

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 - 155IE**# 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:Motors & Transformers**Course Description:**

Covers basic generator, AC and DC motor and transformer construction and theory, as well as calculations involving motors and transformers. Practical use of the NEC 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):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 different types of motors,
2. properly size motor circuits and motor over current protection,
3. demonstrate the ability to properly hook up and operate a magnetic starter with a stop-start station,
4. demonstrate the ability to properly size and protect transformer windings,
5. explain emergency, standby, and legally required standby circuitry;
6. use the national electric code to properly install motor and generator and transformers.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Orientation, Generator Theory.
2. Generator Code per NEC.
3. Transformer Theory.
4. Transformer Code per NEC.
5. Midterm.
6. Motor Theory.
7. Overcurrent and locked rotor per NEC.
8. Motor overload protection, motor branch circuit calculations.
9. Control circuits and connecting of simple controls.

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

:
