Foundations of User Experience (UX)

PEIMS Code: N1302809

Abbreviation: FOUNDUX

Grade Level(s): 9–12

Award of Credit: 1.0

Approved Innovative Course

- Districts must have local board approval to implement innovative courses.

- In accordance with Texas Administrative Code (TAC) §74.27, school districts must provide instruction in all essential knowledge and skills identified in this innovative course.

- Innovative courses may only satisfy elective credit toward graduation requirements.

- Please refer to TAC §74.13 for guidance on endorsements.

Course Description:

In Foundations of User Experience (UX), students obtain an understanding of UX designers, key notions and factors involved in the conception of UX design solutions and design tools applied across the process. Students will gain knowledge of introductory observation and research skills; basic design thinking and defined empathy methodologies; collaborative problem-solving and ideation; and interaction usability and solution development (includes digital tools). The knowledge and skills acquired enable students to identify real-world problems through research and data-driven investigation to design solutions while participating in collaborative problem solving. Students are introduced to agile and methodologies to develop skills to take the solutions from conceptual sketch to digital designs using professional software tools. Students will explore how to improve the quality of user interactions and perceptions of products, experiences, and any related services.

Essential Knowledge and Skills:

(a) General Requirements. This course is recommended for students in grades 9-12. There are no recommended prerequisites. Students shall be awarded one credit for successful completion of this course.

(b) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Information Technology (IT) Career Cluster focuses on building linkages in IT occupations for entry level, technical, and professional careers related to the design, development, support, and management of hardware, software, multimedia, and systems integration services.

(3) In Foundations of User Experience (UX), students will analyze and assess current trends in a career field that creates meaningful, approachable, and compelling experiences for users of an array of products, services, and or initiatives of companies, governments, and organizations. Students will gain knowledge of introductory observation and research skills; basic design thinking and applied empathy methodologies; collaborative problem-solving and ideation; and interaction design and solution development. The knowledge and skills acquired from this course enable students to identify real-world problems through research and data-driven investigation to design solutions while participating in collaborative problem-solving. Students will be introduced to agile practices and methodologies to develop skills to take solutions from conceptual sketch to digital designs using professional software tools. Students will explore how to improve the quality of user interactions and perceptions of products, experiences, and any related services.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(c) Knowledge and Skills.

(1) The student demonstrates professional standards/employability skills in the information technology (IT) field with a focus in the area of user experience (UX). The student is expected to:

(A) identify job opportunities in UX and accompanying job duties and tasks;

(B) employ effective verbal and nonverbal communication skills;

(C) create resumes and portfolios for UX professions;

(D) use critical thinking skills and creativity to present a solution to a user problem; and

(E) work collaboratively in a team to devise and present an efficiency or enhancement solution to a user issue within a given timeline, while incorporating empathy methodology, agile, and design principles.

(2) The student applies professional communications strategies. The student is expected to:

(A) adapt presentations for audience, purpose, situation, and intent;

(B) interpret and communicate information, data, and observations;

(C) apply active listening skills to obtain and clarify information;

(D) collect multiple viewpoints of potential diverse users; and

(E) define and exhibit public relations skills that are used by UX designers.

(3) The student describes the field of UX along with the common elements in user-centered design. The student is expected to:

(A) analyze and articulate the current trends and challenges of the UX field;

(B) analyze and document the diversity of roles and career opportunities across the UX field;

(C) identify terminology associated with UX, including user, user experience, empathy, human-centered design, design thinking, persona, user journey, empathy map, mind maps, roadmaps, wireframes, prototypes, and portfolios;

(D) identify and explain the differences between relevant, friendly, and useful experience design;

(E) identify and explain the connection between psychology and behavior with regard to usability;

(F) explain the components of the design thinking methodology for ideation, iteration, co-creation, development, and execution; and

(G) explain how UX design affects everyday lives.

(4) The student discusses and applies the legal and ethical practices that UX designers follow when working with technology, designs, and clients. The student is expected to:

(A) explain and identify ethical use of technology;

(B) explain intellectual property laws, including copyright, trademarks, and patents, and consequences of violating each type of law;

(C) identify violations of intellectual property laws;

(D) explain the consequences of plagiarism; and

(E) demonstrate ethical use of online resources, including citation of sources.

(5) The student identifies and demonstrates introductory observation and research methods. The student is expected to:

(A) describe the difference between qualitative and quantitative data;

(B) conduct user interviews to gather insights into what users think about a site, an application, a product, or a process;

(C) organize ideas and data using software tools;

(D) analyze and make conclusions from qualitative data collection;

(E) observe and document how users perform tasks through task analysis observations;

(F) define affinity and explain the benefits of affinity and customer journey maps;

(G) use data summaries from user interviews to create personas; and

(H) create a report or presentation, including user interview and observation data summaries, data analysis, and additional findings, for a target audience.

(6) The student applies an understanding of psychological principles used in user-centered design. The student is expected to:

(A) identify and define design principles;

(B) describe how visceral reactions inform the creation of a positive user experience;

(C) select colors to influence human behavior, mind, and reaction toward an intended outcome;

(D) explain recognition and scanning patterns and their importance in user-centered design;

(E) define Hick's Law and Weber's Law and explain their impact on UX design decisions;

(F) describe sensory adaptation phenomenon and perceptual set; and

(G) explain the stages of human information processing, including sensing, perceiving, decision-making, and acting.

