

UT-Austin iSchool Syllabus INF385C HCISpring 2023

1/3/23

Description (from the catalog)

The history and importance of human-computer interaction (HCI), theories of HCI design, modeling of computer users and interfaces, empirical techniques for analyzing systems and interfaces, interface design, and styles of interaction. Emphasis on reviewing research papers, current works, and future directions in HCI research.

Details

Important note: The information presented in this syllabus is subject to expansion, contraction, change, or stasis during the semester. In case of conflict between versions, the copy on Canvas takes precedence.

Course Number

28075

Prerequisites

Graduate standing

Time

Th 1230–1530

Place

UTA-1.208

Dates

January 9–May 1, 2023

Final Exam

none

Instructor

Mick McQuaid

Email

mcq@utexas.edu

Office

1616 Guadalupe St, Room 5.402

Office Hours

TUE 1430–1630, WED 1300–1500 or by appointment

Materials

- Hartson and Pyla (2019) is the main textbook, available online at [ut library link](#)
- Johnson (2020) is also required and is also available online at [ut library link](#)
- Norman (2013) is also required and is also available online at [ut library link](#)

Learning Outcomes

The objective of this course is for students to learn fundamentals of human perception and cognition, to learn how to conduct user research, how to design, prototype and evaluate user interfaces. Students will learn user interaction design principles through theory and practice. At the end of this course you will be able to:

- understand the main concepts in human computer interaction;
- understand the fundamentals of human perception and cognition and their implications for user experience and interaction design;
- conduct research to learn about user needs and human uses of technology;
- undertake iterative and inexpensive user-centered design methods;
- design and prototype user interfaces;
- understand and apply interaction design guidelines;
- identify the strengths and weaknesses of interfaces and provide suggestions of how to improve them;
- perform basic user interface evaluation and usability testing;
- undertake further training and research in this area.

Class Format

This course takes a practical, applied, hands-on approach, based on the application of established best practices, principles, and proven methods to ensure a quality user experience. My goal for you is to introduce you to the activities of the UX lifecycle process and to give you opportunity to gain some practical experience with them. You are exposed to each activity in several ways. First you read about it in the book, then the instructor will review the highlights in lectures. Then we will discuss topics in the class. Topics and discussions will be enriched by your short presentations in most of class meetings. Finally, you will apply your newly learned skills in a somewhat realistic hands-on situation through your semester-long team project assignments.

Schedule

Week 1 (12 Jan) Introduction — What is HCI / UX? — UX lifecycle — Read Hartson and Pyla (2019): Ch 1, 2, 4 — Read Norman (2013): Ch 1 — In class: introductions — Assignment: HCI background questions (not graded)

Week 2 (19 Jan) Perception — Read Johnson (2020): Intro, Ch 1–5 — In class: 1 article presentation, discussion — Assignment: none

Week 3 (26 Jan) Cognition — Design principles — Read Johnson (2020) Ch 7-9, Norman (2013) Ch 2, 4 — In class: 2 design critiques, 1 article presentation, discussion — Assignment: Milestone 0

Week 4 (2 Feb) Usage research — Data elicitation and analysis — Read Hartson and Pyla (2019) 7, 8 — In class: 2 design critiques, 1 article presentation, discussion — Assignments: Assignment 1, Milestone 1

Week 5 (9 Feb) Models to inform design — Design requirements — Read Hartson and Pyla (2019) Ch 9, 10 — In class: 2 design critiques, 1 article presentation, discussion — Assignment: none

Week 6 (16 Feb) Design — Ideation — Read Hartson and Pyla (2019) Ch 1 In class: 2 design critiques, 1 article presentation, discussion — Milestone 2

Week 7 (23 Feb) Conceptual design — Interaction design — Read Hartson and Pyla (2019) Ch 15–18, Norman (2013) Ch 3–4 — In class: 2 design critiques, 1 article presentation, discussion — Assignment: none

Week 8 (2 Mar) Prototyping tutorial — Read Hartson and Pyla (2019) Ch 20 — In class: 2 design critiques, 1 article presentation, discussion — Milestone 3

Week 9 (9 Mar) Empirical evaluation — Read Hartson and Pyla (2019) Ch 22–24 — In class: 2 design critiques, 1 article presentation, discussion — Assignment: none

Spring Break

Week 10 (23 Mar) Analytic evaluation — Data analysis — Read Hartson and Pyla (2019) Ch 25–26 — In class: 2 design critiques, 1 article presentation, discussion — Assignment: Milestone 4

Week 11 (30 Mar) Affordances and signifiers — HCI “laws” — Read Hartson and Pyla (2019) Ch 30, Johnson (2020) Ch 13, Norman (2013) Ch 5 — In class: 2 design critiques, 1 article presentation, discussion — Assignment: none

Week 12 (6 Apr) Interaction cycle — Read Hartson and Pyla (2019) Ch 31 — In class: informal project presentations — Assignment: Milestone 5

Week 13 (13 Apr) UX design guidelines — Review — Read Hartson and Pyla (2019) Ch32 — In class: 2 design critiques, 1 article presentation, discussion — Assignment: Milestone 6

Week 14 (20 Apr) Project presentations — Poster presentations — Assignments: Milestone 7, Milestone 8, Assignment 3

Grading

I plan to grade assignments within two weeks of their due date except where circumstances interfere. The grading scale used along with the grade components follow.

- A \geq 96%
- A- \geq 90% & $<$ 96%
- B+ \geq 87% & $<$ 90%
- B \geq 84% & $<$ 87%
- B- \geq 80% & $<$ 84%
- C+ \geq 77% & $<$ 80%
- C \geq 74% & $<$ 77%
- C- \geq 70% & $<$ 74%
- D \geq 60% & $<$ 70%
- F $<$ 60.0%

Group work: 9 milestones

- Milestone 0: Topic idea 0%
- Milestone 1: Topic selection and product concept statement 0%
- Milestone 2: Usage research data elicitation and analysis 10%
- Milestone 3: Requirements and modeling, 10%
- Milestone 4: Design, 10%
- Milestone 5: Prototype (wireframes + pilot test) 10%
- Milestone 6: Evaluation and reporting, 10%
- Milestone 7: Final presentation, 5%
- Milestone 8: Final report, 15%

Individual work: ongoing assignments

- Design critique or article presentation or discussion leading (ongoing in class meetings), 10%
- Reading assignments and participation in online discussions on Canvas, 5%
- Assignment 1: Design analysis, 5%
- Assignment 2: Final reflections + lessons learned 10%

Reading assignments

You are responsible for keeping up with readings in the book per the schedule given in the course schedule/calendar. All assigned readings are to be done before a class meeting (except our first meeting, of course). You are required to post at least one discussion question relevant

to the assigned weekly reading on the designated Canvas discussion area (please note there may be more than one topic per week) and respond to at least one question posted by another student. Your questions should be in depth and sufficiently detailed to demonstrate that you read the assigned material (and not just skimmed it). Questions should not be too short (e.g., <10 words) or too long (e.g., > 200 words; these numbers are just rough guidelines). Questions should show your critical analysis of each reading and should not be superficial. Any student, TA or an instructor may post responses to online questions. The deadline for posting questions is Sunday evening 10pm (62 hours) before the class meeting time. Be prepared to discuss your questions during class meeting. Responses should be posted by Tuesday noon.

Student presentations

Each week one to three students will be assigned to prepare at home and present to the whole class one of the two types of presentations (a short design critique or an article presentation). Design Critique and/or Article Presentation (selected weeks as posted on Canvas) Most weeks between two and four students will be asked to present a short design critique of a human-machine interface (you should be able to show the images of an interface or a device). Another type of an on-going presentation will be a presentation of an online article on a topic related with weekly class topic. The article could be selected as an example of a UX technique or tool; if possible the article should be closely related to the weekly readings/lecture topic (but it should not repeat the same content). If more than one student is presenting, they should coordinate their article selection so that there is no overlap. The presentations should be short and to the point (5 to 7 minutes). For both types of presentations you should prepare slides and upload them to Canvas 48 hours before the class meeting time. More information is posted on Canvas under Assignments.

In class presentations

Most weeks (please consult Canvas for specific weeks) one or two students will be assigned to lead discussion on the weekly readings. In addition, one to three students will be assigned to prepare at home and present in class one of two types of presentations (short design critique or online article presentation – see below).

Discussion Leading (selected weeks as posted on Canvas)

The discussants are required to come prepared to take a leading role in class discussion. The discussants should be familiar with related questions posted by classmates on Canvas and be able to summarize them and possibly try to answer some of them. Discussion leading should be supported by slides (submitted to Canvas by Tuesday at 10pm). More information is posted on Canvas under Assignments.

Design Critique (selected weeks as posted on Canvas)

Most weeks one or two students will be asked to present a short design critique of a human-machine interface (you should be able to show the device or its images). Presentation slides are due by Tuesday at 10pm. More information is posted on Canvas under Assignments.

Team project

The major work (and the major part of course grade) component for the course is the semester team-oriented development project. It involves defining, analyzing, specifying, designing, prototyping, and evaluating an interaction design for a realistic problem area that you select. The purpose of the project is to give you exposure to all steps involved in developing a significant user interaction design. The project will include seven phases listed above in the grading table. The project assignments are described in detail separately. This is a team project (except part #6 (evaluation) and one section of the final project report (#8i), which you will perform individually). I will assign students to teams, trying to balance knowledge, skills, and backgrounds, based on a demographic survey given the first day/week of class. All development activities, including writing the deliverables, are team activities. All team members are to participate in all project activities. Do not go too far in the direction of dividing the overall process among the team members. Even though this might seem like a more efficient way to proceed, this leads to a kind of specialization that poses a barrier to each person learning the overall process.

The project grading process

The TA and the instructor typically work together in grading your submissions. Teams will be operating under somewhat varying conditions, reflecting various real-world development situations. Therefore, expectations for different teams will vary, as will the bases for grading project deliverables, so this is not about comparing the final products or deliverables across teams. The emphasis in this class is on learning the process and your project deliverables will be graded with that perspective.

The objective part

The first thing we assess objectively is whether all requirements are met. Mechanical aspects such as formatting, labeling, grammar, spelling, following instructions, etc. are easy to grade because they are objective. Since these mechanical aspects are just expected, we don't give positive points for those, but we may deduct points if they are wrong or missing.

The subjective part

The hard part in grading is the subjective part, which is about quality of content. Your submissions will be sorted in an approximate order of overall quality. We then take a second look and discuss relative merits of your work. In this process we calibrate our judgments. There are two components to this subjective evaluation: how well requirements are met (how well you did the job) and how well you reported it. Our evaluation of these components is based on our own knowledge and experience and is necessarily somewhat relative among the project teams of the class. The “how well you met requirements” part is based on our perception of how much you put into it, how completely you pursued the assignment, and how well you understood, interpreted, and applied the material covered in class to your project. We will try to write comments about these qualitative parts, so you know what aspects of your work and writing are possible issues.

Teamwork

Each member of the team is expected to contribute equally to each part of the project. It is possible that one of the most difficult parts of the project assignments is working well together in a group. It is understood that the effort each of you put into project phases may fluctuate given your skillset. Be aware of possible group problems and be ready to solve them. Don't make the mistake of taking this aspect for granted or waiting for it to fix itself; you have too much at stake. Sometimes, despite our best efforts, some team members end up not pulling their fair share of the weight. If you encounter such problems please contact your instructor as early as possible. The instructor will work with a group to help you solve problems.

Class participation

Class participation includes showing up, presentation of assigned materials in the classroom, active role in in class activities as well as active participation in classroom discussions.

Course policies

Due dates and times for handing in homework and project assignments

All homework and project assignments must be turned in at the beginning of class on the due date. You should think of all due dates for assignments, especially project assignments, as firm. The tight schedule of deliverables throughout the whole semester makes it nearly impossible to extend due dates. Any assignment that you do not hand in on time may be penalized in grading. If you are not able to complete an assignment by the due date, it would be best for

you to hand in as much of it as you have done. It will help if you notify us about special circumstances that will adversely affect completion of an assignment.

Attendance

I will take attendance every day and your final grade for the class will be dropped one-half letter grade if you are only present for 70 to 80 percent of classes. It will be dropped a full letter grade if you are only present for 60 to 70 percent of classes. If you are present less than 60 percent of the classes, your final grade will be dropped by two letter grades and it will be difficult for you to achieve a passing grade so, in that case, you should drop the class.

If you have a legitimate need for absence, such as illness or job interview, notify the instructor by email as soon as possible and you may receive an excused absence.

POLICIES

Accessible, Inclusive, and Compliant Statement

The university is committed to creating an accessible and inclusive learning environment consistent with university policy and federal and state law. Please let me know if you experience any barriers to learning so I can work with you to ensure you have equal opportunity to participate fully in this course. If you are a student with a disability, or think you may have a disability, and need accommodations please contact Disability and Access (D&A). Please refer to D&A's website for contact and more information: <http://diversity.utexas.edu/disability/>. If you are already registered with D&A , please deliver your Accommodation Letter to me as early as possible in the semester so we can discuss your approved accommodations and needs in this course.

Policy on Academic Integrity

Students who violate University rules on academic misconduct are subject to the student conduct process and potential disciplinary action. A student found responsible for academic misconduct may be assigned both a status sanction and a grade impact for the course. The grade impact could range from a zero on the assignment in question up to a failing grade in the course. A status sanction can range from probation, deferred suspension and/or dismissal from the University. To learn more about academic integrity standards, tips for avoiding a potential academic misconduct violation, and the overall conduct process, please visit the Student Conduct and Academic Integrity website at: <http://deanofstudents.utexas.edu/conduct>.

Class Recordings

Class recordings are reserved only for students in this class for educational purposes and are protected under FERPA. The recordings should not be shared outside the class in any form. Violation of this restriction by a student could lead to Student Misconduct proceedings.

Personal Pronouns

Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, culture, religion, politics, sexual orientation, gender identity & expression, and nationalities. Class rosters are provided to the instructor with the student's legal name, unless they have added a "chosen name" with the registrar's office, which you can do so here: https://utdirect.utexas.edu/apps/ais/chosen_name/. I will gladly honor your request to address you by a name that is different from what appears on the official roster, and by the pronouns you use (she/he/they/ze, etc). Please advise me of any changes early in the semester so that I may make appropriate updates to my records. For instructions on how to add your pronouns to Canvas, visit <https://utexas.instructure.com/courses/633028/pages/profile-pronouns>. More resources available on the Gender and Sexuality Center's website, <https://www.utgsc.org>.

Basic Needs Security

Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact the Dean of Students for support. UT maintains the UT Outpost (<https://deanofstudents.utexas.edu/emergency/utoutpost.php>) which is a free on-campus food pantry and career closet. Furthermore, please notify the professor if you are comfortable in doing so. This will enable him to provide any resources that he may possess.

Mental Health Information

I urge students who are struggling for any reason and who believe that it might impact their performance in the course to reach out to me if they feel comfortable. This will allow me to provide any resources or accommodations that I can. If immediate mental health assistance is needed, call the Counseling and Mental Health Center (CMHC) at 512-471-3515 or you may also contact Bryce Moffett, LCSW (iSchool CARE counselor) at 512-232-2983. Outside CMHC business hours (8am-5pm, Monday-Friday), contact the CMHC 24/7 Crisis Line at 512-471-2255.

References

- Hartson, Rex, and Pardha Pyla. 2019. *The UX Book, 2nd Edition*. Cambridge, MA: Morgan Kaufman.
- Johnson, Jeff. 2020. *Designing with the Mind in Mind, 3rd Edition*. Cambridge, MA: Morgan Kaufman.
- Norman, Donald A. 2013. *The Design of Everyday Things, 2nd Edition*. Basic Books.