

# Engineering Education Graduate Certificate

The Certificate in Engineering Education provides access and opportunity for engineering educators to improve their teaching skills and classroom management.

## Why Pursue a Graduate Certificate in Engineering Education

The Graduate Certificate in Engineering Education is a 9-semester credit hour program offered as a collaborative effort between the Colleges of Engineering and Integrated Design and Education and Human Development. The program has an emphasis on engineering curriculum development, instruction, and assessment methods to support student learning outcomes. It covers history and attributes of different engineering fields.

As San Antonio and South Texas continue to grow, the demand for engineers and engineering educators will continually increase. A significant workforce of well-prepared and engaged engineering educational professionals is imperative to meet the growing needs of our region.


## Program Targets

This program is targeted for both engineering students wishing to prepare as future engineering instructors in a college or university and for teachers in the field (or future teachers) interested in preparing to teach engineering at the middle and high school level in formal and informal educational settings. It provides a training platform for those educators who plan to teach engineering or pre-engineering subjects. This unique program also allows for the collaboration of students and faculty from both technical and educational fields as peers.

## Admission & Application Requirements

Applications are submitted through the UTSA Graduate Application. Please upload all required documents (listed below) on your UTSA Graduate Application. It is the applicant's responsibility to ensure completion and submission of the application, a nonrefundable application fee, and all required supporting documents are on file with UTSA by the appropriate application deadline.

*For international students, please note that student visas are not issued at UTSA for non-degree-seeking students, including certificate programs. For more information, visit our international students admission page.*

-more- 



## Start here!

**E-mail Dr. Ortiz to start  
the registration process!**

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<https://bit.ly/3ss73s6>



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## Engineering Education (CERT)

**Required Degree:** Bachelor's Degree from an accredited college or university in the United States or have proof of equivalent training at a foreign institution.

**Minimum GPA:** 3.0 (on a 4.0 scale) Departments may consider GPA of last 60 semester credit hours

**Transcripts\*:** Required from all institutions attended; international transcripts must be recorded/translated to English

**Credential Evaluation:** Required if you have earned university-level credit from foreign institutions. Submit an evaluation of your transcripts from Educational Credential Evaluators (ECE) directly from the graduate admission application platform

**English Language Proficiency:** 550 TOEFL Paper / 79 TOEFL Internet / 6.5 IELTS / Duolingo 100

**Resume:** Required

*\*Unofficial transcripts will be taken into consideration for admissions; however, if admitted into the program, you must submit official transcripts to the University.*

## Courses

### EGR 6973 / CI 6973: Special Problems: Becoming an Engineering Educator/Professor- 3

An organized course offering the opportunity for specialized study in engineering education for instructors in either a college/university setting or a K-12 educational classroom. This course covers the theoretical foundations of engineering curriculum design, a culturally responsive teaching framework for teaching engineering content, and using engineering design as the impetus for student learning of STEM content. Students will be provided the opportunity to enhance other valuable skills for engineering educators, such as writing grant proposals, managing active learning classrooms, and developing teaching methods to enable diverse student learning. This course may be repeated for credit when topics vary.

### EGR 6183 Engineering Education Methods 3

This course is designed to provide graduate students with an opportunity to acquire foundational knowledge on theories of teaching and learning in engineering education. The course contains principles of inclusive, learner-centered, and evidence-based pedagogy and assessment in engineering learning environments. This course serves as an opportunity to gain knowledge about the role of engineers as educators, mentors, and advisors through critical examinations of theory, disciplinary literacies, dominant ideologies, and empirical research in engineering education.

### EGR 6283 Mentored Teaching in Engineering 3

This course allows students the opportunity for a deeper understanding of teaching and learning through practice, feedback, and reflection as performed regularly in assigned teaching duties. Educational goals and objectives are identified, and engaging and meaningful activities are designed to address the learning goals using asset-based, student-centered curricular strategies. Students have the opportunity to develop assessments of the classroom activities and methods they use to support student learning. Reflection is used as a central method for learning and formatively evaluating the educator's practice. Topics include equity in education, inclusive teaching, grading and assessment, engagement activities, and cultural relevance.



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