

# ControlLogix/Studio 5000

Studio 5000 Logix Designer Level 1:  
ControlLogix Fundamentals  
and Troubleshooting



## 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

## COURSE AGENDA

- Locating ControlLogix Components
- Navigating through the Studio 5000 Logix Designer Application
- Connecting a Computer to a Communications Network
- Downloading and Going Online
- Locating I/O Tags and Devices
- Interpreting Studio 5000 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 Studio 5000 Logix Designer Project Files
- Documenting and Printing Components
- Troubleshooting Noise-Related Problems

## 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 three 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

## STUDENT MATERIALS

To enhance and facilitate the students' learning experiences, the following materials are provided as part of the course package:

- Student Manual:
  - Includes the key concepts, definitions, examples, and activities presented in this course
- Lab Book:
  - Provides learning activities and hands-on practice. Solutions are included after each exercise for immediate feedback.
- Logix5000 System Glossary:
  - Contains terms and definitions specific to Logix5000 systems and 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
- ControlLogix Troubleshooting Guide:
  - Contains a systematic approach to diagnosing and troubleshooting common ControlLogix system problems

## HANDS-ON PRACTICE

Throughout this course, you will have the opportunity to practice the skills you have learned through a variety of hands-on exercises using an ABT-TDCLX3-B ControlLogix workstation. Exercises focus on the skills introduced in each lesson.

Integrated practices combine and practice several key skills at once.

## COURSE LENGTH

This is a four-and-a-half-day course.

## IACET CEUS

Rockwell Automation is authorized by IACET to offer 3.2 CEUs for this program.







## 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.

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To be respectful of the environment, Rockwell Automation is transitioning some of its training courses to a paperless format. Students are asked to complete downloads and bring personal devices to these classes. A full list of digital/paperless courses is currently available through your local distributor.

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