

# Certificate in Engineering and Science Education

The Department of Engineering and Science Education is pleased to offer graduate students in the College of Engineering and Science the opportunity to earn a **Certificate in Engineering and Science Education**. This educational experience is designed for graduate students who seek experience in preparation for an academic career, who wish to further their understanding of the education process in engineering and science, or who are interested in engineering and science education research. This certificate program includes a range of courses that may be chosen to address specific research questions or interests. The course sequence is intended to complement courses offered in the engineering and science disciplines, and is as follows:

## 1. Pedagogy (3 credits)

Choose one out of the following options:

- CES 820 - Teaching Undergraduate Engineering
- CES 821 - Teaching Undergraduate Science *or* CH 671 – Teaching Chemistry
- ED 955 - Theoretical Bases of Instruction

## 2. Professional preparation (3 credits minimum)

Choose one or more out of the following options:

- CES 875 – Current Issues in STEM Education Research
- CES 825 – Engineering and Science Student Strategies
- CES 888 - Preparing for the Professoriate

## 3. Research methods (3 credits minimum)

Choose one or more out of the following options; other courses will be considered upon approval by the Certificate committee:

- CES 871 - Engineering and Science Education Research Methods
- EXST 802 - Statistical Methods II (EXST 801 prereq)
- ED F 808 - Educational Tests and Measurements
- ED F 878 – Research Methods in Education II (EDF 778 prereq)
- PSYCH 811 - Research Design and Quantitative Methods II (PSYCH 810 prereq)
- PSYCH 833 - Advanced Cognitive Psychology

## 4. Practicum (1 credit)

- CES 861 Teaching or Mentoring Practicum in Engineering and Science Education

## 5. Seminar (1 credit)

- CES 800 Seminar in Engineering and Science Education

**TOTAL CREDIT HOURS: 11**

