

Clackamas Community College
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Section #1 General Course Information

Department:Apprenticeship

Submitter

First Name: Shelly

Last Name: Tracy

Phone: 0945

Email: shellyt

Course Prefix and Number:APR - 231UL

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:Outside Electrical Advanced Theory I

Course Description:

Instruct third year, first term apprentices on outside electrical apprenticeship training as it applies to distribution circuits and capacitors, inductance, AC theory, transformers single and three phase voltages and connections, troubleshooting and testing, personal protective grounding, National Electric Safety Code (NESC) standards, and safe work practices.

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?

Yes

Recommendations:None

Requirements:Second-year outside electrical theory

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:No

When do you plan to offer this course?

✓ Fall

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. name the types of circuits used for distribution,
2. explain the function of capacitors,
3. explain inductive reactance and capacitive reactance,
4. apply A/C theory to tasks in the field,
5. identify and explain the individual characteristics of instrument transformers and special transformers (buck and boost),
6. implement troubleshooting techniques and testing of line equipment (transformers and insulators) including three phase transformer banks,
7. name the 12 types of personal protective grounding applications,
8. adhere to the requirements set forth by the National Electric Safety Code for safe work practices.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Distribution circuits and capacitors.
2. Inductance.
3. AC theory terms and definitions.
4. Transformers.
5. Troubleshooting.
6. Personal protective grounding.
7. National Electric Safety Code standards.

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

:
