

Clackamas Community College

Online Course/Outline Submission System

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Section #1 General Course Information**Department:**Appenticeship**Submitter**

First Name: Shelly

Last Name: Tracy

Phone: 0945

Email: shellyt

Course Prefix and Number:APR - 145IE**# Credits:**3**Contact hours**

Lecture (# of hours): 36

Lec/lab (# of hours):

Lab (# of hours):

Total course hours: 36

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:Grounding & Bonding**Course Description:**

Discusses what grounding is and its proper terms. It also discusses why effective grounding is needed and how effective grounding can be made a part of the electrical system.

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 and CC

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. identify various faults and the stresses caused,
2. explain the purpose of a grounding electrode system and how to size the conductor,
3. explain why systems and circuits are grounded,
4. calculate the minimum size grounded conductor and main bond jumper,
5. demonstrate how to size and bond equipment and enclosures,
6. identify a separately derived system and its grounding requirements,
7. explain the requirements regarding grounding two or more buildings.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Orientation, grounding Article 250.
2. Grounding, safety and the electrode system.
3. Faults, grounding electrode systems(GES).
4. Installing grounding electrode system.
5. Grounded conductor.
6. Equipment grounding conductor, equipment and enclosure bonding.
7. Equipment and enclosure grounding.
8. Separately derived systems, grounding and bonding
9. Two or more buildings, grounding and bonding
10. Bonding: main bonding jumper, supply side bonding jumper, bonding versus grounding.

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

:
