

What is Computer-Aided Drafting (CAD)?

Computer-aided drafting is the use of graphics intensive computer software to help designers prepare drawings, specifications, parts lists, and other design-related elements for a wide variety of engineering and design fields. CAD is most commonly used in engineering fields such as architectural engineering, civil engineering, structural engineering, and building systems engineering, but the use of CAD software has steadily been growing into other non-engineering design fields such as interior design, graphic design and fashion design. Although the original purpose of CAD systems was to merely automate hand drafting, now most CAD systems are also used to create three-dimensional models and computer-simulated operation of the model.

What do CAD Technicians do?

People who work in the computer-aided drafting technology use computers to create two-dimensional and three-dimensional drawings that transform an engineer's ideas into reality. CAD technicians take the sketches of an engineer, architect or designer to create the technical drawings that are used to construct the machine, building or structure. CAD technicians also perform routine design calculations, organize data for cost estimating functions, and assist in the planning or coordinating of manufacturing activities.

Where can I get a job?

Graduates typically work in the mechanical, architectural, civil or construction fields. They can find work with government agencies, architectural firms, engineering firms and other multi-discipline design firms. Graduates qualify for drafter/technician positions in mechanical, architectural, structural or civil engineering environments.

How much will I earn?

Computer-Aided Engineering Drafting and Design 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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Computer-Aided Engineering Drafting & Design Technology



Delaware Technical & Community College
www.dtcc.edu

What will I learn in the Delaware Tech program?

You will learn to use several different Computer-aided design (CAD) software programs to prepare detailed construction and fabrication drawings for a multitude of engineering disciplines, including mechanical, architectural, structural and civil.

You will be able to:

1. Prepare detailed mechanical, machine, architectural, structural, HVAC, industrial piping electrical/electronics drawings for light commercial, manufacturing and industrial companies.
2. Perform routine structural design calculations required to size steel beams, columns and decking materials in accordance with AISC standards, and reinforced concrete slabs, foundation footings in accordance ACI standards. 11 3. Support manufacturing office administration activities with ability to read and interpret drawings and specifications, prepare technically accurate drawings using both manual and CAD techniques, perform quantity surveys and organize cost data for cost estimating functions, prepare or check shop drawings, assist in the planning or coordinating of manufacturing activities, assist designers and coordinate the preparation and review of bid packages.
4. 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 business correspondence and contribute to the development of manufacturing specifications and other written contract documents.
5. Provide meaningful and innovative assistance to supervising engineers or designers by developing layout design solutions to manufacturing problems, recommending alternate material substitutions or methods of production, and applying reference resources to collect, organize and analyze required research data.
6. Collect, organize, and analyze data for manufacturing machine parts, prepare plans for department/client approval.
7. 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 classes will I take?

Engineering Drafting & Design I and II introduces technical drafting from the fundamentals through advanced drafting practices.

Engineering Drafting & Design III includes advanced principles, techniques and applications of drafting technology required for the preparation of section drawings, detail and assembly drawings, welding drawings and developments.

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

Advanced CAD using AutoCAD emphasizes the more advanced computer-aided drawing and editing commands, symbols libraries, attributes, and basic three-dimensional drawing commands.

Engineering Drafting & Design (Piping/HVAC) provides instruction in the preparation of drawings and specifications for process piping systems with an introduction to the basic design of heating and air-conditioning systems.

Engineering Drafting & Design (Structural) introduces the students to the four types of structural drafting: structural steel, precast concrete, poured-in-place concrete, and structural wood.

Engineering Drafting & Design (Electrical) is a basic course designed to provide fundamental skills associated with electrical drawings for residential and commercial buildings.

Modern Manufacturing Techniques is a study of modern manufacturing techniques, including a discussion of hand tools, precision measuring tools, material identification and selection, identification and uses of machine tools/equipment.

Statics & Strength of Materials presents the fundamental principles of engineering mechanics including the analysis of force systems on rigid bodies in static equilibrium.

Solid Modeling allows the user to model mechanical design concepts in 3-D using the latest 3-D modeling software.

What Degree will I earn?

You will earn an Associates Degree in Computer Aided Engineering Drafting and Design.

When would I graduate?

You can enroll in the Computer-Aided Engineering Drafting and Design 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.

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.
- A good mathematics background.
- The ability to work well with others.

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.