



University of Southern California
ISE 470 – Human-Computer Interface Design
Spring 2022

Time: TTh 4 - 5:50 pm

Location: DMC 211

Instructor: Yalda Khashe

Office: <https://usc.zoom.us/my/yaldakhashe>

Office Hours: By appointment on Wednesdays 2-3 pm

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Catalog Course Description

Essentials of human factors and computer interface for the design, development, implementation, and evaluation of integrated media systems.

Text

Handouts for lecture and case studies will be posted on Blackboard.

Interaction Design: Beyond Human-Computer Interaction, by J. Preece, H. Sharp, Y. Rogers, Wiley & Sons Publishers, 5th edition (2019), ISBN: 978-1-119-54725-9

Supporting Text book:

Human-computer Interaction, by A. Dix, J. Finlay, G. Abowd, R. Beale, Pearson Education, 3rd Edition

Designing for People: An introduction to Human Factors Engineering, by J. Lee, C. Wickens, Y. Liu and L. Boyle, published by CreateSpace, 3rd edition (2017), ISBN: 9781539808008

The Encyclopedia of Human Computer Interaction, by Mads Soegaard and Rikke Friis Dam, 2nd Edition (2012), available at <https://www.interaction-design.org/literature/book/the-encyclopedia-of-human-computer-interaction-2nd-ed>

Learning Objectives:

- ✓ To evaluate, analyze and design human-computer interaction and design interfaces that facilitates this interaction
- ✓ To identify users' needs and requirements for a user-centered design.
- ✓ To define, collect, analyze and present user data.
- ✓ To develop scenarios, personas, and use cases to develop low fidelity prototypes.
- ✓ To use qualitative and quantitative evaluation methods for design and provide recommendations.

Course Expectations and Policies

Course Expectations and Netiquette: To ensure a cooperative learning environment, each student is expected to read the text before each class meeting time, and prepare to

actively participate during class discussions, team-related activities, presentations, and writings.

Netiquette is network etiquette; a set of rules that encourages appropriate and courteous online behavior. A short list of “Netiquette Rules for Class” is included at the end of this syllabus. Students are expected to engage in behaviors that enhance the learning environment. Our goal is to optimize the learning experience for all the students; therefore, disruptive behaviors are prohibited and will not be tolerated.

Participation and Attendance Policy: It is expected that students will attend class regularly and participate in the class discussion throughout the semester. Participation involves actively listening and volunteering answers to questions and moving the discussion along toward a shared understanding. The participation grade will be assigned at the end of the semester based on objective (contribution to class discussions, interaction with TA/Instructor inside and outside the classroom) and subjective (contributing meaningful questions/answers, illustrating comprehension of course material) assessment by the instructor. The participation rubric is included at the end of this syllabus.

At this time, the Viterbi classes are back to the usual pre-pandemic instruction modality. On-campus students are expected to return to fully in-person classes. Students who have medical concerns should contact the Office of Student Accessibility Services (OSAS). Online attendance, unless approved by the school or the instructor, does not count towards course participation.

Due Dates/Make-Up Work: Exams must be taken as scheduled. Assignments are due as scheduled. Make-ups will be allowed only if the student has contacted the professor before the due date, detailing a serious problem. There is no late submission for in-class assignments. If you cannot take an exam on the scheduled date and time, you must provide documents from a responsible party (doctor, court, police, etc.) and you must arrange to take the exam before the following class meeting. Travel plans do not count as documented emergencies. Please consult the course outline before making any plans. The final exam date/time cannot be rescheduled.

Online Communication Policy: Students are encouraged to contact the instructor by USC email and schedule a meeting during office hours. In the subject line, indicate the course number and a very brief summary of the email. Simple questions will be answered by email, but for more complex discussions students may be instructed to schedule a zoom meeting.

Assignment Submission: Homework descriptions will be posted on blackboard and assignments are due at the beginning of the class and should be submitted online through Blackboard. Electronic submission must be in MS Office formats. Since creating, analytical, and critical thinking skills are part of the learning outcomes of this course, all assignments should be prepared by the student working individually or in groups. Students may not have another person or entity complete any substantive portion of the assignment. Developing strong competencies in these areas will prepare you for a competitive workplace. Therefore, using AI-generated tools is prohibited in this course, will be identified as plagiarism, and will be reported to the Office of Academic Integrity.

Grading:

I. Letter Grades Table:

96-100	A	75-79	C+
91-95	A-	70-74	C
87-90	B+	65-69	C-
84-86	B	60-65	D+
80-83	B-	56-60*	D

* Grades less than 56: F

The final grade will be based on the above table combined with the cluster analysis of all the students' grades. Which will be explained in detail in the first class session.

II. The final course grade will be determined based on the following weights:

Exam 1	20 %
Exam 2	20 %
Homework	15 %
Term Project	20 %
Special Topic Presentation	15 %
Participation/in-class exercises	10 %
Peer Evaluation	*

According to USC policy: "No student is allowed to retake a final examination or do extra work in a course after the semester has ended for purposes of improving [their] grade.¹"

*Peer Evaluation will be reflected in the final Term Project grade and the participation grade

Course Content Distribution and Synchronous Session Recordings Policies: USC has policies that prohibit recording and distribution of any synchronous and asynchronous course content outside of the learning environment.

Recording a university class without the express permission of the instructor and announcement to the class, or unless conducted pursuant to an Office of Student Accessibility Services (OSAS) accommodation. Recording can inhibit free discussion in the future, and thus infringe on the academic freedom of other students as well as the instructor. (Living our Unifying Values: The USC Student Handbook, page 13).

Distribution or use of notes, recordings, exams, or other intellectual property, based on university classes or lectures without the express permission of the instructor for purposes other than individual or group study. This includes but is not limited to providing materials for distribution by services publishing course materials. This restriction on unauthorized use also applies to all information, which had been distributed to students or in any way had been displayed for use in relationship to the class, whether obtained in class, via email, on the internet, or via any other media. (Living our Unifying Values: The USC Student Handbook, page 13).

¹ chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://esdcomm.usc.edu/arr/forms/ARR_Grade_Handbook.pdf

Tentative Course Outline²:

<i>Week of</i>	<i>Topics</i>	<i>Assignment Due</i>	<i>Book Chapter</i>
01 Aug 21	Introduction and Logistics of the Course Human Information Processing & Sensory Systems		<i>Dix</i> ³ 1
02 Aug 28	Computer Interfaces, displays and Controls Interaction and Interaction Design		<i>Dix</i> 2 & 3
03 Sep 4	Understanding and Conceptualizing Interaction In-class Design Session		<i>Pr</i> ⁴ 1 & 2 <i>Pr</i> 11 <i>Lee</i> ⁵ 8,9 & 10
04 Sep 11	User Needs and Requirements Human Cognition	<i>Due: HW1</i>	<i>Dix</i> 15 <i>Pr</i> 4
05 Sep 18	Design Methods and Task Analysis In-class Design Session		<i>Pr</i> 4&7 <i>Lee</i> 2
06 Sep 25	Emotional and Social Interaction Data Gathering, Analysis, Interpretation and Presentation	<i>Due: HW2</i>	<i>Pr</i> 9 & 10
07 Oct 2	In-class Design Session <u>October 5 - Midterm Project Presentation</u>		
08 Oct 9	<u>October 10 - Midterm Exam</u> <u>October 12 - Fall Recess - University Holiday</u>		<i>Pr</i> 5 & 6
09 Oct 16	Design Principles, guideline and standards October 19 - Team 1: Ethnography and Social Computing	<i>Due: HW3</i>	<i>MD</i> ⁶ 38
10 Oct 23	Prototyping and Construction In-class Design Session		<i>Pr</i> 12
11 Oct 30	October 31 - Team 2: Design for All & Wearable Computing Interface design evaluation & Usability hueristics	<i>Due: HW4</i>	<i>Lee</i> 2 <i>Pr</i> 14 & 15
12 Nov 6	Case Study: The Application of HCI Design in Digital Health November 7 - Team 3: Affective & Context Aware Computing		<i>Handout</i>
13 Nov 13	Human-Automation Interaction & Balancing Automation In-class Design Session	<i>Due: HW5</i>	<i>Lee</i> 11 <i>Handout</i>
14 Nov 20	Case Study: The Application of HCI Design in Safety Critical Organizations November 23 - Thanksgiving - University Holiday		<i>Handout</i>
15 Nov 27	<u>November 28 - Final Presentation</u> Final review	<i>Due: Peer evaluations (11/27)</i> <i>Due: Course evaluation (12/1)</i> <i>Due: Project Report (12/1)</i>	
<i>Thursday, Dec 7</i>	Final Exam (4:30-6:30 pm ⁷) - Mandated by USC Schedule		

