Miami Dade College

Course Description

ETS2544C | Programmable Logic Controllers 2 | 3.00 credits

This course is a continuation of EST 2542C for students who are familiar with basic PLC operations and concepts. Students learn the skills required to troubleshoot and maintain logic controllers in a simulated industrial environment. Topics covered include program control instructions, date manipulation instruction, math instructions, acquisition, computer controlled machines and processes. Prerequisite: ETS 2542C

Course Competencies

Competency 1: The student will enhance their troubleshooting skills for programmable logic controllers (PLCs) by:

1. Diagnosing common faults in PLC operations through systematic analysis
2. Implementing effective troubleshooting techniques to resolve program control instruction errors
3. Evaluating the performance of PLCs and identifying potential areas for improvement in control processes

Competency 2: The student will apply advanced programming concepts in PLCs to optimize performance by:

1. Developing and modifying program control instructions to achieve desired outcomes in industrial simulations
2. Utilizing data manipulation instructions to streamline operations and improve data accuracy
3. Constructing complex mathematical algorithms for real-time processing and control of industrial equipment

Competency 3: The student will explore the integration of PLCs with computer-controlled machines by:

1. Analyzing communication protocols used in PLC and computer interactions
2. Designing automated processes that incorporate PLCs and computer systems for enhanced efficiency
3. Evaluating the impact of PLC programming on the overall functionality of computer-controlled machinery in a simulated environment

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