

# ELE 101 - INTRODUCTION TO ELECTRICAL

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## Course Description

This course will introduce the electrical student and/or the apprentice electrician to the electrical field through exploring basic electrical concepts. The student will explore career options in the electrical trade and learn about and practice OSHA construction and electrical safety rules, electrical theory, basic electrical circuits, test equipment, and the National Electrical Code. Group 2 course.

## Credit Hours

3

## Contact Hours

4

## Lecture Hours

2

## Lab Hours

2

## Required Prerequisites

CMT 100, may be taken concurrently

## Recommended Prerequisites or Skills Competencies

Placement in MTH 111 or higher, or co-enrollment in the appropriate developmental Math course, and placement into ENG 11/111 or higher or co-enrollment in the appropriate developmental English course

## Course Learning Outcomes

### Knowledge:

- Describe the differences between the types of electricians and the work they do, and understand the State of Michigan Electrical Administrative Laws.
- Explain atomic theory, the laws of charges, and the importance of electrons.
- Explain the theory and use of magnetism.

### Application:

- Identify and practice OSHA Construction and Electrical safety rules.
- Measure electrical values using test equipment.
- Identify and calculate series, parallel and combination circuits.

### Integration:

- Connect the relationship of volts, ohms, amps, and watts using Ohm's law.
- Correlate circuit formulas, rules, and electrical math principles.
- Identify and install basic electrical circuits.

### Human Dimension:

- Take responsibility for completing work in a neat and proficient manner.

### Caring - Civic Learning:

- Recognize the unseen power behind everything we use.
- Commit to the safety and wellbeing of everyone on the job site and the end user.
- Value the importance of electricity and the electrical field to daily life.

### Learning How to Learn:

- Construct knowledge about the use of logic in electrical studies.
- Reflect on their ability to use the National Electric Code, the State of Michigan Electrical Administrative Laws and OSHA Construction and Electrical safety rules effectively.