College of Innovation and Design

College of Innovation and Design Web Site (https://www.tamuc.edu/college-of-innovation-and-design/)

Dr. April Sanders, Dean
Dr. Jennifer Hudson, Interim Assistant Dean

The College of Innovation and Design is a university-wide hub that works collaboratively with faculty, students, alumni and industry to assess and prepare students for the demands and opportunities of our ever-changing world and workplace. The college serves as an incubator for new initiatives, badges, certificates and degrees that transcend single disciplines or departments. Together, we ensure students are successful for their first year of college as well as for their first, second or third career later in life.

Our online degree options are perfect for working adults who are seeking to earn a degree or certificate. Whether you choose our self-paced, competency-based programs or our online programs that provide a more structured environment, you are sure to find learning opportunities that match your learning style. Our dedicated advisers, housed within the college, ensure your needs are met and provide one-on-one guidance, either virtually or face-to-face

Mission

By combining unique programs, personalized advising and career planning, the College of Innovation and Design provides students with the knowledge, confidence and practical tools needed to become career-ready professionals, prepared to compete in the marketplace and add value to the global environment.

Vision

Unlocking the future of learning by redesigning education for all learners.

UX Design Graduate Certificate

This 18 semester hour multi-disciplinary certificate will provide students with the skills necessary to gather, interpret and visualize a range of data types in a variety of mediums. Merging insights from the disciplines of Art, Sociology, Marketing, and English, students will gain familiarity with key software used in this industry, comprise a portfolio of completed projects, and perform a final product pitch to an industry professional.

Artificial Intelligence MS (https://coursecatalog.tamuc.edu/grad/colleges-and-departments/college-of-innovation-design/artificial-intelligence-ms/)
Alternative Teacher Certification - Graduate Level, Competency Based Education (https://coursecatalog.tamuc.edu/grad/colleges-and-departments/college-of-innovation-design/alternative-teacher-certification-graduate-level-competency-based-education/)

UX Design Graduate Certificate (https://coursecatalog.tamuc.edu/grad/colleges-and-departments/college-of-innovation-design/ux-design-graduate-certificate/)

First Year

Fall	**Hours**
EDCB 514	3
	3

Total Hours: 3

AI 500 - Foundations of Artificial Intelligence
Hours: 4
This course is a general introductory course designed to accommodate students with diverse majors. It serves as an entry point into the world of artificial intelligence (AI) by providing a strong foundation in essential science principles, including algorithms, data structures, and problem solving. Natural language processing is the other core field of AI, connecting human language generation and understanding as key intelligent behaviors. Throughout this course, students will apply various algorithms using fundamental data structures, such as lists, trees, and graphs to solve various AI problems. By the conclusion of this course, students will possess a robust knowledge base, equipping them to engage with AI in various contexts, from research to practical application. Embark on this intellectually stimulating journey to uncover the core principles driving the AI revolution, tailored to the diverse academic backgrounds of graduate students. Prerequisites: CSCI 513.

AI 510 - Seminar in Artificial Intelligence Ethics
Hours: 3
As artificial intelligence (AI) continues to transform various aspects of our lives, it becomes imperative to examine the ethical implications of its development, deployment, and impact on society. This course is a topical seminar is a topical seminar designed to engage students in critical discussions surrounding the ethical challenges and dilemmas posed by AI technologies. Topics may vary, but may include: bias and fairness; transparency and accountability; AI and social justice, legal implications, emerging technologies, case studies, privacy issues, ethical guidelines and policy development.

AI 520 - Machine Learning for Artificial Intelligence
Hours: 3
This course is a foundational course designed to introduce students into the interdisciplinary applications of Artificial Intelligence, focusing on the robust field of Machine Learning. The course will look at computer algorithms that automatically acquire new knowledge and improve their own performance through experience. This comprehensive, application-oriented course is the first step in the AI master's program, specially tailored to accommodate students from a variety of academic disciplines including computer vision, natural language processing, and decision making in healthcare and finance. Topics include linear and logistic regression, artificial neural networks, Bayesian networks and learning, decision trees, kernel / support-vector machines, statistical learning methods, unsupervised learning, reinforcement learning, and other currently emerging algorithms. Prerequisites: CSCI 513.

