HCIN 5200F (Fall, 2026)

Software and User Interface Development

Instructor: Edward Melcer
Class location: Please check Carleton Central for the room location.
Email: edwardmelcer@cunet.carleton.ca
Office location: Herzberg Building, Room 5356
Best ways to be in touch: In class, via email, or during office hours.
Teaching Assistant: A list of teaching assistants and their contact/office hours information will be posted once the course starts.
Lecture times: Wednesdays, 2:35 pm - 5:25 pm
Course website: https://brightspace.carleton.ca/d2l/home/450205

- Brightspace access for University of Ottawa Students; please see information here: https://gradstudents.carleton.ca/faculty-of-graduate-and-postdoctoral-affairs-access-to-brightspace/
- University of Ottawa Students who need access to SCS IT resources such, as OpenStack and Nextcloud, must submit a request to SCS Tech Support SCS.Tech.Support@cunet.carleton.ca. The request must be sent from their @cmail.carleton.ca email address, and the email should say which resource is required and for which course (including section).

Important dates and deadlines can be found here: Dates, Deadlines, and Regulations—Registrar's Office, including class suspension for fall, winter breaks, and statutory holidays.

Copyright

Course materials (including this course outline and any slides, posted notes, videos, projects, assignments, and so forth) created for this course and posted on Brightspace, Discord, or Slack are intended for personal use and may not be reproduced, redistributed, given to or used with AI, or posted on any web site without prior written permission from the instructor.

Course Calendar Description

Software and User Interface Development

Design and development of user interfaces for software systems based on principles for supporting user interaction, with emphasis on frameworks, tools, and processes for user interface development.

Learning Material(s) and Other Course/Lab-Related Resources

Students are not required to purchase textbooks or other learning materials for this course.

Welcome

I am excited to welcome you to HCIN 5200F: Software and User Interface Development!

In this course, we will explore how ideas from human-computer interaction can be translated into the design and development of software interfaces. We will examine different interface styles and interaction paradigms, explore design principles and patterns, and gain hands-on experience designing and prototyping user interfaces. We will also read and discuss research from the HCI literature and develop skills for conducting and communicating HCI research. Along the way, you will have opportunities to experiment with different design approaches, think critically about interface decisions, and create work that you can build on for your portfolio.

I hope this course will be an opportunity to explore, experiment, and have some fun with interface design. You do not need to have all the answers—or even know exactly what kind of interface designer or researcher you want to be—when you arrive. My goal is to create a classroom where you can ask questions, try things, learn from one another, and develop your own perspective on designing interactive systems.

I also welcome you to contact me outside of class and during office hours. You are always welcome to email me, stop by my office, or catch me in the hallway between classes. My door is open, and I encourage you to reach out with questions, ideas, enthusiasm, concerns, or anything else that would help you get the most out of the course. I look forward to working with you this term!

Learning Outcomes

The objective of this course is to provide students with fundamental knowledge of and practical experience in the design and development of user interfaces for interactive software systems.

By the end of the course, students will be able to:

- **Read, analyze, present, and discuss HCI research papers**, identifying their key ideas, underlying rationale, evidence, and implications for interaction design.
- **Explain, compare, and apply different interface styles and interaction paradigms**, including their underlying principles, strengths, limitations, and appropriate contexts of use.
- **Design and prototype user interfaces** using interaction design principles, design patterns, and appropriate interface styles and interaction paradigms.
- **Identify, investigate, and communicate HCI research questions**, synthesizing relevant literature and presenting research findings in written and oral form.

Topics Covered

The list of readings for each assignment and their corresponding PDFs are available on Brightspace.

Week	Date	Topic/Content	Assignments
1	Sep 9	Introduction to HCI and Design	Reading Discussion Lead Signup TCPS 2 Certification (Due Nov 4) Reading Response 1 (Due Sep 16)
2	Sep 16	UI Styles	Reading Response 2 (Due Sep 23)

3	Sep 23	Prototyping	Design and Prototyping Assignment (Due Oct 9)
4	Sep 30	Interaction Design, Design Patterns, and Visual Design	
5	Oct 7	Technical Research and Writing Workshop	Reading Response 3 (Due Oct 14)
6	Oct 14	Mobile Interaction	Reading Response 4 (Due Oct 21)
7	Oct 21	Gestures	Project Plan (Due Nov 4)
8	Oct 28	Fall Break – No Class	
9	Nov 4	Evaluation	Research Project (Due Dec 11) Project Presentation (Due Dec 2) Reading Response 5 (Due Nov 11)
10	Nov 11	Accessibility	Reading Response 6 (Due Nov 18)
11	Nov 18	Designing for Social Interaction	
12	Nov 25	Project Work Week	
13	Dec 2	Project Presentations	
14	Dec 9	Project Presentations	

Assessment Scheme

Grade Breakdown

COMPONENT	GRADE VALUE	DATE
Attendance, Participation, and Discussion	10 %	N/A
TCPS 2 Certification	5 %	Nov 4
Written Reading Responses	10 %	See Topics Covered
Reading Discussion Lead	10 %	By End of Term
Design and Prototyping Assignment	20 %	Oct 9
Project Plan	5 %	Nov 4
Project Presentation	15 %	Dec 2
Project	25 %	Dec 11

Assessments

- **Participation and Discussion** – Attending each class as well as participating in class discussions, workshops, and other activities.
- **Written Reading Responses** – A one-page reading response on assigned weekly readings that is submitted **before** the start of class each week.
- **Reading Discussion Lead** – Students will take turns providing a brief summary and leading the discussion on weekly reading papers throughout the term.

- **Design and Prototyping Assignment** – Students will design and create two prototypes to address the same underlying design problem, but employ distinct design approaches for each (e.g., different interaction styles and design patterns).
- **Project Plan** – Students will submit a written project plan that provides a high-level overview of their proposed final project.
- **Project** – Projects can be either a research project or literature review, and the submitted project will take the form of an academic paper.
- **Project Presentation** – Students will present their project to the class. Presentations should cover the 1) main research question, gap, or issue being addressed, 2) the motivation for the work and relevance to HCI, and 3) the plan, results, and contributions of the work.

Collaboration, Sources, Plagiarism, and Use of AI

Collaboration and discussion. All submitted work in this course is expected to represent your own individual work. You are encouraged to discuss course concepts, readings, design ideas, and research topics with your classmates, and such discussion can be an important part of learning. However, unless an assignment explicitly states otherwise, you should independently produce and submit your own work. You should not share written answers, assignment drafts, research analyses, code, prototypes, or other work that will be submitted for assessment. You should also not use another student's work as the basis for your own submission.

Sources and references. You should use appropriate sources to support your work, including academic papers, books, websites, documentation, tutorials, and other online resources. Any ideas, arguments, wording, images, code, designs, or other material that comes from another source must be appropriately acknowledged and cited. Simply changing the wording of a source does not make it your own work. When in doubt about whether something should be cited, please ask.

Plagiarism. Plagiarism includes presenting another person's words, ideas, arguments, research, designs, code, or other intellectual work as your own without appropriate acknowledgement. This includes copying text without citation, closely paraphrasing a source without citation, submitting another person's work as your own, and presenting substantially AI-generated material as your own work. Plagiarism can occur even when material is obtained from publicly available websites, online tutorials, or other freely accessible resources.

Use of generative AI. Generative AI tools may be used in this course only for limited proofreading and grammar checking. For example, you may use an AI tool to identify spelling, punctuation, or grammatical errors in writing that you have produced yourself. AI tools may not be used to generate, rewrite, summarize, translate, substantially edit, or develop the content of an assignment. In particular, do not use AI to generate arguments, literature reviews, research analyses, discussion responses, design rationales, or other substantive assignment content. You are responsible for ensuring that all submitted work accurately represents your own thinking and work.

If an assignment has different expectations regarding collaboration, outside assistance, or AI use, those expectations will be stated explicitly in the assignment instructions. If you are unsure whether a particular use of a source, collaboration, or AI tool is permitted, please ask before submitting the work.

Grading

In accordance with Carleton University Calendar Regulations, the letter grades assigned in this course will have the following percentage equivalents:

A+ = 90-100	A = 85-89	A- = 80-84
B+ = 77-79	B = 73-76	B- = 70-72
C+ = 67-69	C = 63-66	C- = 60-62
D+ = 57-59	D = 53-56	D- = 50-52
F = <50		

WDN = Withdrawn from the course; DEF = Deferred; FND = (Failed, no Deferred)

Late and Missed Work Policies

Late Work

Assignments should be submitted by the given due date. You are allowed to submit one late assignment during the semester, as long as it is within one week of the given deadline. There is no need to contact anyone and you will not lose any points. Any subsequent late assignments will lose 10% from the total grade for each day that it is late.

Missed Work

Short-term (5 days or less): If you would like to request a deferral for an assignment/project deadline (apart from the one-time assignment extension available to everyone), please contact your TA and instructor on a single email and fill in the academic considerations form no later than three working days after the work was due. You will then be informed about the next steps.

Long-term (> 5 days): If you are experiencing chronic, ongoing challenges, please follow the above steps but fill out the longer-term accommodation form instead. Please also consider reaching out to the Paul Menton Centre and/or the Care Support team.

School of Computer Science Laptop Requirement

Every student that has been enrolled in a 1000-level (i.e., first year) course offered is required to have a laptop. This includes COMP1001, COMP1005, and COMP1006. For more information, please visit https://carleton.ca/scs/scs-laptop-requirement/ and then review the requirements at https://carleton.ca/scs/scs-laptop-requirement/laptop-specs/.

Graduate Academic Advisors (only for Grad course)

The Graduate Advisors for the School of Computer Science are available in Room 5302 HP; or by email at grad.scs@carleton.ca. The graduate advisors can assist with understanding your academic audit and the remaining courses required to meet graduation requirements.

SCS Computer Laboratory

Students taking a COMP course can access the SCS computer labs. The lab schedule and location can be found at: https://carleton.ca/scs/tech-support/computer-laboratories/. All SCS computer lab and technical support information can be found at: https://carleton.ca/scs/tech-support/. Technical support staff may be contacted in-person or virtually, see this page for details: https://carleton.ca/scs/tech-support/contact-it-support/.

Assistance and Resources for Students

Carleton Wellness: https://wellness.carleton.ca/

Career Services: https://carleton.ca/career/

Writing Services: https://carleton.ca/csas/support/

Peer Assisted Study Sessions (PASS): https://carleton.ca/csas/group-support/pass/

Math Tutorial Centre: https://carleton.ca/math/math-tutorial-centre/

Science Student Success Centre: https://sssc.carleton.ca/

Academic Accommodations and Regulations

Academic Accommodation

Carleton is committed to providing academic accessibility for all individuals. You may need special arrangements to meet your academic obligations during the term. The accommodation request processes are outlined on the Academic Accommodations website (https://students.carleton.ca/course-outline/).

Chat GPT/Generative AI Usage

As our understanding of the uses of AI and its relationship to student work and academic Integrity continue to evolve, students are required to discuss their use of AI in any circumstance not described here with the course instructor to ensure it supports the learning goals for the course.

Academic Integrity

Students are expected to uphold the values of academic Integrity, which include fairness, honesty, trust, and responsibility. Examples of actions that compromise these values include but are not limited to plagiarism, accessing unauthorized sites for assignments or tests, unauthorized collaboration on assignments or exams, and using artificial intelligence tools such as ChatGPT when your assessment instructions say it is not permitted.

If you are unsure of the expectations regarding academic Integrity (how to use and cite references, if unauthorized collaboration with lab- or classmates is permitted (and, if so, to what degree), then you must ASK your instructor. Sharing assignments or quiz specifications as well as posting them online to sites like Chegg, CourseHero, OneClass, and so forth is ALWAYS considered academic misconduct.

Misconduct in scholarly activity will not be tolerated and will result in consequences as outlined in Carleton University's Academic Integrity Policy. A list of standard sanctions in the Faculty of Science can be found here.

Additional details about this process can be found on the Faculty of Science Academic Integrity website.

Students are expected to familiarize themselves with and abide by Carleton University's Academic Integrity Policy. Claiming ignorance of or confusion about the academic integrity standards as described in the Policy does not excuse a student from responsibility for violations of those standards."

Student Rights & Responsibilities

Students are expected to act responsibly and engage respectfully with other students and members of the Carleton and the broader community. See the 7 Rights and Responsibilities Policy for details regarding the expectations of non-academic behaviour of students. Those who participate with another student in the commission of an infraction of this Policy will also be held liable for their actions.

Student Concerns

If you have any concerns regarding this course, your first point of contact is me. Please email me or visit during my student hours, and I will do my best to address your concerns. If I cannot resolve the issue, the next point of contact is the School of Computer Science at studentconcerns@scs.carleton.ca. If the concern remains unresolved, the final point of contact is the Office of the Dean of Science at ODScience@carleton.ca. Please follow this order of contact. **Note:** You can also bring your concerns to Ombuds services.

Land acknowledgement

Here at Carleton University, it is important that we acknowledge that the land on which we gather is the traditional and unceded territory of the Algonquin nation.