² Schedule may be revised to accommodate the content and pace of the class learning process. Due dates and case studies are subject to change.

³ Human-computer Interaction, Dix

⁴ Interaction Design: Beyond Human-Computer Interaction

⁵ Designing for People: An introduction to Human Factors Engineering

⁶ The Encyclopedia of Human Computer Interaction

⁷ **Confirm the time and date of the exam on the USC website.**

Special Topic Presentation

According to the Accreditation Board of Engineering and Technology (ABET), one of the most important qualities of a good engineer is the ability to read, research, reduce and present a topic to a specific audience. Also, according to the Journal of Engineering Education, allowing the students to read/learn outside the class and present their own findings is a better mode of learning than listening to lectures only. The quality of contents and the presentations may indeed vary from one team to another, however, we know that the depth of learning for the presenting team is significantly higher and the effects are longer lasting.

The teams will work on the topic presented in their assigned section of the textbooks and their presentation should include both the book content and also the discussion of the topic based on team research or personal experiences. The students are encouraged to explore and bring data and concepts from outside the book to complement the chapter content. The teams' performance will be evaluated on the content of the presentation, presentation style and professionalism, and the ability to engage the students in the presentation and the following Q&A. The team should prepare at least three Questions/Answers at the end of the presentation. These questions should reflect the summary of the presentation and your own analysis and criticism. The rubric for the chapter presentation is as follow:

Criteria	%	Excellent
Content of the presentation	70	<ul style="list-style-type: none">• Covering the main topics discussed in the book chapter• Relating the topics to course material discussed in lectures• Supplemental external research included in the presentation• Providing relevant and informative examples
Presentation style and professionalism	15	<ul style="list-style-type: none">• Professional slides (Fonts, format, etc.)• Presentation style• Team members' participation in the presentation• Multimedia and other creative approaches to presentation
The ability to engage the students	15	<ul style="list-style-type: none">• Q&A• Using case studies and other creative approaches to engage the students

Each team has 30 minutes for their presentations and 5 minutes for Q/A and follow up. We will do a follow-up briefing, and a summary of the topic discussed as a class after each presentation.

Design Project Project

Topic: The purpose of this project is to learn how to design and evaluate a human-computer interface.

Midterm and Final Presentation: Teams will present the project status in class, with one project briefing (mid-semester) and a final presentation (see Course Schedule for dates). The midterm presentation is pass/no-pass. We will give you feedback on your presentation style and the ability to engage students which you can use for your final presentation. Also, there is a folder posted on Blackboard with information on how to design and deliver good presentations. The rubric for the final team presentation is similar to the book chapter presentation only the content should focus on your project updates and results.

Final Term Paper: The term paper should include all the steps that your team has taken to define and analyze the problem and design and evaluate the interface. The paper organization guideline is posted on Blackboard under the *Term Project* section.

Peer Evaluation and Final Grade: The final project grade is the average of the final presentation and the final term paper grades. All team members will receive equal grades, contingent on team members' confirmation of their participation, however, each member has a chance to evaluate the other members at the end of the semester. Peer Evaluation will be reflected in the final Term Project grade and the participation grade. Please note that if you fail to submit your peer evaluation on time, you will not receive any points towards your own evaluation.

Criterion		Name			
(Assign 0 to 5 for each criterion)		Team Member 1	Team Member 2	Team Member 3	Team Member 4
1	Ability to communicate effectively: listening and talking with respect				
2	Willingness to help others				
3	Creativity in performing the tasks assigned				
4	Ability to offer solutions and accept constructive criticism				
5	Spend time and work hard to finish the project				
6	Availability and flexibility				
Total Points/6					

Netiquette Rules for Class

Netiquette is network etiquette; a set of rules that encourages appropriate and courteous online behavior.

- Above all, show respect to your peers and the instructor.
- Respect the opinions of others, regardless of how much you disagree.
- If you are writing an email or discussion post in anger, the content of your text will probably come off as disrespectful. Give yourself time to calm down and show respect.
- Reflect kindness and concern for your colleagues, you never know when someone else is having the worst day of their life.
- Allow others to save face. When possible, allow others the option of coming to the same conclusion, rather than pushing an opinion or answer on them. Instead of saying, “That’s not right, it should be purple,” consider saying this instead, “Would purple be a better color in this situation?”
- Address your instructor with their full title (e.g. Professor or Dr.) unless they explicitly tell you otherwise.
- Let others know how you would like to be addressed and address others as they would like to be addressed.
- Limit your use of the exclamation point.
- Avoid using all caps. IT IS COMMONLY INTERPRETED AS YELLING.
- Humor is difficult to interpret in text-based communication. Consider avoiding it in professional and academic communication.
- Check your spelling and grammar before hitting send or submit. This is an academic community and part of being professional is checking and double-checking your work.
- Use professional language and avoid using social media language and characters (i.e. don’t use slang, text shortcuts, such as “u” instead of “you,” emojis, emoticons).
- Use appropriate fonts.
- Use appropriate font-size: 12 font for papers (you can use 10 for tables); 11 or 12 in emails or discussion board posts.
- In emails, be brief. After greetings, but the most important point in the first sentence. Do not make the reader get halfway (or all the way) through the email before you present the reason for the email.
- In the discussion board, expand on your thoughts. Explain why you agree with them or why you think it’s a great post.
- Give details to your discussion post. What was your source and what pages were you looking at?

A more comprehensive list of communication norms is posted on the course page on Blackboard.

Participation Ruberic

Excellent Performance	Fair / Average Performance	Unacceptable Performance
<ul style="list-style-type: none"> • Initiates information relative to topics discussed • Accurately exhibits knowledge of assignment content • Clarifies points that others may not understand • Shares personal experiences or opinions related to the topic • Offers relevant/succinct input to class • Actively participates in labs and class exercises • Demonstrates ability to apply, analyze, evaluate & synthesize course material. • Demonstrates willingness to attempt to answer unpopular questions • Builds on other students' contributions 	<ul style="list-style-type: none"> • Participates in group discussions when asked • Demonstrates knowledge of course material • Offers clear, concise, "good" information on class assignments • Offers input, but tends to reiterate the intuitive • Attends class regularly 	<ul style="list-style-type: none"> • Fails to participate even when specifically asked • Gives no input to discussions • Does not demonstrate knowledge of the readings • Shows up to class: does nothing • Distracts group/class • Irrelevant discussion

Statement on Academic Conduct and Support Systems:

Academic Integrity: The University of Southern California is a learning community committed to developing successful scholars and researchers dedicated to the pursuit of knowledge and the dissemination of ideas. Academic misconduct, which includes any act of dishonesty in the production or submission of academic work, comprises the integrity of the person who commits the act and can impugn the perceived integrity of the entire university community. It stands in opposition to the university's mission to research, educate, and contribute productively to our community and the world.

All students are expected to submit assignments that represent their own original work, and that have been prepared specifically for the course or section for which they have been submitted. You may not submit work written by others or "recycle" work prepared for other courses without obtaining written permission from the instructor(s).

Other violations of academic integrity include, but are not limited to, cheating, plagiarism, fabrication (e.g., falsifying data), collusion, knowingly assisting others in acts of academic dishonesty, and any act that gains or is intended to gain an unfair academic advantage.

The impact of academic dishonesty is far-reaching and is considered a serious offense against the university. All incidences of academic misconduct will be reported to the Office of Academic Integrity and could result in outcomes such as failure on the assignment, failure in the course, suspension, or even expulsion from the university.

For more information about academic integrity see [the student handbook](#) or the [Office of Academic Integrity's website](#), and university policies on [Research and Scholarship Misconduct](#). Please ask your instructor if you are unsure what constitutes

unauthorized assistance on an exam or assignment, or what information requires citation and/or attribution.

Students and Disability Accommodations: USC welcomes students with disabilities into all of the University's educational programs. The Office of Student Accessibility Services (OSAS) is responsible for the determination of appropriate accommodations for students who encounter disability-related barriers. Once a student has completed the OSAS process (registration, initial appointment, and submitted documentation) and accommodations are determined to be reasonable and appropriate, a Letter of Accommodation (LOA) will be available to generate for each course. The LOA must be given to each course instructor by the student and followed up with a discussion. This should be done as early in the semester as possible as accommodations are not retroactive. More information can be found at osas.usc.edu. You may contact OSAS at (213) 740-0776 or via email at osasfrontdesk@usc.edu.

Support Systems:

[Counseling and Mental Health](#) - (213) 740-9355 – 24/7 on call

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

[988 Suicide and Crisis Lifeline](#) - 988 for both calls and text messages – 24/7 on call

The 988 Suicide and Crisis Lifeline (formerly known as the National Suicide Prevention Lifeline) provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week, across the United States. The Lifeline is comprised of a national network of over 200 local crisis centers, combining custom local care and resources with national standards and best practices. The new, shorter phone number makes it easier for people to remember and access mental health crisis services (though the previous 1 (800) 273-8255 number will continue to function indefinitely) and represents a continued commitment to those in crisis.

[Relationship and Sexual Violence Prevention Services \(RSVP\)](#) - (213) 740-9355(WELL) – 24/7 on call

Free and confidential therapy services, workshops, and training for situations related to gender- and power-based harm (including sexual assault, intimate partner violence, and stalking).

[Office for Equity, Equal Opportunity, and Title IX \(EEO-TIX\)](#) - (213) 740-5086

Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

[Reporting Incidents of Bias or Harassment](#) - (213) 740-5086 or (213) 821-8298

Avenue to report incidents of bias, hate crimes, and microaggressions to the Office for Equity, Equal Opportunity, and Title for appropriate investigation, supportive measures, and response.

[The Office of Student Accessibility Services \(OSAS\)](#) - (213) 740-0776

OSAS ensures equal access for students with disabilities through providing academic accommodations and auxiliary aids in accordance with federal laws and university policy.

[USC Campus Support and Intervention](#) - (213) 740-0411

Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

[Diversity, Equity and Inclusion](#) - (213) 740-2101

Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

[USC Emergency](#) - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call

Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

[USC Department of Public Safety](#) - UPC: (213) 740-6000, HSC: (323) 442-1200 – 24/7 on call

Non-emergency assistance or information.

[Office of the Ombuds](#) - (213) 821-9556 (UPC) / (323-442-0382 (HSC)

A safe and confidential place to share your USC-related issues with a University Ombuds who will work with you to explore options or paths to manage your concern.

[Occupational Therapy Faculty Practice](#) - (323) 442-2850 or otfp@med.usc.edu

Confidential Lifestyle Redesign services for USC students to support health promoting habits and routines that enhance quality of life and academic performance.