

COCONINO COMMUNITY COLLEGE
COURSE OUTLINE

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Status: Permanent
Effective: Fall 2015

November 17, 1999
February 4, 2002
March 4, 2004
February 4, 2015

A. Identification:

1. Subject Area: Construction Technology Management (CTM)
2. Course Number: 236
3. Course Title: Photovoltaics and Wind Power
4. Credit Hrs: 3
5. Course Description: This course will define the design and installation of photovoltaic and wind power systems. Emphasis will be placed on electrical safety and operation of trade tools and equipment and job site safety. Topics covered: Photovoltaic and wind power system plans, safety, electrical materials and fittings, solar cell panel and wind generator wiring techniques, battery systems, inverters and charge controllers. Prerequisite: CTM 150. Three lecture.

B. Course Goals:

The student will apply knowledge gained to design, install, maintain and repair various PV and wind power generation systems and fixtures in actual hands-on applications on training practice modules that is very close to real world installation situations.

C. Course Outcomes: Students will::

1. assess the Alternate Energy trade as a professional career path;
2. interpret Power generation plans for a typical residential installation;
3. determine the proper systems materials to use for a variety of installation scenarios;
4. identify and describe a great variety of PV and wind power parts;
5. design basic residential PV and wind power supply systems;
6. and install PV and wind power supply systems with electrical devices in a training module under instructor supervision in teams and then individually for competency scores.

D. Course Outcomes Assessment will include:

1. quizzes;
2. test;
3. and final design project.

E. Course Content will include:

1. introduction to PV and Wind power equipment;
2. safe operation of power tools;
3. PV and wind power plans;
4. PV and wind power materials for various applications;
5. PV and wind power fittings identification;
6. PV and wind power systems;
7. wiring techniques of various materials;
8. PV and wind power systems, sizing and installation;
9. and PV and wind power installation practices.