

COURSE SYLLABUS

DIVISION: Workforce Services

Revised: January 2015

CURRICULUM IN WHICH COURSE IS TAUGHT: Non-Curricula

COURSE NUMBER: ENE 110 – Solar Power Installations

CREDITS: 4

HOURS WEEK LECTURE: 3

HOURS WEEK LAB: 3

LECTURE/LAB COMBINATION: 6

I. CATALOG DESCRIPTION

Covers wiring, control, conversion, and ties to established power systems. Studies use of invertors, batteries, and charging systems. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week. 4 credits

II. RELATIONSHIP OF THE CORSE TO CURRICULUM OBJECTIVES IN WHICH IT IS TAUGHT:

To provide an introduction and instruction in solar power installations

III. REQUIRED BACKGROUND: None required

IV. COURSE OUTLINE:

- Introduction
- Solar Radiation
- AC/DC Power points and Lab Exercise
- Site Surveys and Preplanning
- System Components and Configurations
- Cells, Modules and Arrays
- Batteries
- Charge Controllers
- Inverters
- System Sizing
- Mechanical Integration
- Electrical Integration
- Utility Interconnection
- Permitting and Inspection
- Commissioning, Maintenance, and Troubleshooting
- Economic Analysis

V. LEARNER OUTCOMES:

VI. EVALUATION:

<p>Upon completion of the course, students have an understanding of</p> <ul style="list-style-type: none"> • Trainer Familiarization & Safety • Energy Fundamentals • Solar Module • Array Fabrication 	<p>Tests, quizzes, and class participation will be considered in determination of the grade as well as Lab Exercises</p>
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The course supports the following objectives:

DCC Educational Objectives

1. Communication
2. Critical Thinking
3. Interpersonal Skills and Human Relations
4. Computational and Computer Skills
5. Understanding Culture and Society