



What is the Alternative Energy Technology Program?

The Alternative Energy Technology (AET) Program is designed to prepare students to enter the industrial, commercial, or residential setting in the growing areas of renewable energy, while at the same time providing students with technical, critical thinking, and customer service skills desired by a variety of other industries as well.

In the AET Program, students can earn progressive levels of certificates that can be applied toward employment or advanced degrees. Although the AET Program teaches solar, wind, and geothermal technologies, students learn such skills as electrical theory and applications, heating ventilation and air conditioning, pumps and motors, and plumbing, with a special emphasis on servicing alternative energy components.

The program features classroom instruction, as well as real-world, hands-on laboratory experiences that will include experiments in solar, wind, geothermal, and fuel cell technology. The use of meters, gauges, and computer software is also included to assist



students in achieving an advanced knowledge of measurements and calculations.

What types of jobs do AET technicians perform?

The field of alternative energy technology one of the fastest growing fields today and as installations continue to expand, opportunities for service and maintenance of these systems will be in high demand. Students who complete this program can work as solar, wind, and geothermal installers, technicians, and system designers, electricians, HVAC technicians, plumbers, and instrumentation or maintenance technicians.

What do AET technicians earn?

Earnings vary depending on experience, education, geographical location, and specialization such as renewable energy electrician or geothermal HVAC technician. In 2010, for example, the average annual salary was \$48,250 for electricians, with the top 10 percent earning \$80,890 per year. The median annual wage for HVAC workers in 2010 was \$42,530, with the top 10 percent earning \$66,930 annually. Apprentices in both of these fields 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).

What makes HCC's program special?

HCC's AET Program is the only degree program of its kind in the tri-state region. Not only does HCC provide theory and installation training, but the College offers service and maintenance skills training to give its students a broad knowledge base that will afford them greater opportunities for further learning and advancement at both the professional and academic level.

Students completing the degree program will gain the necessary knowledge needed to enter the workforce and perform jobs such as installing, monitoring, and servicing alternative energy components in photovoltaic systems, solar thermal systems, or small wind turbines.

Within two semesters at HCC, students can earn credentials that are recognized by The North American Board of Certified Energy

Practitioners (NABCEP), The American Wind Energy Association (AWCA), and The International Ground Source Heat Pump Association (IGSHPA).

In addition, HCC's brand new 65,000 square-foot Science, Technology, Engineering and Math (STEM) building features the latest, most advanced technologies in this rapidly growing field. Students have access to real-world installation practices and monitoring through the use of green and solar, wind, and geothermal energy components.

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

What are the program options?

Students can earn an associate of applied science in alternative energy technology. Students can also earn a certificate in solar/wind energy installation and service and/or geothermal energy installation and service.

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A.A.S. Degree

Alternative Energy Technology

General Education Requirements 21-22 credits

* See current college catalog for general education requirements. The catalog is available online at www.hagerstowncc.edu/academics/catalogs.

Program Requirements 36 credits

AET 101	Applied Mathematics for Technology..	1
AET 102	Introduction to Alternative Energy	3
AET 104	Geothermal Installation.....	3
AET 106	Photovoltaic Installation	3
AET 108	Wind Energy Installation	3
BUS 145	Customer Service.....	1
INT 101	Introduction to Industrial Technology.....	3
INT 104	Facilities Safety and Compliance	3
INT 105	Plumbing and Pipefitting.....	3
INT 107	Heating, Ventilation, Air Conditioning and Refrigeration (HVAC/R).....	3
INT 110	Fundamentals of Electricity	4
INT 111	Pump & Motor Operation and Maintenance.....	3
INT 113	Instrumentation and Process Control I.....	3

Restricted Electives 3 credits

AET 240	Capstone Project	(3)
AET 269	AET Internship I	(3)
AET 270	AET Internship II	(3)
CAD 152	Computer-Aided Design I	(3)
IST 102	Introduction to Information Technology.....	(3)
IST 106	Spreadsheet Software Excel.....	(3)

Degree Requirements 60

Certificate

Alternative Energy Technology Solar/Wind Energy Installation and Service

Students completing this program will have the skills to enter an entry-level or apprentice-level position in the field of photovoltaic and wind turbine installation and service.

Program Requirements 18 credits

AET 101	Applied Mathematics for Technology..	1
AET 102	Introduction to Alternative Energy	3
AET 106	Photovoltaic Installation	3
AET 108	Wind Energy Installation.....	3
BUS 145	Customer Service.....	1
INT 104	Facilities Safety and Compliance	3
INT 110	Fundamentals of Electricity	4

Restricted Electives 4 credits

AET 240	Capstone Project	(1)
AET 269	Internship	(3)
CAD 152	Computer-Aided Design I	(3)
IST 102	Introduction to Information Technology.....	(3)

Certificate Requirements 22

Certificate

Alternative Energy Technology Geothermal Energy Installation and Service

Students completing this program will have the skills to enter an entry-level or apprentice-level position in the field of geothermal installation and service.

Program Requirements 21 credits

AET 101	Applied Mathematics for Technology..	1
AET 102	Introduction to Alternative Energy	3
AET 104	Geothermal Installation.....	3
BUS 145	Customer Service.....	1
INT 104	Facilities Safety and Compliance	3
INT 105	Plumbing and Pipefitting.....	3
INT 107	Heating, Ventilation, Air Conditioning and Refrigeration (HVAC/R).....	3
INT 110	Fundamentals of Electricity	4

Restricted Electives 4 credits

AET 240	Capstone Project	(1)
AET 269	Internship	(3)
CAD 152	Computer-Aided Design I	(3)
IST 102	Introduction to Information Technology.....	(3)

Certificate Requirement 25

To enter the Alternative Energy Technology Program, adequate math and English skills must be proven. Students must test out of MAT 98, MAT 99, ENG 98, and IST 100 or complete these courses prior to their first semester of study. To schedule a placement test, visit the Academic Testing Center online at www.hagerstowncc.edu/testing-tutoring/academic-testing-center.

The chart below offers guidance in planning for the certificate programs. For additional program options, contact the Academic Advisement Office at 240-500-2240 or by emailing advise@hagerstowncc.edu.

Recommended program sequence

First Semester	Second Semester	Third Semester
Solar/Wind Energy Installation and Service Certificate		
AET 101 Problem Solving for AET AET 102 Introduction to Alternative Energy INT 110 Fundamentals of Electricity 11 credits	AET 106 Photovoltaic Installation AET 108 Wind Energy Installation INT 104 Facilities Safety and Compliance BUS 145 Customer Service 10 credits	AET 269 Internship or AET 240 Capstone Project 1-3 credits
Geothermal Energy Installation and Service Certificate		
AET 102 Introduction to Alternative Energy INT 110 Fundamentals of Electricity INT 107 Heating, Ventilation, Air Conditioning and Refrigeration (HVAC/R) AET 101 Applied Mathematics for Technology INT 105 Plumbing and Pipefitting 17 credits	AET 104 Geothermal Installation INT 104 Facilities Safety and Compliance BUS 145 Customer Service 7 credits	AET 269 Internship or AET 240 Capstone Project 1-3 credits