University of Southern California
ISE 470 – Human-Computer Interface Design
MW 3:30 - 4:50 pm – KAP 140

Instructor: Yalda Khashe
Office Hours: Daniel J. Epstein Department of Industrial &
MW 5-6pm or by appointment   Systems Engineering
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Teaching Assistant   TBD
Office Hours:

Catalog Course Description:

This course covers topics of introductory nature on human-computer interaction (HCI). HCI focuses on how to design tech products that can be used easily, efficiently, and safely. The course also offers simple evaluation methodologies and tools to analyze a device's interface.

Text:

Preece, J., Sharp, H., Rogers, Y. (2015). Interaction Design: Beyond Human-Computer Interaction (Fourth Edition). Wiley & Sons Publishers.

Optional: Dix, A., Finlay, J., Abowd, G., Beale, R., (2004). Human-computer Interaction (3rd Edition). Pearson Education.

Team Reading and Presentation Book:

Mads Soegaard and Rikke Friis Dam (2012). The Encyclopedia of Human Computer Interaction (2nd Edition). Team presentations are based on chapters from this book, available at https://www.interaction-design.org/books/hci.html.

Students Learning Objectives:

In this course you will learn how to tackle the following questions:

- ✓ Why some interfaces are good and others are poor?
- ✓ How we can figure out user needs to design better products?
- ✓ What are user abilities and limitations while interacting with a device?
- ✓ What are the key concepts of user-centered design?
- ✓ How to design for different kinds of interactions among users and devices?
- ✓ How to design for targeted users versus designing for a broad spectrum of users?
- ✓ How to use scenarios, personas, and use cases to develop low fidelity prototypes?
- ✓ When to use qualitative versus quantitative evaluation methods for our designs?

Course Expectations and Policies:

***Course Expectations*:** 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.

Attendance Policy: It is expected that students will attend class regularly and participate in the class discussion throughout the semester.

***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.

Academic Integrity: USC seeks to maintain an optimal learning environment. General Principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one's own academic work from misuse by others as well as to avoid using another's work as one's own. All students are expected to understand and abide by these principles. *SCampus*, The Student Guidebook, contains the Student Conduct Code in Section 11.00, while the recommended sanctions are located in Appendix A: http://usc.edu/dept/publications/SCAMPUS/gov/ Students will be referred to the Office of Student Judicial Affairs and Community Standards for further review should there be any suspicion of academic dishonesty. The Review process can be found at: http://usc.edu/student-affairs/SJACS/ Information on intellectual property at USC is available at: http://usc.edu/academe/acsen/issues/ipr/index.html.

Classroom Access: Any Student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me as early in the semester as possible. DSP is located in STU 301 and is open 8:30 a.m. - 5:00 p.m., Monday through Friday. The phone number for DSP is (213)740-0776.

Electronic Device Policy: You are allowed to use electronic devices to access your text, retrieve information, and take notes. However, you are not allowed to use social media and the like during class. Please be respectful of the other students by turning off or muting your devices.

Statement for Students with Disabilities: Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to your course instructor (or TA) as early in the semester as possible. DSP is located in STU 301 and is open from 8:30am to 5:00pm, Monday through Friday. Website and contact information for DSP http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html (213)740-0776(Phone), (213)740-6948(TDD only), (213)740-8216(FAX), ability@usc.edu

Grading procedure and Assessment Methods:

I. Letter Grades Table:

93-100	A	73-77	C+
89-93	A-	68-73	C
85-89	B+	65-68	C-
80-85	B	60-65	D+
77-80	B-	56-60*	D

* Grades less than 56: F

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

Exam 1 …………………………..…………...	22 %
Exam 2 ………………………………….......	22 %
Homework ………………….….…………	16 %
Term Project ………………….……………	20 %
Special Topic Presentation ………………..	10 %
Participation* ……………………………..	5 %
Peer Evaluation ……………………………	5 %

* Subjective grading by the Instructor based on the student's participation in class discussions and interaction with TA/Instructor inside and outside the classroom.

Exams:

Exams consist of true/false, multiple choice, short answers and essay questions. 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. The final exam date/time is set USC and cannot be rescheduled.

Assignment Submission:

Homework descriptions will be posted on blackboard and assignments are due at the beginning of the class. You are encouraged to submit your assignments online. Electronic submission must be in MS Office formats. Your presentations can be of any format you deem appropriate.

Study Hints:

- Do not hesitate to ask questions in person during office hours or via email.
- Read the text before you come to each class meeting.
- Participate in class discussions.

NOTE:

Course materials and grades will be posted on Blackboard System. Please make sure that you have access to the blackboard and your **USC account** is up and running.

Due to administrative processes, this syllabus is subject to change. It is the student's responsibility to verify with the instructor regarding any updates.

