**USC VITERBI SCHOOL OF ENGINEERING INFORMATICS PROGRAM**

**INF 555: User Interface Design, Implementation and Testing  - 4 units**

## *Spring 2018 (32427D) Syllabus*

Tuesday 2:00pm -5:20pm – KAP 113

**Professor Jaime Levy**
jaimelev@usc.edu
Skype: JLRinteractive

**TA Amy Chiu**
Email: chihyi@usc.edu
Skype: bio1006

**Professor's Office Hours:**

Office hours are available throughout the week over Skype by appointment. Please contact the professor by email and be specific about the subject matter to be discussed. For minor issues (i.e. absences, homework questions) it is highly recommended that you contact the teacher's assistant first.

**Catalogue Description**

Understand and apply user interface theory and techniques to conceive, design and test responsive applications that run on mobile devices, Web and/or desktops.

**Expanded Course Description:**

Surveys the theory and practice of human-computer interaction and the development of user interfaces. Through both analysis and design projects, students have an opportunity to learn cutting-edge approaches to digital product development workflows, the design of systems that meet end-user needs, and usability testing methods. Topics covered include behavioral and cognitive foundations of interaction design, information architecture, rapid prototyping techniques, and the process of user-centered design.

In this course, students will apply the theory and techniques in a semester-long individual project where they conceive, design, and test a responsive application that runs on a browser or mobile devices.

**Recommended Prep:** Students should have basic familiarity with web development and/or graphic design using a digital layout tool. However, you can easily pick up these skills by allowing yourself extra time to do the assignments and by paying close attention to the homework critiques in class.

This course is foundational and appropriate for students with backgrounds in a wide variety of fields, including any engineering discipline, and other fields including business, cinematic arts, communications, and design.

**Course Objectives:**

The course objectives are to provide:

- The theory and practice of creating effective user interfaces for modern devices ranging from mobile phones to desktop displays.

- Design guidelines for effective human computer interaction and the cognitive science theory that support the guidelines.

- The ability to create a variety of standard interaction design deliverables

- The ability to rapidly prototype a solution and then conduct usability testing

- To finish the class with an online UX portfolio and interactive prototype that demonstrates your skills and understanding of the methodology

**Methods of Teaching:**

Class will include a weekly lecture and in-class discussion or exercise, studio critique, or peer reviews. The materials presented in readings, videos, and lectures are intended to assist you in completing the homework assignments.

Throughout the course, students will be work both independently and in teams to develop a single comprehensive prototype and portfolio that will demonstrate your interaction design skills.

Students will be required to complete all homework assignments, which should average between three to four hours each to complete. A computer with access to the Internet is required to do all of the assignments.

**Grading Schema:**

| | |
|---|---|
| Homework Assignments: | 40% |
| Quizzes: | 10% |
| Participation: | 20% |
| Final Project: | 20% |
| Final Presentation: | 10% |
| | |
| Total | 100% |

Grades will range from A through F.  The following is the breakdown for grading:

94 - 100  = A     74 - 76 = C
90 - 93  = A -    70 - 73 = C-
87 - 89  = B+     67 - 69 = D+
84 - 86  = B      64 - 66 = D
80 - 83  = B-     60 - 63 = D-
77 - 79 = C+      Below 60 is an F


**The graded coursework will consist of five components:**

   1.    **WEEKLY HOMEWORK (12 assignments) -** A set of exercises will be assigned. Each student is expected to submit the completed assignment on blackboard each week. Homework is due by midnight of the evening prior to day that the class meets. All homework assignments will receive pass/fail scores. Students may work in groups to complete the user research assignments. NO assignment will be accepted late.  An incomplete grade will be granted only under the conditions specified in the student handbook, *SCAMPUS*, which is available

online, http://scampus.usc.edu. There also will be occasional written quizzes on the readings to make certain that it is being done. Not turning in a fully complete written quiz will affect your homework score.

 **2.**   **QUIZZES -** There will be three quizzes given throughout the semester to make sure that students are reading and comprehending the required books. They are all pass/fail. Anyone caught cheating during quiz time will given a failure for all quizzes and they will not be allowed to sit in the classes during quiz time.

 **3.**   **CLASS PARTICIPATION** – Class participation is based on attendance and engagement in informed discussions, student assignment critiques or class exercises. Students are expected to arrive to class each day and stay for the entire class in order for it to be counted. The only accepted reasons for missing classes are (1) having a medical reason such as being contagious with a flu or a condition that renders you immobile (2) a death in your immediate family. In either case, documented proof will be required. You may miss up to one class and still be eligible to earn an "A" assuming you successfully complete all the assignments, the final project, participate in class and give an amazing final presentation. If you want to earn 20% in this category, be certain that you sit toward the front of the classroom, give feedback to at least one assignment every week, and NEVER use your mobile phone during class.

 **4.**   **FINAL PROJECT -** Each student will submit a final visual presentation (in PDF format) along with their digital product prototype. It is due on the same day of the final presentation. This project will be a refined version of all the homework assignments ordered to tell a compelling story about their process, what they learned, and the benefits of their core user experience expressed in the prototype. The final presentation can be created using a presentation tool such as PowerPoint or Keynote. The prototype demo can be created using Justinmind or a similar rapid prototyping tool. Students will be graded based on creativity, ingenuity, and ability to apply class teachings.

 **5.**   **FINAL PRESENTATION–** In the last week of class, students will present their 7-8-minute portfolio presentation including the prototype to the class. They will be graded on oral presentation skills such as eye contact, enthusiasm, and storytelling skills.

**Class Communication:**

Blackboard at USC will be used for class communication and homework assignment uploading. We will also have a Slack channel so that students can easily communicate with each other and the TA with quick questions/feedback.

**Books, Readings, Videos:**

All books will be available to purchase at the USC bookstore or online from Amazon. All articles and videos will be available at no charge and distributed via links from Blackboard.

**Required Reading (Abbreviated titles are used in class schedule):**

About Face, The Essentials of Interaction Design **(AF)**, 4th Edition by Alan Cooper, Robert Reimann, David Cronin and Christopher Noessel. ISBN: 978-0321965516

Don't Make Me Think (Revisited/3rd Edition)**(DMMT)**. A Common Sense Approach to Web and Mobile Usability. Steve Krug, ISBN: 978-0321965516

**Recommended Reading:**

Hooked: How to Build Habit-Forming Products. Nir Eyal, ISBN: 978-1591847786

**Class Conduct:**

This is a no-screens class. Please keep your mobile devices and laptops in your bags. Breaking this rule will negatively impact your participation score. Please take handwritten notes or feel welcome to set your phone to record as long as you put it in front of the instructor.

**Class Structure & Schedule:**

Class sequence, dates, topics and guest speakers are subject to change as the semester proceeds.  Any revisions will be noted and announced in class in advance.

| | Topics/Activities | Readings & Homework | Assignment Due |
|---|---|---|---|
| Wk 1 1/9 | Review of Syllabus. Class introductions. Defining Interaction Design, Implementation, and Usability Testing. | Reading: AF Ch 1, 8. HW 1 - Write 3 different project ideas for a digital product or service. | |
| Wk 2 1/16 | Product Definition: Design Research, Personas and Goal,. Gathering Business Requirements & Stakeholder Interviews. | Reading: AF Ch 2, 3. See Blackboard. HW 2 - Conduct research and create your Persona(s). | HW 1 |
| Wk 3 1/23 | Product Definition: User Scenarios, Use Cases, User Stories, Feature Lists | Reading: AF Ch 4. HW 3 - Create a list of User Scenarios, Use Cases, User Stories, & Features. | HW 2 |
| Wk 4 1/30 | Information Architecture: Site Maps and Application Maps - Part 1. Flow and Hierarchy Creation. | Reading: Blackboard articles. HW 4 - Create the first draft of your site or app map using Sketch. | HW 3 |
| Wk 5 2/6 | Information Architecture: Site Maps and Application Maps - Part 2. Global and Persistent Navigation. Taxonomies. | Reading: Blackboard articles. HW 5 - Create the final draft of your site or app map. | HW 4 |
| Wk 6 2/13 | Information Architecture: User Flows vs. Task Flows. Labeling. Data/content modeling. | Reading: Blackboard articles; AF Ch 5. HW6 - Create a User Flow or Flows for your primary users. | HW 5 |
| Wk 7 2/20 | Interaction Design: The Basics of Wireframing - Sketching, Whiteboarding and Usability Conventions. | Reading: Blackboard articles; AF Ch 20, DMMT CHS 1-3. HW 7 - Create your Home Page or Main Screen (in Sketch). | HW 6 |
| Wk 8 2/27 | Interaction Design: Understanding Design Patterns, Best Practices, and Effective Visual Hierarchies. | Reading: AF CH 19; DMMT CHS 4-6. HW 8 - 9. Create all your secondary pages/screens (in Sketch). | HW 7 |
| Wk 9 3/6 | Interaction Design: Advanced Wireframing - Interface Design, Iconography, Responsive Design. | Reading: AF CH 7, 17, 21; DMMT CHS 7-8, 10-11. HW 9 - Finalize all your wireframe for your product. | HW 8 |
| Wk 10 3/13 | <span style="color:red">SPRING RECESS - NO CLASS!</span> | | |
| Wk 11 3/20 | Prototyping: The goals of prototyping. Prototype examples. Low-Fidelity to High-Fidelity Prototypes. Overview of prototyping tools/platforms. | Reading: Blackboard chapters. HW 10 - Create a script for your prototype. Choose a prototyping tool and layout your first screen. | HW 9 |
| Wk 12 3/27 | Prototyping: The process of prototyping. Minimum viable prototype. Exploration vs. Audience vs. Assumption-Centric. | Reading: Blackboard chapters. Ch . HW 11 - Finalize your interactive prototype. | HW 10 |
| Wk 13 4/3 | Usability Testing: Testing prototypes with users. Preparing for a Usability test. | Reading: DMMT CHS 9, 10 (160-163). See blackboard. HW 12 - Planning and conducting the research/testing. | HW 11 |
| Wk 14 4/10 | Usability Testing: Moderating a test. Data analysis techniques. The usability report. | Reading: DMMT CHS 12-13 . FINAL - Finish your Project Portfolio and Oral Presentation. | HW 12 |
| Wk 15 4/17 | Final Presentations (Group 1) | | |
| Wk 16 4/24 | Final Presentations (Group 2) | Happy Holidays | Final Project |

**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 me as early in the semester as possible. Your letter must be specific as to the nature of any accommodations granted. DSP is located in STU 301 and is open 8:30 am to 5:30 pm, Monday through Friday. The telephone number for DSP is (213) 740-0776.

## Statement on Academic Conduct and Support Systems

**Academic Conduct**
Plagiarism – presenting someone else's ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in *SCampus* in Section 11, *Behavior Violating University Standards* https://scampus.usc.edu/1100-behavior-violating-university-standards-and-appropriate-sanctions. Other forms of academic dishonesty are equally unacceptable. See additional information in *SCampus* and university policies on scientific misconduct, http://policy.usc.edu/scientific-misconduct.

Discrimination, sexual assault, and harassment are not tolerated by the university. You are encouraged to report any incidents to the *Office of Equity and Diversity* http://equity.usc.edu or to the *Department of Public Safety* http://adminopsnet.usc.edu/department/department-public-safety. This is important for the safety of the whole USC community. Another member of the university community – such as a friend, classmate, advisor, or faculty member – can help initiate the report, or can initiate the report on behalf of another person. *The Center for Women and Men* http://www.usc.edu/student-affairs/cwm/ provides 24/7 confidential support, and the sexual assault resource center webpage http://sarc.usc.edu describes reporting options and other resources.

**Support Systems**
A number of USC's schools provide support for students who need help with scholarly writing. Check with your advisor or program staff to find out more. 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. *The Office of Disability Services and Programs* http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html provides certification for students with disabilities and helps arrange the relevant accommodations. 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 blackboard, teleconferencing, and other technology.