

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

- I/O, Hardware, and Drive Troubleshooting/Maintenance
- Tuning

### **Prerequisite:**

Students are expected to have good computer skills and experience with another PLC system and Motion Controller.

### **Topics Covered**

#### PC Control & IEC 61131 Programming

- Overview of IEC 61131-3 & TwinCAT
- Getting Started with TwinCAT
- Scanning and Adding I/O Terminals
- PLC Programming with TwinCAT
- Working with POU's – Programs
- Linking I/O
- Using Libraries
- Information System
- Defining Variables – Local, Global, Retentive
- Fundamentals of Structured Text Programming
- State Machine Programming in Structured Text
- Defining Variables – Arrays, Structures
- Working with POU's – Functions and Function Blocks

#### TwinSAFE Programming

- Overview of TwinSAFE
- Configuring TwinSAFE
- Basic TwinSAFE programming
- Linking TwinSAFE data to PLC

#### NC and Motion Fundamentals

- Scanning and Adding Drives
- Configuring Drives and Motors
- Linking Drives to NC Tasks
- Configuring and Scaling Axes
- Online Axis Control

- Working with the Motion Library in PLC Control
- Linking PLC Axes to NC Tasks
- Using Motion Control Axis and Function Blocks