

**Attention:** The following topics are *not* addressed during this class:

- I/O and hardware troubleshooting
- Motion Control
- TwinSAFE

### Prerequisite:

Students are expected to know basic computer skills, including file and folder management. Students should also know how to “Scan Devices” in the System Manager before attending class. This topic is covered in detail in TR1010.

### Topics Covered

Documentation – Catalog and Information System

TwinCAT Architecture

Connecting PLC Variables to Hardware

- Appending the PLC project to the System Manager
- Linking the PLC variables to Hardware

Variables

- Variable Types
- Declarations
- Variable Scope
- Initial Values
- Constants
- Retained Data
- Persistent Data

Review of IEC 61131 Languages

- IL – Instruction List
- LD – Ladder Diagram
- FBD – Function Block Diagram
- ST – Structured Text
- SFC – Sequential Function Chart
- CFC – Continuous Function Chart

Loading and Running the PLC

Online Changes

Structures

Enumerations

Arrays

Functions

- Declaration
- Coding
- Use

Function Blocks

- Declaration
- Coding
- Use

Libraries

Code Sequencing and POU Calls

Troubleshooting PLC Code

- Break Points
- Flow Control
- Global Search
- Cross Reference

Boot Project

Source Code Download

Scope View

Project Compare