ED.893 (EDUCATIONAL TECHNOLOGY)

ED.893.708. Technologies and Creative Learning. 3 Credits.
Through the latest research in learning in the computer age, this course explores how technology can support creative learning. Henessey and Amabile (2010) state that creativity is essential to human progress. Through evidence-based research, learners will explore the potential for technology to support instruction and learning. The digital age is affecting how identity is defined and managed. The identity life-cycle will be explored as well as the field of human-computer interaction and its effects on creative thinking. The concepts of participatory culture and media education will be discussed and how they support developing digital communities of learners. We will discuss computer-supported collaborative learning and how online communities can be catalysts for interactive media creation. We will also explore disruptive technologies, radical game design, and the new literacies in the digital age.

ED.893.508. Technology and the Science of Learning. 3 Credits.
Technologies are part of the intellectual landscape in which new kinds of knowledge are breaking down the boundaries of previous distinct disciplines. The design and use of new technologies make possible new approaches to learning, new contexts for learning, new tools to support learning, and new understandings of the dynamics of the learning process itself. This course examines the role of technology relative to the key concepts of active learning, metacognition, and transfer of knowledge from multidisciplinary perspectives on learning. Based on their readings of empirical literature from the science of learning, students will develop and implement a technology-related strategy that aligns educational technology to standards-based instruction, promote problem solving and higher-order thinking skills, facilitate cooperative learning, and use reflective teaching and inductive approaches to increase student achievement. Students must take Technology and the Science of Learning as one of their first courses in the program.

ED.893.545. Technology Integration for the 21st Century Learner. 3 Credits.
This course prepares educators in K-12 and adult education settings to implement instruction and assessment that targets four essential digital-age learning objectives: critical thinking, creativity, communication, and collaboration. Students will learn about and apply the TPACK framework, which describes three forms of knowledge educators need to integrate educational technologies into instruction effectively—technical knowledge, pedagogical knowledge, and content knowledge. Alongside the TPACK framework, students will learn about and apply the SAMR Model, which describes four different types of educational technology integration: Substitution, Augmentation, Modification, and Redefinition. Applying their understanding of TPACK, SAMR, and other concepts and practices from course readings and activities, students will design technology-rich learning activities/learning units for use in their own professional settings.

ED.893.546. Technology for Learner Variability. 3 Credits.
This course provides an overview of the historical foundations and the advancements in the learning sciences related to learner variability. Students will learn to apply the Universal Design for Learning framework in understanding and addressing learning variability. Students will develop the knowledge and skills necessary to anticipate and plan for systematic differences in learners, and apply technology to that end. Students will investigate existing and emerging technologies to determine how these may support all learners in becoming purposeful and motivated, resourceful and knowledgeable, and strategic and goal-directed.

ED.893.550. Emerging Issues in Digital Age Learning. 3 Credits.
The new digital landscape is drastically changing how people work, collaborate and learn. New innovations in digital technologies are powerful influences in 21st century classrooms. In this course, participants are exposed to emerging issues for Internet-based culture and digital age learning, including gaming, virtual and augmented reality, digital libraries and databases, big data and data mining, and the use of social media and digital tools for enhancing instructional delivery. Learners will explore the use of emerging technologies and their integration into schools and organizations. (3 credits)

ED.893.601. Evaluation and Research in Digital Age Learning. 3 Credits.
In this course students learn and practice the skills necessary to evaluate the use of educational technology in learning environments and educational settings. The course covers a range of alternative and mixed methods for data collection, such as observation, interviewing, the use of surveys, and analysis of data. Students develop an evaluation plan that can be implemented in their own educational settings and demonstrates their ability to select and/or develop appropriate metrics to identify the impact of technology in the teaching-learning process. Students use empirical methods to describe, explore, and/or explain the relationships between technology and program and/or individual outcomes.

ED.893.628. Gaming and Simulations for Learning. 3 Credits.
This course provides an overview of game-based learning theories and best practices for incorporating educational games and simulations into a range of learning environments. Students will learn to apply analytic frameworks to commercial and educational games so as to evaluate a game’s potential as a learning tool or environment for K-18, business, and government settings. Students will integrate games with lessons and other learning activities, as well as produce prototypes for their own educational games and plan to use gameplay data for assessment.

ED.893.632. Data-Driven Decision Making. 3 Credits.
The increasing impact of a knowledge economy and globalization has been a catalyst to the fields of knowledge management and organizational decision making. This course is designed to introduce knowledge management concepts into an educational context and to provide an in depth focus on data-driven decision making in educational organizations and institutions. Participants investigate how decisions and strategies are developed and how tacit or explicit knowledge can be identified, captured, structured, valued and shared for effective use. Course topics include leadership and strategic management relative to organizational decision making, managerial and organizational structures, organizational learning, and decision support systems. A related intent is to develop an understanding of data mining metrics that can be used to create predictive models that support systemic change in schools. Opportunities are provided for participants to use online and electronic tools that can assist in facilitating meaningful conversations about instruction and learning among their school’s faculty and staff.
ED.893.634. **Technology Leadership for School Improvement. 3 Credits.**
Education leaders need to understand the use of technology for teaching, learning, and managing their school environment. These skills include schoolwide technology planning and leadership that incorporate instructional design, curriculum integration with standards, logistics of technology implementation, professional development, and evaluation. Students will develop an understanding of how to create and support technological change through a systems approach. Topics include sources of resistance to change, tools for planning, decision making and change, creating and supporting a culture for learning and change, and managing and institutionalizing change systems.

ED.893.645. **Explorations in Blended and Hybrid Learning. 3 Credits.**
In this course, students will become familiar with different models of blended learning, discuss how blended learning differs from "technology integration," and examine the potential for blended learning instructional models to provide learners with more personalized learning experiences. Students will evaluate and compare different blended learning models to justify their rationale for selecting models appropriate for their teaching and learning contexts. They will describe instructional strategies and technologies that can be used to increase learner engagement in blended learning environments. Through course readings and their own analyses, students will also examine challenges associated with the implementation of blended learning activities and the impact that implementation has on students, teachers, schools, or stakeholders in other workplace contexts. While exploring these topics, students will choose a path for their learning based on their teaching and learning context. The course will culminate with students designing their own blended learning initiative that is authentic to their teaching and learning context.

ED.893.650. **Fundamentals of Design Thinking. 3 Credits.**
This foundational course in the DALET program, to be taken during a student’s first term of enrollment, operationalizes principles of design thinking, instructional design, and learning theories to equip learners with foundational knowledge and skills for designing learning experiences in a range of contexts. Throughout the course, students will independently and collaboratively engage in the multiple phases of an iterative design cycle (framing, ideation, prototyping, testing and evaluating) to create human-centered design prototypes to address specific learner/user needs. Students will leave the course with a set of practical tools and techniques to design innovative design solutions within their own professional setting.

ED.893.651. **Computational Thinking for K-12 Educators. 3 Credits.**
In 2006, Jeannette Wing published a seminal paper on computational thinking, arguing that “it represents a universally applicable attitude and skill set everyone, not just computer scientists, would be eager to learn and use.” This course will provide an overview of computational thinking (CT), in theory and in practice, with an emphasis on its use in different K–12 disciplines and contexts. Students will investigate CT theories, CT measures, the benefits of building CT competencies, and approaches to developing CT in many different disciplines. Students will work with a variety of tools, including the Scratch block programming environment, to explore how these can be used to develop CT competencies among their learners, and create a long-term plan for nurturing CT in their particular context.

ED.893.701. **Advanced Seminar in Digital Age Learning. 3 Credits.**
The seminar is the capstone course in the Digital Age Learning and Educational Technology master’s program and reflects students’ individual mastery for leveraging technology with diverse learning populations. The seminar focuses on examining the constructs of educational technology topics and culminates in the student creation of his/her online portfolio. The portfolio showcases the products and skills developed by learners during the core courses throughout the term of their academic studies. The goals of the seminar are to engage and support participants in understanding the historical, cognitive, technical, political, and sociological issues involved in the effective use of technology in education and particularly in the integration of technology into instruction.

**Prerequisite(s):** ED.893.601

ED.893.850. **Advanced Applications in Digital Age Learning. 3 Credits.**
The advanced applications course provides students the opportunity to individualize their program experience, to sharpen existing skills, to gain new skills, and to pursue their educational technology interests related to curriculum and professional development in support of technology-based programs. Students work with their advisor to create a professional, customized learning experience that stretches the student through his/her participation in the development, design, implementation, or evaluation of high-quality technology products, projects, or services. The activities in this course are aligned to individual students’ schedules and can include collaborative opportunitities with public and private sector organizations and agencies that have local, regional, national, or international interests. This course supports the development of leadership expertise in an area designated by the student as a set of skills needed to advance the individual in their chosen area of study and professional practice.

ED.893.830. **Graduate Project in Technology. 3 Credits.**
Students of demonstrated ability with special interest in technology study under the direction of a faculty member in the School of Education. Students must meet with their faculty adviser and prepare an outline of their proposed project before they register for this course.