I300

Introduction to Human-Computer Interaction Design

INFO-300   SUMMER 2022   IF 0117

TUESDAY , WEDNESDAY, THURSDAY | **11:15 AM- 1:45 PM**

Instructor	Associate Instructors	
Dr. Sai Shruthi Chivukula schivuku@iu.edu Office hours: MF 3-4 pm Zoom	Farheen Samad fsamad@iu.edu Office hours: M 10-11am Zoom	Bhanu Pratap Yadav bhpyadav@iu.edu Office hours: *Book appointment

DESCRIPTION AND LEARNING OBJECTIVES

This course introduces students to the foundations of Human-Computer Interaction Design (HCI/d). The field of Human-Computer Interaction (HCI) has origins primarily in computer science and cognitive psychology. Students will learn a human-centered approach of designing user interfaces. This course aims to teach HCI/d students about design research/practice and various methods designers can use and learn for user research, analysis, designing, prototyping, testing, etc. In addition, students will apply their knowledge in a course-wide project through the semester.

GOALS

By the end of this course, students will be able to:
1. Learn common HCI and design vocabulary.
2. Identify, summarize, and apply scholarly research in the design process
3. Conduct and analyze secondary and primary research (interviews) to understand user needs.
4. Create personas to aid in designing prototypes
5. Translate user needs to sketches and prototypes (low fidelity and high fidelity)
6. Design and ethical conduct user studies
7. Practice giving and responding to design critiques to classmates
8. Present and document the design process

REQUIREMENTS AND GRADING

Project- Group	**40%**
Exercises - Individual	**30%**
Class Activities	**15%**
Attendance and Certifications	**15%**

Project- Group

Project is a group assignment where a team of 4 or 5 students work on your chosen design brief. The design brief will have all the details and specifications of the requirements of submission. The projects are designed and implanted through the course to allow students to apply the learnt methods to see how they work in design practice, sometimes in agile setups. All Group Project assignments must be submitted **by 10am before the class** (on the day as specified in Schedule Table or Check Canvas deadlines).

Exercises- Individual

Exercises are individual assignments where a student works on a given exercise brief. The exercises are designed in a way that the student's efforts are contributed towards building their skills that will help them with the projects. Exercises are also designed to allow students practice their tools such as sketching, evaluation, and design reflection. The exercises are: 1) **Exercise 1:** Sketch a HCD Process; 2) **Exercise 2:** Sketch an App; 3) **Exercise 3:** Share your Ideas from Project; and 4) **Exercise 4:** Conduct Heuristic Evaluation of a Website. All Exercises must be submitted **by 11:59pm on the specified date**.

Class Activities

Class Activities include class participation, engaging in class discussions and arranged class activities. During project presentations, this might also include presentation engagement and critique from the students. There are a range of activities planned such as group discussions, preparing elevator pitches, collecting secondary research articles, evaluating user interfaces, sketching, and hands-on prototyping. All the class activities must be submitted **by 3pm after the end of class** (on the day as specified in Schedule Table or Check Canvas deadlines).

Attendance

Attendance includes being present in person in the class. Unless sick and priorly taken permission from the instructor, the students are not granted an excuse for attendance.

CLASS TOOLS AND RESOURCES

Students will be required to do paper sketches for their projects and are encouraged to purchase a quality **notebook and drawing pencils or pens**. Students are free to choose their own supplies, but notebooks or paper without lines are preferred (dotted grid paper is helpful).

