

**Clackamas Community College**

## Online Course/Outline Submission System

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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 - 185IE**# 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:**Electrical Systems**Course Description:**

This course will illustrate different electrical systems from branch circuits and feeders to electrical services. The National Electrical Code (NEC) NFPA 70 requirements for equipment will also be covered in this course.

**Type of Course:**Career Technical Apprenticeship**Reason for the new course:**

To replace retired course for program

**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. explain how to properly employ the National Electric Code,
2. explain the difference between branch circuits and feeders,
3. explain the different aspects of electrical services,
4. identify proper conductor size and overcurrent protection,
5. explain the difference between ground fault and short circuit and their effects on electrical systems,
6. explain the various electrical wiring methods,
7. identify the different equipment for general use and the NEC requirements for each.

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

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Major Topic Outline:

1. Using the NEC.
2. Branch circuits and feeders.
3. Electrical services.
4. Conductors and overcurrent protection.
5. Wiring methods and requirements.
6. Wire materials—raceways and boxes.
7. Wire materials—switchgear and panel boards.
8. Equipment for general use.

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:

**Next available term after approval**

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