



Advanced User Experience Design

PEIMS Code: N1302814

Abbreviation: ADVUXD

Grade Level(s): 10–11

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:

The *Advanced User Experience (UX) Design* course allows students to apply skills in science and art to make technology useful, meaningful, memorable and accessible to all users. Students will use knowledge from the Foundations of User Experience Design course to expand the research, design, programming, testing, and communication skills essential for success in this user-focused career field.

Essential Knowledge and Skills:

- (a) General Requirements. This course is recommended for students in Grades 10-11. Recommended prerequisites: Foundations of User Experience Design. Students shall be awarded one credit for successful completion of the 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) The Advanced User Experience (UX) Design course allows students to apply skills in science and art to make technology useful, meaningful, memorable and accessible to all users. Students will use knowledge from the Foundations of User Experience Design course to expand the research, design, programming, testing, and communication skills essential for success in this user-focused career field.
 - (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 the 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 skills, including initiating, planning, executing, monitoring and controlling, and closing a project.
 - (2) 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 and online resources;
 - (B) adhere to intellectual property laws;
 - (C) explain intellectual property laws, including copyright, trademarks, and patents and consequences of violating each type of law;
 - (D) explain the consequences of plagiarism; and
 - (E) demonstrate ethical use of online resources, including citation of sources.
 - (3) The student uses agile project management to produce a successful UX design. The student is expected to:
 - (A) analyze how human-centered design determines what controls, mechanisms, and processes will be required for a user to partake in an application's functionality;
 - (B) analyze and discuss Garrett's five planes of UX, including strategy, scope, structure, skeleton and surface; and
 - (C) determine which phase in design-thinking approach to use which includes empathize, define, ideate, prototype, and testing phases.
 - (4) The student collects and interprets data. The student is expected to:
 - (A) analyze existing research and data to determine best practices and methods for a specific task;
 - (B) identify qualitative research methods such as user interviews, ethnography, field studies, focus groups, and usability testing;
 - (C) identify quantitative methods such as A/B testing, card sorting, heat maps, analytics, and user surveys;

- (D) analyze and select appropriate research methods;
 - (E) describe a specific end-user by creating a set of personas;
 - (F) document and analyze a user’s interaction with a product or service by creating a storyboard;
 - (G) analyze and select a data reporting tool such as Google Analytics, Usability Hub, Adobe Target, or Sketch; and
 - (H) interpret results of qualitative and quantitative research to determine patterns of user’s experience and identify areas of improvement.
- (5) The student analyzes and selects the appropriate prototype for UX product. The student is expected to:
- (A) create a journey map illustrating the interaction between a user and a company, product, or service at every stage of digital or non-digital engagement;
 - (B) conduct SWOT (strengths, weakness, opportunities, and threats) and competitive analysis;
 - (C) create a narrative with data visualization techniques such as line charts, bar charts, scatter plots, pie charts;
 - (D) generate possible solutions with ideation methods such as unstructured discussion, storyboards, brainstorming (Osborn methodology), role playing, game storming, mind mapping, teamwork games, and written ideation; and
 - (E) refine and select the best ideas for prototyping.
- (6) The student organizes on-screen content in a way that is navigable and accessible. The student is expected to:
- (A) identify and describe the importance of information architecture in UX for structuring content including websites, web and mobile applications, and social media software;
 - (B) discuss methods for organizing content that provide optimal user experience;
 - (C) identify main components which are organization schemes and structures, labeling systems, navigation systems, and search systems;
 - (D) determine and use the right information architecture model such as Draw.io, LucidChart, and Visio;
 - (E) identify and evaluate navigation structures and options;
 - (F) research and apply principles of usability, accessibility, and universal design; and
 - (G) plan and implement a user-friendly site map.
- (7) The student applies design theory to UX. The student is expected to:
- (A) create user flow charts that reflect every possible action that a user may take when moving through a product;
 - (B) apply elements and principles of design;
 - (C) use design patterns and layouts to create effective design; and

- (D) create wireframes that show the skeletal structure of each view using a variety of design software.
- (8) The student analyzes the effectiveness of a prototype. The student is expected to:
 - (A) create low-fidelity prototypes including sketches, paper, and click-through prototypes;
 - (B) create high-fidelity prototypes including interactive, digital, and coded prototypes; and
 - (C) use design thinking process phases to determine appropriate quantitative and qualitative research methods to perform additional user testing.
- (9) The student describes best practices and plans for a usability test. The student is expected to:
 - (A) describe the roles and components of user testing including the facilitator, the tasks, and the participant;
 - (B) decide whether to use qualitative or quantitative, remote, or in-person usability testing;
 - (C) use Heuristic evaluation at any stage of design-thinking process to test whether a digital product is user-friendly before conducting usability test;
 - (D) demonstrate effective written communication skills by creating usability test scripts; and
 - (E) recruit and obtain permission from participants for usability testing based on behavioral traits, attitudes, and goals.
- (10) The student conducts effective user testing. The student is expected to:
 - (A) conduct usability testing;
 - (B) demonstrate effective interpersonal communication skills among test participants;
 - (C) summarize, organize, and analyze results of testing using various methods such as spreadsheets, video recording, filled out surveys, audio recording, eye-tracking plot; and
 - (D) iterate and improve prototypes incorporating user feedback.
- (11) The student communicates processes and results to appropriate stakeholders. The student is expected to:
 - (A) apply effective presentation skills incorporating technology as appropriate; and
 - (B) collaborate with internal and external stakeholders to refine wireframes or prototype designs.

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.

- Krug, S. (2010). Rocket surgery made easy: the do-it-yourself guide to finding and fixing usability problems. Berkeley, CA: 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/>
- Rosenfeld, L., Morville, P., Arango, J., & Morville, P. (2015). Information architecture for the World Wide Web. Beijing: O'Reilly.
- Garrett, J. J. (2011). The elements of user experience: user-centered design for the web and beyond. Berkeley, CA: New Riders.
- Lidwell, W., Holden, K., & Butler, J. (2010). Universal principles of design: 125 ways to enhance usability, influence perception, increase appeal, make better design decisions, and teach through design. Beverly, MA: Rockport.
- Sinek, S. (2019). Start with why: how great leaders inspire everyone to take action. London, England: Penguin Business.
- Eyal, N., & Hoover, R. (2019). Hooked: how to build habit-forming products. New York: Penguin Business.
- Adobe Creative Suite (Version CC) [Computer software]. (n.d.).
- The digital design toolkit. (n.d.). Retrieved from <https://www.sketchapp.com/>
- Digital accessibility consulting, training, and advocacy. (n.d.). Retrieved February 4, 2020, from <https://knowbility.org/>.

Recommended Course Activities:

- UX workshops conducted by UX professionals
- Job shadowing
- Real-world projects to use UX design to solve problems at school or in the community
- UX Design Contests
- Participate in the Accessibility Internet Rally (AIR)

Suggested methods for evaluating student outcomes:

- Digital Portfolios
- Reflections/Journals
- Industry Certification
- Rubrics to evaluate:
 - Portfolios
 - Capstone projects
 - Mapping
 - Exam Questions

Advanced User Experience Design

Teacher qualifications:

An assignment for Advanced User Experience Design is allowed with one of the following certificates.

- 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: