USC

USC VITERBI SCHOOL OF ENGINEERING DATA SCIENCE/INF PROGRAM

Data Science 555: Interaction Design and Usability Testing - 4 units

Fall 2020 (32400D) Syllabus
Monday 6:00pm - 9:20pm – GFS 118
(Hybrid course/physical attendance is not required)

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PLEASE READ EVERYTHING IN RED CAREFULLY BEFORE ENROLLING!
Here is the course website for the latest info such as Zoom and waitlist links:
https://tinyurl.com/y25gegp2

Slack Workspace URL: https://ds555-fall2020.slack.com

Professor's Office Hours:
Office hours are available throughout the week over Zoom by appointment.
Appointments can be booked by accessing the professor calendar
here:https://jaimelevy.as.me/OfficeHours. For minor issues (i.e. absences, simple
homework questions) it is highly recommended that you contact a teacher's assistant
first.

Catalogue Description
Understand and apply interaction design theory and techniques to conceive, design and
test responsive websites that run on the web and mobile devices.

Expanded Course Description:
Surveys the theory and practice of interaction design and the development of user
interfaces. Through both analysis and design projects, students have an opportunity to
learn best practices for 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, usability testing, and the practice 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 website prototype that runs on the web

and mobile devices.

Recommended Prep: Students should have a basic familiarity with website 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 Interaction Design portfolio and interactive prototype that demonstrates your skills and understanding of the methodology

Methods of Teaching/Class Rules:
Each class will include a weekly lecture, homework critiques/peer reviews, and in-class discussions or exercises. The materials presented in readings, videos, and lectures are intended to assist you in completing the homework assignments.

Throughout the course, students will work independently 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.

Between 60-75-minutes of each class will be dedicated to homework critiques. Students will also be called upon to also give feedback to each other. This is a design course so some feedback may seem subjective. If you have issues with getting subjective feedback or learning from the critiques of other student's design work, please consider taking a coding class instead.

Students **must** be fluent in English at a college-level for speaking, reading, writing, and have strong listening comprehension skills. Homework assignments or a final turned in with spelling and/or grammatical errors will be graded down. Oral presentations must be articulated so that everyone can hear and understand you clearly.

Students who miss the first day of class will potentially be dropped from the course if there is a long waiting list to enroll.

Grading Schema:

Homework Assignments:	40%
Participation:	15%
Quizzes:	20%
Final Project:	15%
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 (13 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 the day that the class meets. All homework assignments will receive 0-2 points. One point for turning it in on time and up to one point for doing the assignment following the homework instructions. 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.

2.   **QUIZZES -** There will be three quizzes given during the semester to make sure that students are comprehending the required reading. The first two are pass/fail with a required score of 70+% except. The Don't Make Me Think quiz will be graded. Anyone caught cheating during quiz time will be given a fail on the quiz and asked to leave class for that day. The Don't Make Me Think quiz = 10% and the two The Design of Everyday Things quizzes = 5% each.

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 the 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 10% 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 online interaction portfolio presentation that documents their course work. It is due on the evening before the final presentation. This 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. It should be created using Behance. Students will be graded based on creativity, ingenuity, and ability to apply class teachings and feedback.

5.   **FINAL PRESENTATION–** In the last week of class, students will present their 5-6-minute portfolio presentation. 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.

Required Books and Software/Hardware:
All books will be available to purchase online from Amazon. All articles and videos will be available at no charge and distributed via links from Blackboard.

Required Books (Abbreviated titles are used in class schedule):
The Design of Everyday Things: Revised and Expanded Edition 2013 **(DN)**
Don Norman. ISBN: 978-0465050659
Note: This book is very inexpensive on Amazon ($7 used copies). Please do not buy the older 1st edition because it is very different and outdated.

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

Required Software:
This semester we will primarily be using Adobe XD for the homework assignments. It is currently free and runs on both Windows and OSX.
https://www.adobe.com/products/xd.html

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 major revisions will be promptly announced in class and/or by email.

	Topics/Activities	Readings & Homework	Homework Due
Wk 1 8/24	Review of Syllabus. Class introductions. Defining Interaction Design, Implementation, and Usability Testing.	Reading: DN Ch 1. HW 1 - Find one small business in need of an updated responsive web site.	
Wk 2 8/31	Product Definition: Design Research, Personas and Goals. Gathering Business Requirements w/ Stakeholder Interviews, User Scenarios, Use Cases, User Stories, Feature Lists.	Reading: DN Ch 2. See Blackboard. HW 2 - Conduct research and create your Persona(s).	HW 1
Wk 3 9/7	Information Architecture: Site Maps and Application Maps - Part 1. Flow and Hierarchy Creation. Global and Persistent Navigation. Taxonomies.	Reading: DN Ch 3. HW 3 - Create a list of User Scenarios, Use Cases, User Stories, & Features.	HW 2
Wk 4 9/14	HOLIDAY – LABOR DAY – NO CLASS	Reading: DN Ch. 4. Blackboard articles. HW 4 - Create the first draft of your site map.	HW 3
Wk 5 9/21	Information Architecture: User Flows, Task Flows. Labeling. Design of Everyday Things Quiz 1	Reading: DN Ch. 5. Blackboard articles. HW 5 - Create the final version of your site map.	HW 4
Wk 6 9/28	Interaction Design: The Basics of Wireframing - Sketching, Whiteboarding and Usability Conventions.	Reading: Blackboard articles; DN Ch 6. HW 6 - Create a User Flows for your primary use cases.	HW 5
Wk 7 10/5	Interaction Design: Understanding Design Patterns, Best Practices, and Effective Visual Hierarchies.	Reading: Blackboard articles; DN Ch7. HW 7 - Create your Home Page and secondary desktop wireframes.	HW 6
Wk 8 10/12	Interaction Design: Advanced Wireframing - Interface Design, Iconography, Responsive Design. Design of Everyday Thing Quiz 2	Reading: DMMT CHS 1-2. HW 8. Create the critical responsive wireframes for your site.	HW 7
Wk 9 10/19	Visual Design: Understanding the basics of visual design including typography, graphical layout, and color theory.	Reading: DMMT CHS 3-4. HW 9 - Finalize all your responsive wireframes for your site	HW 8
Wk 10 10/26	Visual Design: Understanding the intersection of interaction design and visual design for branding, visual effects, and "look and feel".	Reading: DMMT CHS 5-6; See Blackboard. HW 10 - Apply visual design to your responsive wireframes.	HW 9
Wk 11 11/2	Prototyping: The process and goals of prototyping. Prototype examples. Low-Fidelity to High-Fidelity Prototypes. Overview of prototyping tools/platforms. Designing a prototype for testing.	Reading: DMMT CHS 7-8; See Blackboard. HW 11 - Write a script for your prototype. Create your interactive prototype following the script.	HW 10
Wk 12 11/9	Prototyping/Usability Testing: Preparing for an unmoderated Usability Study.	Reading: DMMT CHS 9-11; HW 12 -Finish the prototype. Create your first usability test and test it on a friend.	HW 11
Wk 13 11/16	Usability Testing: Testing prototypes with users. Moderating a test. The usability report and highlight reel.	Reading: Provided PDF of Prototyping Book - Chapter 7 - HW 13 - Running a Usability Study.	HW 12
Wk 14 11/23	Early Final Presentations (Volunteers only - final projects due if you present on this day).DON'T MAKE ME THINK QUIZ	FINAL - Finish your Online Interaction Design Portfolio Project and Rehearse your Oral Presentation.	HW 13
Wk 17 12/7	Final Presentations	Enjoy your winter recess!!!	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 SDNety* http://adminopsnet.usc.edu/department/department-public-sDNety. This is important for the sDNety 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-DNfairs/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 stDNf 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 sDNety and other updates, including ways in which instruction will be continued by means of blackboard, teleconferencing, and other technology.