AI 595 - Research Literature and Techniques
Hours: 3
A course designed to acquaint the student with the role of research in the initiation, development and modification of concepts and theories in computer science. A final written report and presentation and/or demonstration of results obtained during the course will be made to interested faculty members and students.

EDCB 514 - Management and Curriculum Development for Diverse Learners
Hours: 3
(Same As EDCI 514) This course contains introductory content for the professional body of knowledge necessary for effective teaching in a K-12 classroom. Competency in instructional design as well as organizing and managing a classroom in diverse environments will be developed. The content of this course will include classroom procedures and management, knowledge of research-based teaching strategies, curriculum analysis/ development and lesson design, teaching models, formative and summative assessment, and certification issues. Students will exhibit an understanding of the domains and competences Texas teachers are expected to demonstrate on the Pedagogy and Professional Development TExES certification examination.

EDCB 515 - Evidence-Based Teaching for Diverse Populations
Hours: 3
(Same As EDCI 515) This capstone course requires students to apply and expand their knowledge through a number of project-based and research initiatives. Students will synthesize or integrate the knowledge they have developed throughout the prerequisite courses in a clinical/internship experience. The course focuses on understanding diagnostic teaching practices and aligning the needs of a diverse population of students. Course requirements will include designing and implementing responsive instruction and assessment, creating a community of learners, and exhibiting an understanding of the legal and professional responsibilities outlined on the Pedagogy and Professional Responsibility TExES test. Enrollment is limited to teacher candidates fully admitted into the Alternative Certification Program & completing an internship or student teaching with Advisor approval. Prerequisites: EDCB 514 & EDCB 566.

EDCB 517 - Reading and Learning in K-12 Content Areas
Hours: 3
(Same As EDCI 517) This course is designed for graduate students in the alternative certification program seeking initial teacher certification. The focus is on reading comprehension, conceptual development, and strategies for interacting with expository text and media. The role of the teacher, the structure of text, text analysis methods, and content area reading strategies are examined in relation to the student and the learning process. Research-based reading strategies are discussed as appropriate for all elementary and secondary grade levels.

EDCB 519 - Response to Intervention
Hours: 3
(Same As EDCI 519) This course will build capacity among students to implement the Response to Intervention framework in local and state education agencies. Participants will examine the RTI components of screening of students, monitoring student progress, providing evidence-based interventions and identifying students with special learning needs.

EDCB 520 - Generative AI Innovation in Curriculum Design
Hours: 3
This course explores cutting-edge practices in educational technology, focusing on generative AI and virtual reality applications in curriculum design. Students will learn to use AI tools to create interactive materials and resources and develop skills in AI prompting for effective curriculum development. The course provides a comprehensive overview of innovative practices in education technology.

EDCB 530 - Designing an AI Ecosystem in Education
Hours: 3
This course prepares educators to implement AI systems in educational settings. Topics include building professional development programs for teachers on innovative tools, developing communities of practice around educational technology, and creating strategies to gain support from parents and the community for AI integration in K-16 education.

EDCB 540 - Assessment Integrity and Analysis with Generative AI
Hours: 3
Focusing on the intersection of AI and educational assessment, this course covers student privacy protection, AI-assisted assessment development aligned with student learning outcomes, and AI applications in grading. Students will evaluate AI detectors and explore the reliability and validity of AI in high-stakes testing, using case studies.

EDCB 566 - Learning Environments and Instructional Design for the K-12 Classroom
Hours: 3
(Same as ECE 566) This course provides knowledge and practice in designing developmentally appropriate learning environments and instructional design with the use of technological and other tools/materials to advance learning in K-12 classrooms. Students will investigate the relationship between the classroom environment and instructional planning.

EDCB 585 - Research Methods with Innovative AI Tools
Hours: 3
This course examines the integration of Artificial Intelligence (AI) tools in the research process. Students will explore AI platforms for research applications, while addressing academic integrity concerns related to AI use. The course emphasizes ethical and effective utilization of AI in academic research methodologies.

RDCB 516 - Foundations of Reading
Hours: 3
(Same As RDG 516) This course is designed for graduate students in the emergency permit or alternative certification program seeking initial teacher certification. The focus is on the reading process and the factors that condition its development. The importance of reading in school and in life serves as a background for critical evaluation of the methods and materials of reading instruction. Special consideration is given to the essential components of research-based programs and the features of classrooms that support effective beginning reading instruction.