

Clackamas Community College

Online Course/Outline Submission System

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Section #1 General Course Information

Department: Manufacturing

Submitter

First Name: **Dan**

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Email: **dant**

Course Prefix and Number: MFG - 132

Credits: 3

Contact hours

Lecture (# of hours): 33

Lec/lab (# of hours):

Lab (# of hours):

Total course hours: 33

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: Basic Electricity III

Course Description:

This course offers continued study in the control of industrial electric motors. Concepts in the application of relays, motor starters, switches and overload protection are explored from both a practical and theoretical viewpoint. Wiring techniques and electrical devices for residential, commercial and industrial facilities are presented along with hands on activities. Additional topics include: electrical conductors, installation materials, and the scope of work performed by licensed electricians.

Type of Course: Career Technical Preparatory

Is this class challengeable?

Yes

Can this course be repeated for credit in a degree?

No

Is general education certification being sought at this time?

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): Manufacturing Programs

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?

Yes

Recommendations: Completion of MFG-130 and MFG-131

Requirements: None

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 or Pass/No Pass

Audit: Yes

When do you plan to offer this course?

✓ **Spring**

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?

Yes

Will this course appear in the schedule?

Yes

Student Learning Outcomes:

Upon successful completion of this course, students should be able to:

1. Build common relay circuits for industrial controls including latching and motor starter circuits.
2. Interpret relay ladder logic diagrams to determine circuit function.
3. Select and apply conductors for proper current and environmental conditions.
4. Analyze circuits to predict and prevent overloading and overheating.
5. Perform proper wiring and termination for lighting and utility electrical supply circuits.
6. Describe the scope of work performed by licensed electricians under Oregon law.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Electromagnetic relays
2. Conductor selection
3. Overload protection
4. Relay ladder logic
5. Motor starters
6. Receptacles and switches
7. Circuit analysis
8. Oregon electrical regulation and licensure

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

:
