

**Clackamas Community College**

## Online Course/Outline Submission System

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**Section #1 General Course Information****Department:** Energy and Utility Resource Management**Submitter**

First Name: Shelly

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**Course Prefix and Number:** UG - 113**# Credits:** 5**Contact hours**

Lecture (# of hours): 55

Lec/lab (# of hours):

Lab (# of hours):

Total course hours: 55

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:** Hydro-Generation: Electric Theory III**Course Description:**

This course will instruct students on the theory and operation of generators, motors, circuit breakers, other electrical equipment and safe work practices.

**Type of Course:** Career Technical Preparatory

Is this class challengeable?

**No**

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):** Generation Technologies AAS Degree, Hydro-Generation Operator One Year Certificate and Hydro-Generation Pathway Certificate

Are there prerequisites to this course?

**Yes**

**Pre-reqs:** UG-112 Hydro-Generation: Electric Theory II

**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 Only

**Audit: No**

When do you plan to offer this course?

✓ **Not every term**

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?

**No**

Will this course appear in the schedule?

**No**

**Student Learning Outcomes:**

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

1. explain the theory and operation of electric generators, motors and circuit breakers as it applies to hydro plant operations;
2. describe the different types of motors and the best application for each,
3. identify and describe electrical protection system,
4. practice principles of safety.

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***This course does not include assessable General Education outcomes.***

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**Major Topic Outline:**

1. Generators.
2. Motor theory and operation.
3. Electrical protection systems.
4. Principles of safety.

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

- |                                      |           |
|--------------------------------------|-----------|
| 1. Increased energy efficiency       | <b>No</b> |
| 2. Produce renewable energy          | <b>No</b> |
| 3. Prevent environmental degradation | <b>No</b> |
| 4. Clean up natural environment      | <b>No</b> |

5. Supports green services **No**

Percent of course: 0%

First term to be offered:

**Next available term after approval**

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