



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 2018, for example, the average annual salary was \$55,190 for electricians, with the top 10 percent earning \$94,620 per year. The median annual wage for HVAC workers in 2018 was \$47,610, with the top 10 percent earning \$76,230 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).

Additionally, HCC's brand new 3,000 squarefoot, Energy Trades and Training Center (ETTC) 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.

Important information about the educational debt, earnings, and completion rates of students who attended these programs can be viewed at www.hagerstowncc.edu/gepd

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

ADM 258	Advanced Motors, Machines, and Devices.....	3
AET 101	Applied Mathematics for Technology I	1
AET 102	Introduction to Alternative Energy ...	3
AET 104	Geo-Thermal Installation.....	3
AET 106	Photovoltaic Installation	3
AET 108	Wind Energy Installation	3
BUS 145	Customer Service.....	1
ELE 110	Fundamentals of Electricity	4
ELE 113	Instrumentation and Process Control I.....	3
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

Restricted Electives 2-3 credits

AET 240	AET Capstone Project	(1)
AET 269	Internship I	(1-3)
AET 270	Internship II	(1-3)
CAD 152	Computer-Aided Design	(3)
CSC 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 I	1
AET 102	Introduction to Alternative Energy ...	3
AET 106	Photovoltaic Installation	3
AET 108	Wind Energy Installation.....	3
BUS 145	Customer Service.....	1
ELE 110	Fundamentals of Electricity	4
INT 104	Facilities Safety and Compliance	3

Restricted Electives 4 credits

AET 240	AET Capstone Project	(1)
AET 269	Internship I	(1-3)
CAD 152	Computer-Aided Design	(3)
CSC 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 I	1
AET 102	Introduction to Alternative Energy ...	3
AET 104	Geo-Thermal Installation.....	3
BUS 145	Customer Service.....	1
ELE 110	Fundamentals of Electricity	4
INT 104	Facilities Safety and Compliance	3
INT 105	Plumbing and Pipefitting.....	3
INT 107	Heating, Ventilation, Air Conditioning and Refrigeration (HVAC/R).....	3

Restricted Electives 4 credits

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

Certificate Requirement 25

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	Applied Mathematics for Technology	AET 106	Photovoltaic Installation	AET 108	Wind Energy Installation
AET 102	Introduction to Alternative Energy	BUS 145	Customer Service	AET 240	AET Capstone Project
ELE 110	Fundamentals of Electricity	INT 104	Facilities Safety and Compliance	AET 269	Internship I
8 credits		7 credits		7 credits	
Geothermal Energy Installation and Service Certificate					
AET 102	Introduction to Alternative Energy	AET 104	Geothermal Installation	AET 240	AET Capstone Project
ELE 110	Fundamentals of Electricity	INT 104	Facilities Safety and Compliance	AET 269	Internship I
INT 107	Heating, Ventilation, Air Conditioning and Refrigeration (HVAC/R)	BUS 145	Customer Service		
AET 101	Applied Mathematics for Technology				
INT 105	Plumbing and Pipefitting				
14 credits		7 credits		4 credits	