THE UNIVERSITY OF WINNIPEG

ACS-3916-002 Human Computer Interaction
Applied Computer Science

Course Number: ACS-3916-002
Course Name: Human-Computer Interaction
Course Webpage: https://nexus.uwinnipeg.ca/d2l/home/67598

Instructor Information

Instructor: Bradley Rey
E-mail: b.rey@uwinnipeg.ca

Office Hours:	Tuesdays Or by appointment	3:30 – 4:30 pm	2Ax26
Class meeting time:	Mondays and Wednesdays	1:00 – 2:15 pm	3D01

Important Dates

- First Class:		Monday, January 6, 2025
- Reading week (no classes):		February 16 – 22, 2025
- Midterm Test:		Wednesday, February 12, 2025
- Final Withdrawal Date without academic penalty*:		Friday, March 14, 2025
- Last Class:		Wednesday, April 2, 2025
- Final Exam:		TBD
- Final Exam Period:		April 9 – 23, 2025
- University closures:	Louis Riel Day	Monday, February 17, 2025
	Good Friday	Friday, April 18, 2025

*A minimum of 20% of the work on which the final grade is based will be evaluated and available to the student before the voluntary withdrawal date.

Course Objectives / Learning Outcomes

This course covers the fundamentals and concepts of design, implementation, and evaluation of human-computer interfaces. Topics include human cognitive aspects, user-centered design, design goals and principles, interface and interaction types, prototyping and construction, and evaluation methods. The design concepts are demonstrated using an interface development tool such as Figma. To make a balance between theory and practice, emphasis is placed on a

course project involving design, implementation and evaluation of the user interface for a specific application.

Evaluation Criteria

1. Assignments (10%)
   - Individual work.
   - 2 assignments, equally weighted.
   - Due dates and details about each assignment will be shared in class and on Nexus. Assignments may include any or a combination of theory, design, prototyping, analysis exercises.

2. Course Project (35%)
   - Group work (3-4 students per team).
     - Groups will be created by the instructor given student skills and preferences.
   - Individual project marks will be based on the group mark, self-reports per deliverable, and peer evaluations at the end of the term.
   - The course project will be divided into 5 milestones submitted throughout the term and an end of term presentation. Due dates and details about each milestone and the presentation will be shared in class and on Nexus.
     - Note, the milestones are not equally weighted; see the breakdown below:
       - Milestone 1 – Project Proposal (5%)
       - Milestone 2 – User Research and Requirements (20%)
       - Milestone 3 – Ideation and Low-Fidelity Prototyping (20%)
       - Milestone 4 – High-Fidelity Prototyping (25%)
       - Milestone 5 – Heuristic Evaluation (20%)
       - Project Presentation (10%)

3. Midterm Test (15%)
   - During the regular class time (see Important Dates).
   - 75 minutes in duration.

4. Final Exam (40%)
   - Cumulative (the final exam covers all material discussed in the course).
   - 2 hours (120 minutes) in duration.
   - Time and location to be determined later.

Note: You must earn a passing grade (50%) on both the course project and final exam to pass the course.

Submissions:
- All work is to be submitted electronically via Nexus.
- All prototypes must be submitted in the appropriate format, and all written work as PDF. Further details and submission procedures will be stated in each assignment.

- Students are responsible for backing up and protecting their assignment work.
- Assignments and project deliverables will be accepted up to 1 day late with a penalty of 20%.
- Further information and dates to be posted on the course website.

Students should contact the instructor as soon as possible if extenuating circumstances require missing a lab, assignment, test or examination. A medical certificate from a practicing physician, and/or other forms of reasonable documentation, may be required before any adjustments are considered.

The prototyping software Figma will be used for the course project, however, how to use Figma is not explicitly covered through course material. You will be introduced to Figma within your assignments and guided towards online resources to help familiarize yourself with the software. Students may ask to use other tools for the course project, however, may only use a proposed tools with permission from the instructor.

Over the course of the semester one *'life happens'* day is given to all students to use as they see fit, to submit an assignment later than the posted due date. Use this extension wisely as I will give no additional extensions, unless in extreme documented situations (e.g., admission to hospital, death in family, etc.). Please note:

- This policy only applies to the individual assignments, not the group course project.
- *You do not have to ask for permission to use the life happens extension. You must, however, inform your instructor via email prior to the assignment deadline that you wish to use your life happens day.*

Test / Exam Requirements

More details on exam content will be shared prior to each exam.

Exams will be held in-person and written on-paper (i.e., you will not be using a computer). The midterm will be held in the same classroom used for the lectures, during the scheduled lecture time. Location and time for the final exam will be announced later. Students are required to bring their student ID card to exams.

The use of computers, calculators, smartphones, smartwatches, or other electronic devices is not permitted during exams. Use of these devices will constitute Academic Misconduct.

The exams in this course are all closed book. As such, you are NOT permitted to access any of the course materials, including your notes, during the exam. You are also NOT to communicate with anyone about the exam during the scheduled write time – you are to work independently. Communication with other students during the exam (written, text, verbal, etc.) is not permitted and will constitute Academic Misconduct.

Students with documented disabilities, temporary or chronic medical conditions, requiring academic accommodations for tests/exams (e.g., private space) or during lectures/laboratories (e.g., note-takers) are encouraged to contact Accessibility Services (AS) at 204-786-9771 or accessibilityservices@uwinnipeg.ca to discuss appropriate options. All information about a student's disability or medical condition remains confidential.
https://www.uwinnipeg.ca/accessibility-services

Students may choose not to attend classes or write examinations on holy days of their religion, but they must notify their instructors at least two weeks in advance. Instructors will then provide opportunity for students to make up work examinations without penalty. A list of religious holidays can be found in the 2024-25 Undergraduate Academic Calendar online at http://uwinnipeg.ca/academics/calendar/docs/important-notes.pdf

Final Letter Grade Assignment

Historically, numerical percentages have been converted to letter grades using the following scale. However, instructors can deviate from these values based on pedagogical nuances of a particular class, and final grades are subject to approval by the Department Review Committee.

A+	90 – 100%	B+	75 – 79%	C	60 – 64%
A	85 – 89 %	B	70 – 74%	D	50 – 59%
A-	80 – 84%	C+	65 – 69%	F	below 50%

Required Textbook/Reading List

- *Interaction Design: Beyond Human-Computer Interaction*, Preece, Rogers and Sharp, Wiley 5th Edition 2019 **(optional)**
  - ISBN 978-1-119-54725-9 (print)
  - ISBN 978-1-119-54730-3 (ebook)
- Additional readings and material that are not covered by the textbook will be provided by the instructor on Nexus.
- Class notes will be available on Nexus as PDFs. Annotated class notes done within lectures (i.e., additional notes, ideas, and discussion points brought forward in class), will not be shared on Nexus.

Prerequisite Information

- Prerequisites: A grade of at least C in ACS-2909 (3) and ACS-2814 (3) (or the former ACS2914 (3))
- Restrictions: Students cannot hold credit in ACS-3916 (3) and ACS-3816 (3)

Regulations, Policies, and Academic Integrity

Students are encouraged to familiarize themselves with the Academic Regulations and Policies found in the University Academic Calendar at:
https://uwinnipeg.ca/academics/calendar/docs/regulationsandpolicies.pdf
Particular attention should be given to subsections 8 (Student Discipline), 9 (Senate Appeals) and 10 (Grade Appeals).

Avoiding Academic Misconduct: Academic dishonesty is a very serious offense and will be dealt in accordance with the University's policies.

Detailed information can be found at the following:

- Academic Misconduct Policy and Procedures: https://www.uwinnipeg.ca/policies/docs/policies/academic-misconduct-policy.pdf and https://www.uwinnipeg.ca/policies/docs/procedures/academic-misconduct-procedures.pdf
- About Academic Integrity and Misconduct, Resources and FAQs: https://library.uwinnipeg.ca/use-the-library/help-with-research/academic-integrity.html

Uploading essays and other assignments to essay vendor or trader sites (filesharing sites that are known providers of essays for use by others who submit them to instructors as their own work) involves "aiding and abetting" plagiarism. Students who do this can be charged with Academic Misconduct.

Academic Integrity and AI Tools: Students must follow principles of academic integrity (e.g., honesty, respect, fairness, and responsibility) in their use of material obtained through AI text-generating tools (e.g., ChatGPT, Bing, Notion AI). ***Individual assignment and group milestone documents will highlight whether the use of AI tools are prohibited or permitted, and if permitted, the extent to which AI tools can be used.*** **Students may face an allegation of academic misconduct if using AI tools when not permitted.**

When AI tools are permitted, students must cite them. According to the MLA (https://style.mla.org/citing-generative-ai/), writers should

- cite a generative AI tool whenever you paraphrase, quote, or incorporate into your own work any content (whether text, image, data, or other) that was created by it
- acknowledge all functional uses of the tool (like editing your prose or translating words) in a note, your text, or another suitable location
- take care to vet the secondary sources it cites

If students are not sure whether or not they can use AI tools, they should ask their professors.

Non-academic misconduct: Students are expected to conduct themselves in a respectful manner on campus and in the learning environment irrespective of platform being used. Behaviour, communication, or acts that are inconsistent with a number of UW policies could be considered "non-academic" misconduct. More detailed information can be found here:

- Respectful Working and Learning Environment Policy: https://www.uwinnipeg.ca/respect/respect-policy.html,
- Acceptable Use of Information Technology Policy: https://www.uwinnipeg.ca/policies/docs/policies/acceptable-use-of-information-technology-policy.pdf
- Non-Academic Misconduct Policy and Procedures: https://www.uwinnipeg.ca/policies/docs/policies/student-non-academic-misconduct-policy.pdf and https://www.uwinnipeg.ca/policies/docs/procedures/student-non-academic-misconduct-procedures.pdf.

Copyright and Intellectual Property: Course materials are the property of the instructor who developed them. Examples of such materials are course outlines, assignment descriptions, lecture notes, test questions, and presentation slides—irrespective of format. Students who upload these materials to filesharing sites, or in any other way share these materials with others outside the class without prior permission of the instructor/presenter, are in violation of copyright law and University policy. Students must also seek prior permission of the instructor/presenter before, for example, photographing, recording, or taking screenshots of slides, presentations, lectures, and notes on the board. Students found to be in violation of an instructor's intellectual property rights could face serious consequences pursuant to the Academic Misconduct or Non-Academic Misconduct Policy; such consequences could possibly involve legal sanction under the Copyright Policy: https://copyright.uwinnipeg.ca/basics/copyright-policy.html

Privacy

Students have rights in relation of the collecting of personal data the University of Winnipeg

- Student Privacy: https://www.uwinnipeg.ca/privacy/admissions-privacy-notice.html
- Zoom Privacy: https://www.uwinnipeg.ca/privacy/zoom-privacy-notice.html

Class Cancellation, Correspondence with Students and Withdrawing from Course

When it is necessary to cancel a class due to exceptional circumstances, the course instructor will make every effort to inform students via uwinnipeg email and Nexus.

Students are reminded that they have a responsibility to regularly check their uwinnipeg e-mail addresses to ensure timely receipt of correspondence from the University and/or the course instructor**.**

When emailing the instructor, you should use your **UofW email address** to communicate with the instructor. **Do not** use the Nexus email system, i.e., mail.nexus.uwinnipeg.ca, Nexus mailbox are not monitored on a regular basis. As well, **Do not** use an external email address (e.g., Gmail, Hotmail, Shaw, etc.) as the email may be filtered out by the anti-spam system.

Please let course instructor know if you plan on withdrawing from the course. Note that withdrawing before the VW date does not necessarily result in a fee refund.

Student Wellness

The University of Winnipeg affirms the importance of student mental health and our commitment to providing accessible, culturally appropriate, and effective services for students. Students who are seeking mental health supports are encouraged to reach out to the Wellness Centre at studentwellness@uwinnipeg.ca or 204-258-3809. For community-based mental health resources and supports, students are encouraged to dial 2-1-1. This program of United Way is available 24/7 in 150 languages. Other resources and contact information can be found at the following link: https://www.uwinnipeg.ca/student-wellness/contact-us.html.

Topics to be Covered (tentative)

0. Introduction to HCI
1. History of Computing Interfaces and Future Interfaces
2. Interfaces and Interaction
    a. Design is Hard
    b. Interaction Cycles
3. Interface and User Requirements
    a. Functional, Data, Environmental
    b. Usability Goals
    c. User Experience Goals
4. Users and User-Centered Design
    a. Working with Users and Their Data
    b. Types of Users
    c. User-Centered Design Process
5. Investigation
    a. IDEO Methods
    b. Personas
    c. User Scenarios and Task Descriptions
6. Ideation and Prototyping
    a. Sketching
    b. Low/High Fidelity Prototyping
    c. Horizontal/Vertical Prototyping
7. Memory and Cognition
8. Design Principles
9. Human Vision and Perception
10. Gestalt Principles
    a. Proximity
    b. Similarity
    c. Continuity
    d. Closure
    e. Area

11. Layout and Navigation
    a. Hierarchy
    b. Balance
    c. Grids and Alignment
12. Evaluation
    a. Analytical Methods
    b. Usability Studies
    c. Experiments
13. Universal Design
14. Special Topics in HCI (time permitting)

A permitted or necessary change in mode of delivery may require adjustments to important aspects of course outlines, like class schedule and the number, nature, and weighting of assignments and/or exams.