BECKHOFF

TR3030 - Outline

TR3030 | TwinCAT 3 Training: PLC basics, NC-PTP, ADS

> ⚠ **Attention - The following topics are not addressed during this class**
> - Hardware and Wiring Topics
> - Drive Troubleshooting/Maintenance
> - Safety

Prerequisite:

- Good computer skills
- Prior experience with programming and motion control
- No prior knowledge of TwinCAT or IEC 61131-3 is necessary

Topics Covered:

- Introduction to TwinCAT eXtended Automation Technology (XAT)
- eXtended Automation Engineering (XAE) and Microsoft Visual Studio® Integration
- TwinCAT Basics
    - Scanning IO
    - Basic Hardware Configuration
    - Linking I/O

- EtherCAT
    - Overview
    - Troubleshooting

- IEC 61131-3 Programming
    - Using Library and Information System
    - Defining Variables – Local, Global, Retentive, Arrays, Structures
    - Working with POUs – Programs, Functions and Function Blocks
    - Fundamentals of Function Block Diagram Programming
    - Fundamentals of Structured Text Programming
    - State Machine Programming in Structured Text
    - TwinCAT Visualization

- NC Point-to-Point
    - Scanning and Adding Drives
    - Configuring Drives and Motors
    - Linking Drives to NC Tasks
    - Configuring and Scaling Axes
    - Online Axis Control
    - Programming with the Motion Library
    - Linking PLC Axes to NC Tasks
    - Tuning Basics
    - Gearing Basics

- ScopeView
- ADS Introduction
    - ADS Overview
    - API Usage (C# Example)