Tentative Course Outline[1]:

Week of		Topics	Project / Assignments
01	Jan 8	Introduction and Logistics of the course **Dix 1**: Human	Project[2]: Team Selection
02	Jan 15	January 15 - Martin Luther King Day - University Holiday Dix 1: Human (Cont'd) Dix 2: Computer	Project: Team leaders give a one-minute description of their selected project device (Jan 22)
03	Jan 22	**Dix 3**: Interaction **Preece 1:** What Is Interaction Design?	Project: Develop a detailed needs assessment and problem statement, and a goal hierarchy
04	Jan 29	**Preece 2**: Understanding and Conceptualizing Interaction **Preece 10:** User Needs and Establishing Requirements	***Assignment Due: HW1*** Project: User profiles (Primary, Secondary, and Tertiary), and User behavior expectations (based on tasks, activities, interactions)
05	Feb 5	**Preece 6**: Interface **Preece 3**: Cognitive Aspects	***Assignment Due: HW2*** Project: Develop 1) top system level requirements, 2) system constraints & I/O requirements, 3) environmental requirements
06	Feb 12	Task Analysis **Preece 7**: Data Gathering	***Assignment Due: HW3*** Project: List how you will measure system performance, Explain how you will test and evaluate your design
07	Feb 19	***February 19 – Presidents' Day - University Holiday*** ***February 21 - Exam I***	
08	Feb 26	**Preece 11**: Design, Prototyping and Construction ***February 28 - Midterm Project Presentations*** *(10 mins each team)*	***Assignment Due: HW4*** Project: Develop a hierarchy of task decomposition
09	March 5	**Preece 8**: Data Analysis, Interpretation and Presentation **Preece 13**: Introducing Evaluation	Project: 1) Perform a comprehensive Task Analysis, 2) Initiate interface design, 3) Begin usability study on prototype
10	March 12	***Spring Break***	
11	March 19	Design Guideline Balancing Automation	
12	March 26	Special Topic presentation - Team 1: Personas Team 2: Affecting Computing	***Assignment Due: HW5*** Project: Develop a comprehensive system map, and user data flow diagram. Iterate interface design.
13	April 2	Special Topic presentation - Team 3: Context-Aware Computing Team 4: Tactile Interaction	Project: Test and evaluate
14	April 9	Special Topic presentation - Team 5: Wearable Computing In-class Design	
15	April 16	Special Topic presentation - Team 6: Data Visualization In-class Design	***Due: Peer evaluations*** ***Due: Course evaluation***
16	April 23	***Term Project Presentations*** *(20 minutes each team)*	
Friday, May 4		***Final Exam (2 -4 pm)*** - *Mandated by USC Schedule*	

[1] Schedule may be revised to accommodate the content and pace of the class learning process.
[2] This is a guideline to develop your term project. Only the HW assignments should be submitted through Bb.

Term Project

> *Topic:* The purpose of this project is to learn how to design and evaluate a human-computer interface. Teams should be formed by those who share a mutual interest in a particular design problem. The details of the project is explained on Blackboard under the *Term Project* section.

> *Midterm and Final Presentation:* Teams will present the project status in–class, using one project briefing (mid semester) and a final presentation (see Course Schedule for dates).

> *Final Term Paper:* The This project should follow a user-centered design and evaluation approach. The term paper should include all the steps that your team has taken to develop and design your device. The paper organization guideline is posted on Blackboard under *Term Project* section.

Special Topics: Reading and Presentation

Each team is assigned a chapter from Mads book (see the textbook section). The chapters assigned are current topics of importance in HCI. Each chapter explores a contemporary topic in detail. All of the team members should read the chapter carefully and understand deeply the concepts presented by the authors. This is an additional reading/learning requirement for the entire class. Those who present will gain a deeper understanding in the assigned topic.

The following is a list of things you need to do in preparing for your presentation:

- ✓ What are the definitions, terminology, classification, and nomenclature for this topic?
- ✓ Why is this topic important to HCI practitioners? Which type of HCI problems does it address?
- ✓ What are the history and trends in this special area?
- ✓ What are the main HCI theories that form its foundation?
- ✓ What are the main HCI developments in this area?
- ✓ What are the HCI challenges for the future developments?
- ✓ Make sure that your presentation consists of examples from outside the chapter.

> *Question/Answer at the end:* present a set of 3 Q/As for the entire class to discuss. These questions should reflect the summary of the presentation from the perspective of HCI design. Make sure that you clearly frame your questions. If no answer from the students, then be prepared to give a hint to further encourage thinking about the question, and motivate the students to get involved and find solutions.

> *Presentation Format:* At your discretion, each team reviews its presentation slides with the TA/instructor a few days before the presentation session. The instructor team is prepared to help the teams in presentation style, format, and content for each chapter. Please note that you do not have a sufficient amount of time to present all details of the chapter. You must select and present only the important concepts of each chapter, specifically the topics related to the 3Q/As at the end of your presentation.