

COMPUTER AIDED DESIGN TECHNOLOGY

CATI

Construction & Applied Technologies Institute

Frederick Community College



Program Contact:

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Computer Aided Design Technology

The Architectural Computer Aided Design (CAD) program provides students with a broad range of knowledge and skills required for success in a career as an architectural CAD drafter, designer, operator, or technician.

Computer Aided Design Technology Area of Concentration within the A.A.S. in STEM Technology

The Architectural Computer Aided Design Technology Area of Concentration within the A.A.S. in STEM Technology provides students with the necessary education to pursue employment as an architectural drafter/designer. Students will gain a broad range of knowledge and skills to qualify them for a career as an architectural CAD drafter, designer, operator, or technician.

At the completion of the program, students will be able to:

- Create two dimensional production and architectural drawings using basic AutoCAD commands. Print/plot to scale using model and layout space. Use layers to organize and separate information.
- Create pictorial views and three dimensional drawings. Create multiview drawings from 3D models.
- Describe and recognize the basic features and uses of additional CAD software systems, including AutoDesk Architecture, Revit, Civil 3D, and Micro station.
- Create architectural sketches, drawings, and models.
- Prepare house plans in AutoCAD and plot drawings in paper space.
- Describe the basic properties and uses of materials used in the construction process and evaluate appropriate methods of installation of construction materials. Illustrate the testing methods used to evaluate the performance and installation of construction materials.
- Create and revise civil drawings.

- Demonstrate proficiency in selected elective areas of CAD and construction.
- Demonstrate awareness of general education concepts—writing, math, science, social science, communications, and PE/health.

Computer Aided Design (Engineering) Technology Area of Concentration within the A.A.S. in STEM Technology

The Computer Aided Design (Engineering) Technology Area of Concentration within the A.A.S. in STEM Technology teaches a full array of industry standard design skills and technologies including Computer Aided Drafting and Solid Modeling, enabling students to assist and work with engineers and related professionals. This program prepares students to pursue paraprofessional positions in engineering industries.

At the completion of the program, students will be able to:

- Solve engineering problems with the use of CAD software and technology.
- Communicate the geometry of the motion of particles and plane motion of rigid bodies through the use of mechanical, architectural, and engineering focused technology.
- Create 3D parametric models from simple 2D drawings using methods such as revolving, lofting, and extruding.
- Create multiview drawings from 3D models. Create designs using various AutoCAD 3D modeling methods.
- Create and modify drawings in pictorial views and create and modify 3D drawings.



- Describe basic finite stress analyses and conduct simulations.
- Demonstrate the ability to calculate load and the effect of forces and interpret outcomes. Analyze compression and tensile forces within structural elements.
- Describe experimental design and evaluate evidence to develop hypotheses.
- Describe the basic concepts of force, mass and acceleration, work and energy, and impulse and momentum.
- Demonstrate the ability to use observational techniques to measure and collect data and to prepare moment and shear diagrams.

Computer Aided Design Operator Certificate

The Computer Aided Design Operator Certificate program is designed to help students develop skills and techniques used in drafting. Students learn to identify and solve various types of drafting problems and develop the skills required to obtain a position as a CAD technician.

Architectural Computer Aided Design Certificate

The Architectural Computer Aided Design Certificate program is designed to help students develop skills and techniques used in drafting. CAD drafters prepare blueprints and technical drawings for use by engineers, architects, and construction companies. Students learn to identify and solve various types of drafting problems and develop the skills required for success in a career as an architectural CAD drafter, designer, operator, or technician.

Growth Potential

The median annual wage for architecture and engineering occupations was \$79,840 in May 2021. Employment of architecture and engineering occupations is projected to grow six percent from 2020 to 2030.

(Source: Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook)

Financial Assistance

Frederick Community College (FCC) provides a tuition payment plan for students who wish to spread payment over several months. Scholarship and loan assistance is available for eligible students. In addition to general scholarships and loans, the following scholarships are available to CAD technology students:

- Joseph C. Rodgers Scholarship Fund (Engineering, CAD, Construction Management, or Arts and Sciences)

For complete scholarship information, contact Financial Aid at 301.846.2620.

Transfer Note

Students can transfer the equivalent of 60 credits to any four-year institution in Maryland. To find more information about how credits will transfer from FCC to a state four-year institution visit artsys.usmd.edu or contact Career & Academic Planning Services at 301.846.2471.

FCC has an articulation agreement with the University of Maryland University College, allowing students a seamless transfer experience. Students who plan to transfer should speak with an advisor or program manager from their chosen transfer institution before selecting elective courses.

View required course listings: frederick.edu/CAD

For more information:

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Frederick Community College makes every effort to accommodate individuals with disabilities for College-sponsored events and programs. If you have accommodation needs or questions, please call 301.846.2408. To request a sign language interpreter or if you have questions related to interpreting services, please email interpreting@frederick.edu or call 301.846.2408. Sign language interpreters will not be automatically provided for College-sponsored events without a request for services. To guarantee accommodations, requests must be made at least five workdays in advance of a scheduled event. • If your request pertains to accessible transportation for a College-sponsored trip, please submit your request at least 21 calendar days in advance. Requests made less than 21 calendar days in advance may not be able to be guaranteed.