Miami Dade College

Course Description

ETS2542C | Programmable Logic Controllers 1 | 3.00 credits

This first course in programmable logic controller (PLC), is designed for students preparing for careers in electronics, manufacturing, electrical or industrial technology. Students will learn the basic operational concepts common to PLCs, focusing on PLC principles, programming, numbering systems, data manipulation, and math and sequencer instructions. Prerequisite: CET 1110C; Pre/Co-requisite: EET 1141C

Course Competencies

Competency 1: The student will understand the foundational principles of programmable logic controllers (PLCs) by:

1. Analyzing the architecture and components of PLC systems
2. Identifying the differences between PLCs and other control systems
3. Examining the role of PLCs in industrial automation and control processes

Competency 2: The student will demonstrate proficiency in programming PLCs by:

1. Designing and writing ladder logic programs to execute specific tasks
2. Implementing various programming languages used in PLC programming, such as functional block diagrams and structured text
3. Debugging and optimizing PLC programs to enhance efficiency and reliability

Competency 3: The student will apply data manipulation and mathematical instructions in PLC applications by:

1. Conducting operations on different numbering systems, including binary, decimal, and hexadecimal
2. Utilizing data manipulation techniques to manage input and output signals effectively
3. Constructing sequencer instructions to control sequential operations in industrial processes

Learning Outcomes

- Use quantitative analytical skills to evaluate and process numerical data
- Formulate strategies to locate, evaluate, and apply information
- Use computer and emerging technologies effectively