

COMP 3008A – Human-Computer Interaction

School of Computer Science, Carleton University
Course Outline

Main course details

Overview

- *Course instructor:* Dr. Nadine Moacdieh
- *Email:* nadine.moacdieh@carleton.ca
- *Office:* HP 5135
- *Office hours:* Tuesdays and Wednesdays 12-1 pm; you can drop by HP 5135 or join on Zoom (link will be posted to Brightspace)
- *Classroom:* Room location is posted on Carleton Central
- *Lecture times:* Tuesdays and Thursdays from 10:05 to 11:35 am
- *Course website:* [On Brightspace](#)

Teaching assistants (TAs)

A list of teaching assistants and their emails will be posted to Brightspace once the course starts.

Description

Fundamentals of the underlying theories, design principles, development and evaluation practices of human-computer interaction (HCI). Topics may include: theories of interaction, user interface frameworks, desktop, web, mobile, and immersive applications, usability inspection and testing methods, and qualitative and quantitative approaches to HCI research. Prerequisite(s): (COMP 2404 or SYSC 3010 or SYSC 3110) and (COMP 2406 or SYSC 4504).

Materials

- *Textbook:* Interaction Design: Beyond Human-Computer Interaction (5th edition) by Helen Sharp, Yvonne Rogers, and Jenny Preece. Wiley Publishing, 2019 (available at the Carleton University Bookstore and from online retailers like Amazon)
- *Other course resources:* Additional materials will be available on Brightspace throughout the term. Preliminary course slides will be posted to Brightspace before class. The complete slides will be posted after class.
- Note that all materials created for this course (including, but not limited to, lecture notes, in-class examples, assignments, and exams) remain the intellectual property of the instructor. These materials are intended for the personal and non-transferable use of students registered in the current offering of the course. Reposting, reproducing, or redistributing any course materials, in part or in whole, without the written consent of the instructor, is strictly prohibited.

Content and topics

Human-computer interaction (HCI) is a field of study related to the evaluation and design of interfaces that maximize efficiency, accuracy, and safety for users in different situations. Topics covered in this course include user-centered design principles, basics of human cognition, interface design principles, gathering information about the user via interviews, surveys, and other techniques, quantitative and qualitative data analysis approaches, basic experiment design, prototyping, and usability testing.

Week	Date	Course outline
1	T Jan 9	Introduction
	Th Jan 11	Basic concepts
2	T Jan 16	Human cognition
	Th Jan 18	Assignment 1 at 11:59 pm
3	T Jan 23	Understand the user
	Th Jan 25	
4	T Jan 30	Assignment 2 at 11:59 pm
	Th Feb 1	
5	T Feb 6	Interface design
	Th Feb 8	
6	T Feb 13	Assignment 3 at 11:59 pm
	Th Feb 15	
<i>No class (winter break)</i>		
7	T Feb 27	Midterm review
	Th Feb 29	Midterm 1 during class time
8	T March 5	Test and evaluate
	Th March 7	
9	T March 12	Assignment 4 at 11:59 pm
	Th March 14	
10	T March 19	Test and evaluate
	Th March 21	
11	T March 26	Midterm 2 during class time
	Th March 28	Project (part 1) at 11:59 pm
12	T April 2	Test and evaluate HCI research
	Th April 4	
13	T April 9	Project (part 2) at 11:59 pm (<i>no class</i>)
	W April 10	

Learning objectives

Upon completing COMP 3008, you will be able to:

- Explain the importance of usability in the context of interface design
- Describe the different steps and key aspects of a user-centered design process

- Describe different types of human cognition, their limitations, and factors that affect them as related to human-computer interaction
- Identify the types of errors that people can make and how those can be overcome in design
- Carry out a heuristic evaluation using well-known interface design principles
- Gather and analyze user and context information using techniques such as interviews, focus groups, and surveys
- Create different types of conceptual models and prototypes
- Select and conduct the appropriate form of usability testing to evaluate a design
- Design a formal usability experiment, including the necessary ethical considerations
- Analyze quantitative experiment data using basic statistical techniques

Assessment scheme

Component	Notes
Assignments (40%)	<ul style="list-style-type: none"> • Four individual assignments (10% each) to be submitted through Brightspace. • Assignments have to 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 assignment will lose 10 points (out of 100) for each hour that it is late. • You have one week after an assignment grade is posted to contact your TA with any questions or concerns about your assignment grade; after one week, no requests can be made and all grades are final
Midterm (30%)	<ul style="list-style-type: none"> • There are two midterm dates during the semester. You can choose to do one or both midterms. The highest grade will be considered as your midterm grade. Both exams are comprehensive (up to the material covered at that point) • The midterms will take place in class during class time. • You may bring up to two sheets of notes with you (two-sided) • You have one week after the midterm grade is posted to contact your instructor before all grades are final. • If you are sick or unable to attend a midterm for whatever reason, there is no need to contact anyone. Your grade on the other midterm will be considered.
Project (30%)	<ul style="list-style-type: none"> • The project deliverables will consist of a recorded presentation (15%) and a report (15%), both of which are to be done individually. • Your project will build on the assignments you have completed. • All project deliverables have to be submitted on time, otherwise you will lose 10 points (out of 100) for every hour it is late

Note that while attendance is not required nor tracked, there is the possibility of earning bonus points (up to 3%) by participating in select in-class activities.

Course policies

Communication

- Please ask all questions related to lecture material, course policies, assignments, the midterm, and the project using the appropriate discussion forums on Brightspace
- You can also attend instructor office hours to ask questions or discuss further
- Email your TA if there is a matter related to an assignment or exam grade; please do not post these to a forum. Any deferral requests (see Deferral section below) should also be communicated by email
- Email your instructor in the case of confidential information or personal matters

Deferral

If you would like to request a deferral for an assignment/project deadline (apart from the one-time assignment extension available to everyone), please fill in the [self-declaration form](#) and contact your TA within three working days after the work was due. You will then be informed about the next steps. Note that this should only be used for short-term concerns; if you are experiencing chronic, ongoing challenges, consider reaching out to the Paul Menton Centre and/or the Care Support team (see the University Policies section).

Collaboration

- Assignments must be done individually and should be your own work. For assignments, you are encouraged to discuss your thoughts and ideas with classmates during and outside of tutorials. However, you cannot share code with classmates or submit anything except what is your own work.
- Cheating during a midterm is strictly prohibited, where cheating includes copying another person's work during the exam, sharing your work with another person during the exam, or in any way conspiring to get a grade in a dishonest way
- You cannot post questions/answers online (to sites like Chegg, CourseHero, etc.). You are never permitted to share or upload course materials without explicit permission from your instructor.
- All cases of plagiarism or cheating will be pursued through official university channels. Academic integrity offences are reported to the office of the Dean of Science. Penalties for such offences can be found on the [academic integrity webpage](#). If you are unsure of the expectations regarding academic integrity, please ask your TAs or instructor
- Use of any AI system to generate assignment code will be considered academic misconduct. This includes, but is not limited to, chatbots (e.g., ChatGPT, Google Bard, Bing Chat), research assistants (e.g., Elicit), and image generators (e.g., Stable Diffusion, Dall-E), etc.
- An exception to the above rule is made for automated grammar and punctuation checking tools (such as Grammarly). Also, references to any material you use but did not originate must use the IEEE/APA/MLA citation style. Failure to reference materials correctly can result in severe penalties, and the use of manufactured (i.e., falsified) or misleading references will be treated as evidence of plagiarism and considered academic misconduct.

Respect and inclusion

The course instructor and TAs in this course are committed to fostering a learning environment that is inclusive for everyone. All students in the class, the instructor, TAs, and any guests should be treated with respect during all interactions, including any communications in class, through email, during office hours, or on any forum. Please feel free to contact your instructor via email or in person if you have any experiences in this class that made you feel uncomfortable.

School of Computer Science policies

Laptop policy

Everyone enrolled in a 1st year COMP course after the 2020/21 school year is required to have a laptop. This applies to students enrolled in a 1st year COMP course, which includes COMP1001, 1005 and 1006. For more information please visit [SCS Laptop Requirement - School of Computer Science](#).

Undergraduate academic advisor

The Undergraduate Advisor for the School of Computer Science is available in HP 5302 or by email at scs.ug.advisor@cunet.carleton.ca. The undergraduate advisors can assist with information about prerequisites and preclusions, course substitutions/equivalencies, understanding your academic audit and the remaining requirements for graduation. The undergraduate advisors will also refer students to appropriate resources such as the Science Student Success Centre, Learning Support Services and Writing Tutorial Services.

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/>.

University policies

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.

University dates and deadlines

For information about Carleton's academic year, including registration and withdrawal dates, see [Carleton's Academic Calendar](#).

Grading

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

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

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

Academic integrity

Student Academic Integrity Policy. Every student should be familiar with the Carleton University Student Academic Integrity policy. A student found in violation of academic integrity standards may be sanctioned with penalties which range from a reprimand to receiving a grade of F in the course, or even being suspended or expelled from the University. Examples of punishable offences include plagiarism and unauthorized collaboration. Any such reported offences will be reviewed by the office of the Dean of Science. More information on this policy may be found on the ODS Academic Integrity page: <https://carleton.ca/registrar/academic-integrity/>.

Plagiarism. As defined by Senate, "plagiarism is presenting, whether intentional or not, the ideas, expression of ideas or work of others as one's own". Such reported offences will be reviewed by the office of the Dean of Science. More information and standard sanction guidelines can be found here: <https://science.carleton.ca/students/academic-integrity/>.

Unauthorized Collaboration. Senate policy states that "to ensure fairness and equity in assessment of term work, students shall not co-operate or collaborate in the completion of an academic assignment, in whole or in part, when the instructor has indicated that the assignment is to be completed on an individual basis".

Accommodations

Carleton is committed to providing academic accessibility for all individuals. Please review the academic accommodation available to students here: <https://students.carleton.ca/course-outline/>.