

## Introduction to SIMATIC PLCs & Languages with Diagnostics (US-S7BADIA)

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### Type

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Instructor-led Learning

### Duration and Continuing Education Units (CEU)

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1.5 Days  
1.2 CEUs

### Target Group

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- Maintenance
- Engineer
- Programmer

### Short Description

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This course is for engineers and maintenance personnel who are new to PLC programming - who will be creating, modifying, or diagnosing hardware issues in S7 PLC systems with SIMATIC STEP 7 software.

This course is designed to provide the student with core SIMATIC PLC program fundamentals. For learners new to PLC applications, this course is an ideal preparation to the S7 Programming 1 or S7 Automation Maintenance 1 courses. Whether designing a PLC program or Diagnosing hardware issues in a control system, this course builds fundamental skills and confidence in key concepts, navigation, tools, and procedures for a successful continuous learning path. Students needing a solid introduction to the core PLC programming languages will find this a great fit. Three program editors, LAD, FBD and STL are introduced with the primary development and troubleshooting tools. Basic logic development and data memory management complete the curriculum and help the student build skills in PLC program basics. This is a face to face, instructor lead course consisting of in class instruction and exercises.

### Objectives

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- Apply and convert various numbering system concepts within a typical PLC application
- Identify the IEC language set and perform essential program analysis and organization
- Build a fundamental program flow chart and structogram for efficient program development
- Navigate the SIMATIC Manager tools for efficient program development, documentation, and testing
- Configure various input and output (I/O) addressing, Data Block, and internal memory allocations
- Build simple S7 PLC programs using the Function Block Diagram (FBD) editor
- Manage program data through proper data storage and retrieval
- Build a simple function using the Statement List program editor
- Diagnose hardware errors

### Content

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- Number Systems & IEC61131 Standard
- SIMATIC Development Tools
- PLC Inputs and Outputs
- PLC I/O Addressing
- Ladder Logic & FBD Instructions
- CPU Diagnostics

## Language

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English

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