



Foundations of User Experience

PEIMS Code: N1302809
Abbreviation: FOUNDUX
Grade Level(s): 10-12
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 will analyze and assess current trends in a fast-growing 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 (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 will be introduced to agile practices 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 grade 10-12. Recommended prerequisites: Digital Media or Principles of Information Technology. 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 fast-growing 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 (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 will be introduced to agile practices 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.
 - (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) examine the role of certifications, resumes, and portfolios in UX professions;
 - (D) solve problems and think critically;
 - (E) demonstrate leadership skills and function effectively as a team member with a focus on appreciation for diversity, conflict management, and adaptability; and
 - (F) demonstrate planning and time-management skills such as storyboarding and project management, including initiating, planning, executing, monitoring and controlling, and closing a project.
 - (2) The student applies professional communications strategies. The student is expected to:
 - (A) adapt language such as structure and style for audience, purpose, situation, and intent;
 - (B) organize oral and written information;
 - (C) interpret and communicate information, data, and observations;
 - (D) deliver formal and informal presentations;

- (E) apply active listening skills to obtain and clarify information;
 - (F) analyze multiple viewpoints of potential diverse users; and
 - (G) exhibit public relations skills.
- (3) The student describes the emerging field of UX. The student is expected to:
- (A) summarize the evolution of the UX field;
 - (B) analyze current trends and challenges of the UX field;
 - (C) examine the diversity of roles and career opportunities across the UX field;
 - (D) identify terminology associated with UX including Agile, sprint cycles, back and front-end development, design thinking, empathy mapping, journey mapping, game-storming, human computer interaction, task-analysis observation, quantitative and qualitative data, end user, iteration, persona, wire-framing, prototype, scrum, user interface design, journey, and empathy mapping;
 - (E) identify and explain the differences between effective and ineffective design;
 - (F) identify and explain the connection between psychology and behavior with regard to usability;
 - (G) explain how design affects our everyday lives; and
 - (H) predict future applications of UX skills.
- (4) The student understands and demonstrates legal and ethical procedures as they apply to the use of information technology. The student is expected to:
- (A) explain and demonstrate ethical use of technology;
 - (B) explain intellectual property laws, including copyright, trademarks, and patents and consequences of violating each type of law;
 - (C) adhere to 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) explain 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) draw conclusions from qualitative data collection and methods;
 - (D) analyze and document how users perform tasks through a task analysis observation;
 - (E) identify patterns in collected data;
 - (F) define affinity and customer journey maps as a visual document that shows a user's interactions with a company or product to understand business solution opportunities;

- (G) develop a user persona as a representation of real target audience data; and
 - (H) prepare communication, observations, analyses, and findings for business product and marketing teams.
- (6) The student uses UX research methodologies to collaborate for the needs of a business. The student is expected to:
- (A) organize ideas and data using affinity mapping;
 - (B) produce simple customer journey maps; and
 - (C) communicate observations, analyses, and findings with business product and marketing teams.
- (7) The student applies an understanding of psychological principles used in user-centered design. The student is expected to:
- (A) identify Gestalt principles and how users tend to unify visual elements into groups;
 - (B) describe visceral reactions in creating a positive user experience;
 - (C) demonstrate knowledge of the psychology of color which is the influence of colors on the human behavior, mind, and reactions;
 - (D) explain recognition and scanning patterns;
 - (E) define Hick's Law and Weber's Law of just noticeable difference;
 - (F) explain sensory adaptation phenomenon and perceptual set; and
 - (G) explain the stages of human information processing, including sensing, perceiving, decision-making, and acting.
- (8) 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 explain the connection between human and computer interaction in regard to usability;
 - (D) identify where an existing product or process can be improved for the end user by using empathy and journey mapping;
 - (E) sketch and revise designs to understand the concept of wire-framing, prototypes, and rapid iteration;
 - (F) apply design thinking methodology to understand users, challenge assumptions, redefine problems, and create solutions to prototype and test;
 - (G) perform user tests to determine what is effective and efficient for changes to the product or process;
 - (H) define and use iteration process based on user test data to analyze and validate or challenge assumptions for a design solution; and

- (I) perform various ideation techniques such as prototyping, storyboarding, and game-storming to visually predict and explore a user experience's with a product.
- (9) The student collaborates to apply UX project management methods. The student is expected to:
 - (A) identify the relationship between UX research and design-thinking methods and the different stages and roles of UX project management including Scrum and a sprint cycle;
 - (B) describe best practices of UX research and design thinking in Agile project cycles;
 - (C) identify and use techniques of building and achieving consensus in solution design; and
 - (D) understand the purpose and roles of UX professionals throughout a project lifecycle.
- (10) The student develops initial hands-on design and development skills using professional software. The student is expected to:
 - (A) apply writing skills to document research findings and solution plans;
 - (B) identify the terminology associated with web page and mobile app development, and interactive media;
 - (C) use design elements such as typeface, color, shape, texture, space, and form;
 - (D) use design principles such as unity, harmony, balance, scale, and contrast;
 - (E) identify and explain common elements of Hyper Text Markup Language (HTML) such as tags, style sheets, and hyperlinks;
 - (F) apply design, web, and mobile publishing 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) demonstrate an understanding of the difference between desktop and mobile applications;
 - (iv) understand the difference between back-end and front-end development in UX; and
 - (v) create a web page containing links, graphics, and text using appropriate design principles;
 - (G) demonstrate basic sketching skills for agile iteration;
 - (H) create wireframes using design software to create mobile and application layout designs and functions;
 - (I) create interactive elements in wireframes as foundational for agile prototyping;

- (J) explain how design fidelity from sketch to wireframe to prototype to visuals, aligns with and supports agile development lifecycles; and
- (K) produce digital assets toward a digital product portfolio.

Recommended Resources and Materials:

Improving the User Experience. (n.d.). Retrieved from <https://www.usability.gov/>
The Design of Everyday Things: Revised and Expanded Edition. (2013). New York: Basic Books.

Krug, S. (2017). Don't make me think! A common sense approach to Web usability. Berkley: New Riders.

Gothelf, J. (2016). Lean ux. Place of publication not identified: O'Reilly Media, Inc, Usa.

Norman, D., & Nielson, J. (n.d.). Nielsen Norman Group-World Leaders in Research-Based User Experience. Retrieved from <https://www.nngroup.com/>

MURAL. (n.d.). Retrieved from <https://mural.co/>
Online brainstorming, synthesis and collaboration

Adobe Creative Suite (Version CC) [Computer software]. (n.d.).

Create Meaningful Experiences. (n.d.). Retrieved from <https://www.optimalworkshop.com/>
The digital design toolkit. (n.d.). Retrieved from <https://www.sketchapp.com/>

Recommended Course Activities:

- relate directly to the content of the course
- opportunities for students to demonstrate learning
- UX workshops conducted by UX professionals
- Job shadowing
- Real-world projects to use UX design to solve problems at school or in community
- UX Design Contests

Suggested methods for evaluating student outcomes:

- Surveys
- Exit Tickets
- Reflections/Journals
- Industry Certification
- Rubrics to evaluate:
 - Portfolios
 - Capstone projects
 - Mapping
 - Ideation Sessions

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

Additional information: