

Hagerstown Community College
OFFICIAL MASTER SYLLABUS DOCUMENT

COURSE: AET-106, Photovoltaic Installation

Credits: 3

INSTRUCTOR: Greg Betz

SEMESTER/YEAR: Fall 2018

COURSE DESCRIPTION:

AET 106 will introduce students to the skills necessary to enter into the field of photovoltaic (PV) solar installations. Students will learn the principles behind PV system design and operation, will learn how to perform site evaluations, and will learn how to specify system components. By the completion of this course, students should be able to install, startup, and test simple residential photovoltaic systems. Students will also be instructed on how to trouble-shoot and repair common photovoltaic system faults and errors. Hands-on activities are included. **Prerequisites:** AET 101, AET 102, INT 110

TEXTBOOKS REQUIRED:

Photovoltaic Systems (Third Edition), James P. Dunlop author American Technical Publishers, Inc. ISBN 978-1-935941-05-7

STUDENT LEARNING OUTCOMES

Objectives:

Upon successful completion of this course, students should be able, at entry level, to:

- Explain photovoltaic principles.
- Describe how a solar photovoltaic system works.
- Identify system components and their roles.
- Specify the correct system components for different applications.
- Size Battery Banks based upon load requirements.
- Determine best location of a solar panel and array.
- Name photovoltaic system electrical components and describe the function.
- Properly size system conductors based upon ampacity and voltage drop.
- Install a simple grid-tied photovoltaic system.
- Collect data and analyze the information.
- Startup and trouble-shoot typical photovoltaic system.
- Explain safe work practices.
- Communicate effectively with others in the field.
- Explain current and future career opportunities in the solar energy field.

Total Hours of Coursework:

To earn one academic credit at HCC, students are required to complete a minimum of 37.5 clock hours (45 fifty-minute “academic” hours) of coursework per semester. Those hours of coursework may be completed through a combination of hours within the classroom and hours outside the classroom. Certain courses may require more than the 37.5 minimum hours of coursework per credit. For most classes, students should expect to do at least 2 hours of coursework outside of class for each hour of in-class coursework.

Assignment/Assessment	Clock Hours
In-class Instruction	45
Textbook Chapter Readings	15 hours
Study of Manuals for Hands-on	15 hours
Chapter Review Questions and Answers	15 hours
Research Assignments	15 hours
Exam Preparation	20 hours
	Total hours=125 hours

Services for Students with Disabilities: Students may receive reasonable accommodations if they have a diagnosed disability and present appropriate documentation. Students seeking accommodations are required to contact the Disability Support Services (DSS) office as early as possible. Students may contact a DSS staff member for an appointment at dss@hagerstowncc.edu or at 240-500-2530