The objective of the Civil Engineering Technology Program is to provide basic training in the concepts fundamental to the development, design and construction of commercial, industrial and public structures, utilities and highways.

**CIVIL ENGINEERING TECHNOLOGY**

Degree: Associate in Applied Science  
HEGIS Code: 5309  
Curriculum Code: 0517  
Campus Location: North  
Engineering & Technologies Division

Pre-Admission Recommendations: 3 years math, 2 years science (including physics)  
Recommended H.S. Courses and/or Experiences: 3 years science, basic drafting  
Career Opportunities/Further Education: Civil engineering firms, government agencies, testing labs, transfers to bachelor’s degree programs, nationally certified by ETAC/ABET.

**Program Description**

While civil engineers plan, design and construct various structures including all civic facilities, commercial buildings and highways, the civil engineering technician assists the professional engineer in the accomplishments of these tasks. There is an urgent and continuing local need for civil engineering technology graduates to support the enormous investment in modernizing the infrastructure of the local community. There is a current shortage and demand for trained personnel by governmental and private sector design agencies as well as construction contractors. The demand for civil engineering technicians exceeds the annual number of graduates. SUNY Erie is the only institution in Western New York offering this program.

The educational objectives of the Civil Engineering Technology Program are to:

- secure employment in a technical career related to civil engineering;
- continue education to four-year engineering or engineering-related program; and
- prepare students to obtain national certifications related to furthering their education and knowledge to succeed on the job.

Students will be provided with basic training in the concepts fundamental to the development,
design and construction of commercial, industrial and public structures, utilities and highways. Students will develop a clear understanding of the problems and the solutions to the problems facing the design construction team, including the owner, surveyor, architect, engineer, building product supplier, and contractor.

The program encourages professional office practice standards in both the lecture and lab experiences. Through lecture courses, students probe surveying, manual and computer-aided design (CAD) drafting, structural steel design, reinforced concrete design, highway design, and computer applications. These classes are supplemented by laboratory experiences. Students—having regular access to state-of-the-art equipment, including micro-computers, survey programs, printers, plotters, micro-based CAD equipment, COGO survey programs, electronic distance measuring equipment, automatic levels and theodolites—were expected to produce calculations and reports that meet professional standards.

A minimum grade point average of 2.0 is required for graduation with an A.A.S. degree in civil engineering technology. Graduates of the program may continue toward a B.S. or B.S.T. degree at various universities or find employment with material testing and inspection firms; private and governmental engineering, design and surveying agencies; architectural firms; and contracting firms and construction material and equipment suppliers.

Accreditation

Accredited by the Engineering Technology Accreditation Commission of ABET (ETAC/ABET), http://www.abet.org

Special Admissions Requirements/Prerequisites

It is recommended that students have at least three years of high school mathematics and science, as well as basic drafting.

Students who are required to take remedial math and/or English courses will be scheduled for the pre-civil engineering technology sequence. Additional term(s) of coursework may be required in order to make up deficiencies.

Scholarship Opportunity

APWA - American Public Works Association
NYSETA – New York State Engineering Technology Association

Program Competencies

Upon graduating with an Associate in Applied Science degree in Civil Engineering Technology, the graduate will be able to:

• understand the ethical, professional and social responsibilities, including a respect for diversity, associated with the engineering technology field;
• perform, in a laboratory setting, the operating of technical equipment, analyzing experimental results and properly recording results;
• work as a member of a team on class engineering projects;
• recognize the need for life-long learning and continued education;
• design and analyze components of various civil engineering projects; and
• utilize modern survey methods for land measurement and/or construction layout.

CURRICULUM

Total Degree Credits: 65.0

Full-Time Students

Note: This is a recommended sequence. Student should consult his/her academic adviser prior to registering. To assure all prerequisites are completed for each successive semester, it is important that courses be taken in the proper order.

First Year, Fall Semester

CI 100 Application of Digital Computer (3 cr)
CI 110 Surveying I (3 cr)
CI 130 Engineering Mechanics (3 cr)
MT 122 Technical Mathematics II (4 cr) or
MT 126 College Mathematics II (4 cr)
PH 260 Technical Physics I (4 cr)
PH 261 Lab for PH 260 Credit Hours: (Included in the 4.0 Credit Hours for PH 260)

First Year, Spring Semester

CI 165 Surveying II (3 cr)
CI 175 Computer-Aided Drafting I (3 cr)
CI 185 Strength of Materials (3 cr)
MT 180 Pre-Calculus Mathematics (4 cr)
• Required Option (Student must enroll in one of the following required optional courses of Technical Physics II, Physical Geology or Engineering Problem Applications):

CO 295 Engineering Problem Applications (4 cr) or
GL 160 Physical Geology (4 cr) and
GL 161 Lab for GL 160 Credit Hours: (Included in the 4.0 Credit Hours for GL 160) or
PH 262 Technical Physics II (4 cr) and
PH 263 Lab for PH 262 Credit Hours: (Included in the 4.0 Credit Hours for PH 262)
### Second Year, Fall Semester
- CI 210 Materials Testing (3 cr)
- CI 220 Structural Steel Design (3 cr)
- CI 230 Soils and Foundations (3 cr)
- CI 240 Engineering Drafting (3 cr)
- EN 110 College Composition (3 cr)

### Second Year, Spring Semester
- CI 255 Highway Design (3 cr)
- CI 266 Contracts/Specifications/Estimating (3 cr)
- CI 285 Reinforced Concrete Design (3 cr)
- CI 295 Hydraulics & Hydrology (4 cr)

### Part-Time Students & Evening Students
*Note: This is a recommended sequence. Students should consult their academic advisers prior to registering. To assure all prerequisites are completed for each successive semester, it is important that courses be taken in the proper order.*

### Fall Semester (First Year)
- CI 100 Application of Digital Computer (3 cr)
- MT 122 Technical Mathematics II (4 cr) or
- MT 126 College Mathematics II (4 cr)

### Spring Semester (First Year)
- CI 110 Surveying I (3 cr)
- MT 180 Pre-Calculus Mathematics (4 cr)

### Fall Semester (Second Year)
- CI 165 Surveying II (3 cr)
- PH 260 Technical Physics I (4 cr)
- PH 261 Lab for PH 260 Credit Hours: (Included in the 4.0 Credit Hours for PH 260)

### Spring Semester (Second Year)
- CI 130 Engineering Mechanics (3 cr)
- CI 175 Computer-Aided Drafting I (3 cr)

### Fall Semester (Third Year)
- CI 185 Strength of Materials (3 cr)
- CI 255 Highway Design (3 cr)

### Spring Semester (Third Year)
- CI 210 Materials Testing (3 cr)
- CI 240 Engineering Drafting (3 cr)

### Second Year, Fall Semester
- CI 266 Contracts/Specifications/Estimating (3 cr)
- CI 285 Reinforced Concrete Design (3 cr)

### Spring Semester (Fourth Year)
- CI 220 Structural Steel Design (3 cr)
- EN 110 College Composition (3 cr)

### Fall Semester (Fifth Year)
- CI 295 - Hydraulics & Hydrology (4 cr)
- ______ Social Science Elective (3 cr)

### Spring Semester (Fifth Year)
- CI 230 - Soils and Foundations (3 cr)

- Requirement Option (Students must enroll in one of the following required optional courses of Technical Physics II, Physical Geology or Engineering Problem Applications):
  - CO 295 Engineering Problem Applications (4 cr) or
  - GL 160 Physical Geology (4 cr) and
  - GL 161 Lab for GL 160 Credit Hours: (Included in the 4.0 Credit Hours for GL 160) or
  - PH 262 Technical Physics II (4 cr) and
  - PH 263 Lab for PH 262 Credit Hours: (Included in the 4.0 Credit Hours for PH 262)