

Clackamas Community College

Online Course/Outline Submission System

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Section #1 General Course Information

Department: Apprenticeship

Submitter

First Name: Shelly

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Course Prefix and Number: APR - 112UM

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: Metering: Basics II

Course Description:

This course is designed to further first-year apprentice training by building on the concepts of electrical trade theory and introducing students to the aspects of substation safety. Apprentices will have the opportunity to use analog or digital meters to measure voltage, current, and resistance in DC circuits. Fundamentals of substation safety will be explored including responsibilities, personal protective equipment, fall protection, grounding and electrical hazard awareness.

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?

Yes

Pre-reqs: Successful completion of APR-111UM Metering Basic I

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?

✓ **Winter**

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. combine math skills with DC theory to solve problems involving series and parallel electrical circuits,
2. measure current in series and parallel circuits using either analog or digital meters,
3. combine math skills and electrical knowledge to solve distribution system problems,
4. explain the differences in electrical conductors as determined by their properties and by ambient conditions,
5. identify the function and use of various electrical measurement and testing devices,
6. explain electrical hazards,
7. describe safety resources and safety devices used by electrical workers.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Applying Kirchhoff's voltage and current laws.
2. Combination DC circuit analysis.
3. Line drops in electrical distribution systems.
4. Special DC resistive circuits, delta-wye, voltage dividers, current dividers, attenuators electrical efficiency.
5. Conductor properties, resistance of wire.

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:

Specify term: Winter 2015
