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 courses.

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.

What is the employment outlook for this career?
Mechanical engineers are expected to have employment growth of six percent through the year 2018, according to the U.S. Bureau of Labor Statistics. 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. Employment of CAD drafters is expected to grow by four percent through the year 2018. Architectural and civil drafting is expected to be the fastest growing specialty. 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).

What do mechanical engineering technicians earn?
Earnings vary depending on experience, education, geographical location, and specialization. In 2010, for example, the national average annual wage for mechanical engineering technicians was over $51,000, with the top ten percent earning over $73,000. Interns in this field typically earn about 50 percent of the wage rate paid to experienced workers. As workers gain experience and improve their skills, they receive periodic increases until they reach the wage rate of experienced workers (source: 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 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 drawings that meet industry standards and professionally display what they have accomplished at HCC.

For more information about HCC graduation rates, the median debt of students who completed the program, and other important information, visit www.hagerstowncc.edu/met.

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.

A.A.S. Degree
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 Green castle-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  26 credits
See current college catalog for general education requirements. The catalog is available online at www.hagerstowncc.edu/academics/catalogs.

Program Requirements  21 credits
CAD 152  Computer-Aided Design I  (3)
CAD 153  Computer-Aided Drafting I  (3)
EGT 101  Computerized Spreadsheets for Engineers  (3)
EGT 136  Mechanics  (3)
EGT 231  Strength of Materials  (3)
EGT 234  Machine Design  (3)
EGT 235  Fluid Power  (3)

Restricted Electives  10-11 credits
Electives should be selected in consultation with an advisor to satisfy career goals or a transfer college curriculum.

A.S. Degree
Mechanical Engineering Technology Option in Computer-Aided Design

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 Green castle-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  22 credits
See current college catalog for general education requirements. The catalog is available online at www.hagerstowncc.edu/academics/catalogs.

Program Requirements  20 credits
CAD 152  Computer-Aided Design  (3)
CAD 153  Computer-Aided Drafting  (3)
CAD 226  CAD: Architectural  (3)
EGT 228  CAD: Solid Modeling  (3)
EGT 101  Computerized Spreadsheets for Engineers  (3)
EGT 136  Mechanics  (3)
EGT 231  Strength and Materials  (3)
GDT 112  Computer Graphics  (3)

Restricted Electives  18 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:

A.S. Degree
Mechanical Engineering Technology Option in Computer-Aided Design

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 Green castle-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  22 credits
See current college catalog for general education requirements. The catalog is available online at www.hagerstowncc.edu/academics/catalogs.

Program Requirements  20 credits
CAD 152  Computer-Aided Design  (3)
CAD 153  Computer-Aided Drafting  (3)
CAD 226  CAD: Architectural  (3)
EGT 228  CAD: Solid Modeling  (3)
EGT 101  Computerized Spreadsheets for Engineers  (3)
EGT 136  Mechanics  (3)
EGT 231  Strength and Materials  (3)
GDT 112  Computer Graphics  (3)

Restricted Electives  18 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 269  Internship  (3)
EGR 103  Introduction to Engineering  (3)
EGT 150  Introduction to CNC Programming  (3)
EGT 234  Machine Design  (4)
EGT 235  Fluid Power  (3)
INT 101  Introduction to Industrial Technology  (3)
INT 102  Introduction to PLCS  (3)
INT 104  Facilities Safety and Compliance  (3)
INT 107  Heating, Ventilation, Air Conditioning and Refrigeration (HVAC/R)  (3)
INT 110  Fundamentals of Electricity  (4)
IST 102  Introduction to Information Technology  (3)

Certificate
Mechanical Engineering Technology 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.

Program Requirements  18 credits
CAD 152  Computer-Aided Design I  (3)
CAD 153  Computer-Aided Drafting I  (3)
CAD 226  CAD: Architectural  (3)
OR
CAD 228  CAD: Solid Modeling  (3)
EGT 150  Introduction to CNC Programming  (3)
ENG 101  English Composition  (3)
MAT 114  Introduction to Applied Algebra  (3)

Suggested Electives  6 credits
ENG 112  Technical Writing I  (3)
GDT 112  Computer Graphics  (3)
IST 102  Introduction to Information Technology  (3)

Certificate Requirement  24 credits

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.

Program Requirements  9 credits
CAD 152  Computer-Aided Design I  (3)
GDT 112  Computer Graphics  (3)
IST 102  Introduction to Information Technology  (3)

Letter of Recognition Requirement  9 credits

Contact Information:
Adam Bridendolph
Instructor, Mechanical Engineering Technology
240-500-2676
acbridendolph@hagerstowncc.edu

Recommended Professional Organizations:
The American Institute of Architects (AIA): www.ai.org
American Institute of Building Design (AIBD): www.aibd.org
American Society of Mechanical Engineers (ASME): www.asme.org
County Engineers Association of Maryland (CEAM): www.countyengineers-md.org
National Society of Black Engineers (NSBE): www.nsbe.org
Society of Manufacturing Engineers (SME): www.sme.org
The Society of Women Engineers (SWE): www.swe.org