



TEXAS TECH UNIVERSITY

Center for Engineering Outreach™

Strategic Plan

Few courses in the Texas Education Agency inventory or two-year collegiate programs offer significant engineering content, and few instructors in K-14 education have the necessary experience or training to teach engineering. While K-14 instructors are best positioned to recognize students with aptitude for engineering, these educators are not usually prepared to advise students about engineering career choices because degree and certificate programs for K-14 instructors rarely include exposure to engineering.

Vision

By inspiring and preparing a larger and more diverse population of K-14 students to become engineers, the Texas Tech University Center for Engineering Outreach will improve recruitment, retention, and diversity in the Texas Tech University College of Engineering and serve as a model for engineering outreach programs across the nation.

Mission

The Texas Tech University Center for Engineering Outreach works to integrate engineering into K-14 education, creating feeder programs at the regional and state levels for Texas Tech University. The center works to accomplish this mission by

- developing curriculum, professional development, and other academic resources designed to help K-14 institutions and educators teach students about engineering and encourage rigorous academic preparation;
- providing experiences that reinforce interest and learning about engineering at the K-14 levels with competitions, field trips, and other opportunities focused on engineering concepts and skills;
- connecting the K-14 student experience to engineering in higher education and practice through mentoring, campus visits, early admission, and other activities aimed at making engineering degrees and careers more accessible and attainable.

Goals

Encourage K-14 institutions and educators to integrate content and activities into the curriculum that help students make informed decisions about engineering careers and the rigorous academic preparation necessary for engineering degrees.

CORE FUNCTION

Develop, deliver, and promote education resources and activities that enhance engineering literacy and preparation at all levels of K-14 education.

FOCUSED ACTIVITIES

- Develop and disseminate K-14 curriculum resources with engineering content.
Assessment: number of curriculum resources adopted and number of students impacted by adopted resources
- Develop K-14 professional development opportunities with engineering content.
Assessment: number of professional development opportunities provided and number of educators impacted

Increase diversity in engineering.

CORE FUNCTION

Encourage the involvement of traditionally underrepresented populations in engineering.

FOCUSED ACTIVITY

- Target traditionally underrepresented populations with programs that promote engineering literacy and careers.
Assessment: number of underrepresented students impacted through targeted programs
- Develop partnerships with organizations that promote engineering within traditionally underrepresented populations.
Assessment: number of traditionally underrepresented students impacted through partnership sponsored programs

Foster opportunities for engineering faculty, student and practitioner involvement in K-14 education.

CORE FUNCTION

Create or support activities that allow engineering faculty, students and practitioners to demonstrate engineering concepts and skills and/or promote engineering literacy and careers to K-14 educators and students.

FOCUSED ACTIVITY

- Involve engineering faculty, students, and practitioners in formal and informal educational or service activities that promote engineering literacy and careers.
Assessment: number of engineering student / practitioner engineer participants

Institutionalize the center and its programs and disseminate the experience and results of center activities.

CORE FUNCTION

Create the institutional infrastructure, recognition, and funding streams that enable the center to accomplish its mission effectively.

FOCUSED ACTIVITY

- Write grant proposals and engage in other fund raising activities.

Assessment: funds awarded

- Write journal articles, deliver conference presentations, and engage in other activities to disseminate and publicize the activities of the center.

Assessment: number of articles and presentations

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