Master of Science- Instructional Specialist
Concentration: Elementary STEM

Degree Plan- 30 Credit Hours total

Foundational Courses:

EL 751 Applications of Developmental Theories- 3 Credit Hours

This course is for students who are practitioners in any educational setting from pre-K through secondary school. Course covers the main theories currently used as the foundation for quality education, pre-K through late adolescence and young adults.

EL 810 Information Literacy- 3 Credit Hours

This course focuses on the process of becoming web literate or finding, understanding, and using information from the web. A foundation will be built from what we know about reading, learning, and effective teaching practices with print text in order to understand the benefits and challenges of reading on the web. Course projects will encourage participants to actively use models of inquiry with the web to pursue answers to their own questions and learn ways to guide students through the online inquiry process.

EL 725 Differentiating Instruction- 2 Credit Hours

This course provides descriptions and applications of methods and strategies for teaching diverse learners. Candidates will participate in a variety of activities to demonstrate their knowledge and skills to meet the academic needs of all learners through application of the principles of universal design for learning, technology, and intensive intervention as individually appropriate across the content areas.

EL 854 Action Research in the Classroom- 3 Credit Hours

This course is designed to develop the educators' knowledge and skills in appropriate action research techniques with the participants developing an action research project that will be implemented in their school/classroom. Students will produce a research proposal and then complete a final paper that reports the outcome of the research.

Concentration Courses:

EL 802 Best Practices in Elementary Math- 3 Credit Hours

This course is designed to develop prospective and in-service elementary teachers' knowledge and skill in teaching mathematics. Course focus will include relevant research and standards, applicable to the effective teaching of mathematics content to elementary school students. Concepts and material developed in the class will be related to actual classroom situations.

EL 803 Best Practices in Elementary Science- 3 Credit Hours

This course is designed to develop prospective and in-service elementary teachers' knowledge and skills in teaching problem solving and inquiry based science. Course focus will include relevant research and standards, including STEM integration, to the effective teaching of elementary science content. Concepts and material developed in the class will be related to actual classroom situations.

EL 726 Elementary Engineering and Robotics- 3 Credit Hours

This on-line course engages students in sequential scientific discussion activities that will increase your competence in (1) problem-solving process skills in engineering and robotics and (2) planning, teaching, and evaluating the effectiveness of science lessons for children in the elementary school setting. The course is designed on a competency based, mastery model. Throughout the course, students practice using logic, cognitive processing skills, and strategies from recently developed activity based K-8 science curricula including strategies for enriching a more conventional, textbook-oriented curriculum.

EL 740 STEM Concepts Through Fiction and Non-Fiction- 3 Credit Hours

An exploration of children's literature, fiction and nonfiction, with a focus on ways both print and digital texts can be used to create interest in and to teach STEM concepts. Course content is appropriate for K-12 educators, including classroom teachers, library media specialists, support teachers, as well as public librarians who focus on youth services.

EL 784 Trends in STEM Education- 3 Credit Hours

This course is designed to develop the educators' knowledge and skills in appropriate research techniques and topics in elementary STEM education. Students will develop a research project that will be implemented in their school/classroom. Students will produce a research proposal and then complete a final paper that reports the outcome of the research.

Capstone Courses:

EL 828 Instructional Leadership and Coaching- 2 Credit Hours

This course focuses on the theory and instruction of leadership and coaching across all disciplines. Course activities and assignments will allow students to broadly view effective roles of the coach/leader in the schools and apply the content to a specific subject area (literacy, math, STEM, etc.). This course is a prerequisite for EL829, Literacy and Coaching Practicum.

EL 829 Leadership and Coaching Practicum – 2 Credit Hours

(Prerequisite: EL 828 and Instructor Permission) Each student will participate in practical experiences related to professional leadership and coaching roles in the selected field of study. The course serves as the capstone for the instructional specialist degree.