

Department:

Electrical Technology

Course Description:

This course will focus on basic direct current theory. The course will cover electron theory and Ohm's law and how they apply to direct current circuits. The course will also introduce series circuits and their equations, parallel circuits and their equations, and combination circuits and their equations.

Course Competencies:

Upon completion of the course, the student should be able to:

1. Explain the concept of electron movement and the nature of electricity.
2. Apply Ohm's law as it pertains to direct current circuits.
3. Calculate and solve direct current series circuit problems.
4. Calculate and solve direct current parallel circuit problems.
5. Calculate and solve direct current series-parallel circuit problems.

Course Content:

- A. Unit 1: Matter and Atomic theory
- B. Unit 2: Electron theory
- C. Unit 3: Magnetism
- D. Unit 4: Electricity and Electric current flow
- E. Unit 5: Electromagnetism
- F. Unit 6: Uses of electromagnetism
- G. Unit 7: Electrical circuits
- H. Unit 8: Math
- I. Unit 9: Electrical formulas
- J. Unit 10: Series circuits
- K. Unit 11: Parallel circuits
- L. Unit 12: Series-parallel circuits
- M. Unit 13: Multiwire circuits

Learning Assessments:

Course competencies will be assessed by use of unit tests, evaluation of lab work and work skills, quizzes, and a final exam.

Instructional Materials:

Basic Electrical Theory, Holt, 2nd Ed., Mike Holt Enterprises, 2007. ISBN: 9781932685121
NEC Plus National Electrical Code, NEC, Code Electrical Classes, 2008. ISBN: 9780877657910
Tom Henry's 2008 Key Word Index, Henry. ISBN: 9780945495949

Guidelines for Requesting Accommodations Based on Documented Disability or Medical Condition

It is the intention of Highland Community College to work toward full compliance with the Americans with Disabilities Act, to make instructional programs accessible to all people, and to provide reasonable accommodations according to the law.

Students should understand that it is their responsibility to self-identify their need(s) for accommodation and that they must provide current, comprehensive diagnosis of a specific disability or medical condition from a qualified professional in order to receive services. Documentation must include specific recommendations for accommodation(s). Documentation should be provided in a timely manner prior to or early in the semester so that the requested accommodation can be considered and, if warranted, arranged.

In order to begin the process all students **must** complete the "Disabilities Self-Identification Form" at this link:

<https://highlandcc.edu/pages/disability-services>.

This form can also be accessed at the Highland Community College homepage under Students Services/Student Resources/Disability Service or by contacting the Disabilities Coordinator.