(7) The student creates effective, accessible, usable, and meaningful solutions for the end user by using UX design principles. The student is expected to:

(A) identify end-user problems and needs in real-world environments;

(B) identify principles of accessibility, such as perceivable, operable, understandable, and robust (POUR);

(C) identify and discuss the differences and connections between UX Design, Visual Design, and UI User Interaction in regard to usability;

(D) communicate solution ideas with a storytelling approach;

(E) sketch and refine designs within wire-framing and prototypes; and

(F) implement iterations for a design solution using structured testing protocols.

(8) The student collaborates with others to apply UX project management methods. The student is expected to:

(A) identify the relationship between UX research and design-thinking methods; and

(B) explain three different stages and roles of UX project management methods, such as agile.

(9) The student applies UX design practices and uses technology to create digital assets. The student is expected to:

(A) use design elements such as typeface, color, shape, texture, space, and form to create a visual narrative;

(B) implement design principles such as unity, harmony, balance, scale, novelty, hierarchy, alignment, and contrast to create visual narratives;

(C) identify and explain common elements of HyperText Markup Language (HTML), such as tags, style sheets, and hyperlinks;

(D) apply UX design techniques in order to:

(i) create effective user interfaces for browser-based, native, and hybrid mobile applications;

(ii) demonstrate proper use of vector and raster-based design software;

(iii) explain the difference between back-end and front-end development in UX; and

(iv) create a web page containing links, graphics, and text using appropriate design principles;

(E) demonstrate basic sketching skills;

(F) create wireframes using design software;

(G) explain how design fidelity, from sketch to wireframe to prototype to visuals, aligns with and supports agile methodology; and

(H) produce digital assets.

Recommended Resources and Materials:

Chesnut, Donald, and Kevin Nichols. UX for Dummies. West Sussex, England: John Wiley & Sons, Ltd, 2014.

"Creating Meaningful Experiences: An Introduction to User Experience Design." Learn UX, July 1, 2020. https://www.keepitusable.com/blog/creating-meaningful-experiences-an-introduction-to-user-experience-design/.

"Creative Collaboration | Adobe Creative Cloud." Accessed December 8, 2022. https://www.adobe.com/creativecloud/collaboration.html.

Davis, Meredith. Teaching Design: A Guide to Curriculum and Pedagogy for College Design Faculty and Teachers Who Use Design in Their Classrooms. New York: Allworth Press, 2017.

Gothelf, Jeff, and Josh Seiden. Lean Ux. Logroño: Universidad Internacional de La Rioja, S.A. (UNIR), 2015.

Krippendorff, Klaus. The Semantic Turn: A New Foundation for Design. Boca Raton, Fla: CRC/Taylor & Francis, 2006.

Krug, Steve. Don't Make Me Think! A Common Sense Approach to Web Usability. Berkley: New Riders, 2017.

"Mural Is a Collaborative Intelligence Company." Mural. Accessed December 8, 2022. https://mural.co/.

Muller-Roterberg, Christian. Design Thinking for Dummies. S.l.: HOEPLI, 2021.

Muratovski, Gjoko, Kenneth Scott Friedman, Donald A. Norman, and Steven Heller. Research for Designers: A Guide to Methods and Practice. Los Angeles: SAGE Publications, 2022.

Norman, D. & Nielsen, J. "UX Training, Consulting, & Research." Nielsen Norman Group. Accessed December 8, 2022. https://www.nngroup.com/.

Posts by Katie Messner, and Originally posted by Katie Messner on Jul 30. "Improving the User Experience with the Usability.gov Reboot." Digital.gov, July 30, 2013. https://digital.gov/2013/07/30/improving-the-user-experience-with-the-usability-gov-reboot/.

"Sketchapp.com - Analysis and Stats | Sketch - the Digital Design Toolkit." Accessed December 8, 2022. https://onlinewebtool.com/analysis/sketchapp.com.

The Design of Everyday Things: Revised and Expanded Edition. New York: Basic Books, 2013.

Recommended Course Activities:

- Design challenges.
- Design a tools application that is focused on people-centered approach, design language, and foundational concepts.
- Provide and receive peer reviews.
- Create mind maps to evaluate analytical thinking to make connections to the users' needs.

Complementary activities:

- Participate in UX workshops conducted by UX professionals.
- Complete job shadowing.
- Use UX design to solve real-world problems at school or in the community.
- Listen to UX Design Speakers.
- Visit Design Schools.
- Collaborate with another school or business to create a UX solution.

Suggested methods for evaluating student outcomes:

- Surveys
- Reflections/journals
- Rubrics to evaluate work and skill development
- Portfolios
- Capstone projects
- Exam/assessments

Teacher qualifications:

- Technology Applications 8-12
- Technology Education 6-12
- Computer Science 8-12
- Business Education 6-12
- Secondary Industrial Arts 6-12
- Secondary Industrial Technology 6-12
- Alternative Certification in any of the previously listed certification areas

Additional information:

- UX Design Professional certification
- Online UX Design Professional certification courses available for a monthly fee