

Clackamas Community College

Online Course/Outline Submission System

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APR-118UW Substation Operator Overview

General education certified: Yes No

Writing

Oral Communication

Arts and Letters

Science & Computer Science

Mathematics

Social Science

Cultural Literacy

Health & Physical Education

Approved Date (mm/dd/yyyy): / /

Section #1 General Course Information

Department: Apprenticeship

Submitter

First Name: Shelly

Last Name: Tracy

Phone: 0945

Email: shellyt

Course Prefix and Number: APR - 118UW

Credits: 2

Contact hours

Lecture (# of hours):

Lec/lab (# of hours): 40

Lab (# of hours):

Total course hours: 40

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: Substation Operator Overview

Course Description:

Wire apprentices will experience the daily duties of Substation Operators and their responsibilities related to other working groups, relay reports, substation inspections, System Control Instructions and substation equipment maintenance.

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 Technologies AAS

Are there prerequisites to this course?

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 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 how substations operate through multiple work groups,
2. explain relay reports and what they mean,
3. recognize one-line symbols,
4. describe what an inspection of a substation entails,
5. explain switching – highline, ties, moving distribution loads;
6. identify why it is important that system control instructions must be written,
7. recognize close ties and capacitors and state their functions,
8. explain the function of transfer stations,
9. name sectionalizing motors, circuit switches/breakers and their use;
10. identify what a dead station is and what can cause them,
11. distinguish what Motor Operators do, both load and non-load and all duty-combinations;
12. recognize substation equipment and identify what is at hand,
13. read a transformer name plate,
14. explain load shifting,
15. name what the alarms are and describe what they mean,
16. recognize gas breakers (high – low).

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Operate through multiple work groups.
2. Relay reports and what they mean.
3. One-Line symbols.
4. What an inspection of a substation entails.

5. Switching – highline, ties, moving distribution loads.
6. System control instructions – must be written.
7. Close ties, understand their function and know how capacitors function.
8. Transfer stations.
9. Sectionalizing motors, circuit switches/breakers.
10. What a dead station is and what can cause them.
11. Motor Operators – Load and non-load, all duty-combination.
12. Substation equipment and what is at hand.
13. Transformer name plate.
14. Cut sheet and load shifting.
15. Alarms are and what they mean.
16. Gas breakers (high – low).

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

:
