



CSYE 7280 User Experience Design and Testing FALL 25

Course Information

Course Title: User Experience Design and Testing

Course Number: CSYE 7280

Term and Year: Fall 2025

Credit Hour: 4

CRN: 17560

Course Format: On-Ground/Traditional

Instructor Information

Full Name: Vishal Chawla

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Office Hours: On Demand by Zoom or Before/After class

Instructor Biography

Vishal Chawla is the Director of Enterprise Collaboration, AI and Web Services at MIT Lincoln Labs, with over 25 years of professional experience. He holds a Master's degree in Information Technology from Northeastern University, where he specialized in Web Design, Web Development, User Experience, Application Development, Quality Assurance, Web Services, Database Management, Open Source Development, and GenAI.

Chawla is an esteemed adjunct faculty member at Northeastern University, teaching courses in Web Design and User Experience Engineering, as well as User Experience Design and Testing. He is recognized as an industry expert with a deep knowledge of technology and a strong track record in leadership roles. His work has significantly contributed to the development of innovative technological solutions and products.

In addition to his professional achievements, Chawla is passionate about teaching and mentoring. His interactive teaching style and dedication to student success have earned him high regard among his students. He is committed to fostering his students' potential and guiding them toward successful careers. A lifelong learner, Chawla believes in the importance of continuous self-improvement and adaptation in the ever-evolving field of technology.

Course Prerequisites

No Prerequisites Required

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.

Course Learning Outcomes

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. 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.
12. Design intuitive and functional solutions for products by understanding and applying User Experience principles, wireframing, and various prototyping methods.
13. Develop user research and advanced techniques to gather insights that significantly improve website/app design.
14. Apply UX laws and design logos principles and their types.
15. 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 Nielsen 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)

Tentative Course Schedule/Topics Covered:

Class 1		<p>Explain Course Outline.</p> <p>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.</p> <p>Additionally, you'll gain skills in developing comprehensive use cases, which include both broad overviews and in-depth analyses, to fully grasp user interactions.</p> <p>Get ready to go beyond theory and put UX into action!</p>
Class 2		<p>In this module, you will explore the essential principles that highlight the importance of User Experience (UX).</p> <p>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.</p>
Class 3		<p>We will learn how to do User Onboarding and its critical role in usability and organization success.</p> <p>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.</p> <p>Create project teams and identify project topics. <i>Note: Project topic will remain the same throughout the semester.</i></p>

Class 4		<p>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.</p> <p>Moreover, you will explore the dynamic stages of IBM Design Thinking, gaining proficiency in applying this renowned framework to real-world problem-solving scenarios.</p>
Class 5		<p>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.</p> <p>You will move beyond and learn to assemble UX portfolios, which is a vital component for advancing in UI/UX careers.</p>
Class 6		<p>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.</p>
Class 7		<p>User Research Presentation for students to showcase any 3 user research methods for chosen project topic as a group.</p>
		BREAK – NO CLASSES
Class 8		Midterm Project presentations
Class 9		<p>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.</p> <p>*Additionally, this module includes a guest lecture, offering key insights from seasoned industry experts.</p>

Class 10		<p>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.</p> <p>Further, through hands-on FIGMA lab, you will enhance your proficiency in high-fidelity prototyping, transforming your design concepts into detailed and sophisticated realities.</p>
Class 11		<p>In this module, you will focus on the practical techniques of applying the skeleton plane to information design, navigation design.</p> <p>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.</p> <p>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.</p> <p>*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.</p>
Class 12		<p>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.</p> <p>The module further examines Quality Assurance (QA), where you'll learn testing techniques to identify and resolve issues in software products.</p> <p>You'll explore both black box and white box testing methods to ensure the highest quality in UX designs and use of Selenium IDE.</p>

Class 13		Final Exam
Class 14		Final Project Presentations

Assignment Grading(Relative): Grade Weightage

Assignments 40%

Midterm Project Presentations 15%

Final Exam/Whiteboarding 30%

Final Project Presentations 15%

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.

Grading Scale (Relative)

95-100% A	87-89.9% B+	77-79.9% C+	69.9% or below F
	84-86.9% B	74-76.9% C	
90-94.9% A-	80-83.9% B-	70-73.9% C-	

Attendance/Late Work Policy

Attendance Policy

Students registered in MGEN courses (INFO, CSYE, and DAMG) are allowed **a maximum of 2 absences per course, with 3 or more absences resulting in an automatic 'F' for that course.** Students are expected to inform their instructors of any absences in advance of the class; if a student is sick long-term or experiences a medical issue that prevents class attendance, it is strongly encouraged that they speak with their Academic Advisor (coe-mgen-gradadvising@northeastern.edu) to learn more about the Medical Leave of Absence. Should a student anticipate being unable to attend 3 or more classes, they should discuss their situation with their Academic Advisor to explore other types of leave in accordance with the University's academic and global entry expectations. International students should review the Office of Global Services webpage to understand their visa compliance requirements.

Teaching Assistants (TAs) or Instructional Assistants (IAs) will be present at each class to collect student attendance.

Late Work Policy

Students must submit assignments by the deadline in the time zone noted in the syllabus. Students must communicate with the faculty prior to 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 Engineering. 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 Northeastern University 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.

MGEN Student Feedback

Students who would like to provide the MGEN unit with anonymous feedback on this particular course, Teaching Assistants, Instructional Assistants, professors, or to provide general feedback regarding their program, may do so using this survey: https://neu.co1.qualtrics.com/jfe/form/SV_cTIAbH7ZRaaW0Ki

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>
Network Campus Library Services: [Northeastern University Library Global Campus Portals](#)

24/7 Canvas Technical Help

For immediate technical support for Canvas, call 617-373-4357 or email help@northeastern.edu

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.