

ControlLogix/Studio 5000

Studio 5000 Logix Designer Fundamentals Level:
ControlLogix System Fundamentals & Basic
Ladder Logic Programming and Troubleshooting



Course Number

KMT-CCP150

Course Purpose

After completing this course, you should be able to perform basic ControlLogix® and Studio 5000 Logix Designer® tasks, such as:

- Creating and configuring a project
- Communicating with a controller

You will then be presented with a systematic strategy for diagnosing and troubleshooting a variety of common system errors:

- Controller, I/O, and other hardware problems
- Faulty/malfunctioning field devices
- Software configuration problems

The course will assist you in developing and building a solid foundation with a fundamental knowledge of ControlLogix and other Logix5000™ systems.

You will be introduced to basic Logix5000 concepts and terminology, and you will be exposed to Logix5000 system hardware, including hands-on experience with the ControlLogix platform.

After completing this course, you should be able to program basic ladder logic instructions for Logix5000™ controllers. This is a skill-building course that provides you with the resources and hands-on practice required to complete this objective.

You will have an opportunity to use the Studio 5000 Logix Designer® application to perform basic software tasks to meet the requirements of a given functional specification. In addition, you will set up a sequencer to run equipment through a predefined procedure and separate production procedure from equipment control.

COURSE AGENDA

DAY 1

- Understanding Control Systems
- Locating ControlLogix System Components
- Locating and Configuring Studio 5000 Logix Designer Application components
- Creating and Modifying a Studio 5000 Logix Designer Project
- Selecting and Connecting to Industrial Networks in a Logix5000 System
- Downloading and Going Online to a Logix5000 Controller

DAY 2

- Locating I/O Tags and Devices in a ControlLogix System
- Configuring Local 1756-I/O Modules in a Studio 5000 Logix Designer Project
- Creating Tags and Monitoring Data in a Studio 5000 Logix Designer Project
- Drafting Basic Ladder Logic for a Studio 5000 Logix Designer Routine
- Selecting Basic Ladder Logic Instructions for a Studio 5000 Logix Designer Routine
- Entering Ladder Logic Components in a Studio 5000 Logix Designer Routine
- Integrated Practice - Creating and Verifying a Studio 5000 Logix Designer Project

DAY 3

- Starting a Ladder Diagram for a Studio 5000 Logix Designer Project
- Testing a Ladder Diagram in a Studio 5000 Logix Designer Project
- Programming Timer Instructions in a Studio 5000 Logix Designer Project
- Programming Compare Instructions in a Studio 5000 Logix Designer Project
- Programming Move Instructions in a Studio 5000 Logix Designer Project
- Programming Math Instructions in a Studio 5000 Logix Designer Project

DAY 4

- Programming Counter Instructions in a Studio 5000 Logix Designer Project
- Handling Expressions in a Studio 5000 Logix Designer Project
- Documenting and Searching Ladder Logic Using the Studio 5000 Logix Designer Application
- Programming a Procedure in a Studio 5000 Logix Designer Project
- Separating the Procedure from Equipment Control in Studio 5000 Logix Designer Project
- Copying and Filling an Array in a Studio 5000 Logix Designer Project

DAY 5

- Troubleshooting Digital I/O Module Problems
- Troubleshooting Analog I/O Module 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

WHO SHOULD ATTEND

Individuals who have little or no working experience with Logix5000 systems or other programmable controllers should attend this course.

PREREQUISITES

To successfully complete this course, you must be able to perform basic Microsoft Windows tasks, such as:

- Use a mouse
- Browse for files
- Open, close, size and move windows

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.
- Studio 5000 Logix Designer and Logix5000 Procedures Guide
 - Provides the steps required to complete basic software tasks that are common to all Logix5000 hardware platforms

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

NEXT LEARNING LEVEL

Once you have mastered the fundamental skills covered in this course, you will have the knowledge and skills necessary to attend the next level of Logix5000 training. In particular, this course will benefit those enrolling in the following courses:

- Studio 5000 Logix Designer Intermediate Level: Project Development (Course No. KMT-CCP151)
- Studio 5000 Logix Designer Advanced Level: Function Block, Structured Text & Sequential Function Chart Programming (Course No. KMT-CCP152)

COURSE LENGTH

This is a five -days course.

FOR BOOKING

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