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
Class schedule: Mondays 10am - 12pm EST
                    Tuesdays 1pm – 2pm EST via Zoom

Instructor Information
Full Name: Svetlena Taneva Metzger
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Course Prerequisites
This class assumes no prior experience in Design Principles, User Experience Design, Product Design, or User Experience testing concepts.

Course Description
Introduces user experience concepts while working on applied projects that follow the User-Centred Design process. Offers students an opportunity to build the necessary skill sets to make better decisions to designing usable human-centred interfaces that are intuitive. Students practice interview techniques, ethnography, and evaluation methods to understand user needs, derive user requirements and evaluate designs for usability. Students use wireframes and user scenarios to drive the creative design process. Various case studies are introduced and discussed in team settings to emphasize user perspectives. Various levels of fidelity are applied to 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.*

The Information Systems Program accepts students of different engineering backgrounds with minimum programming skills and 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. *Build 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 User Experience concepts and importance of making usable interfaces and products
2. Identify human factors related to the design of human-computer interfaces.
3. Apply User-Centred design and evaluation methodologies to create usable interfaces.
4. Conduct user research to identify user needs and requirements and inform interface design.
5. Learn Wire framing for purposes of interface design and evaluation
6. Assess a user interface based on usability and user experience metrics.
7. Develop and display critical thinking and analytical skills through presentations
8. Summarize current design trends relevant to the field of human factors and UX.
9. Learn using case studies and group discussions in a friendly setting
10. This class assumes no prior experience in the User Experience design and User Experience testing concepts. Comfort with computers, desktop tools and general computing concepts are expected.

Required Tools and Course Textbooks.
The readings associated with each weeks topics are mandatory. Students are expected to read the assigned chapters in articles in advance of each lecture. Students will need access to the full text of the following books:
1. (Book 1) Human-Computer Interaction : An Empirical Research Perspective. Morgan Kaufmann; Scott MacKenzie. 2013.
2. (Book 2) Interaction Design: Beyond Human-Computer Interaction. Sharp, Helen ; Preece, Jennifer ; Rogers, Yvonne. 2019
3. (Book 3) The Design of Everyday Things. Norman, Donald A. 2013.

Course Schedule

Week	Topics	Evaluation
WEEK1 Jan. 8, 9	Meet and greet the students and professor; overview of course and policies Topics: UI vs. UX https://www.usertesting.com/resources/topics/ui-vs-ux	Complete the UX brain teaser submission
WEEK 2 Jan. 15, 16	Introduction to Human-Computer Interaction Reading: (Book 2) Chapter 1 Topics: Introduction to the course, Why HCI?, User experience **LAB:** Term Project Overview	
WEEK 3 Jan. 22, 23	Human Factor*s* Reading: (Book 1) Chapter 2, (Book 2) Chapter 4 Topics: Cognition, human performance and behaviour, User Centred Design Process, Systems engineering approach **LAB:** Term Project Q&A	Come prepared with your ideas and questions for your term project! **Groups Finalized Due** Wednesday EOD
WEEK 4 Jan. 29, 30	User Needs Assessment (UNA) Reading: (Book 1) Chapter 4, (Book 2) Chapter 8, (Book 3) Chapter 6 Topics: Process. Data gathering, User Needs Assessment and Requirements Gathering, Usability study participant groups **LAB:** presentations, assignment and AOB	**Project Proposal Presentations** Wednesday EOD
WEEK 5 Feb. 5, 6	From UNA to Prototyping Reading: (Book 2) Chapter 3, 9, and 12 Topics: Data analysis. Conceptual models. Personas, Scenarios and Early Prototyping. Interaction models. **LAB:** assignment and AOB	**Usability Evaluation Participant Pool Plan Due** Monday 9am

WEEK 6 Feb. 12, 13	Evaluation I Reading: (Book 1) Chapter 5 Topics: Interviewing, questionnaires, cognitive walkthroughs, user testing, experimental design **LAB:** presentations, assignment and AOB	**UNA Presentations** Wednesday EOD
WEEK 7 Feb. 19 – Family Day Feb. 20	No Lecture on Monday due to the holiday **LAB:** presentations, user testing sessions	**Low Fidelity Prototype Demos** Monday EOD **Evaluation of Low Fidelity Prototype Work** Wednesday EOD
WEEK 8 Feb. 26, 27	Midterm test **LAB:** presentations, assignment and AOB	**Evaluation of Low Fidelity Prototype Presentations** Wednesday EOD
WEEK 9 March 4, 5	Evaluation II Topics: Heuristics, expert reviews **LAB:** midterm review, presentations, assignment and AOB	**Advanced Prototype Demos** Wednesday EOD
SPRING BREAK March 11, 12	No classes	

WEEK 10 March 18, 19	Evaluation III Reading: (Book 2) Chapter 15 Topics: Usability Testing and experimental design **LAB:** assignment and AOB	**Heuristic Evaluation** Tuesday **EOD**
WEEK 11 March 25, 26	Usability Data Analysis & Reporting Reading: (Book 1) Chapter 6 Topics: qualitative and quantitative analysis methods and metrics, analysis tools **LAB:** assignment, usability testing template and AOB	**Redesigned Prototype Due** Monday EOD - Usability Testing Sessions
WEEK 12 Apr. 1, 2	Guest talk: TBD **LAB:** no lab class, assignment given on Monday	**Usability Testing Due** Wednesday EOD - Usability Testing Sessions - Presentation preparation
WEEK 13 Apr. 8, 9	**Project Presentations** 10 minutes and 5 minute Q&A	- Report writing
WEEK 14 Apr. 15, 16	Final Exam **LAB**: working session	
Week 15 Apr. 22, 23	**Case studies Presentations** Reading: (Book 3) Chapter 7 Topics: Systems engineering / Novel interfaces	**Final UX Report Due** Friday EOD

Grading

Project	30%
Group project participation	10%
Project Presentation	5 %
Tech and UX Seminar	5 %
Mid-Term	20%
Final Exam	30%

Plagiarism Policy

When there is evidence that a student has committed plagiarism, copied the work of others, allowed others to copy their work, cheated on an exam, altered class material or scores, or has inappropriate possession of exams, or sensitive material, the incident will be investigated. The consequences for academic dishonesty are severe and that will include a straight F in the course with the potential for dismissal.

The following rules apply to anything you hand in for a grade:

- You may not copy anyone else's work under any circumstances - this includes online and AI sources.
- You may not use any automated or AI tools to generate your assignments or any other material that you're turning for a grade, in whole or in part, unless an assignment specifically allows you to use these tools.
- You may not permit any other student to see any part of your individual assignments.
- You may not permit yourself to see any part of another student's individual assignment.
- You make use online resources as part of your coursework but you may not copy from online sources. If you get an idea of how to solve a problem from an online source, include a short citation in your submission.
- Use of AI resources and posting on forums is not permitted.
- The only exception to the above rules is that you may collaborate with students in your group for assignments classed as group assignment – almost all labs for example will be completed in groups.

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, unless proof of extenuating circumstances is provided and faculty must be notified in advance.

Students are expected to complete course readings, participate in class discussions or other learning activities during the unit, and complete written assignments for each unit during the time of that unit.

Late Work Policy

Students must submit assignments by the deadline in the time zone noted in the syllabus. Work submitted late will not be graded.

Term Project

The projects will be completed by a team of around 4 students. The details for each deliverable will be provided 1-2 weeks in advance of the due date. Students are encouraged to choose their topic of choice either from healthcare, business, and/or technology related fields.

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.*