Clackamas Community College

Online Course/Outline Submission System

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Section #1 General Course Information

Department: Engineering Science

Submitter

First Name: Jim
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Course Prefix and Number:WET - 131L

 # Credits:0

Contact hours

Lecture (# of hours):
Lec/lab (# of hours):
Lab (# of hours): 33
Total course hours: 33

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: Water Treatment Lab

Course Description:

Design, operation and process control of water treatment plants. Includes water chemistry, related math, coagulation, sedimentation, filtration and disinfection procedures. Review for Oregon Operator certification exams. No lab requirement for this course. Lab includes field trips to local water treatment facilities.

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): Water Quality AAS

Are there prerequisites to this course?

Yes

Pre-reqs: Pass WET-121

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?

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?

✓ **Spring**

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. describe the type of treatment that is normally required to various types of source water,
2. explain the drinking water standards required by the federal SDWA Amendment,
3. describe the processes involved in coagulation and flocculation,
4. describe the filtration process and the distinctive properties of the various types of filters,
5. explain the basics of water chemistry and the normal chemical make-up of surface and ground water in the northwest,
6. describe the variety of methods available for the treatment and removal of problem materials in water such as iron, sulfides, etc.;
7. perform standard water treatment calculations similar to those on advanced water certification exams.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Unique physical and chemical characteristics of water. Introduction to water alkalinity and hardness.
2. Chemical characteristics of groundwater and surface water.
3. Understanding the carbonate cycle and the interaction of the pH of natural water bodies.
4. Introduction to water chemical stability: corrosion and scale.
5. Review of water chemical dosage problems and the normality equation.
6. Overview of conventional water treatment technology.
7. Introduction to coagulation chemistry.
8. Coagulation control methods used in the water industry.
9. Introduction to filter techniques used in the water industry.
10. Rapid sand filtration operation and troubleshooting.

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
: