

Department:

Electrical Technology

Course Description:

This course will examine requirements and designs used for the industrial wiring environment. The course will focus on the study of transformers — single and three phases are begun — as well as connection of these systems and voltages found. The course will also provide an introduction to the requirements for plant automation.

Course Competencies:

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

1. Apply NEC to all calculations.
2. Explain the properties of inductance.
3. Describe the operation of isolation, auto, and distribution transformers.
4. Calculate line and winding currents and KVA.
5. Calculate system protection.

Course Content:

- A. Chapter 1: Plans and site work
- B. Chapter 2: Unit substation
- C. Chapter 3: Feeder bus system
- D. Chapter 4: Panel boards
- E. Chapter 5: Trolley busways
- F. Chapter 6: Using wire tables
- G. Chapter 7: Signaling systems
- H. Chapter 8: Basic motor control
- I. Chapter 9: Motor controllers
- J. Chapter 10: Motor installation
- K. Chapter 11: Power factor
- L. Chapter 12: Ventilating and air conditioning
- M. Chapter 13: System protection
- N. Chapter 14: Lightning protection
- O. Chapter 15: Site lighting
- P. Chapter 16: Programmable logic controllers
- Q. Chapter 17: Programming for a PLC
- R. Chapter 18: Fiber optics
- S. Chapter 19: Hazardous locations
- T. Chapter 20: Harmonics

Learning Assessments:

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

Instructional Materials:

Electrical Wiring Industrial 2008, Smith, Herman, 13th Ed., Thomson Delmar.
ISBN: 9781418063986

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.