Alexandria Technical and Community College

MFGT 2546: Mechatronics II Lab

A. COURSE DESCRIPTION

   Credits: 3
   Lecture Hours/Week: *.*
   Lab Hours/Week: 6
   OJT Hours/Week: *.*

   Prerequisites:
   This course requires the following prerequisite
   MFGT 1560 - Mechatronics I (Number of Years Valid: 5)

   Corequisites: None
   MnTC Goals: None

   This course provides learners with practical hands-on experience testing, evaluating, and using electric control devices. These circuits are built using Mechatronic Workstations and circuit simulation software. Prerequisite: MFGT1560.

B. COURSE EFFECTIVE DATES: 07/02/2003 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

   1. Design/ build electrical circuits.
   2. Design/ build electro-pneumatic circuits.
   3. Design PLC programs.
   4. Design/ build photo sensor circuits.
   5. Design/ build capacitive sensor circuits.
   6. Design/ build inductive sensor circuits.
   7. Design/ build Reed/Hall switch sensor circuits.
   8. Troubleshoot electro-pneumatic circuits.
   9. Operate electro-pneumatic circuits with PLC.
   10. Demonstrate proper wiring techniques.
   11. Install and adjust electrical/ mechanical components.

D. LEARNING OUTCOMES (General)

   1. The learner will gain an understanding of various solid-state components.
   2. The learner will gain an understanding of the mathematics and function of logic gates.
   3. The learner will gain an understanding of advanced microprocessor electronics.

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

   None

F. LEARNER OUTCOMES ASSESSMENT

   As noted on course syllabus

G. SPECIAL INFORMATION

   None noted