

PLC Technology 1 with MicroLogix 1100

Catalog number	8210-0010
Category	Electronics and Electrical Control
Duration	15 Hours
Software supplied	PLCMotion
Prerequisites	Pneumatics or Hydraulics Technology courses (recommended)

Activity 1: Getting Started

Programmable Logic Controllers (PLC)

Inputs and Outputs

Your Physical PLC

Activity 2: Examining Input/Output Relationships

Programmable Logic Controller

Introduction to Logic

PLCMotion Software

The MicroLogix Interface

Connecting the Hardware

Task: Running PLC Simulator and Loading a Program

Task: Simulating a Ladder Diagram

Task: Examining Input/Output Relationships

Inventory and Safety Checks

Task: Running PLC Simulator and Loading a Program (For Use With Hardware)

Task: Simulating a Ladder Diagram (For Use With Hardware)

Task: Examining Input/Output Relationships (For Use With Hardware)

Inventory Check and Shut Down

Activity 3: PLC Monitoring Tools

What is Logic?

Logic Functions

Logic Variable Addresses

Inventory and Safety Checks

Task: Identifying Input/Output Addresses for an I/O Panel

Task: Identifying Input/Output Addresses for an I/O Panel (For Use With Hardware)

Task: Interpreting a Memory Map

Task: Interpreting a Memory Map (For Use With Hardware)

Inventory Check and Shut Down

Activity 4: Writing and Simulating a Basic Ladder Diagram

Introduction to Ladder Logic

eXamine If Closed (XIC)

OutpuT Energize (OTE)

Designing Your First PLC Program

Task: Starting PLCEditor

Task: Programming a Basic Ladder Diagram

Task: Saving and Compiling a Program

Task: Debugging and Editing Tools

Inventory and Safety Checks

Task: Running the Program

Task: Running the Program (For Use With Hardware)

Task: Modifying the Ladder to Include an Additional Output

Task: Simulating the Ladder Diagram with an Additional Output (For Use With Hardware)

Inventory Check and Shut Down

Activity 5: Project: Controlling a Sorting System

Controlling a Sorting System

Task: Programming the Ladder Diagram

Inventory and Safety Checks

Task: Running the Program

Task: Running the Program (For Use With Hardware)

Inventory Check and Shut Down

Activity 6: NOT Logic

Improving Control and Safety

eXamine If Open (XIO)

Task: Programming with NOT Logic

Inventory and Safety Checks

Task: Running the New Program

Task: Running the New Program (For Use With Hardware)

Inventory Check and Shut Down

Activity 7: AND Logic

Controlling an Elevator

AND Logic

Designing the Ladder Diagram

Task: Programming with AND Logic

Inventory and Safety Checks

Task: Running the Program

Task: Running the Program (For Use With Hardware)

Task: Modifying the Elevator Control System

Task: Modifying the Elevator Control System (For Use With Hardware)

Inventory Check and Shut Down

Activity 8: OR Logic

OR Logic

Designing the Ladder Diagram

Task: Programming with OR Logic

Inventory and Safety Checks

Task: Running the Program

Task: Running the Program (For Use With Hardware)

Task: Adding a Warning Lamp to the System

Task: Adding a Warning Lamp to the System (For Use With Hardware)

Inventory Check and Shut Down

Activity 9: Project: Arsenic Filling Station

Arsenic Filling Station

Designing the Ladder Diagram

Task: Programming the Ladder Diagram

Inventory and Safety Checks

Task: Simulating the Arsenic Filling Station

Task: Simulating the Arsenic Filling Station (For Use With Hardware)

Inventory Check and Shut Down

Activity 10: Latching and Unlatching Outputs

Gate Control with PLC

Ladder Design

Output Latch (OTL) and Output Unlatch (OTU)

Task: Programming with the OTL and OTU Instruction

Inventory and Safety Checks

Task: Running the Program

Task: Running the Program (For Use With Hardware)

Inventory Check and Shut Down

Activity 11: Improving Elevator Control

Elevator Control with PLC

Designing the Ladder Diagram

Task: Building a Ladder Diagram to Control an Elevator

Inventory and Safety Checks

Task: Running the Program

Task: Running the Program (For Use With Hardware)

Inventory Check and Shut Down

Activity 12: One Shot Rising

Controlling an Automatic Stapler
One Shot Rising (OSR)
Designing the Ladder Diagram
Programming Without the OSR Instruction
Inventory and Safety Checks
Task: Running the Program
Task: Running the Program (For Use With Hardware)
Task: Revising a Program by Adding an OSR Instruction
Task: Running the Modified Program
Task: Running the Modified Program (For Use With Hardware)
Inventory Check and Shut Down

Activity 13: Timer On Delay

Adding a Delay
Timer ON Delay (TON)
Task: Programming with the TON Instruction
Inventory and Safety Checks
Task: Running the Program and Interpreting a Memory Map
Task: Running the Program and Interpreting a Memory Map (For Use With Hardware)
Task: Adding a Five Second Delay
Task: Adding a Five Second Delay (For Use With Hardware)
Inventory Check and Shut Down

Activity 14: Timer Off Delay

Controlling an Automatic Punch
Timer OFF Delay (TOF)
Task: Programming with the TOF Instruction
Inventory and Safety Checks
Task: Running the Program
Task: Running the Program (For Use With Hardware)
Task: Activating the Solenoid Using a TON (Instead of TOF)
Task: Activating the Solenoid Using a TON (Instead of TOF) (For Use With Hardware)
Inventory Check and Shut Down



Activity 15: Conclusion

Recent Developments for PLCs

Inventory and Safety Checks

Task: Final Project A

Task: Final Project A (For Use With Hardware)

Task: Final Project B

Task: Final Project B (For Use With Hardware)

Inventory Check and Shut Down