 hour, depending on the project phase and the needs of the team. Process details and marking rubrics will be provided and discussed in class at the outset of each milestone.

LABS

The course lab provides a set time for students to practice requirements gathering, design, and evaluation techniques presented in class and for project groups to plan, review, and work together in the presence of a knowledgeable lab instructor. TAs will support their project teams during individual and group tasks. Specialized tutorials may be provided as needed and will be posted on Brightspace.

TENTATIVE* CLASS SCHEDULE

***subject to change –** Brightspace provides the definitive schedule. See "Important Dates" for due dates.*

Week starting	Topic	Events	Lab Readings
Sept 4	Course introduction. What is a user interface? What is interaction design?	*No class Sept 7*	Design of Everyday Things Understanding User Experience Design, Dudley Storey My Response to the Ketchup Bottle UX vs. UI Meme, Chris Compston
Sept 11	A brief history. Types of interface. User-Centered Design, other schools of thought.	Project announced	Design Lifecycle in 2-3 hours.
Sept 18	*Human*: ethnography, contextual inquiry, task analysis, participatory design, research.	Project groups formed, Assignment 1	Ideation and sketching. Sanders and Stappers (2008). Co-creation and the new landscapes of design
Sept 25	*Design*: sketching, storyboarding, lo-fidelity prototyping.	Quiz 1	Storyboarding. Understanding Comics (The Invisible Art), Scott McCloud. Chapter 3: Blood in the Gutter
Oct 2	*Evaluation*: scenarios, personas, lo-fidelity prototype evaluation.	Assignment 2	Scenario-based walkthroughs.
Oct 9	*Human*: perception, motor control, mental models.	Milestone 1	Project feedback session one.
Oct 16	*Design*: med-fidelity prototypes, prototyping tools.	Quiz 2	Prototyping. Houde and Hill (1997). What do prototypes prototype?.
Oct 23	*Evaluation*: heuristics, cognitive walkthrough.	Assignment 3	Cognitive walkthroughs.
Oct 30	*Human*: phenomenology, emotion, sociality.	Milestone 2	Project feedback session two. Chavan et al. (2009). The washing machine that ate my sari---mistakes in cross-cultural design.
Nov 6	*Design*: visual design, hi-fidelity prototypes, standards, accessibility.	Quiz 3	Usability heuristics. The Nielsen-Molich Heuristics for Interaction Design
Nov 13	Reading Week		
Nov 20	*Evaluation*: user studies, field trials, ethics.	Assignment 4	C.R.A.P. The UX of Lego Interface Panels, George Cave
Nov 27	Final thoughts and next steps.	Quiz 4, Milestone 3	Final presentations, demos.

COURSE COMMUNICATIONS

Course announcements will be posted on Brightspace. It is the student's responsibility to check Brightspace on a regular basis. If you do not know how to access Brightspace please contact the CS help desk or read the information located at: http://www.dal.ca/faculty/computerscience/current.html

ACADEMIC STANDARDS

Failure to properly attribute sources in your work will be treated as an academic standards issue and points may be deducted for not following citation requirements. For example, forgetting to quote text taken from other sources, failure to include in-text citations, or a failure to include required information in the citations or references. Please see the resources on proper citation provided by the Dalhousie Writing Center (https://dal.ca.libguides.com/c.php?g=257176&p=5001261).

Please note that if it appears that the error was made with intent to claim other people's work as your own such as a lack of both citations and references, an allegation of plagiarism will be submitted to the Faculty Academic Integrity Officer, which could result in consequences such as a course failure.

CULTURE OF RESPECT[1]

Every person has a right to be respected and safe. We believe inclusiveness is fundamental to education and learning. Misogyny and disrespectful behavior in our classrooms, on our campus, on social media, and in our community is unacceptable. We stand for equality. We hold ourselves to a higher standard.

What we all need to do:

1. **Be ready:** promise yourself to not remain silent, know that it will happen again, summon your courage whatever it takes. Practice things to say, open ended is good: "Why did you say that?" or "How did you develop that belief?"
2. **Identify the behaviour:** Use reflective listening, avoid labeling, name-calling or blame. Describe the behaviour, don't label the person: "Kim, what I hear you saying is that …"
3. **Appeal to principles:** this works well if the person is known to you like a friend, sibling, co-worker etc. "Joe, I have always thought of you as a fair-minded person, so it shocks me when I hear you say something like that."
4. **Set limits:** you cannot control another person, but you can control what happens in your space. "Please don't tell racist jokes in my presence anymore" or "This classroom is not a place where I allow homophobia to occur" and then follow through.
5. **Find an ally/be an ally:** seek out like-minded people for support or support others in their challenges. Lead by example and inspire others to do the same.
6. **Be vigilant:** change happens slowly, but be prepared, and keep speaking up. Don't let yourself be silenced.

RESPONSIBLE COMPUTING POLICY

Usage of all computing resources in the Faculty of Computer Science must be within the Dalhousie Acceptable Use Policies (https://cdn.dal.ca/content/dam/dalhousie/pdf/dept/university_secretariat/policy-repository/Acceptable%20Use%20Policy%20Feb%202020.pdf) and the Faculty of Computer Science Responsible Computing Policy (https://www.cs.dal.ca/downloads/fcs_policy_local.pdf)

COPYRIGHT NOTICE

The course materials are designed for use as part of the CSCI courses at Dalhousie University and are the property of the instructors unless otherwise stated. Third party copyrighted materials (such as books, journal articles, music, videos, etc.) have either been licensed for use in this course or fall under an exception or limitation in Canadian Copyright law. Copying this course material for distribution (e.g. uploading material to a commercial third party website) may lead to a violation of Copyright law.

UNIVERSITY STATEMENTS

This course is governed by the academic rules and regulations set forth in the University Calendar and the Senate. https://academiccalendar.dal.ca/Catalog/ViewCatalog.aspx?pageid=viewcatalog&catalogid=111&chapterid=6817&loadusercredits=False

Territorial Acknowledgement

Dalhousie University is located in Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq. We are all Treaty people.

Internationalization

At Dalhousie, 'thinking and acting globally' enhances the quality and impact of education, supporting learning that is "interdisciplinary, cross-cultural, global in reach, and orientated toward solving problems that extend across national borders." https://www.dal.ca/about-dal/internationalization.html

Academic Integrity

At Dalhousie University, we are guided in all of our work by the values of academic integrity: honesty, trust, fairness, responsibility and respect (The Center for Academic Integrity, Duke University, 1999). As a student, you are required to

---

[1] Source: Speak Up! © 2005 Southern Poverty Law Center. First Printing. This publication was produced by Teaching Tolerance, a project of the Southern Poverty Law Center. Full "Speak Up" document found at: http://www.dal.ca/dept/dalrespect.html. Revised by Susan Holmes from a document provided April 2015 by Lyndsay Anderson, Manager, Student Dispute Resolution, Dalhousie University, 902.494.4140, lyndsay.anderson@dal.ca www.dal.ca/think.

demonstrate these values in all of the work you do. The University provides policies and procedures that every member of the university community is required to follow to ensure academic integrity.
http://www.dal.ca/dept/university_secretariat/academic-integrity.html

Accessibility
The Advising and Access Services Centre is Dalhousie's centre of expertise for student accessibility and accommodation. The advising team works with students who request accommodation as a result of: a disability, religious obligation, or any barrier related to any other characteristic protected under Human Rights legislation (NS, NB, PEI, NFLD). https://www.dal.ca/campus_life/academic-support/accessibility.html

Student Code of Conduct
Everyone at Dalhousie is expected to treat others with dignity and respect. The Code of Student Conduct allows Dalhousie to take disciplinary action if students don't follow this community expectation. When appropriate, violations of the code can be resolved in a reasonable and informal manner, perhaps through a restorative justice process. If an informal resolution can't be reached, or would be inappropriate, procedures exist for formal dispute resolution.
https://www.dal.ca/campus_life/safety-respect/student-rights-and-responsibilities/student-life-policies/code-of-student-conduct.html

Conduct in the Classroom
Substantial and constructive dialogue on challenging issues is an important part of academic inquiry and exchange. It requires willingness to listen and tolerance of opposing points of view. Consideration of individual differences and alternative viewpoints is required of all class members, towards each other, towards instructors, and towards guest speakers. While expressions of differing perspectives are welcome and encouraged, the words and language used should remain within acceptable bounds of civility and respect.

Diversity and Inclusion
Every person at Dalhousie has a right to be respected and safe. We believe inclusiveness is fundamental to education. We stand for equality. Dalhousie is strengthened in our diversity. We are a respectful and inclusive community. We are committed to being a place where everyone feels welcome and supported, which is why our Strategic Direction prioritizes fostering a culture of diversity and inclusiveness (Strategic Priority 5.2).
http://www.dal.ca/cultureofrespect.html

Fair Dealing Policy
The Dalhousie University Fair Dealing Policy provides guidance for the limited use of copyright protected material without the risk of infringement and without having to seek the permission of copyright owners. It is intended to provide a balance between the rights of creators and the rights of users at Dalhousie. (read more: https://www.dal.ca/dept/university_secretariat/policies/academic/fair-dealing-policy-.html)

Originality Checking Software
The course instructor may use Dalhousie's approved originality checking software and Google to check the originality of any work submitted for credit, in accordance with the Student Submission of Assignments and Use of Originality Checking Software Policy. Students are free, without penalty of grade, to choose an alternative method of attesting to the authenticity of their work, and must inform the instructor no later than the last day to add/drop classes of their intent to choose an alternate method. (read more: https://www.dal.ca/dept/university_secretariat/policies/academic/student-submission-of-assigments-and-use-of-originality.html)

Student Use of Course Materials
These course materials are designed for use as part of the CSCI courses at Dalhousie University and are the property of the instructor unless otherwise stated. Third party copyrighted materials (such as books, journal articles, music, videos, etc.) have either been licensed for use in this course or fall under an exception or limitation in Canadian Copyright law. Copying this course material for distribution (e.g. uploading material to a commercial third party website) may lead to a violation of Copyright law.

Learning and Support Resources
- General Academic Support — Advising
  https://www.dal.ca/campus_life/academic-support/advising.html
- Dalhousie University Library http://libraries.dal.ca/