A. COURSE DESCRIPTION

Credits: 3
Lecture Hours/Week: *. *
Lab Hours/Week: *. *
OJT Hours/Week: *. *
Prerequisites: None
Corequisites: None
MnTC Goals: None

This course offers students an in depth exposure to programmable logic controller (PLC) devices, the main components of PLC systems, and DC/AC motor and fluid power. The course will cover configuration and programming of PLCS for motor and hydraulic system control using various programming tools.
Prerequisite: PHYS 1102 and junior status.

B. COURSE EFFECTIVE DATES: 08/22/2016 - Present

C. OUTLINE OF MAJOR CONTENT AREAS
   1. Fluid power and Hydraulic systems
   2. Input/output devices
   3. Ladder logic diagrams and programming
   4. Logic gate functions
   5. Math, compare, jump, and reset instructions
   6. Number systems and codes
   7. Timer and counter instructions

D. LEARNING OUTCOMES (General)
   1. be able to create a PLC project and program using PLC software
   2. be able to explain how basic hydraulic and pneumatic systems operate and perform work.
   3. be able to identify basic components of a PLC system and explain how they function.
   4. be able to explain the binary, hexadecimal, and octal number systems and ASCII and EBCDIC alphanumeric codes.
   5. be able to create ladder logic diagrams for process and industrial control problems.
   6. be able to describe the purpose, functions, and operations of a PLC.
   7. be able to explain the operation of various sensors, switches, relays, and motor control devices.

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies
   None

F. LEARNER OUTCOMES ASSESSMENT
   As noted on course syllabus

G. SPECIAL INFORMATION
   None noted