

Course Syllabus

RNEW-1500 - Principles of Hydrogen Fuel Cell Technology

4.00 credits

Course Fee: \$50.00

Prerequisite: None

RNEW-1500 analyzes and evaluates hydrogen fuel cell technology. Topics include hydrogen safety, storage, production, codes, regulations, and standards associated with hydrogen. This course also discusses the history of fuel cells, current applications, future use, fuel cell structures, operations, and classifications. Hands-on activities are included. (4 contact hrs) South Campus.

Macomb Community College
Official Course Syllabus

Outcomes and Objectives

OUTCOME 1: Upon completion of the course, students will be able to describe hydrogen safety, storage, and production.

OBJECTIVES:

- A. Explain the properties of hydrogen.
- B. Describe the safety precautions in handling hydrogen.
- C. Describe the different ways to produce hydrogen.
- D. List the different types of hydrogen storage.

OUTCOME 2: Upon completion of the course, students will be able to identify codes, regulations, and standards associated with hydrogen.

OBJECTIVES:

- A. Compare and contrast hydrogen and conventional fuels.
- B. Describe the state codes, standards, and regulations.
- C. Describe the national codes, standards, and regulations.
- D. Describe the international codes, standards, and regulations.
- E. Describe codes, standards, and regulations in progress.

OUTCOME 3: Upon completion of the course, students will be able to explain the operation of a fuel cell.

OBJECTIVES:

- A. Describe the importance of fuel cell technology.
- B. Define terms and components related to fuel cells.
- C. Explain fuel cell operation.
- D. Describe electrical components and ratings for fuel cells.
- E. Explain the past, present, and future state of fuel cells.
- F. Describe state and national government initiatives for fuel cells.
- G. Compare and contrast the different types of fuel cells.
- H. List examples of fuel cell applications.

Course Assessments

A Pre-test/Post-test will be administered.

Course Content Outline

<i>Week</i>	<i>Topic</i>	
1.	Hydrogen safety	
2.	Hydrogen production	
3.	Hydrogen storage	Test #1
4.	Hydrogen comparison to conventional fuels	
5.	Hydrogen state codes, standards, and regulations	
6.	Hydrogen national codes, standards, and regulations	
7.	Hydrogen international codes, standards, and regulations	
8.	Review and Midterm	Test #2
9.	Fuel cell relevance and definition	
10.	Fuel cell operation	
11.	Electrical components and ratings for fuel cells	
12.	History of fuel cells	Test #3
13.	State and national government initiatives	
14.	Fuel cell types	
15.	Fuel cell applications	
16.	Review & Final Exam	Test #4

Department Contacts

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04/07/09