CDS 280 Spark! UX Design

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Course Dates: Fall 2022
Course Time: Wed 2:30 - 4:30pm
Course location: CDS 164
Course Credits: 2

Additional Resources & Support:

- *Spark! Engineers and Experts in Residence:* Find a list of all experts in residence and their officers here: http://www.bu.edu/spark/resources/

Course Description.

User experience design (UX) and user interface engineering (UI) is the design of user interfaces and visualization for computer, information, and data products with a focus on maximizing usability and the user experience. Students will complete a series of activities contained in the Figma Class Toolkit. The course will cover the basic steps of the UX Design process from the starting point of user insights and problem definition to journey maps around personas to user stories and low-fidelity wireframes or story maps to high fidelity wireframes. While this course is focused on developing artifacts grounded in visual design, the process of immersing oneself in the experience of individuals who will be interacting with this artifact is a foundational learning outcome.

Digital/Multimedia Expression Learning Outcomes

Learning Outcome #1: Students will be able to craft and deliver responsible, considered, and well-structured arguments using media and modes of expression appropriate to the situation.

In the context of UX/ UI, the argument is defined as a point of view on the priority needs of the individual engaging with a technology product. This is expressed in the form of decisions taken regarding functionality and the architectural and visual presentation of the user's experience and interactions with the technology solution. From the integration of visual or audio nudges to the use of prototyping and testing to evolve their experience hypothesis in response to user behavior, students will learn how to create user interfaces that deliver responsible and quality interactions. Specifically, students will implement a discovery process to inform the design of a user experience (reflecting their argument of the desired experience) and they will create wireframes or other prototypes to test the efficacy of this experience.

Learning Outcome #2: Students will be able to demonstrate an understanding of the capabilities of various communication technologies and be able to use these technologies ethically and effectively.

The field of user experience and user interface design utilizes a broad set of tools and standard practices that students must work successfully alongside developers and technologists in the creation of compelling digital experiences. These start with the use of established design systems created by many of the large technology companies or open source design

communities that enable a more seamless application of designs into coded solutions. Other tools necessary for UX/UI design include a variety of design programs from figma to Adobe XD and sketch. Additionally, there is often heavy utilization of existing imagery, iconography, and established color palettes and fonts when creating the style guides for the products, all of which need to receive public attribution in the product documentation. Students will learn how to assess which tools are best for their use case as well as how to use their selected tools through assignments that involve creating the product prototype or wireframes. They will also learn the expectations for attribution and documentation when using existing design platforms and content.

Learning Outcome #3: Students will be able to demonstrate an understanding of the fundamentals of visual communication, such as principles governing design, time-based and interactive media, and the audio-visual representation of qualitative and quantitative data.

Through a variety of assignments including benchmarking competitor products and reviewing the functionality options within established design systems, students will gain an understanding of the trends and best practices of user experience and user interface design. Through regular reviews, they will receive ongoing feedback on their work.

Other Outcomes (e.g., School, Department, and/or Program Outcomes)

Students will complete this course with an overview of the essential steps of user experience design including:

1. How to conduct a robust customer discovery process including user interviews and validation processes.
2. How to translate user research into visual style guides for design resonance.
3. An understanding of the principles of inclusive design with an emphasis on accessibility.
4. How to complete wireframes, storyboards, and prototypes for user testing

Instructional Format, Course Pedagogy, and Approach to Learning

This course will take a project-based learning approach with students working on a project defined by the instructors. The instruction time will be split between understanding concepts and group reviews of work completed each week.

Courseware, Books and other course materials

Figma will be used for creating all deliverables. Students can obtain a free educational license for their use during and outside of class. Instructions for obtaining your Figma license will be shared during the first class. A Blackboard site will be set up as a central hub for course content, assignments, grading, and class announcements. There will be no textbook for this course.

Useful links

Figma workspace
Blackboard site

Assignments

Students will work on several assignments throughout the semester that will culminate in a final product. The project will include a combination of individual and group assignments. The final product will be presented at the end of the semester. Upon completion of each assignment, the students will have the opportunity to receive and provide constructive feedback during a small-group critique. The small peer groups will remain the same throughout the semester.

Through in-class group workshops and individual assignments, students will design a mobile or simple web application that addresses user problems. All students will be given the same genre, but will have flexibility to arrive at a unique solution following user research and discovery. The project will span the length of the term and focus on a different aspect of the user-centered design process each week. Professor(s) will provide the genre and students will choose (3) user journeys to design for based on user research feedback. Below you will find an example of a genre and associated user stories:

Banking (mobile or web)

- User story 1: create an account
- User story 2: view the statement
- User story 3: transfer a balance

Attendance and Participation
All students are expected to actively participate and contribute to team activities and attend classes on a weekly basis. Project contributions will be evaluated both at the midpoint and end of the term using a peer assessment questionnaire and through instructor observation.

User Interviews (group assignment)
Customer interviews are used to help define your target persona(s) and opportunity. Interviews can be completed with individuals who identify as a perceived user. Speaking with potential users will help you understand their activities, goals, and needs. This information will help build out a target persona or personas for your design. Without putting the product in front of the user, students will interview existing or perceived users to understand their goals, needs, and environment in which they would complete these tasks.

This assignment will be completed amongst the small groups. The students will come up with a list of questions together and interview 2 users each.

Persona Development (group assignment)
A persona is used to characterize the target user. Students will work in teams to create a persona for the target application based on the user interview data.

Journey Mapping (group assignment)
After speaking with users, Students should identify user tasks, the environment in which they are completing the tasks, user goals or blockers and any other variables. Tracking user tasks to

perceived persona's emotions can help build empathy and remove blockers in your design. Through this exercise, students will identify key opportunities for improving user outcomes.

User Stories (group assignment)
Define a set of user stories that reflect the key tasks and opportunities identified in the user research.

Storyboard, and Wireframes (individual assignment)
Students will demonstrate basic screen layouts and interactions in the form of annotated wireframes that document the intended user experience that reflect the user stories.

High Fidelity Mockups and Prototype (individual assignment)
During this phase of the project, you will transform your wireframes into high fidelity mockups that represent the fully realized design of your application. Finally you will use these screens to build an interactive prototype suitable for testing and demonstration. This assignment will be completed using Figma with an existing design library to give you design mockups a consistent appearance.

Usability Test Plan and Report (individual assignment)
Usability testing will be used to validate your design. You will begin by creating a repeatable test script and then perform that test against your high-fidelity prototype with potential users. The usability test report will document your findings and recommendations for design improvements to be made during the final phase of the project.

Final Presentations (individual assignment)
The final presentation will culminate your project in the form of a presentation that would be suitable for presenting to your management team or client. Grades for the final presentation will take into account both the quality of your presentation and your final design concept.

See the Blackboard site for assignment details.

Grading

Completion based grading will be utilized for most assignments in this course. Students who satisfactorily complete the assignment will receive full credit. Those who fail to complete an assignment can still submit or resubmit to obtain a reduced passing grade worth 80% of the assigned points for that assignment (i.e. 4/5 or 8/10 points). See points assigned per each assignment below.

For group assignments, all students in the group will receive the same grade based on satisfactory completion of what is required.

%	Category	Grading Elements
25%	Attendance and Participation	Attendance, in-class participation, and individual contribution as evaluated through peer assessments and instructor observations. (25pts)
25%	Discovery Phase Assignments (Completion based, team grade)	User interviews (10pts) Persona development (5pts) Journey mapping (5pts) User stories (5pts)
25%	Design Phase Assignments (Completion based, individual grade)	Lo Fi wireframes/storyboard (10pts) High fidelity mockups and prototype (10pts) Usability testing (5pts)
25%	Final design and presentation (Letter grade)	Final presentations and design storyboard (25pts)

Students will be assigned to a cohort for team assignments and peer sharing and critique throughout the semester. Active participation in the cohort experience is critical for achieving the learning objectives of this class. Assuming perfect attendance, students will receive a participation grade based on the following rubric:

Student is an active participant in team activities and always provides thoughtful and helpful feedback to other cohort members.	25 points
Student participates in team activities and provide only minimal feedback to other cohort members during group critiques.	20 points
Student only minimally participates in and contributes to team activities.	15 points

Class and University Policies

Attendance & Absences
Due to the sequential nature of the project-based learning experience and the goal of completing the project by the end of the semester, weekly attendance is critical. If you must miss class for any reason, please email the instructor ahead of time. Students will be allowed one excused absence and further absences will result in a 5% deduction from your attendance and participation grade. Illness Leave of Absence Policy.

Assignment Completion & Late Work
Assignments are due prior to the start of class with a 20% penalty for late assignments.

Religious Holidays & Mental Health
We understand that our student community is diverse and affirm the University's Policy on Religious Observance. Please communicate in advance with faculty if you have a religious obligation that may impact attendance or meeting deadlines. Additionally, we recognize that life is stressful and want to support your mental health. Students should feel supported by faculty to manage their personal mental health.

Borrowing Code and Academic Conduct
Software engineering is an inherently collaborative endeavor. In most cases, you will find open-source design systems on the internet that you might want to use in your own projects. While this is permitted, you *must* cite your sources appropriately. You are also responsible for ensuring that you have the original author's permission to use their work. The Open-Source Initiative maintains an excellent page on the different types of software licenses and what you can and cannot do with them. Using code you have borrowed from the internet without permission and/or attribution is an instance of plagiarism, which is a violation of the Academic Code of Conduct. If you are in doubt about whether something might be construed as plagiarism, please check with course staff and in general—err on the side of caution.

Disability Accommodations
Accommodations for Students with Documented Disabilities: If you are a student with a disability or believe you might have a disability that requires accommodations, please contact the Office for Disability Services (ODS) at (617) 353-3658 or access@bu.edu to coordinate any reasonable accommodation requests. ODS is located at 25 Buick Street on the 3rd floor. For more information, please see http://www.bu.edu/disability

Schedule
Outline of Class Meetings: Date, Topic, and Assignments due. This schedule is subject to change and adjustment as circumstances dictate.

Date	Lecture Topic	Assignments and activities
September 6	Course introduction • Syllabus review • Introduction to Figma	
September 13	Project foundations: • Cohort assignments • Project ideation based on problem statement • Figma fundamentals	
September 20	User research, part I • Introduction to user research • Tools & tips for user interviews	Workshop: research planning and interview practice Assignment: User interviews

September 27	User research, part II ● Qualitative data analysis methods ● Personas	Workshop: making sense of your data Assignment: create a persona
October 4	User research, part III ● Journey maps	Assignment: create a journey map
October 11	Defining requirements ● User stories	Workshop: defining user stories
October 18	Principles of design ● Principles of design and concept ideation ● Wireframing	Workshop: create initial design concept sketches
October 25	Lo-fi wireframing & storyboarding, part II ● Intro to design critiques ● Concept refinement ● Storyboarding	Assignment: UX storyboard with wireframes
November 1	High-fidelity design, part I ● Visual frameworks ● Visual style sheet ● Design systems	Workshop: create high-fidelity screens using a design library
November 8	High-fidelity design, part II ● Prototyping	Assignment: complete a clickable prototype
November 15	Usability testing ● Usability test planning ● Moderating a usability test	Workshop: identify tasks for usability testing Assignment: usability test your prototype
November 29	Design iteration and refinement ● Share usability test results ● Design review and refinement	

December 6	Final Presentations	Final presentations and peer assessments