Certificate of STEAM Education

College of **EDUCATION**

The STEAM Education Certificate provides teachers with the ability to infuse STEAM practices in their classrooms. STEAM is a transdisciplinary approach for engaging all learners to solve real-world problems. The four-course sequence equips teachers with skills to create, implement, reflect, and assess students engaged in STEAM units. This certificate is appropriate for K-12 teachers of all content areas. STEAM education is an innovative approach to teaching in the K-12 setting. This transdisciplinary approach engages learners to solve real-world problems through STEAM problem scenarios. STEAM education has demonstrated much success in re-engaging learners and teachers through problem-based approaches.

The **four-course, asynchronous STEAM Education Certificate program** admits students for a Fall entrance term. The application deadline is August 1.

Required Courses

ED 8700 STEAM Instructional Design (Fall)
Focuses on STEAM instructional design for teachers, including subject-matter alignment, discipline integration, and ways to employ problem-solving skills. Emphasizes STEAM-based practices such as problem-based, inquiry-rich, authentic tasks, and ways to integrate technology across the curriculum.

ED 8710/8711 STEAM Transdisciplinary Teaching (Spring)
Focuses on STEAM-based instructional approaches, including the ways in which teachers structure the classroom environment, tasks, and resources to facilitate deep learning. These instructional approaches include problem-based, student-driven, authentic tasks, and technology integration, and supports for equitable participation.

ED 8730 STEAM Assessment (Summer)
Focuses on assessment practices the support learning, including the iterative process of refining instruction and evaluating learning in a real-world context using multiple forms of data. Assessment types include authentic, embedded, incorporate regular feedback, and drives adjustments to teaching.

ED 8720/ED 8721 STEAM Enacted and Evaluated (Fall)
Focuses on the ways to implement the STEAM teaching beyond the classroom to create leaders in the pedagogy. Emphasizes evaluation, feedback and changes in practice, and examines and utilizes the STEAM Observation to help school teachers understand STEAM teaching and learning.

S.C. Teacher Incentive

The STEAM Education Certificate program offers a South Carolina Teacher Incentive reducing tuition by 10% for all in-state South Carolina K-12 teachers/leaders.

Program Goals

The STEAM Education certificate builds a conceptual foundation that prepares teachers, instructional coaches and technology integration specialists to design and implement STEAM instruction in classrooms using a transdisciplinary approach. This certificate program is designed to meet outcomes such as:

> Conceptualize STEAM education through the adoption of a research-based instructional model
> Design a STEAM instructional unit focused on authenticity, relevance, inquiry and problem-based learning
> Explore and integrate student-centered technologies in STEAM teaching, learning and assessment
> Develop formative and summative assessments aligned with STEAM learning objectives
> Implement and reflect on STEAM teaching