

# ELE 147 - ADVANCED ELECTRICAL STUDIES II

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## Course Description

This course will introduce the advanced electrical student and/or the apprentice electrician to new residential and commercial electrical concepts and reinforce concepts and skills learned in previous courses. Concepts include advanced controls, HVAC controls, heat tracing and freeze protection, motor operation and maintenance, medium-voltage terminations/splices, special locations, and fundamentals of crew leadership. Participants will also apply code rules from the National Electrical Code. Completion of this course will result in a Level 4 National Center for Construction Education Research Credential. Group 2 course.

## Credit Hours

3

## Contact Hours

4

## Lecture Hours

2

## Lab Hours

2

## Required Prerequisites

ELE 144

## Course Learning Outcomes

### Knowledge:

- Identify advanced motor and HVAC controls.
- Define motor operation and maintenance standards.
- Recognize heat tracing and freeze protection techniques.

### Application:

- Evaluate a medium-voltage termination demonstration.

### Integration:

- Implement various solutions for crew leadership scenarios.

### Human Dimension:

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

### Caring - Civic Learning:

- 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.