

Clackamas Community College
Online Course/Outline Submission System

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Section #1 General Course Information

Department: Manufacturing

Submitter

First Name: **Abe**
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Course Prefix and Number: RET - 215

Credits: 3

Contact hours

Lecture (# of hours):
Lec/lab (# of hours): 66
Lab (# of hours):
Total course hours: 66

For each credit, the student will be expected to spend, on average, 3 hours per week in combination of in-class and out-of-class activity.

Course Title: Renewable Energy IV: Systems Design

Course Description:

This fourth course in the series will concentrate on systems design for renewable energy applications. Students will work together and apply concepts to evaluate, design and select one or more renewable energy systems for solar, wind or micro-hydro installations. Topics will include site surveys, structural elements, electrical generators, energy storage and electrical inversion.

Type of Course: Career Technical Preparatory

Is this class challengeable?

Yes

Can this course be repeated for credit in a degree?

No

Is general education certification being sought at this time?

No

Does this course map to any general education outcome(s)?

No

Is this course part of an AAS or related certificate of completion?

Yes

Name of degree(s) and/or certificate(s): Manufacturing AAS

Are there prerequisites to this course?

Yes

Pre-reqs: RET-213

Have you consulted with the appropriate chair if the pre-req is in another program?

No

Are there corequisites to this course?

No

Are there any requirements or recommendations for students taken this course?

No

Are there similar courses existing in other programs or disciplines at CCC?

No

Will this class use library resources?

Yes

Have you talked with a librarian regarding that impact?

No

Is there any other potential impact on another department?

No

Does this course belong on the Related Instruction list?

No

GRADING METHOD:

A-F or Pass/No Pass

Audit: Yes

When do you plan to offer this course?

- Summer
- Fall
- Winter**
- Spring
- Not every term
- Not every year

Is this course equivalent to another?

If yes, they must have the same description and outcomes.

No

Will this course appear in the college catalog?

Yes

Will this course appear in the schedule?

Yes

Student Learning Outcomes:

Upon successful completion of this course, students should be able to:

1. demonstrate and explain a site survey;
2. explain the elements of selecting renewable and/or green practices for a particular site;
3. design the various elements of a renewable energy system;
4. manage a project from design to implementation.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Design Application.
 - a. Site Survey –GIS/ Mapping
2. Selecting the renewable energy system type for the location and customer needs
 - a. Tools and methods for evaluating cost/benefit ratio
3. Designing the system
 - a. Structural – designing the foundation/supporting structure
 - b. Conversion – Selecting and designing conversion system configuration
 - c. Inverter – selecting the inverter system
 - d. Connection – designing the electrical circuit
 - e. Storage – selecting & designing the storage system
 - f. Control – selecting & designing the control system
 - g. Monitoring –selecting & designing the monitoring system

Does the content of this class relate to job skills in any of the following areas:

- | | |
|--------------------------------------|-----------|
| 1. Increased energy efficiency | No |
| 2. Produce renewable energy | No |
| 3. Prevent environmental degradation | No |

- | | |
|---------------------------------|-----------|
| 4. Clean up natural environment | No |
| 5. Supports green services | No |

Percent of course: 0%

First term to be offered:

Next available term after approval
:
