

# ControlLogix®/Studio 5000™

## Studio 5000 Logix Designer Level 1: ControlLogix Fundamentals and Troubleshooting Course Description

### COURSE AGENDA

- Locating ControlLogix Components
- Navigating through the Logix Designer Application
- Connecting a Computer to a Communications Network
- Downloading and Going Online
- Locating I/O Tags and Devices
- Interpreting Logix Designer Project Organization and Execution
- Interpreting Ladder Logic Structure
- Locating and Editing Tag Values
- Interpreting Bit Instructions
- Interpreting Frequently Used Instructions
- Interpreting Arrays
- Interpreting Tags of User-Defined Data Types
- Searching for Project Components
- Integrated Practice - Interpreting a Basic Project
- Forcing I/O and Toggling Bits
- Troubleshooting Digital I/O Problems
- Troubleshooting Analog I/O Problems
- Troubleshooting Remote I/O Problems
- Updating Logix5000 Firmware
- Troubleshooting Controller Problems
- Troubleshooting Power Supply Problems
- Analyzing and Troubleshooting a System Using a Trend Chart
- Integrated Practice-Troubleshooting Basic Projects
- Editing Ladder Logic Online
- Managing Logix Designer Project Files
- Documenting and Printing Components
- Troubleshooting Noise-Related Problems



### COURSE NUMBER: CCP299

#### *Course Purpose*

Upon completion of this course, you should be able to troubleshoot a previously operational ControlLogix system and restore normal operation.

You will have the opportunity to develop and practice these skills by:

- Learning basic concepts and terminology used with:
  - ControlLogix system hardware
  - Studio 5000 Logix Designer application
- Practicing a systematic strategy for diagnosing and troubleshooting problems:
  - Configuration issues
  - Electrical noise
  - Faulty/malfunctioning field devices
  - Controller, I/O or other hardware issues
- Performing hands-on exercises

All Logix5000 systems use the same control engine; therefore, tasks are similar. You will see applicable references for other systems.

LISTEN.  
THINK.  
SOLVE.®

### **Who Should Attend**

This course is intended for individuals who need to maintain and troubleshoot a ControlLogix system – but have no current working experience with ControlLogix systems.

**Curriculum Note:** This course contains many of the lessons in courses CCP146 and CCP153 – in a consolidated four and a half-day format. Do not take all 3 courses.

### **Prerequisites**

To successfully complete this course, the following prerequisites are required:

- Ability to perform basic Microsoft Windows® tasks
- Previous experience with common industrial control system concepts

### **Technology Requirements**

All technology is provided for student use in the classroom by Rockwell Automation. It is not necessary for students to bring any technology with them when attending this course.

### **Student Materials**

To enhance and facilitate your learning experience, the following materials are provided as part of the course package:

- *Student Manual:*
  - Contains the topical outlines and exercises.
  - Used to follow presentations, take notes, and work through exercises
- *Logix5000 System Glossary:*
  - Contains terms and definitions specific to Logix5000 systems
  - Defines key Logix5000 systems terminology
- *Studio 5000 Logix Designer and Logix5000 Procedures Guide:*
  - Provides the steps required to complete basic tasks that are common to all Logix5000 hardware platforms

### **Student Materials (continued)**

- *Logix5000 Documentation Reference Guide:*
  - Searchable, electronic resource that contains frequently referenced technical documentation
- *ControlLogix Troubleshooting Guide:*
  - Contains a systematic approach to diagnosing and troubleshooting common ControlLogix system problems

### **Hands-On Exercises**

Throughout this course, you will have the opportunity to practice the skills you have learned through a variety of hands-on exercises:

- Exercises focus on the skills introduced in each lesson.
- Integrated practices combine and practice several key skills at once.
- Exercises are performed on a ControlLogix workstation

### **Course Length**

This is a four day course.

### **Course Number**

The course number is CCP299.

### **IACET CEUs**

CEUs Awarded: 3.2



### **To Register**

To register for this or any other Rockwell Automation training course, contact your local authorized Allen-Bradley Distributor or your local Sales/Support office for a complete listing of courses, descriptions, prices, and schedules.

You can also access course information via the Web at <http://www.rockwellautomation.com/training>

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