Course Syllabus
COMPSCI 325, 3 Credits, Fall 2024
Time: TuTh 11:30AM - 12:45PM
Location: Room 119, Agriculture Engineering

Personnel:
Instructor:
Ravi Karkar <rkarkar@umass.edu>
Office hours by appointment. LGRC A351B or Zoom

TAs:
Send an email/note on teams at least an hour prior to the office hour if you plan on dropping by.
Amit Sarker <asarker@umass.edu>
        Office hours: Th 10:00-11:00am CS 207
Alexander (AJ) Yeung <ayeung@umass.edu>
        Office hours: Th 2:30-3:30pm CS 207

UCAs:
Send an email/note on teams to meet with any UCA.
Nicole D'Souza <nadsouza@umass.edu>
Hanabel Mengistu <hmengistu@umass.edu>
Siddarth Arvind <sarvind@umass.edu>

Course Overview
This course provides an introduction to Human-Computer Interaction (HCI), focusing on the design, evaluation, and implementation of interactive computing systems for human use. The course covers the fundamental principles of HCI, user-centered design methodologies, and the interaction between people and technology across different contexts. Students will explore how humans perceive, interact with, and adapt to computer systems, devices, and applications, with an emphasis on usability, user experience (UX), and the importance of designing systems that are both functional and accessible.

The course structure is a mix of lectures, hands-on activities, and design critiques by peers and course staff. The course is overwhelmingly organized around a group project, in which students:
- Ideate and Propose Design Problems
- Study Existing Practices and Challenges
- Explore Potential Design Opportunities and Tradeoffs
- Evaluate and Iterate Upon a Design
- Communicate a Problem and Resulting Design

Learning Objectives
- **User-Centered Design**: Apply user-centered design principles to develop user-friendly and accessible interfaces.

- **Critique Design:** Leverage design concepts and terminology to expertly critique interface designs
- **Conduct User Research**: Perform user research and gather insights using various HCI research methods, such as interviews, surveys, and usability testing.
- **Rapid Prototype**: Develop low-fidelity and high-fidelity prototypes to communicate and test early-stage design ideas
- **Evaluate**: Evaluate prototype's usability through heuristics and user studies.
- **Analyze**: Use quantitative and qualitative methods to analyze findings from user studies and evaluations

Course Schedule:

I reserve the right to make changes to this syllabus in order to maintain currency with the field or increase success for students.

Week	Lecture	Date	Milestone due	Tentative Topic
1	1	9/3		Course Overview and Logistics
	2	9/5		Design Principles
2	3	9/10		Human-Centered Design and HCI
	4	9/12/	A1	Observations
3	5	9/17/		Interviews
	6	9/19/	A2	Surveys/Questionnaires
4	7	9/24/		Personas and Tasks
	8	9/26/	A3; M0	Requirements and Metrics
5	9	10/1/		Qualitative Data Analysis - Affinity Diagram
	10	10/3/	M1a	Qualitative Data Analysis - Thematic Analysis
6	11	10/8/		Mental Models and Conceptual Models
	12	10/10/	M1b	Prototyping - Low Fidelity
7		10/15/		No class
	13	10/17/		Workshop
8	14	10/22	Midterm	Midterm
	15	10/24/		Prototyping - Mid and High Fidelity
9	16	10/29/		Evaluation - Usability Testing
	17	10/31/	M2a	Evaluation - Cognitive Walkthrough
10		11/5/		No class
	18	11/7/	M2b	Evaluation - Heuristic Evaluation
11	19	11/12/		Evaluation - Controlled Experiment

	20	11/14/	M3a	Quantitative Data Analysis*
12	21	11/19/		Human Abilities
	22	11/21/	M3b	Visual Design I
13	23	11/26/		Visual Design II
		11/28/		No class
14	24	12/3/	Demo	Final Project Demo
	25	12/5/		Final Project Demo
15	26	12/10		Final Project Demo

Grading Scheme:

Component	Weight	Type
Assignments (3)	15%	Individual
Participation (In-class + teams + lecture/workshop)	10%	Individual
Midterm exam	20%	Individual
Project peer review	5%	Individual
Group project - milestones + report + demo	50%	Group

Grading Scale

The approximate grade thresholds that usually apply in this course are as follows: A (93-100), A-(90-92), B+ (87-89), B (83-86), B- (80-82), C+ (77-79), C (73-76), C- (70-72), D+ (67-69), D (60-66), F (0-59). However, these are subject to change and will be adjusted (in students' favor) based on the class's performance throughout the semester.

Regrades

If you feel that we made a mistake in grading one of your assignments, you may submit it for a regrade if you do so within 5 days of when the assignment was returned to you. Note that a regrade will be a complete regrade and that your grade could go down as a result of the regrade.

