

**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 - 111UM**# 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 I**Course Description:**

In this course students will examine first-year apprentice responsibilities including job conduct, absenteeism, sexual harassment, drug use and safety. Also, students will begin the first step of electrical trade theory by reviewing math concepts including percentages, scientific notation, metric prefixes, ratios and proportions, and equations. As the lessons progress, electrical topics such as current, voltage, resistance, Ohm's Law, power, and DC series and parallel circuits will be introduced.

**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):**Electrical Apprenticeship AAS

Are there prerequisites to this course?

**Yes**

**Pre-reqs:**Successful completion APR-110UM

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 Only

**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. explain their academic responsibilities as an apprentice in this program,
2. summarize and demonstrate an understanding of the terms and conditions of their Apprenticeship Agreement,
3. solve math problems involving percentages, scientific notation, metric prefixes, ratios and proportions, and simple algebraic equations;
4. demonstrate skills in developing algebraic equations and formulas to solve word problems,
5. explain the fundamentals of electricity including current, voltage, resistance, and power;
6. cite specific electrical hazards,
7. describe safety codes and safety devices used by electrical workers,
8. use Ohm's Law to solve unknown values in an electrical DC series and parallel circuits,
9. use Kirchhoff's Laws to solve unknown values in electrical circuits.

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***This course does not include assessable General Education outcomes.***

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**Major Topic Outline:**

1. Understanding your apprenticeship and responsibilities.
2. Introduction to OSHA/1910.269.
3. Safety first, awareness of hazards specific to the job.
4. Math applications: percentages, solving equations, ratios and proportions, working with powers of 10 and metric prefixes.
5. Electrical energy sources and electrical devices.
6. Conductors, conductor resistance, and wattage loss.
7. Kirchhoff's Law.
8. Calculating resistance in DC series circuits.
9. Principles of magnetism.

**Does the content of this class relate to job skills in any of the following areas:**

- |                                      |           |
|--------------------------------------|-----------|
| 1. Increased energy efficiency       | <b>No</b> |
| 2. Produce renewable energy          | <b>No</b> |
| 3. Prevent environmental degradation | <b>No</b> |
| 4. Clean up natural environment      | <b>No</b> |
| 5. Supports green services           | <b>No</b> |

Percent of course:0%

**First term to be offered:**

**Specify term:** Fall 2014

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