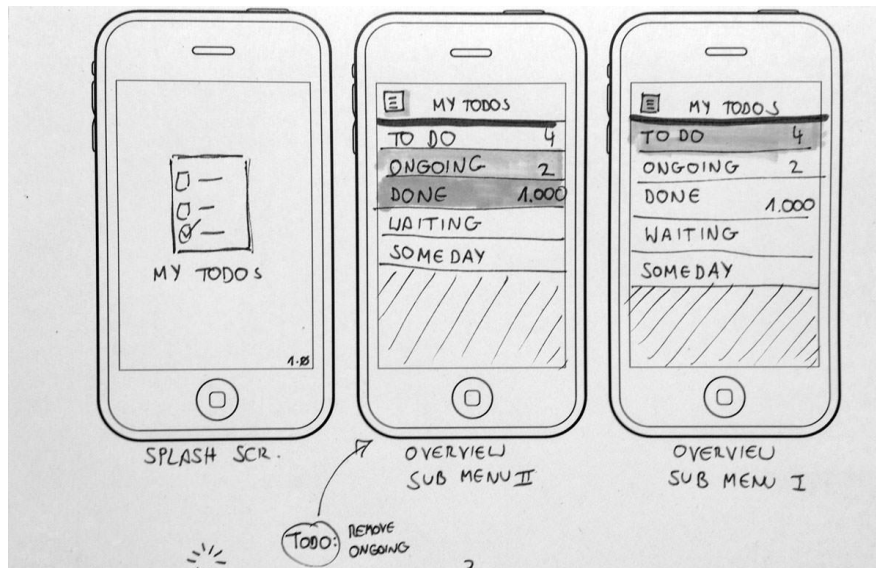Good quality dotted grid notebooks can be found at local hobby stores (e.g., Michaels), department stores (e.g., Target), or online (e.g., http://www.jetpens.com).

Image source: Smashing Magazine

You will also want to have a digital camera, since use of imagery to express your design ideas or conduct observational design research is particularly germane to this course. In general, any digital camera will do for our purposes. If you do not have access to a digital camera, please email i300@iu.edu or see Professor Christina Chung who will be able to loan you a camera.

We will be creating high fidelity prototypes with freely available software (e.g., Figma and Adobe Xd - https://uits.iu.edu/adobe). IU has worked out a special licensing arrangement with Adobe and students can now download the latest Adobe software suites from http://iuware.iu.edu using your student IU login for your own educational use. If you're struggling to get any software onto your computer (that is provided through IU), go to UITS for assistance. They will help you to properly install it for free – do not pay for the software as IU has paid for students to have access to it. We recommend using devices that offer a full desktop operating system. This includes MacOS and Windows (e.g., a personal laptop or a computer from a university computer lab).

CLASS SCHEDULE AND STRUCTURE

Lecture and Studio/Critique Time

45 mins-1 hr: Lecture and Discussion

1-1.5 hrs: Class Activity or Studio time to work on a project and get feedback from AIs

Schedule for 6 weeks (Subject to Change)

>> - Assigned | # - Submission Due

Class #/ Day	TOPIC	READINGS (To finish before class)	WORK DUE (Submit on Canvas)
WEEK 1: INTRODUCTION			
1.1 Jun 21	Introduction to the course What is HCD?	Human Computer Interaction - brief intro	**>>Exercise 1: Sketch a HCD Process** **#Class Activity 0 (Individual): An Example of HCI**
1.2 Jun 22	Framing a Design Space	Identifying Design Space	**#Class Activity 1 (Group): Elevator Pitches** **#Class Activity 1 (Individual): List of (Design) Problems**
1.3 Jun 23	Conducting Secondary Research	Conducting Secondary Research Conducting Competitor Analysis	**#Class Activity 2 (Individual): Collect Secondary Research Artifacts**
WEEK 2: PRIMARY RESEARCH			
2.1 Jun 28	Interviews + Protocols	Conducting User Research Interviews Designing Interview protocol	**#Exercise 1 (D-1)** **#Group: Secondary Research Synthesis**
2.2 Jun 29	Interviews (contd…)+ Transcript		**#Group: Interview Protocol** **>>Exercise 2: Sketch an App**
2.3 Jun 30	Affinity Diagramming	UMOD: Affinity Diagramming (03) Conducting Affinity Diagramming	**>>Exercise 3: Post Persona Examples** **#Class Activity 3 (Group): Affinity Mapping/ Clustering**
WEEK 3: ANALYSIS + CONCEPTUALIZATION			
3.1 Jul 5	Personas	Introduction to Personas UMOD: Personas (82)	**#Exercise 3 (D-1)** **#Class Activity 4 (Individual): Analyze Posted Personas - Reply to Exercise 3** **#Group: Affinity Diagramming**

			Synthesis
3.2 Jul 6	Problem Frame + Brainstorming/ Ideation	[Framing Problem](#)	**#Group: Personas** **#Group: Problem Frame/** **Statement**
3.3 Jul 7	Sketching	[UX Sketching Basics](#) Supplementary: Buxton 2007 (on Canvas)	**#Exercise 4: Share your Ideas** **from Project**
WEEK 4: PROTOTYPING			
4.1 Jul 12	Interaction Flows + Task Flows (FIGMA : Creating canvas mobile application wireframes and providing the interaction flows of the screen.)	[What are Interaction Flows?](#) [Resources to Create](#) [Interaction Flows](#)	**#Exercise 2 (D-1)** **#Group: Documentation(Mid** **Way)**
4.2 Jul 13	Types of Prototyping + Heuristic Evaluation (FIGMA : converting the wireframe to high fidelity prototypes)	[Low vs. High Fidelity](#) [Prototyping](#) [Heuristic Principles](#)	**>>Exercise 5: Conduct** **Heuristic Evaluation of a** **Website**
4.3 Jul 14	Low Fidelity Prototyping (Paper Prototyping) (FIGMA)	Quincy Smith (2019). "Prototyping User Experience" in UX Matters. [On Canvas] [Quick Guide to Paper](#) [Prototyping](#)	
WEEK 5: TESTING			
5.1 Jul 19	Usability Testing (FIGMA)	UMOD: Usability Testing (118) [What is Usability Testing?](#)	**#Exercise 5 (D-1)** **#Group: Low Fidelity** **Prototype**
5.2 Jul 20	Testing (Contd…) + Analysis (FIGMA)	UMOD: Usability Report (117)	
5.3 Jul 21	Iteration + Final Concept (FIGMA)	[Why Iteration?](#)	**#Group: Usability Testing**
WEEK 6: HIGH FIDELITY + FINALS			
6.1 Jul 26	High Fidelity Prototyping	[What is High Fidelity](#) [Prototyping?](#)	**#Group: Iteration + Final** **Concept**
6.2 Jul 27	Connecting Back to Problem Frame	[Communicating Designs](#)	**#Group: High Fidelity** **Prototype**

6.3 Jul 28	**FINAL PRESENTATION (in Class)**	Documentation by July 31st, 11:59pm

READINGS

Required Texts

Here is the required textbook for the course:

Hanington, B., & Martin, B. (2019). Universal methods of design expanded and revised: 125 Ways to research complex problems, develop innovative ideas, and design effective solutions. Rockport publishers. [Access the e-book here]

List of Readings

All the readings are linked in the "CLASS SCHEDULE AND STRUCTURE" >> Readings Column.

Additional References to HCD Methods

Here are some links of design method collections that can be used for the course:

- Design. Think. Make. Break. Repeat.: http://designthinkmakebreakrepeat.com/
- IDEO: https://www.designkit.org/methods
- Delft Design Guide: Design Strategies and Methods: https://arl.human.cornell.edu/PAGES_Delft/Delft_Design_Guide.pdf
- Service Design Tools: https://servicedesigntools.org/tools
- Hyper Island Toolbox: https://toolbox.hyperisland.com/
- Ethics-focused Methods Collection: https://arxiv.org/abs/2102.08909

POLICIES

Academic Misconduct

We are morally and procedurally bound by IU's policies on academic misconduct, the details of which you can read about here:
https://handbook.iuhighschool.iu.edu/policies/code-of-student-rights-responsibilites.html

Religious Observation

Students missing class for a religious observance can find the officially approved accommodation form by going to the Vice Provost for Faculty and Academic Affairs webpage for religious accommodations. The form must be submitted at least 2 weeks prior to the anticipated absence.

Title IX and IU's Sexual Misconduct Policy

As your instructor, one of my responsibilities is to create a positive learning environment for all students. Title IX and IU's Sexual Misconduct Policy prohibit sexual misconduct in any form, including sexual harassment, sexual assault, stalking, and dating and domestic violence. If you have experienced sexual misconduct, or know someone who has, the University can help. If you are seeking help and would like to speak to someone confidentially, you can make an appointment with: The Sexual Assault Crisis Services (SACS) at (812) 855-8900 (counseling services) Confidential Victim Advocates (CVA) at (812) 856-2469 (advocacy and advice services) IU Health Center at (812) 855-4011 (health and medical services) It is also important that you know that Title IX and University policy require me to share any information brought to my attention about potential sexual misconduct, with the campus Deputy Title IX Coordinator or IU's Title IX Coordinator. In that event, those individuals will work to ensure that appropriate measures are taken and resources are made available. Protecting student privacy is of utmost concern, and information will only be shared with those that need to know to ensure the University can respond and assist. I encourage you to visit stopsexualviolence.iu.edu to learn more

COVID

If you have a positive COVID-19 test, have COVID-like symptoms, or have been instructed to quarantine you should not attend class. To ensure that you can do this, attendance in this class will:

- Only be taken to comply with accreditation requirements, or
- Not be taken, or
- Be taken but will be prorated and will not lower a student's grade when that student was absent due to compliance with campus isolation expectations. For those students, alternative assignments or make-ups will be offered on a case-by-case basis.

Please work with your instructor to determine a path to continue your progress in the class during these absences, in whatever way the instructor determines fits within course objectives.

Bias-Based Incident Reporting

Bias-based incident reports can be made by students, faculty and staff. Any act of discrimination or harassment based on race, ethnicity, religious affiliation, gender, gender identity, sexual orientation or disability can be reported through any of the options: 1) email biasincident@indiana.edu or incident@indiana.edu; 2) call the Dean of Students Office at (812) 855-8188; or 3) use the IU mobile App (m.iu.edu). Reports can be made anonymously.

Course Accommodations

If you have a disability that may require special arrangements (ADD, depression, dyslexia, etc.) please let the instructors know during the first two weeks of class by meeting with us after class, email, or by attending office hours. If you experience an unexpected issue (broken arm, concussion, COVID illness, etc.) please let us know as soon as you are able. If you feel that you need assistance at any time, please visit Disability Services for Students as soon as possible. The sooner that we receive your memo/paperwork, the sooner we can assist you in your needs for the course. Accommodations are not retroactive.

Disability Services for Students

Every attempt will be made to accommodate qualified students with disabilities (e.g. mental health, learning, chronic health, physical, hearing, vision, neurological, etc.). Indiana University is dedicated to ensuring that students with disabilities (e.g., chronic health, neurodevelopmental, neurological, sensory, psychological & emotional, including mental health, etc.) have the support services and reasonable accommodations needed to provide equal access to academic programs. To request an accommodation, you must establish your eligibility by working with Disability Services for Students (iubdss@indiana.edu or 812-855-7578). Additional information can be found at accessibility.iu.edu. Note that services are confidential, may take time to put into place, and are not retroactive; captions and alternate media for print materials may take three or more weeks to get produced. Please contact your campus office as soon as possible if accommodations are needed.

English

If English is not your native language or you are otherwise shy about contributing in class, please do not worry. You will not be penalized in any way for making contributions to the class in less than perfect English or for taking time to compose your answers. We need to be supportive of each other when it comes to contributing to the discussions. You are encouraged to utilize the free writing tutorial service provided by the university. You can learn more about it at http://www.indiana.edu/~wts/