

**ELC 128  
INTRO TO PLC**

**COURSE DESCRIPTION:**

Prerequisites: ELC 117

Corequisites: None

This course introduces the programmable logic controller (PLC) and its associated applications. Topics include ladder logic diagrams, input/output modules, power supplies, surge protection, selection and installation of controllers, and interfacing of controllers with equipment. Upon completion, students should be able to install PLCs and create simple programs. Course Hours Per Week: Class, 2. Lab, 3. Semester Hours Credit, 3.

**LEARNING OUTCOMES:**

A student that successfully completes this course will be able to:

- a. Demonstrate principles and applications of industrial PLC systems
- b. Operate, apply and install programmable controllers.

**OUTLINE OF INSTRUCTION:**

- I. Introduction to programmable Controllers
  - A. Overview
  - B. Inputs/Outputs
  - C. Installation
  - D. Rack addressing
  - E. Data files
  
- I. Programming Instructions
  - A. Binary controls
  - B. Relays
  - C. Timers
  - D. Counters
  - E. Registers
  
- I. Programming software
  - A. Start-up
  - B. Memory
  - C. Numbering System
  - D. Debugging
  
- I. Configuring the PLC

- A. Processor configuration
- B. I/O configuration
  
- I. PLC communications
  - A. Online/Offline communications
  - B. Computer interfacing
  
- I. Installation of programmable controllers
  - A. Enclosures
  - B. Environmental considerations

**REQUIRED TEXTBOOKS:**

Programmable Logic Controllers. Schoolcraft Publishing, Electrical Equipment Series 729.

**STATEMENT FOR STUDENTS WITH DISABILITIES:**

Students who require academic accommodations due to any physical, psychological, or learning disability are encouraged to request assistance from a disability services counselor within the first two weeks of class. Likewise, students who potentially require emergency medical attention due to any chronic health condition are encouraged to disclose this information to a disability services counselor within the first two weeks of class. Counselors can be contacted by calling 686-3652 or by visiting the Student Development Office in the Phail Wynn Jr. Student Services Center, room 1309.