

**Hagerstown Community College**  
**OFFICIAL MASTER SYLLABUS DOCUMENT**

**Course:** AET 102 Introduction to Alternative Energy

**Credits:** 3

**INSTRUCTOR:**

**SEMESTER/YEAR:** Fall 2017

**Course Description:**

This class will introduce students to the various types of Alternative and Renewable Energy available in today's global market. Students will learn the basics about different energy types such as solar, wind, bio fuel, solar thermal, geo thermal, magnetism, pressure and mechanical energy. Hands-on labs include miniature Wind Turbine Operation, Solar Energy Collection, and Hydro-fuel Vehicle operation. Three credits.

**Required Texts:**

Alternative Energy Trainee Guide NCCER First Edition ISBN-13: 9780132666251  
ISBN-10: 0132666251 Prentice Hall

**Class Methods:**

The class will be taught using lecture, discussion, laboratory projects, research assignments and group activities.

**STUDENT LEARNING OUTCOMES**

**Objectives:**

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

- Describe the importance of energy efficiency and the global benefits
- Define the different types of energy sources and principles surrounding them.
- Describe how solar photovoltaic systems work.
- Describe how solar thermal systems work.
- Identify components and explain how basic solar energy systems work.
- Describe how wind energy systems work.
- Identify components and explain how basic wind energy systems work.
- Describe the best location for the installation of wind and solar systems.
- Explain the principles of fuel cells.

**Credit Hours Explained**

**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.

<b>Assignment/Assessment</b>	<b>Clock Hours</b>
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
	<b>Total hours=125 hours</b>

**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](mailto:dss@hagerstowncc.edu) or at 240-500-2530.