South Central College

MECA 1250 Mechatronics Systems Operations I

Course Outcome Summary

Course Information

Description This course will provide the student with the principles of programmable logic controllers (PLC) hardware and fundamental sequence control systems. The student will gain essential knowledge nec nec nec

1. **Describe Programmable Logic Controllers**

   Learning Objectives
   Discuss PLC Background
   Recognize Principles of Operation
   Analyze PLCs Versus Other Types of Controls
   Identify Typical Areas of PLC Applications
   Describe Benefits of Using PLCs

2. **Define Number Systems and Codes**

   Learning Objectives
   Explain Number System
   Apply Number Conversions
   Identify One's and Two's Complement
   Interpret Binary Codes

3. **Apply Logical Concepts**

   Learning Objectives
   Explain the Binary Concept
   Identify Logic Functions
   Demonstrate the Principles of Boolean Algebra and Logic
   Use PLC Circuits and Logic Contact Symbology

4. **Explain Processors, The Power Supply System, and Programming Devices**

   Learning Objectives
   Explain Processor Architecture
   Characterize Processor Scan
   Identify Error Checking and Diagnostics
   Describe System Power Supply
   Identify Programming Devices

5. **Clarify Memory System and Input/Output Interaction**

   Learning Objectives
   Identify Memory Types
   Describe Memory Structure and Capacity
   Identify Memory Organization and I/O Interaction
   Translate Memory Mapping and I/O Addressing
   Plan Memory Considerations

6.