

# ControlLogix Programming & Maintenance

September 2025

## Course Overview

After completing this course, students will be able to program and navigate the RSLogix 5000 software, understand and configure the hardware, and use available troubleshooting aids within the software. There are several labs and quizzes associated with this course. **The course is done on equipment made available by the client.**



## Course Objective

To provide the necessary information, resources, and hands-on activities needed to become familiar with the functionality of the ControlLogix system. The course focuses on hardware, installation, configuration, proper instruction, programming, and usage. Additionally, there are ample hands-on exercises that familiarize the student with the hardware and software.

## Who Should Attend

This course is recommended for maintenance and engineering personnel and those responsible for programming and maintaining this equipment.

## Course Length and Cost

Per Student Cost:	\$2013.25 USD
Course Length:	5 Days

## Client Expectations

This training is provided at a discount by using equipment provided by the client. Students are expected to attend the entire training session to receive their certificate. It includes a separate

workstation, Flex IO Modules with DH/DH+ Communications Module, Flex IO ControlNet Module, Flex IO Ethernet Module, 1756-L75 Controller, Ethernet Module, ControlNet Module, and software for each student. An additional station for the instructor. In addition, make the following available:

- Computer and necessary software, including: Studio 5000, RSLinx, ControlFlash, and RSNetWorx
- Microsoft Office Suite and Access to the Internet
- Dry-erase board for examples, assignments, etc.

## Provider Expectations

The contractor will provide the following:

- Student Workbook with exercises
- RSLogix 5000 Instruction Set Reference (Digital)
- Select Procedure Guides
- Lab results can be provided if desired
- Certificate of Completion or Achievement
  - A completion certificate is provided to students who complete the entire class, but with no assessment
  - An achievement certificate is provided for those who complete the entire class and pass a written and programming assessment

## Course Agenda

### Day 1

- Introduction
- Industrial Safety
- Understanding Control Systems
- Numbering Systems (Binary, Octal, Decimal, Hexadecimal)
  - Numbering Exercises
- Industrial Hardware
  - Input/Output Devices

### 3 POCC101

- Module Installation
- Configuring Modules
- Indicators and meaning
- Understanding Software used in a ControlLogix System (Studio 5000/RSLogix 5000, RSLinx, RSNetWorx, ControlFLASH)
- Screen Navigation of Studio 5000/RSLogix 5000 software
- Understanding Basic Bit Instructions (XIC, XIO, OTE)
- Creating and Modifying a Studio 5000/RSLogix 5000 Project
- Editing Ladder Logic Offline
- Selecting and Connecting to Industrial Networks in a ControlLogix System
- Downloading and Going Online with a Controller

#### Day 2

- Review of the Memory Structure
- Understanding IO Addressing
- Locating I/O Tags and Devices in a ControlLogix System
- Configuring Local 1756-I/O Modules in a Studio 5000/RSLogix 5000
- Creating Tags, Arrays, and Monitoring Data in a Studio 5000/RSLogix 5000
- Editing Basic Ladder Logic for a Studio 5000/RSLogix 5000 Online
- Integrated Practice - Creating and Verifying a Studio 5000/RSLogix 5000

#### Day 3

- Timer/Counter Instructions
- Introducing Remote IO and Programming
- Forcing
- Understanding Compute/Math Instructions
- Practical: Programming Compute/Math Instructions
- Understanding Compare Instructions
- Practical: Programming Compare Instructions
- Comprehensive Programming Exercises

#### Day 4

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- Review of Previous Instruction Set
- Understanding Program Control Instructions
- Practical: Programming Program Control Instructions
- Understanding Move/Logical Instructions
- Practical: Programming Move/Logical Instructions
- Comprehensive Programming Exercises

### Day 5

- Comprehensive Programming Review
- Understanding Messaging
- Practical: Programming between Controllers
- Troubleshooting
- Final Assessment

## Adjustments

It may be necessary to adjust the course curriculum based on the students' understanding of the material. Every effort will be made to include as much information as possible.

Time permitting, troubleshooting will be incorporated into the program. Troubleshooting will be limited to software, edits, and hardware configurations unless the client provides faulty equipment to be used.

If you have questions about any part of the course or would like to modify the course curriculum, please reach out to [PO Controls](#) to discuss. Price may vary depending on the extent of changes.