

Department Mission Statement

The mission of the Department of Engineering Technology and Engineering Transfer is to partner with other college departments, the community, and local industry to be the premier provider of postsecondary technical education for Engineering Technology and Engineering Transfer students in the Midlands.

In support of the Mission of the Department of Engineering Technology and Engineering Transfer, the following departmental goals have been established:

1. **Quality Instruction:** To assure consistently high-quality instruction in all modes of delivery.
2. **Student Success:** To work collaboratively with other areas of the colleges to encourage students to achieve their educational goals and succeed in work and/or continued education.
3. **Program and Curricula:** To develop, market and maintain quality programs that are responsive to the needs of our service area.
4. **Technology:** To employ appropriate technologies effectively to enhance instruction and student learning.
5. **Professional Development:** To foster continuing education and professional development for faculty and staff.

Within the Department of Engineering Technologies and Engineering Transfer, the Civil engineering technology program produces graduates who play a major role in the management, planning, designing and construction of structures and facilities needed for land, sea, and air transportation; water supply and wastewater treatment; construction cost estimating; generating and distributing electric power; materials testing; planning and scheduling of engineering projects; structural analysis and detailing; and hydraulic design of piping and open channel systems. Civil engineering technicians assist with design and construction of airports, bridges, highways, buildings, dams, electricity generating plants and distribution systems, pipelines, railroads, and water and sewerage systems. To perform this work, civil engineering technicians must possess broad knowledge and skills in such technical areas as structures, mathematics, land surveying, drafting, management, materials and cost estimating, hydraulics, soil mechanics, and scientific use of computers.

Program Educational Objectives

Program educational objectives are broad statements that describe the career and professional accomplishments that the program is preparing graduates to achieve.

There are five Program Educational Objectives for the Civil Engineering Technology Program. Upon successful completion of the program, CET graduates should be able to perform the following functions:

1. Demonstrate a balance of knowledge that encompasses several areas within the practice of civil engineering technology.
2. Demonstrate competency in applying the principles of civil engineering technology to the planning, development, analysis, construction, operation and management of both public and private facilities.
3. Meet industry expectations in evaluating ethical, societal, and environmental issues in the practice of civil engineering technology.
4. Practice effective professional communications in formats common to industry practice.
5. Be capable of career advancement, professional development, and pursue lifelong learning opportunities within their field of employment.

Process for Establishing Program Educational Objectives

Educational Objectives for the Civil Engineering Technology Program have been established through a process that is defined in the document entitled, “Civil Engineering Technology Program’s Outcomes Assessment Plan and Process” In essence, educational objectives for each program are established collaboratively by involving the various constituencies of the program in the Program Review process. Input has been gathered from DACUM panels, from the program advisory committee, from ABET, from faculty, and from other constituencies regarding what the educational objectives should be for a particular program. Those objectives have been established accordingly, and are reviewed every five years during a formal program review process.

Achievement of Program Educational Objectives

Initial Assessment

The level of achievement of Program Educational Objectives is initially determined during the capstone course sequence. Those courses in that sequence include:

CET 244	Structural Steel Design
CET 218	Hydraulics
CET 246	Environmental Systems Technology
CET 242	Concrete Design
CET 235	Construction Methods and Cost Estimation

All graduates of the Civil Engineering Technology program are required individually to demonstrate basic competency in each of the five Program Educational Outcomes for the Civil Engineering Technology program while they are students in the capstone course sequence.

General Assessment - Followup

The general level of achievement of program educational objectives by graduates in the workforce is assessed every five years during our program review process. Surveys of employers are done to determine how well our graduates are achieving the Program Educational Objectives once they are in the workforce. The most recent program review for the Civil Engineering Technology program took place in 2006

Program Outcomes

Program outcomes are narrower statements that describe what students are expected to know and be able to do by the time of graduation. These relate to the skills, knowledge, and behaviors that students acquire in their matriculation through the program.

Process for Establishing and Revising Program Outcomes

Program Outcomes were initially established for each program through the use of a DACUM panel, and by inclusion of input from other constituencies, including TAC of ABET. The Program Outcomes for each program are reviewed informally during each program advisory committee meeting, and are formally reviewed every five years through a formal Program Review process. The formal Program Review includes another DACUM panel which looks at the curriculum in detail and makes a determination of adequacy of the program and its outcomes.

In addition to oversight of each program by its Advisory Committee and the five-year program review cycle, The Department of Engineering Technologies has established a CQI Curriculum Committee. The CQI Curriculum Committee is chaired by the Academic Program Coordinator for Accreditation, and is staffed by the Department Chair and individual Program Coordinators. The CQI Curriculum Committee annually reviews the Program Educational Objectives and makes any necessary recommendations for change.

The matrix at the end of this section lists all program outcomes in the first column, and indicates which of those outcomes feed into the Program Educational Objectives. The entire list of Program Outcomes is documented in each course syllabi in a matrix that indicates which Program Outcome is supported by each course objective.

Relationship of Program Outcomes to Program Educational Objectives

Program Outcomes for the Civil Engineering Technology program are shown in the first column of the matrix below. The five PEO's for this program are indicated in the second through 6th columns of the matrix. The specific Program outcomes that lead to particular PEO's are indicated in the matrix by a mark. Note that not all Program Outcomes lead to all PEO's, but all PEO's are addressed somewhere in the program. The courses in which those Program outcomes are taught and assessed are also indicated in the last column.

Program Outcomes	Program Educational Objectives					Courses in which PEO is evaluated
	PEO1	PEO2	PEO3	PEO4	PEO5	
Demonstrate appropriate mastery of the knowledge, techniques, skills and modern tools of their disciplines	X	X	X	X	X	All CET courses
Demonstrate an ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering and technology Engineering Ethics	X	X	X	X	X	All CET courses
Demonstrate an ability to conduct, analyze and interpret experiments and apply experimental results to improve processes	X	X	X	X	X	CET 105 CET 120 CET 205 CET 235 CET 216 GMT 101 Thru GMT 235
Demonstrate an ability to apply creativity in the design of systems, components or processes appropriate to program objectives	X	X	X	X		EGR 194 CET 242 CET 244
Demonstrate an ability to function effectively on teams	X			X	X	EGR 194 CET 120 CET 242 CET 105 CET 205 CET 235
Demonstrate an ability to identify, analyze and solve technical problems	X	X	X	X	X	ALL CET courses
Demonstrate an ability to communicate effectively	X		X	X	X	AET 105 EGR 194 CET 105 CET 205
Demonstrate a recognition of the need for, and an ability to engage in lifelong learning			X		X	AET 105 CET 235 CET 105 CET 205 All GMT courses
Demonstrate an ability to understand professional, ethical and social responsibilities	X		X		X	AET 105 EGR 194 CET 105

						CET 205 CET 235
Demonstrate a respect for diversity and a knowledge of contemporary professional, societal and global issues			X	X		CET 242 CET 244 CET 246 CET 235 CET 218
Demonstrate a commitment to quality, timeliness, and continuous improvement	X		X	X	X	All CET and GMT courses
Utilize graphic techniques to produce engineering documents	X	X		X	X	EGT 106 CET 235
Conduct standardized field and laboratory testing on civil engineering materials	X	X	X	X	X	CET 120 CET 216 CET 242
Utilize modern surveying methods for land measurement and/or construction layout	X	X		X		CET 105 CET 205 and all GMT courses
Determine forces and stresses in elementary structural systems		X				EGR 194 CET 242 CET 244 CET 216
Demonstrate appropriate mastery of the knowledge, techniques, skills and modern tools of their disciplines	X	X				CET 120 CET 235
Demonstrate an ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering and technology Engineering Ethics	X	X		X		All CET and GMT courses