

**Clackamas Community College**  
Online Course/Outline Submission System

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**Section #1 General Course Information****Department:** Energy & Utility Resource Management**Submitter**

First Name: Shelly  
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Phone: 0945  
Email: shellyt

**Course Prefix and Number:** UT - 102**# Credits:** 1**Contact hours**

Lecture (# of hours): 10  
Lec/lab (# of hours):  
Lab (# of hours):  
Total course hours: 10

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 Fundamentals**Course Description:**

This course was designed to help students develop an understanding of basic electricity and utility systems; from electromagnetism, generation, transmission, distribution and finally to its end use in homes and at work. It is for utility employees with little or no previous knowledge of electricity. It covers basic electricity fundamentals in a fun non technical way, incorporating group processes, hand-on activities, and problem solving exercises, videos and slides.

**Type of Course:** Career Technical Supplementary

Can this course be repeated for credit in a degree?

**No**

What is the target audience/industry for this class?

PGE employees.

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?

**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?

**✓ 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. calculate the cost of running any piece of customer equipment,
2. understand transformer theory,
3. explain the fundamentals of transformer theory,
4. explain utility generation, distribution and transmission systems;
5. name PGEs generation plans and options (including renewable energy),
6. explain power formulas of single phase and three phase,
7. describe the power factor, demand charges and other customer concerns;
8. identify energy efficiency opportunities and calculate savings.

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

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**Major Topic Outline:**

1. Basic electrical theory and fundamentals.
2. Calculate energy costs for running different types of equipment.
3. Identify energy efficiency opportunities and calculate savings.
4. Utility generation, distribution and transmission systems.
5. Transformer theory and fundamentals.
6. Power formulas of single phase and three phase.
7. Generation future plans and options (including renewable energy).
8. Power factor, demand charges and other customer concerns.

**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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