

Clackamas Community College

Online Course/Outline Submission System

Show changes since last approval in red

Print

Edit

Delete

Back

Reject

Publish

Section #1 General Course Information

Department: Energy and Utility Resource Management

Submitter

First Name: Shelly

Last Name: Tracy

Phone: 0945

Email: shellyt

Course Prefix and Number: UG - 121

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: Fundamentals I

Course Description:

This is the first of three courses designed to instruct second year students on the physics and mechanical concepts of hydro power plant systems. This includes mechanical theory concepts, principles of fluid dynamics, turbine operation, and hydro power plant theory and design.

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-113 Hydro-Generation Electric Theory III

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. describe the major components and systems in a hydro power plant,
2. work word problems in velocity and acceleration,
3. explain the difference between mass and weight,
4. calculate area, volume and densities;
5. conduct calculations involving measurement and units/conversion,
6. explain the concepts of force and motion,
7. explain the concepts of circular motion,
8. explain and calculate work, energy and power.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Hydro plant's components and systems.
2. Physics and math concepts.
 - a. units and measurements
 - b. velocity and acceleration
 - c. mass and weight
 - d. areas, volumes and densities
 - e. concept of forces and motion

f. work, energy and power

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

:
