



CSYE 7280 User Experience Design and Testing

Course Information

Course Title: User Experience Design and Testing

Course Number: CSYE 7280

Term and Year: Spring 2024

Credit Hour: 4

Course Format: On-Ground

Instructor Information

Full Name: Vishal Chawla

Email Address: v.chawla@neu.edu

Phone: 339-293-2010

Course Prerequisites

Graduate level INFO 5100 Minimum Grade of B- or Graduate level CSYE 6200 Minimum Grade of B-

Course Description

This course introduces user experience and advanced interaction concepts while working on Web design projects. This course offers students an opportunity to build the necessary skill sets to make better decisions when designing contemporary websites that cater to their user needs. Students practice usability and interview techniques to understand user requirements while keeping the user experience central to the effort. Wireframes, advanced prototypes, and user scenarios are developed to drive the creative design process. Various case studies on the topics of Information architecture and software engineering usability are introduced and discussed in the team settings to emphasize user perspectives. Uses software quality assurance and usability testing to drive validation, 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.*

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 Moccups and Balsamiq and their interaction techniques
4. Learn prototyping tools like Axure XP and Figma 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 Garrett (ISBN-13: 075-2064712022)
5. Articles from Nielson Norman Group (<http://www.nngroup.com/articles/>)
6. Web Development and Design Foundations with HTML5 by 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 30%

Midterm Project Presentations 20%

Final Exam/Whiteboarding 20%

Final Project Presentations 20%

Creativity and Class Participation 10%

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. 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.
Class 2		Advanced techniques to gather User requirements along with functional requirements through the scope plane. Learn interactions and wireframing techniques using the Mocupps tool.
Class 3		How to do User Onboarding and its critical role in usability and organization success. Learn to create complex user personas through use cases. Learn wireframing using the Balsamiq tool Quiz. Create project teams and identify project topics.
Class 4		Learn to create and design Information Architecture using techniques like Open and Closed card sorting. Group exercise using a complex case study on Information Architecture.
Class 5		Learn User Experience Research methods like Ethnographic studies, Usability Testing, and A/B design techniques, Competitive Analysis, Empathy Map, StoryBoarding(Storyboardthat), Affinity maps, Journey Maps, User Flows, etc.
Class 6		Midterm Project presentations

Class 7		Introduction of advanced prototyping tools starting with Axure XP prototyping tools with building full click-through prototypes and advanced interactions.
Class 8		Introduction to FIGMA, and advance prototyping techniques using Figma tool and various plugin integrations.
Class 9		Learn Human Factored engineering and Design Storyboarding techniques. Case Study on redesigning Shopping cart experience.
Class 10		Google Material Design Techniques and understanding of the User Experience principles and how can we apply those effectively.
Class 11		Introduction techniques for Quality Assurance and Automation testing tools Final Project discussion and clarifications
Class 12		Learn interaction and interface plane concerns; develop critical learning using fitbid case study.
Class 13		Final Exam; Understand concerns with surface plane and how that effect the design of the systems. Summarize the course learnings and bringing it together.
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/uhrs>.

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.