Late Assignments

Turning in work late disrupts everyone's lives, including your own. Therefore, all assignments are due at the date and time they are marked as due in the course website. All assignments (except for Reading Reflections) submitted late without prior arrangement will be graded down by 10% per 24-hour period the assignment is late. See the "Reading Reflection" section for how

they will be graded. If you need an extension on a particular assignment, please ask your TA or the professor before the assignment is due. Do not wait until the last second. Extensions are not automatically granted: your TA or the professor will make a subjective judgment based on how many previous extensions you have requested, why you are asking for the extension, and how you are doing so far in the course.

If you are physically unable to request an extension before the assignment is due, contact your TA or the professor as soon as you are able to, and explain the situation. For further information regarding religious accommodation and other excused absences, refer to the UMass academic regulations - https://www.umass.edu/registrar/students/policies-and-practices/class-absence-policy.

In-class time
Class will generally be a mix of reading presentations, discussion, and activities. In-class time aims to be interactive and participatory.

Textbooks
There is no textbook required. However, we have optional readings from a collection of book chapters, survey and research papers, and articles. If you want to learn more about HCI we suggest the following books that are optional for you to read.

1. Research Methods in Human-Computer Interaction, 2nd Edition (Jonathan Lazar, Jinjuan Heidi Feng, and Harry Hochheiser).
2. Interaction Design beyond Human-Computer Interaction, 5th Edition (Helen Shart, Jennifer Pierce, Yvonne Rogers).
3. The Design of Everyday Things: Revised and Expanded Edition (Don Norman)

Acknowledgements
The course is an adaptation of the same course taught by Narges Mahyar. The design and materials of the modifications were either inspired by or adapted from a variety of courses
- James Fogarty's CS 440 – Introduction to HCI
- James Landay's CS 147 - Introduction to Human-Computer Interaction

Communication Policy
We will use Teams as the primary channel for communication. The other mode of communication is during the teaching staff's office hours. If you need to consult anything with specific teaching staff, you can reach out to them via email.

Accommodation Statement
The University of Massachusetts Amherst is committed to providing an equal educational opportunity for all students. If you have a documented physical, psychological, or learning disability on file with Disability Services (DS), you may be eligible for reasonable academic

accommodations to help you succeed in this course. If you have a documented disability that requires accommodation, please notify me within the first two weeks of the semester so we can make appropriate arrangements.

Academic Honesty Statement

Since the integrity of the academic enterprise of any institution of higher education requires honesty in scholarship and research, academic honesty is required of all students at the University of Massachusetts Amherst. Academic dishonesty is prohibited in all programs of the University. Academic dishonesty includes but is not limited to: cheating, fabrication, plagiarism, and facilitating dishonesty. Appropriate sanctions may be imposed on any student who has committed an act of academic dishonesty. We will take reasonable steps to address academic misconduct. Any person who has reason to believe that a student has committed academic dishonesty should bring such information to the attention of the course instructor as soon as possible. Instances of academic dishonesty not related to a specific course should be brought to the attention of the appropriate Department Head or Chair. Since students are expected to be familiar with this policy and the commonly accepted standards of academic integrity, ignorance of such standards is not normally sufficient evidence of lack of intent (http://www.umass.edu/dean_students/codeofconduct/acadhonesty/).

Inclusivity Statement

In this course, each voice in the classroom has something of value to contribute. Please take care to respect the different opinions, choices, experiences, beliefs, and values expressed by the students, faculty, and staff involved in this course. My colleagues and I support UMass's commitment to diversity, and welcome individuals regardless of age, background, citizenship, disability, sex, education, ethnicity, family status, gender, gender identity, geographical origin, language, military experience, political views, race, religion, sexual orientation, socioeconomic status, and work experience (https://www.cics.umass.edu/diversity).

Copyright Notice

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Names & Pronouns

Everyone has the right to be addressed by the name and pronouns that they use for themselves. You can indicate your preferred/chosen first name and pronouns on SPIRE, which appear on class rosters. I am committed to ensuring that I address you with your chosen name and pronouns. Please let me know what name and pronouns I should use for you if they are not on the roster. Please remember: A student's chosen name and pronouns are to be respected at all times in the classroom.

Title IX Statement

UMass is committed to fostering a safe learning environment by responding promptly and effectively to complaints of all kinds of sexual misconduct. If you have been the victim of sexual

violence, gender discrimination, or sexual harassment, the university can provide you with a variety of support resources and accommodations. If you experience or witness sexual misconduct and wish to report the incident, please contact the UMass Amherst Equal Opportunity (EO) Office (413-545-3464 | equalopportunity@admin.umass.edu) to request an intake meeting with EO staff. Members of the CICS community can also contact Erika Lynn Dawson Head, director of diversity and inclusive community development (erikahead@cics.umass.edu | 860-770-4770).