What is Civil Engineering?

Civil Engineering is a professional discipline focused on the planning, design, construction and operation of all infrastructures in the modern world. Civil Engineering encompasses several different engineering focuses, including structural design, land development, wastewater treatment, and transportation.

What do Civil Engineering Technicians do?

Civil engineering technicians work with civil engineers to design, plan and build residential communities, highways, bridges, dams, wastewater treatment systems, and other structures, as well as do related research and calculations. The technician's role can vary widely depending on the employer and the discipline. Some technician's estimate construction costs and specify materials to be used, while others may prepare drawings or perform land-surveying duties.

What qualities do I need to succeed in this field?

You should possess:

- An interest in construction methods and processes.
- The ability to pay attention to detail.
- The flexibility to adapt to new ideas and constantly changing technology.
- A creative mind.
- The ability to work well with others.
- An aptitude for mathematics.
- Enjoy the practical application of math and science.

Where can I get a job?

Graduates typically work in engineering or construction fields. They can find work with government agencies, departments of transportation, utility companies, engineering firms, land surveyors, construction companies and other multi-discipline design firms.

How much will I earn?

Civil Engineering Technology graduates can earn an estimated salary ranging from $28,000 - $50,000 per year. Salary estimates are dependent on the local job market and the prior work experience of graduates. Many graduates with work experience see their degree significantly increase their earning potential.

Delaware Technical & Community College Engineering Technologies Department

Civil Engineering Technology

Architectural Engineering Technology

Construction Management Technology

Computer-Aided Engineering Drafting & Design Technology

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Civil Engineering Technology

Delaware Technical & Community College
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What classes will I take?

Construction, Materials and Methods covers construction, materials, and methods of use related to the overall building industry, emphasizing soils, concrete, brick, masonry, steel, non-ferrous metals, timber and plastics.

Introduction to CAD using AutoCAD presents an introduction to the basic elements of computer-aided drafting.

Contracts and Specifications studies the interpretation and preparation of specifications and other contract documents.

Cost Estimating & Planning includes the preparation of material lists and take-off quantities of materials and labor costs from plans, working drawings and specifications.

Civil Drafting & Design covers drawing and design problems encountered in the civil engineering field.

Surveying Principles teaches theory and practice of plane surveying including the use of tapes, levels, transits and theodolites.

Principles of Site Development focuses on the fundamental concepts of site and subdivision planning.

Statics & Strength of Materials presents the fundamental principles of engineering mechanics including the analysis of force systems on rigid bodies in static equilibrium. Lab illustrates the physical properties of materials, the physical basis of stress and strain analysis and the techniques of materials testing using laboratory experiments.

Principles of Environmental Systems studies basic principles of fluid mechanics and their application in the design of civil engineering projects.

Principles of Geotechnical Engineering covers the application of principles of soil engineering including the study of physical and mechanical properties of soils.

Structural Design I and II introduces elastic design of structural steel framing members, working stress and ultimate strength design of reinforced concrete.

What will I learn in the Delaware Tech program?

The graduate will be able to:

1. Prepare steel, timber and concrete structural plans and details, topographic drawings, survey plans and highway plans and profiles from engineer's notes, preliminary layouts, application of appropriate design standards and technical references.

2. Perform routine structural design calculations required to size steel and timber beams, columns and decking materials and reinforced concrete beams, columns, slabs, foundation footings in accordance with AISC standards and ACI standards, including performance of material strength tests per ASTM destructive testing standards.

3. Interpret and apply referenced technical information and basic knowledge of highway design loads and specifications, bituminous and concrete pavements, earthwork calculations, drainage analysis, design of intersections and interchanges, untreated and stabilized road surfaces, bridges and roadbed standards.

4. Support construction office or construction administration activities with ability to read and interpret drawings and specifications, perform quantity surveys and organize cost data for cost estimating functions, prepare or check shop drawings, assist in the planning or coordinating of construction activities, use surveyor's instruments for laying out construction projects or assist surveyors and coordinate the preparation and review of bid packages.

5. Communicate in a clear and concise manner with peers and management, verbally and in writing, through the preparation of technical reports, effective inner-office and 10 business correspondence and contribute to the development of construction specifications and other written documents.

6. Provide routine calculations and apply references technical information to the solutions of basic problems related to physical water treatment processes, reservoirs, water distribution piping, pumps, dams, storm drainage and sewer system design and physical sewage treatment methods and disposal.

7. Collect, organize and analyze data for building site considerations including run-off analyses, subsurface soils classification and foundation recommendations, standard penetration tests, contour grades elevations, boundaries, etc., and prepare site plans for regulatory approval.

8. Demonstrate a professional attitude by working efficiently in close cooperation with others, being adaptable to changes in plans and giving proper credit for assistance received through outside resources.

What Degree will I earn?

You will earn an Associates Degree in Civil Engineering.

When would I graduate?

You can enroll in the Civil Engineering Technology Program on either a full-time or part-time basis.

The length of time required to complete an associate degree depends on the number of courses you take each semester, but many students can finish their degree in as little as two years.

How do I enroll?

1. Obtain an admission application by calling (302) 888-5288. Admission applications are also available online at www dtcc. edu/alUforms/. Complete and return the application to the Stanton campus with a $10 fee.

2. Request that your high school and/or college transcripts be sent to the Admissions Office.

3. Arrange to take the Computerized Placement Test (CPT) unless you have already completed college-level math and English courses with a "C" grade or better The CPT is administered by the Admissions Office (302) 454-3954 and is used to determine appropriate course placement.

4. Meet with a Delaware Tech counselor to discuss your CPT results and select your course schedule.

5. Remember to apply and register early for the best selection of courses.