ISE 470: HUMAN-COMPUTER INTERFACE DESIGN (31616)

Spring 2017, Monday and Wednesday 3:30pm – 4:50pm (KAP 147)

Instructor:	**Dr. Kim Peters**	Phone:	213-740-0867 (during office hours)
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Office Hours:	Monday and Wednesday 2:00pm – 3:00pm or by appointment		
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Course Description

This course introduces the basic elements of human computer interaction (HCI). HCI focuses on how to design technology products that can be used easily, efficiently, and safely. The course addresses the fundamental aspects of human-computer interface design from a user-centered perspective providing basic exposure to the tasks and challenges of the interface design. Students will be equipped with principles and guidelines of user-centered interface design process, evaluation methodologies and tools to analyze the interfaces. This course will provide students the practical guidelines for understanding, designing and evaluating the interface for the Graphical User Interface (GUI) and World Wide Web (WWW).

The course objectives are:

- Understand the many considerations that must be applied to the interface design process
- Understand the rationale and guidelines for an effective interface design methodology
- Understand components of interfaces and screens, including windows, menus and controls
- Understand the design concepts and organizations of graphical screens and web pages for faster and accurate execution of screen features
- Understand the screen colors and design screen icons and graphics
- Understand and apply methods for discovering and avoiding common nuisances associated with user interface design process

The subject matter will be covered with lectures, discussions, case studies, reading the text, individual research, and the preparation of a comprehensive interface design process in a team environment.

Course Materials

Required Text:

- Preece, J., Sharp, H., Rogers, Y. (2015). *Interaction Design: Beyond Human-Computer Interaction.* 4th Edition. ISBN - 13: 978-1119020752

Reference Material(s):

- Dix, A., Finlay, J., Abowd, G., Beale, R. *Human-Computer Interaction*. ISBN - 0132398648
- Norman, Donald A. *The Design of Everyday Things*. ISBN - 0-385-26 774-6
- Galitz, Wilbert O. *The Essential Guide to User Interface Design: An Introduction to GUI Design Principles and Techniques.* 3rd Edition. ISBN - 978-0-470-05342-3
- Shneiderman et all. (2017). *Designing the User Interface: Strategies for Effective Human-Computer Interaction*. 6th Edition. ISBN - 13: 9780134380384

Note: Students are ***not*** required to purchase the reference materials. Instructor will provide all the pertinent reference documents for the course.

***Software**:* The course will utilize *Microsoft* software and a programming language.

- Copies of Microsoft software are available on the ISE laboratory computers in GER 309 (M-F 8 to 5).
- Microsoft Excel and PowerPoint can be download @ *http://itservices.usc.edu/officestudents/*
- Virtual Lab: MyDesktop @ http://viterbi.usc.edu/resources/vit/services/vdi.htm.

Online Access to Materials

The assignments, handouts, lecture notes, team rosters and other class information will be posted on Desire To Learn (D2L, https://courses.uscden.net). All students are expected to be able to access information from the on-line website.

Class Project

The class project consists of a group project where interface design skills will be demonstrated and evaluated. Students will be guided through the all elements of the interface design process. The project will be graded based on the class presentation, final report and a 360° team rating. Each design team will maintain a team notebook to track and maintain the interface design process.

Grading

- *Exam 1: 25% (individual).* The exam 1 (3/1/2017) will include all the materials covered until 2/27/2017. This date will mark the end of the first part of the course.
- *Exam 2: 25% (individual).* The exam 2 (4/12/2017) will include only the materials after Exam 1.
- *Assignments: 10% (group).* Homework must be turned in at the specified due date or via D2L prior to the beginning of class. No late assignments will be accepted unless an extreme circumstance can be proven.
- *"UI Design Tool" Presentation: 10% (group).* A member(s) of the design team will present their work for each given period.
- *Project: 30% (group).* The final project report is due on 5/3/2017 (*tentative*).
  - 40%: Project performance (design quality and testing performance)
  - 20%: Project notebook/report
  - 20%: Critical interface design review
  - 20%: 360-degree peer evaluation: creativity, quality, and etc.

Note: *Participation/Behavior:* Notable consideration will be given for class participation and behavior. Extra points may be awarded at the discretion of the instructor for exceptional accomplishments. These can be included but are not limited to exceptional creativity, research, team work, to name a few.

Quality Expectations

All assignments and presentations should be completed with the upmost professionalism. The assignment, project, papers and other materials must be prepared using a word processor, spreadsheet, PowerPoint or any other relevant computer software.

All work shall have cover page with:

1. Your full name
2. Your group member names with last names in alphabetical order (group assignments)
3. Document title
4. Document date
5. File name must conform to the following: group# _assignment#.ext (doc, xls, ppt, etc.)

Note: *Presentations* should be prepared in PowerPoint and should be delivered in time allotted. If any group is not prepared to present, all members of that group will be adversely affected in grading and evaluation.

Attendance

Regular class attendance is strongly encouraged and recommended. You are responsible for all material presented in the lecture whether you are present or not. Electronic devices such as cell phones, pagers, and alarms should be turned off or set to silent mode throughout class.

Important Dates

January 9	Classes Begin
January 16	Martin Luther King's Birthday
February 20	President's Day
March 1	Exam 1 (tentative)
March 12-19	Spring Recess
April 12	Exam 2 (tentative)
April 28	Classes End
April 29-May 2	Study Days
May 5, 2:00pm -4:00pm	Final Project Evaluation
May 12	Commencement

Student Support Systems

- **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 the professor(s) 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.
- **Emergency Services**: If an officially declared emergency makes travel to campus infeasible, USC Emergency Information *http://emergency.usc.edu* will provide safety and other updates, including ways in which instruction will be continued by means of D2L, blackboard, teleconferencing, and other technology.
- **Language Support Systems**: USC provides support for students who need help with scholarly writing. Students whose primary language is not English should check with the American Language Institute *http://dornsife.usc.edu/ali*, which sponsors courses and workshops specifically for international graduate students.

Academic Integrity

USC seeks to maintain an optimal learning environment. The Department of Industrial and Systems Engineering adheres to the University's policies and procedures governing academic integrity as described in *Scampus*, the Student Guidebook. 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. *Scampus*, contains the Student Conduct Code in Section 11.00, while the recommended sanctions are located in Appendix A. 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://www.usc.edu/student-affairs/SJACS*. All students are expected to understand and abide by these principles, as they will be strictly enforced throughout the semester.

Note: This syllabus is subject to change.

Course Schedule (*Note: This schedule is subject to change.*)

W	Date	Assignments	Topics	Readings
1	1/9/2017	EC#1	Introduction to HCUI The Human *Discussion: Why human computer interface design*	Dix Chapter 1 Handouts
2	1/16/2017	EC#2	***Holiday - Martin Luther King's Birthday*** Part 1: HCUI Initiation The Human and Computer *Discussion: Human information processing model*	Dix Chapters 1 & 2 Handouts
3	1/23/2017	Asn#1	Part 1: HCUI Initiation The Computer and Interaction *Discussion: The user experience*	Dix Chapters 2 & 3 Handouts
4	1/30/2017	Asn#2	Part 1: Planning and Analysis What is interaction design *Discussion: Central concern of interaction design*	Dix Chapter 3 Preece Chapter 1 Handouts
5	2/6/2017	Asn#3	Part 2: Planning and Analysis Understanding and Conceptualizing Interaction *Discussion: Conceptual model and requirements*	Preece Chapters 2 & 10 Handouts
6	2/13/2017	Asn#4	Part 2: Planning and Analysis The Interfaces *Discussion: Types of user-friendly interfaces*	Preece Chapters 10 & 6 Handouts
7	2/20/2017	Asn#5	***Holiday – President's Day*** Part 2: Planning and Analysis Cognitive Aspects *Discussion: What is human cognition in HCI design*	Preece Chapters 6 & 3 Handouts
8	2/27/2017		**Exam 1** Part 2: Planning and Analysis *Discussion: Task analysis*	Preece Chapter 7 Handouts
9	3/6/2017	Asn#6	Part 2: Planning and Analysis Data Gathering *Discussion: Task analysis and testing procedures*	Preece Chapter 7 Handouts
	3/13/2017		***Spring Recess***	Handouts
10	3/20/2017	Asn#7	Part 3: Design and Development Design, Prototyping, and Construction Introduction to GUI programing language *Discussion: Task decomposition*	Preece Chapters 9 & 11 Handouts
11	3/27/2017	Asn#8	Part 3: Design and Development Data Interpretation and Presentation *Discussion: Initiate interface design*	Preece Chapters 11 & 8 Handouts
12	4/3/2017	Asn#9	Part 4: Evaluation and Testing Introducing Evaluation *Discussion: T-testing and usability study*	Preece Chapters 8 & 13 Handouts
13	4/10/2017	Asn#10	**Exam 2** *Discussion: Closure process*	Chapter 13 Handouts
14	4/17/2017	FPE	Part 5: Design Termination *Discussion: Final design review guidelines*	Handouts
15	4/24/2017	FPE	Part 5: Design Termination *Discussion: Post Design Probe*	Handouts
16	5/1/2017		***Study Days***	
17	5/5/2017	Final Project Report	Final Project Evaluation (FPE) *Discussion: 360-degree evaluation*	