ELC 117
MOTORS AND CONTROLS

COURSE DESCRIPTION:

Prerequisites: ELC 112 or ELC 131
Corequisites: None

This course introduces the fundamental concepts of motors and motor controls. Topics include ladder diagrams, pilot devices, contactors, motor starters, motors, and other control devices. Upon completion, students should be able to properly select, connect, and troubleshoot motors and control circuits. Course Hours Per Week: Class, 2. Lab, 6. Semester Hours Credit, 4.

LEARNING OUTCOMES:

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

a. Read and understand electrical control diagrams.
b. Understand and design common types of motor controls.
c. Install motor control circuits.

OUTLINE OF INSTRUCTION:

I. Symbols and diagrams
    A. Electrical diagram symbols
    B. Ladder logic diagrams
    C. Wiring diagrams

I. Basic control circuits
    A. Two wire control
    B. Three wire control
    C. Sequence control

I. Manual motor starters
    A. Construction and operation
    B. Applications

I. Solenoids
    A. Types
    B. Applications

I. AC and DC contactors and starters

A. Construction
B. Rules of application
C. Non-reversing controls
D. Reversing and multiple speed controls
E. Reduced voltage starting
F. Accelerating and decelerating controls

I. Time delay circuits
A. Types of timers
B. Applications

REQUIRED TEXTBOOK:

Rockis and Mazur. Electrical Motor Controls. American Technical Publishers, Inc. 3rd ed. 2005.

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.