

CSE 410 HCI and User Interface Design

COURSE INFORMATION

Lectures and recitation during a 14-week semester
4 credit hours

Instructor: Alan Hunt (Office 354 Davis Hall)
Instructor Office Hours : M-W-F 3-4 PM

Time : M-W-F 12:00 – 12:50
Location : 210 O'Brien

TAs : Tristan Wiley, Angus Lam, Harshita Girase
TA Office Hours : Posted on Piazza

COURSE DESCRIPTION

This is an undergraduate-level course intended for junior and senior-level students that will teach them introductory concepts of human computer interaction. The main topics covered in this course will be interface and experience design, interface development in a variety of environments, and evaluation of design via multiple methods including usability studies.

During this course, we will explore both the relevant theory and apply it through both individual and group work designing, implementing, and evaluating user interfaces.

By the end of the class, students should have a solid understanding of

- The process of requirements gathering and evaluation
- The practical skills for user interface design, including prototyping/wireframing, test design, and GUI programming
- The human side of computing, including some psychology behind why design works or does not
- The background to apply theoretical and empirical techniques in HCI
- A good overview of the field

Course Prerequisites: CSE 250.

COURSE SCHEDULE

Week	Topics	Due	Assessments
1	Introduction	Five Minute Rants	
2	Requirements and Testing		
3	Psychology of Design	Project 1	
4	GUI Canvases		
5	Graphic Design	Project 2	
6	Typography		
7	Wireframes	Project 3	Midterm
8	Spring Recess		
9	Usability and Error Handling	Wireframes	
10	Universal Design		

11	Usability Testing	
12	Globalization	
13	Gamification	Usability Tests
14	Data Visualization	Project 4
15	Presentation	Project Demo

STUDENT LEARNING OUTCOMES

Course Learning Outcome	CS ABET Outcomes	Instructional Methods	Assessment Methods
Demonstrate understanding of the basics of human and computational abilities and limitations		Lectures, Class Discussion, In Class Activities	Exams
Demonstrate understanding of the psychology driving good (and bad) design	1	Lectures, Class Discussion, In Class Activities	Homework, Exams, In Class Activities
Demonstrate understanding of the basic definitions, theories, tools, and techniques in HCI		Lectures, Class Discussion	Exams
Show understanding of the fundamental aspects of designing systems via a user centered process	2	Lectures, Class Discussion, In Class Activities	Exams, Projects, Homeworks
Practice a variety of methods for evaluating the quality of a user interface	1	Lectures, Class Discussion, In Class Activities	Exams, Projects, Homeworks
Apply appropriate HCI techniques to create systems designed for universal access, including differences in ability, culture, and background	1,2	Lectures, Class Discussion, In Class Activities	Exams, Projects
Design and Implement systems that are both usable, and consider functional aspects such as performance and maintainability	2	Lectures, Class Discussion, In Class Activities	Projects
Understand the potential ethical, legal and regulatory requirements around accessible design	4	Lectures, Class Discussion	Exams, Projects
Function effectively as part of a team to produce both conceptual designs and a complex software project	3,5	Class, Discussion, In Class Activities	Projects, Homeworks

Understand the basic principles of graphic design, typography, contrast and color usage that help make applications more engaging and attractive	1,2	Lectures, Class Discussion, In Class Activities	Exams, Projects, Homeworks
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Course support of learning outcomes: 0 – not supported, 1 – introduce, 2 – practice, 3—display mastery

CS ABET Outcome	1	2	3	4	5	6
Support	2	3	1	1	2	0

COURSE DELIVERABLES

- Class attendance and participation is important, expected, and graded.
- There will be four programming projects, three individual and one team based
- There will be 10-15 group exercises, some in class and some as homework
- There will be one midterm exam and one cumulative final exam.

ADDITIONAL ACADEMIC CONTENT

Aside from the assignments and projects, there is no activity required outside of class (i.e. there are no field trips, readings, additional related lectures, etc).

GRADING POLICY

All assignments are due on the date and time specified. Late assignments can be submitted at 20% penalty. A late assignment is accepted up to 24 hours after the original deadline.

Learning assessments will be graded based on rubric criteria and weighted according to the following break-down.

Weighting	Assessment / Assignment
60%	Homework and Projects
10%	Midterm exam
15%	Final exam
15%	Attendance and Class Participation
100%	

Final Grades:

Grade	Quality Points	Percentage
A	4.0	92.0% -100.00%
A-	3.67	88.0% - 91.9%
B+	3.33	84.0% - 87.9%
B	3.00	80.0% - 83.9%
B-	2.67	76.0% - 79.9%
C+	2.33	72.0% - 75.9%
C	2.00	66.0% - 71.9%
C-	1.67	62.0% - 65.9%
D+	1.33	58.0% - 61.9%
D	1.00	50.0% - 57.9%
F	0	49.9% or below

Incompletes (I/IU)*: A grade of incomplete (“I”) indicates that additional course work is required to fulfill the requirements of a given course. Students may only be given an “I” grade if they have a passing average in coursework that has been completed and have well-defined parameters to complete the course requirements that could result in a grade better than the default grade. An “I” grade may not be assigned to a student who did not attend the course.

Prior to the end of the semester, students must initiate the request for an “I” grade and receive the instructor’s approval. Assignment of an “I” grade is at the discretion of the instructor.

The instructor must specify a default letter grade at the time the “I” grade is submitted. A default grade is the letter grade the student will receive if no additional coursework is completed and/or a grade change form is not filed by the instructor. “I” grades must be completed within 12 months – see the [Incomplete Grade Policy](#) for the schedule. Individual instructors may set shorter time limits for removing an incomplete than the 12-month time limit. Upon assigning an “I” grade, the instructor shall provide the student specification, in writing or by electronic mail, of the requirements to be fulfilled, and shall file a copy with the appropriate departmental office.

ACADEMIC INTEGRITY

Academic integrity is a fundamental university value. Through the honest completion of academic work, students sustain the integrity of the university while facilitating the university's imperative for the transmission of knowledge and culture based upon the generation of new and innovative ideas.

Academic dishonesty will not be tolerated in this course and may result in grade reductions, failed assignments, failed classes, or expulsion from UB according to the university and CSE policies.

<http://undergrad-catalog.buffalo.edu/policies/course/integrity.html>

http://www.cse.buffalo.edu/undergrad/policy_academic.php

No behavior that compromises academic honesty (such as use of someone else's work or code, using prohibited materials during tests, or making your work available to others) will be tolerated in this course. You are expected to complete assignments on your own. You are encouraged to collaborate on the approach and discuss ideas to complete assignments, however it is essential that you complete all programming and writing assignments on your own. The submitted assignments will be checked for plagiarism, which will be triggered by programs written in close collaboration. It is expected that your work represents your own understanding of the problem. If work of others is used, it must be properly cited. Use of properly cited material is acceptable, but no referencing is treated as claiming the work as your own. If you need assistance with anything, do not hesitate to contact the instructor.

DIVERSITY

The UB School of Engineering and Applied Sciences considers the diversity of its students, faculty, and staff to be a strength, critical to our success. We are committed to providing a safe space and a culture of mutual respect and inclusiveness for all. We believe a community of faculty, students, and staff who bring diverse life experiences and perspectives leads to a superior working environment, and we welcome differences in race, ethnicity, gender, age, religion, language, intellectual and physical ability, sexual orientation, gender identity, socioeconomic status, and veteran status.

ACCESSIBILITY RESOURCES

If you have any disability which requires reasonable accommodations to enable you to participate in this course, please contact the Office of Accessibility Resources, 60 Capen Hall, 645-2608, and also the instructor of this course. The office will provide you with information and review appropriate arrangements for reasonable accommodations.

<https://www.buffalo.edu/studentlife/who-we-are/departments/accessibility.html>

The University at Buffalo and the School of Engineering and Applied Sciences are committed to ensuring equal opportunity for persons with special needs to participate in and benefit from all of its programs, services and activities.

TEMPLATE