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 - 165IE

 # 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: AC Theory

Course Description:

Understand AC Theory, Basic Trigonometry and vectors. Understand inductance in AC circuits and resistance-inductive series and parallel circuits. AC circuits containing capacitors.

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?

Yes

Pre-reqs:APR-125IE

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?

✓ 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. apply Pythagorean theorem,
2. demonstrate the ability to use sine, cosine and tangents to solve problems;
3. evaluate the advantages of AC,
4. define the skin effect in AC circuits,
5. estimate inductive reactance in AC circuits,
6. explain current wattage in an AC circuit,
7. discuss capacitors and how they affect AC circuit,
8. explain power factor,
9. illustrate voltage drop in an AC circuit.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Pythagorean Theorem.
2. sine, cosine and tangents.
3. AC waveforms.
4. AC resistive loads.
5. Inductive reactance.
6. Voltage and current relationship in inductive circuits.
7. Impedance.
8. Voltage drop across resistors.
9. Capacitors.

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
: