

# Mechanical Engineering Technology



## What is the Mechanical Engineering Technology Program?

The Mechanical Engineering Technology (MET) Program is designed to prepare students to enter the mechanical design, manufacturing, and computer-aided design (CAD) industries. The curriculum provides a blend of drafting skills and technical knowledge, as well as academic preparation facilitating students' transfer to an applied engineering technology/manufacturing baccalaureate degree program or job entry into an engineering environment. The major provides lecture and laboratory courses for application-based study in engineering technology. With the adequate math, English, and science preparation for design and engineering applications after graduation, students in the MET program will have all the skills necessary to function as a contributing member of an engineering team. Core courses include Mechanics, Strength of Materials, Machine Design, CNC fundamentals, and CAD, respectively.

## What type of students excel in this program?

Students who excel in mechanical engineering technology typically have critical thinking skills, enjoy hands on activities, work well in groups, and exhibit some proficiency in mathematics.

## What types of jobs do mechanical engineering technicians perform?

Mechanical engineers or engineering technicians work in many industries, and their work varies by industry and function. The mechanical engineering technician is able to apply current knowledge and practices to solve specific technical problems. Technicians may specialize in energy systems, applied mechanics, automotive design, manufacturing, materials, construction, geospatial information systems, plant engineering and maintenance, pressure vessels and piping, and heating, refrigeration and air-conditioning systems. Mechanical engineering is a broad engineering discipline, so graduates have a wide range of career options from which to choose. Graduates of this program find employment as CAD drafters/designers, CNC operators, manufacturing engineering technicians, plant engineer assistants, mechanical test technicians, and sales engineers. To learn more about mechanical engineering careers, visit [www.bls.gov/ooh/architecture-and-engineering/mechanical-engineering-technicians.htm](http://www.bls.gov/ooh/architecture-and-engineering/mechanical-engineering-technicians.htm)



## What is the employment outlook for this career?

Mechanical engineers are involved in the production of a wide range of products, and continued efforts to improve those products will create continued demand for their services. In addition, some new job opportunities will be created through the effects of emerging technologies in biotechnology, materials science, and nanotechnology.

Additional opportunities outside of mechanical engineering will exist because the skills acquired through earning a degree in mechanical engineering often can be applied in other engineering specialties. Increases in overall construction activity stemming from U.S. population growth and the related need to improve the nation's infrastructure should spur demand for drafters trained in architectural and civil design. Increasingly complex design problems associated with new products and manufacturing processes will increase the demand for mechanical drafters and electronic and electrical drafters (source: [www.bls.gov/ooh](http://www.bls.gov/ooh)).

## Why should I come to HCC?

HCC offers the latest technology, software, and lab equipment to give students a competitive edge in a constantly changing environment. Students will learn mechanical design theory as well as applied hands-on problem-solving

## PROGRAM OPTIONS

- A.A.S. Degree, Mechanical Engineering Technology
- A.A.S. Degree, Computer-Aided Design Concentration
- Certificate, Computer-Aided Design
- Letter of Recognition, Computer-Aided Design

## CAREER OUTLOOK

| MEDIAN SALARY  | EMPLOYMENT                                    |
|--|---|
| <b>\$65K</b><br>for Mechanical Engineering Technicians | <br>40,400 jobs in U.S.<br>540 employed in MD |

(source: [www.bls.gov/ooh](http://www.bls.gov/ooh))

skills. Students earning the A.A.S. degree will complete an internship with a local engineering or manufacturing company where they will gain valuable on-the-job experience. Throughout the program, students develop a CAD portfolio containing industry standard drawings in order to professionally display what they have accomplished at HCC.

## What are the program options?

Students can earn an associate of applied science in MET or an associate of applied science in MET with an option in CAD. The MET: CAD option is particularly beneficial for the in-service technical person who wishes to upgrade job skills or apply a degree toward a new position. Students may also earn a certificate or letter of recognition in CAD. Students who are preparing for a career in construction, architecture, geo-spatial technologies, manufacturing, and other industries requiring computer-aided drafting and design skills may benefit from earning this certificate. The sequence of courses required for the letter of recognition is for students who need basic computer and drawing skills in computer-aided design. Credits earned in the sequence can be applied toward a CAD certificate and associate degree program.

## Mechanical Engineering Technology

This program gives students the opportunity to develop skills in mechanical design theory. Lecture and laboratory courses provide an application-based study in engineering technology. Students obtain the scientific, engineering, and technical skills necessary to function as a contributing member of the engineering team.

**General Education Requirements 23-24 credits**  
See current college catalog for general education requirements. The catalog is available online at [www.hagerstowncc.edu/academics/catalogs](http://www.hagerstowncc.edu/academics/catalogs).

|                             |  |
|-----------------------------|--|
| <b>Program Requirements</b> | <b>27 credits</b>                            |
| CAD 152                     | Computer-Aided Design..... 3                 |
| CAD 153                     | Computer-Aided Drafting ..... 3              |
| CAD 228                     | CAD: Solid Modeling ..... 3                  |
| COM 108                     | Intro to Human Communication ..... 3         |
| EGT 101                     | Foundations of Engineering Technology..... 2 |
| EGT 136                     | Mechanics ..... 3                            |
| EGT 231                     | Strength of Materials..... 3                 |
| EGT 234                     | Machine Design ..... 4                       |
| EGT 235                     | Fluid Power..... 3                           |

**Restricted Electives 6-7 credits**  
Electives should be selected in consultation with an advisor to satisfy career goals or a transfer college curriculum.

|         |   |
|---------|---|
| EGT 150 | Introduction to CNC Programming.... 3   |
| EGT 250 | Advanced CNC ..... 3                    |
| EGT 269 | Internship I..... 1-3                   |
| ELE 110 | Fundamentals of Electricity..... 4      |
| ELE 130 | Introduction to Unmanned Systems..... 3 |
| ELE 203 | PLC Applications ..... 3                |
| INT 102 | Introduction to PLCs ..... 3            |
| INT 120 | Introduction to OSHA..... 1             |
| MAT 160 | Precalculus I ..... 3                   |

(EGT 150, ELE 110, or INT 102 are recommended)

**Free Electives 2-4 credits**  
Electives should be selected in consultation with an advisor to satisfy career goals or a transfer college curriculum.

|         |   |
|---------|---|
| AET 102 | Introduction to Alternative Energy .. 3                     |
| CHM 103 | General Chemistry I ..... 4                                 |
| CSC 102 | Introduction to Information Technology..... 3               |
| CSC 130 | Introduction to Scripting Fundamentals Using Python ..... 3 |
| CSC 132 | Introduction to C and C++ Programming ..... 3               |
| EGT 150 | Introduction to CNC Programming.... 3                       |
| ELE 110 | Fundamentals of Electricity..... 4                          |
| ELE 113 | Instrumentation and Process Control I... 3                  |

**Degree Requirement ..... 60**

## Computer-Aided Design Concentration, Mechanical Engineering Technology

This program gives students the opportunity to develop skills in computer-aided design (CAD). Lecture and laboratory courses provide an application-based study in engineering technology. Students obtain the scientific, engineering, and technical skills necessary to function as a contributing member of the engineering team. Articulation agreements exist with Washington County Public Schools, Fulton County Area Vocational Technical School, and Greencastle-Antrim High School for high school students to earn credit and/or dual-enroll in the program. The program is particularly beneficial for the in-service technical person who wishes to upgrade job skills or apply a degree toward a new position.

**General Education Requirements 19-20 credits**  
See current college catalog for general education requirements. The catalog is available online at [www.hagerstowncc.edu/academics/catalogs](http://www.hagerstowncc.edu/academics/catalogs).

|                             |   |
|-----------------------------|---|
| <b>Program Requirements</b> | <b>26 credits</b>                             |
| CAD 152                     | Computer-Aided Design ..... 3                 |
| CAD 153                     | Computer-Aided Drafting ..... 3               |
| COM 108                     | Intro to Human Communication ..... 3          |
| CSC 102                     | Introduction to Information Technology..... 3 |
| EGT 101                     | Foundations of Engineering Technology..... 2  |
| EGT 136                     | Mechanics ..... 3                             |
| EGT 231                     | Strength and Materials..... 3                 |

**Select one pathway:**  
*Architectural Pathway*  
CAD 226 CAD: Architectural..... 3  
CAD 230 BIM for Commercial Architecture... 3  
*Mechanical Pathway*  
CAD 228 CAD: Solid Modeling..... 3  
EGT 150 Introduction to CNC Programming..... 3

**Restricted Electives 14-15 credits**  
Electives should be selected in consultation with an advisor to satisfy career goals or a transfer college curriculum. Select elective credits from the following list:

|          |   |
|----------|---|
| CAD 226* | CAD: Architectural..... 3               |
| CAD 228* | CAD: Solid Modeling ..... 3             |
| CAD 230* | BIM for Commercial Architecture... 3    |
| CAD 269  | Internship..... 1-3                     |
| EGT 150* | Introduction to CNC Programming .... 3  |
| EGT 234  | Machine Design ..... 4                  |
| EGT 235  | Fluid Power..... 3                      |
| EGT 250  | Advanced CNC ..... 3                    |
| ELE 110  | Fundamentals of Electricity..... 4      |
| ELE 130  | Introduction to Unmanned Systems..... 3 |
| INT 120  | Introduction to OSHA..... 1             |
| MAT 160  | Precalculus I ..... 3                   |

\* if not taken as a Program Requirement course

**Degree Requirement..... 60**

## Computer-Aided Design

This certificate is for students who are preparing for a career in construction, architecture, geo-spatial technologies, manufacturing, and other industries requiring computer-aided drafting and design skills.

|                             |                                 |
|-----------------------------|---------------------------------|
| <b>Program Requirements</b> | <b>12 credits</b>               |
| CAD 152                     | Computer-Aided Design..... 3    |
| CAD 153                     | Computer-Aided Drafting ..... 3 |

**Select one pathway:**  
*Architectural Pathway*  
CAD 226 CAD: Architectural..... 3  
CAD 230 BIM for Commercial Architecture... 3

|                           |   |
|---------------------------|---|
| <i>Mechanical Pathway</i> |   |
| CAD 228                   | CAD: Solid Modeling ..... 3             |
| EGT 150                   | Introduction to CNC Programming ..... 3 |

**Free Electives 6 credits**

**Electives should be selected in consultation with an advisor.**

|         |   |
|---------|---|
| CSC 102 | Introduction to Information Technology..... 3 |
| ENG 112 | Technical Writing I ..... 3                   |
| ENT 101 | Introduction to Entrepreneurship ... 3        |
| GDT 112 | Computer Graphics..... 3                      |
| INT 120 | Introduction to OSHA ..... 1                  |
| IST 101 | Basic Keyboarding..... 1                      |
| STU 106 | Professionalism in the Workplace.... 1        |

**Certificate Requirement ..... 18**

*Letter of Recognition*

## Computer-Aided Design

This sequence of courses is for students who need basic computer and drawing skills and entry-level skills in computer-aided design. Credits earned in the sequence can be applied toward a CAD certificate and associate degree program.

|                             |   |
|-----------------------------|---|
| <b>Program Requirements</b> | <b>9 credits</b>                              |
| CAD 152                     | Computer-Aided Design..... 3                  |
| CSC 102                     | Introduction to Information Technology..... 3 |
| GDT 112                     | Computer Graphics..... 3                      |

**Letter of Recognition Requirement..... 9**

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