

ControlLogix/Studio 5000

Studio 5000 Logix Designer Intermediate Level:
Project Development and Troubleshooting



Course Number

KMT-CCP151

Course Purpose

Upon completion of this course, given a functional specification for a Logix5000™ application, you should be able to develop a project to meet the specification requirements.

This course covers tasks common to the following hardware, which all use the Logix5000 control engine:

- ControlLogix® controllers
- CompactLogix™ controllers
- SoftLogix™ controllers

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

This course builds upon your knowledge of common controller terms and operation and your experience with basic ladder logic programming.

You can gain a deeper understanding of project development tasks that are common to all Logix5000 controllers. Such tasks include organizing tasks and routines, organizing controller data, configuring modules, and sharing data.

You will also use producer/consumer technology for multicasting to input and output devices, sharing data between controllers, and controlling remote I/O.

COURSE AGENDA

DAY 1

- Creating and Organizing a Project
- Creating a Periodic Task
- Creating an Event Task
- Developing an Add-On Instruction in a Ladder Diagram

DAY 2

- Organizing Arrays
- Creating a User-Defined Data Type
- Importing Components
- Entering, Editing, and Verifying Ladder Logic
- Configuring a Controller to Produce and Consume Data
- Configuring a Logix5000 Message

DAY 3

- Configuring Controllers and Modules to Communicate and Share Data over EtherNet/IP
- Communicating with a Local 1756-I/O Module
- Allocating Connections
- Retrieving and Setting Controller Status Values with GSV/SSV Instructions
- Programming a BTI Instruction
- Handling a Major Fault

DAY 4

- Managing Project Files
- Updating Logix5000 Firmware
- Integrated Practice: Developing 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 need to develop Studio 5000 Logix Designer® projects for any Logix5000 controller should attend this course.

PREREQUISITES

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

- Ability to perform basic Microsoft Windows tasks
- Knowledge of common controller terms and operation
- Ability to write basic ladder logic with common instructions, such as bit, timer, counter, move, and comparison instructions through experience or this course:
 - Studio 5000 Logix Designer Fundamentals Level: ControlLogix System Fundamentals & Basic Ladder Programming (Course No. KMT-CCP150)

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
- Lab Book
 - Provides learning activities and hands-on practice
- Studio 5000 Logix Designer and Logix5000 Procedures Guide
 - Provides the steps required to complete basic software tasks common to all Logix5000 controllers
- Logix5000 Controllers Design Considerations Reference Manual:
 - Contains guidelines for designing a Logix5000 application

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.

NEXT LEARNING LEVEL

Once you have an understanding of the topics and the skills covered in this course, you may want to attend specific programming training such as:

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

COURSE LENGTH

This is a four-day course.

FOR BOOKING

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