

## Clackamas Community College

### Online Course/Outline Submission System

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#### Section #1 General Course Information

**Department:** Apprenticeship

**Submitter**

First Name: Shelly

Last Name: Tracy

Phone: 0945

Email: shellyt

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**Course Prefix and Number:** APR - 222UG

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**# 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.

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**Course Title:** Hydro-Generation: Operations II

**Course Description:**

Second of three courses designed to instruct third year students on the performance of hydro plant and power generation systems, power dispatch and operations, water systems and components, substations, power transmission systems, and safe work practices.

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**Type of Course:** Career Technical Apprenticeship

Can this course be repeated for credit in a degree?

**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):** Electrician Apprenticeship Technology AAS

Are there prerequisites to this course?

**Yes**

**Pre-reqs:** MTH-095 or instructor consent

**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?

**Yes**

**Recommendations:** Take 200 level UG classes in sequence, but not required.

**Requirements:** MTH-095 or successful completion of the POSS test.

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**

✓ **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?

**No**

Will this course appear in the schedule?

**No**

Student Learning Outcomes:

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

1. summarize principles of the hydro role in the power system,
2. explain the principles of power dispatch and operations,
3. explain the principles of water systems and components,
4. identify hydro plant auxiliary systems,
5. describe the principles of hydrology and dams,
6. apply principles of headwork's and reservoir control,
7. cite the principles of water transport,
8. explain power transmission systems,
9. explain the function of hydraulics.

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

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Major Topic Outline:

1. Water control systems and components.
2. Reservoir control.
3. Hydraulics.
4. Hydrology and dams.
5. Pump operations.
6. Hydro plant auxiliary systems.

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 **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**

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