COURSE INFORMATION FORM

DISCIPLINE INTE

COURSE TITLE Solar Photovoltaic Site Assessment

CR.HR. 3  LECT HR. 2  LAB HR. 2  CLIN/INTERN HR. 0  CLOCK HR. 0

CATALOG DESCRIPTION

This course covers how to perform a PV (photovoltaic) site assessment to determine whether a potential location for a solar PV array is suitable for maximum energy production. The array size will be calculated for the desired energy needs. Students will use common industry tools to determine load requirements, energy efficiency recommendations, options for placement of a PV array and resources to determine financial incentives.

PREREQUISITES

INTE 185

EXPECTED STUDENT OUTCOMES IN THE COURSE (ESO)

Upon completion of this course, the student will be able to:

1. Demonstrate the ability to use site assessment tools.
2. Calculate the size of a PV system.
3. Recommend a PV system type to meet a home or business owner’s goals.
4. Identify and recommend steps for energy efficiency.
5. Perform a load analysis.
6. Identify and recommend array placement options.
7. Quantify solar resources for selected sites.
8. Estimate the general cost a PV system installation.
9. Write a PV site assessment proposal.
10. Demonstrate the use of web based performance calculators.
11. Identify installer and equipment vendor information needed to complete installation.
GENERAL EDUCATION OUTCOMES (ESO)
Specify which general education outcomes, if any, are substantially addressed by the course. Numbers in parentheses identify the Expected Student Outcomes linked to the specific General Education Outcome.

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>ESO</th>
</tr>
</thead>
</table>

CAREER AND TECHNICAL EDUCATION PROGRAM OUTCOMES
Specify which Career and Technical program outcomes, if any, are substantially addressed by the course by completing the “Career and Technical Education template” to show the relationship between course and program outcomes to assessment measures.

1. Students will demonstrate the ability to apply foundational skills in an industrial setting, safely and to industry guidelines.
2. Students will think critically and apply problem-solving skills
3. The program will graduate individuals who exhibit competence in the entry-level skills of technical profession in Industrial technology.
4. The program will graduate individuals who exhibit competence in the entry-level skills of technical profession in solar photovoltaic system installation, integration and technical sales.

CLASS-LEVEL ASSESSMENT MEASURES
Student accomplishment of expected student outcomes may be assessed using the following measures. (Identify which measures are used to assess which outcomes.)

1. Written assignments (1 – 11)
2. Quizzes and exams (1-11)
Individual instructors may order this outline as fits the needs of their individual courses. In addition, they may place more emphasis on some areas than on others. What is assured is that this particular list is covered in the course. Other topics may be added to a course as the instructor sees fit, and as time and interest allow. An *asterisk can be used to mark an item as optional.

I. Introduction and Site Assessor Definition
   A. Site Assessment Definition
   B. Site Assessor’s Toolkit
   C. Client Interaction
   D. Client Pre-screening
   E. Site Assessment Template Overview

II. Load Analysis and Energy Efficiency
   A. Analyze customer utility bill and rate structures
   B. Identify excessive loads and replacement options
   C. Documentation in Template

III. Site Profile and Array Location
   A. Fall protection, electrical shock hazards, and OSHA Guidelines
   B. Structural Integration Considerations
   C. Site Layout Diagram
   D. Aerial Photograph
   E. Documentation in Template

IV. Balance of System Location
   A. Existing Electrical Infrastructure
   B. Illustration of Balance of System
   C. Electrical Integration Considerations

V. Solar Access and the Solar Window
   A. Solar Window Overview
   B. Site Assessment Tools
   C. Shade Analysis

VI. System Description
   A. PV basics to communicate in template
   B. System sizing calculations and production estimate
   C. System Recommendations
   D. System Description
VII. Financial Analysis

A. Financial Terminology Overview
B. Cost Factors
C. Cost Estimation Methods
D. Financial Incentives
E. Cost Modeling Methods and Tools
F. Financial Summary