CSYE 7280 User Experience Design and Testing

Course Information
Course Title: User Experience Design and Testing
Course Number: CSYE 7280
Term and Year: Fall 2024
Credit Hour: 4
Course Format: On-Ground

Instructor Information
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Course Prerequisites
Graduate level INFO 5100 Minimum Grade of B- or Graduate level CSYE 6200 Minimum Grade of B-

Course Description
Introduces user experience concepts and advanced interaction concepts while working on UX and Design projects. Offers students an opportunity to build the necessary skill sets to make better decisions when designing contemporary websites/apps that cater to customer needs. Students practice interview techniques to understand user requirements while keeping user experience central to the effort. Students use wireframes and user scenarios to drive the creative design process. Students practice with tools like wireframes, Mid-fidelity, and advanced prototype tools for user research understanding, which will cause the creative design process. Uses quality assurance and usability testing to drive validation and user-acceptance testing and approvals.

Standard Learning Outcomes

Learning outcomes common to all College of Engineering Graduate programs:
1. *An ability to identify, formulate, and solve complex engineering problems.*
2. *An ability to explain and apply engineering design principles as appropriate to the program's educational objectives.*
3. *An ability to produce solutions that meet specified end-user needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.*
4. *Apply advanced User Experience concepts and scoping for the websites/apps, including the importance of identifying the right use cases to follow while designing a product.*
5. *Design intuitive and functional solutions for products by understanding and applying User Experience principles, wireframing, and various prototyping methods.*

6. *Develop user research and advanced techniques to gather insights that significantly improve website/app design.*
7. *Apply UX laws and design logos principles and their types.*

The Information Systems Program accepts students of different engineering backgrounds with minimum programming skills. It produces first-class Information Systems engineers that operate at the intersection of real-world complexity, software development, and IT management. Graduating students will be able to construct end-to-end advanced software applications that meet business needs.

Specific Learning Outcomes for the Information Systems program:
1. *Create a strong technical foundation through diverse, high-level courses*
2. *Built crucial interpersonal skills needed to succeed in any industry*
3. *Foster a deep level of applied learning through project-based case studies*

Course Outcomes and Assessment Standards
1. Understand the advanced User Experience concepts and user interactions for the websites, including the importance of making usable websites or products
2. Understand the importance of gathering business and user requirements early on during the design phase of the project to map the strategy to the usability roadmap
3. Learn widely used wireframing tools like Moqups and Balsamiq and their interaction techniques
4. Learn prototyping tools like Figma & *Framer for advanced prototyping
5. Learn how to test the products or websites with usability and inclusivity in mind
6. Learn the visualization techniques and concepts
7. Develop and display critical thinking and analytical skills through project presentations
8. Learn using complex case studies and group discussions in a friendly setting
9. Learn Quality Assurance techniques and understand automation tools like Selenium
10. Apply the knowledge readily to the next assignment or job
11. This class assumes no prior experience in the User Experience design and User Experience testing concepts.

Required Tools and Course Textbooks. No required Textbooks and all materials will be provided.

Recommended Text: (Some reading materials will be provided via pdf files)
1. The Design of Everyday Things by Don Norman (ISBN-10: 0465050654).
2. Don't Make Me Think, Revisited: A Common Sense Approach to Web Usability by Steve Krug (ISBN-13: 978-0321965516)
3. Rocket Surgery Made Easy: By Steve Krug (ISBN-13:978-0-321-65729-9)
4. The Elements of User Experience By Jesse James Garett (ISBN-13: 075-2064712022)
5. Articles from Nielson Norman Group (http://www.nngroup.com/articles/)
6. Web Development and Design Foundations with HTML5by Terry Felke-Morris
7. (ISBN-13: 9780133571783)
8. User-Centered Web Site Development: A Human-Computer Interaction by Daniel D. McCracken (ISBN-13: 9780130411617)
9. Selenium testing tool and documentation (www.seleniumhq.org)

Grading(Relative): Grade Weightage
Assignments 35%
Midterm Project Presentations 20%
Final Exam/Whiteboarding 25%
Final Project Presentations 20%

Final Team Project:
A team of 4-5 students will complete the final projects. The project details will be provided during the second/third week of the course. Students are encouraged to choose their topic from healthcare, business, and technology-related fields. Details on project deliverable requirements will be specified at a later time.

Tentative Course Schedule/Topics Covered:

Class 1		Explain Course Outline.
		You'll learn the why and how of UX, including core principles like Miller's Law and be able to apply them to create innovative designs.
		Additionally, you'll gain skills in developing comprehensive use cases, which include both broad overviews and in-depth analyses, to fully grasp user interactions.
		Get ready to go beyond theory and put UX into action!
Class 2		In this module, you will explore the essential principles that highlight the importance of User Experience (UX).
		Moreover, you'll dive into the art of visual design, examining various logo types, from the simple Letter Marks to the detailed complexity of Combination Marks, enhancing your understanding of brand identity.
Class 3		We will learn how to do User Onboarding and its critical role in usability and organization success.
		Additionally, we will focus on creating user personas and Introduce user experience through the lens of five planes starting with Strategy Plane (Business Objectives and User Needs), Human Psychology, and its role in Human-Computer Interaction.

		Create project teams and identify project topics. *Note: Project topic will remain the same through-out the semester.*
Class 4		This module teaches you how to transform ideas into low-fidelity blueprints. Through interactive activities and guided lab sessions, you will become proficient in creating clear, functional wireframes with industry-standard tools like Balsamiq. Moreover, you will explore the dynamic stages of IBM Design Thinking, gaining proficiency in applying this renowned framework to real-world problem-solving scenarios.
Class 5		In this module, you will begin a exploration to master the user research. You will learn to distinguish between qualitative and quantitative research techniques and get hold of UX Research methods like Competitive Analysis, Empathy Map, StoryBoarding(Storyboardthat), Affinity maps, Card Sorting, Usability Testing, and A/B design techniques, Journey Maps, User Flows, etc. You will move beyond and learn to assemble UX portfolios, which is a vital component for advancing in UI/UX careers.
Class 6		In this module, you will not only learn the ins and outs of Moqups, a powerful wireframing tool, but you will also gain hands-on experience in crafting mid-fidelity prototypes.
Class 7		User Research Presentation for students to showcase any 3 user research methods for chosen project topic as a group.
Class 8		Midterm Project presentations
Class 9		In this module, you will navigate on the art of defining the project scope to ensure a clear vision and purpose, we will also learn about whiteboarding technique.

		*Additionally, this module includes a guest lecture, offering key insights from seasoned industry experts.
Class 10		In this module, you'll explore the complexities of Interaction Design and Information Architecture, learning how to create seamless and intuitive user experiences. While navigating through the Structure Plane, you'll understand how to organize information, design user interfaces, and foster meaningful interactions. Further, through hands-on FIGMA lab, you will enhance your proficiency in high-fidelity prototyping, transforming your design concepts into detailed and sophisticated realities.
Class 11		In this module, you will focus on the practical techniques of applying the skeleton plane to information design, navigation design. You'll also learn about key UX Principles and on the later part we will explore the features and functionalities of FigJam and utilize Figma to create detailed website layouts and user interfaces. Extra attention to design-to-code, where you'll learn how to convert designs into React code using the Figma plugins, effectively narrowing the divide between design and development. *Additionally, the module covers the concept of no-code websites with Framer, providing insight into the changing world of web development without the need for traditional coding.
Class 12		In this module, you will explore the Surface Plane, the final stage in the UX design process, and you'll also explore the guidelines of Google Material Design. The module further examines Quality Assurance (QA), where you'll learn testing techniques to identify and resolve issues in software products.

		You'll explore both black box and white box testing methods to ensure the highest quality in UX designs and use of Selenium IDE.
Class 13		Final Exam
Class 14		Final Project Presentations

Attendance/Late Work Policy.

Attendance Policy

The Information Systems Department has a strict class attendance policy. Students who miss two or more Classes will automatically receive one letter grade lower in their final grade. Students who miss three Classes will receive an automatic F for the class. No exceptions are allowed for this rule

Late Work Policy

Students must submit assignments by the deadline in the time zone noted in the syllabus. Students must communicate with the faculty before the deadline if they anticipate work will be submitted late. Work submitted late without prior communication with faculty will not be graded.

End-of-Course Evaluation Surveys
Your feedback regarding your educational experience in this class is particularly important to the College of Professional Studies. Your comments will make a difference in the future planning and presentation of our curriculum.

At the end of this course, please take the time to complete the evaluation survey at **https://neu.evaluationkit.com**. Your survey responses are **completely anonymous and confidential**. For courses 6 weeks in length or shorter, surveys will be open one week prior to the end of the courses; for courses greater than 6 weeks in length, surveys will be open for two weeks. An email will be sent to your Husky Mail account notifying you when surveys are available.

Academic Integrity
A commitment to the principles of academic integrity is essential to the mission of Northeastern University. The promotion of independent and original scholarship ensures that students derive the most from their educational experience and their pursuit of knowledge. Academic dishonesty violates the most fundamental values of an intellectual community and undermines the achievements of the entire University.

As members of the academic community, students must become familiar with their rights and responsibilities. In each course, they are responsible for knowing the requirements and restrictions regarding research and writing, examinations of whatever kind, collaborative work, the use of study aids, the appropriateness of assistance, and other issues. Students are responsible for learning the conventions of documentation and acknowledgment of sources in their fields. Northeastern University expects students to complete all examinations, tests, papers, creative projects, and

assignments of any kind according to the highest ethical standards, as set forth either explicitly or implicitly in this Code or by the direction of instructors.

Go to http://www.northeastern.edu/osccr/academic-integrity-policy/ to access the full academic integrity policy.

University Health and Counseling Services

As a student enrolled in this course, you are fully responsible for assignments, work, and course materials as outlined in this syllabus and in the classroom. Over the course of the semester if you experience any health issues, please contact UHCS.

For more information, visit https://www.northeastern.edu/uhcs.

Student Accommodations
Northeastern University and the Disability Resource Center (DRC) are committed to providing disability services that enable students who qualify under Section 504 of the Rehabilitation Act and the Americans with Disabilities Act Amendments Act (ADAAA) to participate fully in the activities of the university. To receive accommodations through the DRC, students must provide appropriate documentation that demonstrates a current substantially limiting disability.

For more information, visit https://drc.sites.northeastern.edu.

Library Services
The Northeastern University Library is at the hub of campus intellectual life. Resources include over 900,000 print volumes, 206,500 e-books, and 70,225 electronic journals.

For more information and for education specific resources, visit https://library.northeastern.edu.

24/7 Canvas Technical Help
For immediate technical support for Canvas, call 617-373-4357 or email help@northeastern.edu

Canvas Faculty Resources: https://canvas.northeastern.edu/faculty-resources/

Canvas Student Resources: https://canvas.northeastern.edu/student-resources/

For assistance with my Northeastern e-mail, and basic technical support:
Visit ITS at https://its.northeastern.edu
Email: help@northeastern.edu
ITS Customer Service Desk: 617-373-4357

Diversity and Inclusion
Northeastern University is committed to equal opportunity, affirmative action, diversity, and social justice while building a climate of inclusion on and beyond campus. In the classroom, members of the University community work to cultivate an inclusive environment that denounces discrimination through innovation, collaboration, and an awareness of global perspectives on social justice.

Please visit http://www.northeastern.edu/oidi/ for complete information on Diversity and Inclusion

Title IX
Title IX of the Education Amendments of 1972 protects individuals from sex or gender-based discrimination, including discrimination based on gender-identity, in educational programs and activities that receive federal financial assistance.

Northeastern's Title IX Policy prohibits Prohibited Offenses, which are defined as sexual harassment, sexual assault, relationship or domestic violence, and stalking. The Title IX Policy applies to the entire community, including male, female, transgender students, faculty, and staff.

In case of an emergency, please call 911.

Please visit https://www.northeastern.edu/ouec for a complete list of reporting options and resources both on- and off-campus.