

# 1-DAY ON-SITE PRACTICAL ROBOTICS

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Duration: 8h

Role: Technicians, Engineers

Languages: EN, DE, FR

Class size: Up to 15 participants

Prerequisites: No prior robot programming experience required.

Basic technical confidence is recommended.

## OVERVIEW

This one-day on-site course is designed for technical teams who want a practical introduction to robotics before going deeper into brand-specific platforms or advanced automation work.

The day starts with core concepts: how robots move, how tasks are programmed, and how simulation supports safe learning and testing.

PhygiTrain, S3C's training environment, lets participants program and validate tasks in simulation, then transfer selected exercises to a physical robot in a guided phygital setup.

Participants complete hands-on exercises, discover how teach pendant programming fits into real robot operation, and test their own task logic from simulation to real execution.

The format is concrete, practical and focused on what teams will actually do with robots on the shop floor.

## WHO SHOULD ATTEND

- Maintenance and automation technicians
- Production and automation engineers
- Developers and technical project members entering robotics work
- Technical trainers or team leads preparing hands-on robotics adoption

## LEARNING OUTCOMES

- Understand the basic building blocks of industrial robot systems and programming workflows
- Practise core robotics exercises in the PhygiTrain simulation environment
- Learn what teach pendant programming is and how it differs from simulation or code-based work
- Write and test simple task logic individually and in guided exercises
- Transfer selected work from the digital environment to a real robot through the phygital model
- Leave with a clear view of what to practise next on real platforms and interfaces

## CHOOSE YOUR TRACK:

- Prefer coding & AI → Software
- Prefer building physical systems → Hardware
- Prefer math-heavy modeling → Control
- Prefer end-to-end systems → Integration

## WHAT PARTICIPANTS WILL RECEIVE

- PhygiTrain exercise guide
- Robotics basics handout
- Teach pendant and simulation comparison notes

## AGENDA

### **Module 1: Robotics basics and training environment setup**

- Core robotics concepts: robot structure, coordinate systems, motion and task logic
- Introduction to the PhygiTrain environment and how the phygital workflow works at S3C
- First guided exercises in simulation to understand movement, positions and sequence structure

### **Module 2: Practical robot programming in simulation**

- Build simple robot routines in simulation step by step
- Exercise on paths, waypoints, sequence flow and common programming mistakes
- Coached hands-on practice so participants create and debug their own basic tasks

### **Module 3: Teach pendant programming and robot-specific interfaces**

- What a teach pendant is and why each robot brand has its own programming interface
- Demonstration of teach pendant interaction, point teaching and basic program execution
- Comparison between what participants do in PhygiTrain and what changes on the real robot interface

### **Module 4: From simulation to real robot**

- Participant coding time to complete a simple hands-on exercise in the simulation
- Transfer of selected exercises to the physical robot using the S3C phygital model
- Observation of real execution, adjustments and discussion of what changes outside simulation
- Wrap-up on next learning steps in robotics, teach pendant use and practical automation work

## DELIVERY OPTIONS

- Private in-company on-site session
- Can be adapted to your robot platform and participant level
- Includes hands-on simulation and guided real-robot transfer time