

Program Review

Executive Summary

Civil Engineering and Surveying Technologies

Majors Reviewed:

Civil Engineering Technology, B.S.

Civil Engineering Technology, A.A.S.

Surveying Technology, A.A.S.

April 2019



Pennsylvania
College of Technology

A Penn State Affiliate

In Fall 2018, the Civil Engineering and Surveying Technologies department enrolled 131 students. The department offers three degree options: Bachelor of Science in Civil Engineering Technology (BCT), the Associate of Applied Science in Civil Engineering Technology (CT) and the Associate of Applied Science in Surveying Technology (SU). The programs have existed at the institution since 1964. The degree programs prepare students for employment and provide the guidance and preparation for professional licensure. Students completing the B.S. degree in Civil Engineering Technology may pursue licensure as a P.E. (Professional Engineer), and graduates of the surveying major may pursue the Professional Land Surveyor licensure (PLS). Licensure requires additional work experience beyond successful completion of a degree; however, graduation from an ABET-accredited degree program is a first step in pursuit of these professional credentials. ABET accreditation is essential to these majors.

The department (BCT, B.S.; CT, A.A.S.; SU, A.A.S.) underwent an accreditation visit from the Accreditation Board for Engineering and Technology (ABET), Engineering Technologies Accreditation Commission (ETAC) in October 2018. Reaccreditation by ABET is expected in July 2019 for all three majors within the Civil Engineering and Surveying Technologies department. The ABET-ETAC re-accreditation visit, along with this program review, allowed the program to reflect and identify further development and growth opportunities.

In Spring 2019, each major's advisory committee was expanded to include broad representation within the industry. The department is primed to move forward, with input and support of the advisory committees to develop Geographic Information System (GIS) course work for civil engineering students and land development courses specific for surveying students. Additional technological advancements are needed to graduate students ready for the rapidly evolving workforce. Students are increasingly completing either dual BCT and SU degrees or dual CT and SU degrees.

Program exposure at the high school level increased in the 2018-19 academic year. A two-member faculty team, one from civil engineering and one from surveying, made six visits to schools in the northeast corner of Pennsylvania. They presented an introduction to both the civil engineering and surveying technology fields by demonstrating the collection of data using a small-unmanned aerial system (sUAS), i.e. a drone.

Social media presence was increased by using Facebook, Instagram, Twitter and personal LinkedIn pages. Students have been encouraged to use LinkedIn as well. These platforms afford the department opportunity to reach prospective students, current students, alumni, and employers.

The department has a solid history of graduating workforce-ready students. Increased interest from employers indicates that the need for graduates is strong. With program growth and support from the institution, the department is confident that graduates will continue to be prepared to fill the opportunities available in the civil engineering and surveying fields in the construction and design industry.

Recommendations:

1. The department will develop one course to be Penn College NOW or a distance learning course. Possible distance learning could be capstone CET495, CET496 or a civil engineering and surveying exploration course.
2. Each faculty member will participate in at least four hours of engagement with the College community through one of the following opportunities: attending College professional

development, offering College professional development, and/or participating in a College-wide committee.

3. Each faculty will participate in at least two K-12 outreach events over the next five years. Events such as, but not limited to, PA Build My Future, PA Farm Show, Career Day, Smart Girls, or off-campus visits to elementary or secondary schools.
4. The department will develop a Continuous Improvement Plan that satisfies ABET and the College accreditation goals.
5. The department will develop a system to better track information specific to graduates of each major. This may include data such as students who pass the fundamentals of engineering or surveying exams, principles and practice exams, internships, full-time positions.
6. Faculty will encourage students to identify minors that may benefit their career paths. For example, a business management minor may be beneficial to graduates who anticipate starting a company.
7. The department, in collaboration with the school, will research and possibly change the Classification of Instructional Program code for each degree.