Control Systems Technician Exam Preparation Course

1 – 5 November 2026
Johannesburg

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Control Systems Technician Exam Preparation Course

Ref: 980_174612 **Date:** 1 – 5 November 2026 **Location:** Johannesburg **Fees:** 6000 Euro

Overview

Control Systems Technician Exam Preparation Course is a one-week course for technicians who need a structured review of calibration, maintenance, repair, troubleshooting, commissioning, loop checking, planning, and documentation. Participants connect process measurements, signals, test instruments, control loops, final control elements, drawings, calculations, work records, and practice-question technique. The course organizes public technician domains into a Technician Review and Practice File. Agile Leaders Training Center delivers this independent control systems technician review course.

Who Should Attend

- Control systems technicians preparing for a technician-level examination
- Instrumentation technicians reviewing calibration and loop work
- Maintenance technicians who troubleshoot process measurement and control
- Junior automation professionals consolidating technician knowledge
- Experienced technicians returning to structured exam preparation

The course assumes practical instrumentation and control experience. It provides independent preparation only; ISA determines CCST eligibility, administers its examinations, and awards its certification.

Departments and Industries

The course supports technician review across organizations that operate measurement and control systems.

- Instrumentation and control maintenance in process plants
- Automation support in manufacturing and utilities
- Commissioning and start-up teams in industrial projects
- Facilities and technical services responsible for control loops
- Contract service teams maintaining field instrumentation

Learning Objectives

By the end of this course, participants will be able to:

- Review process measurement, signals, and technician calculations
- Apply calibration and documentation steps to instrument scenarios
- Analyze control-loop, final-element, and system faults
- Organize start-up, commissioning, and loop-check activities
- Interpret drawings, records, procedures, and maintenance evidence
- Use domain mapping and practice questions to plan further study

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Course Agenda

Day 1: Measurement and Technician Calculations

- Process Variable, Unit, Range, and Span Review Sheet
- Analog, Discrete, Pneumatic, and Digital Signal Map
- Accuracy, Error, Linearity, and Uncertainty Calculation Set
- Pressure, Level, Flow, and Temperature Measurement Matrix
- Technical Formula and Unit-Conversion Practice Log

Day 2: Calibration and Maintenance

- Instrument Calibration Planning and As-Found Record
- Reference Standard, Test Equipment, and Traceability Checklist
- Transmitter, Transducer, and Controller Calibration Sequence
- Preventive and Corrective Maintenance Decision Table
- Calibration Exception and As-Left Documentation File

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Day 3: Troubleshooting and Repair

- Symptom, Cause, Test, and Evidence Troubleshooting Method
- Control Loop Signal-Path and Block-Diagram Analysis
- Sensor, Wiring, Power, and Communication Fault Tree
- Control Valve, Actuator, and Positioner Diagnostic Matrix
- Repair, Replacement, Retest, and Return-to-Service Record

Day 4: Commissioning and Documentation

- P&ID, Loop Diagram, Data Sheet, and I/O List Review
- Loop-Check Scope, Sequence, and Acceptance Sheet
- Start-Up and Commissioning Readiness Checklist
- Work Planning, Permit, and Task Coordination Map
- Technician Report, Change, and Handover Record

Day 5: Exam Review Practice and Capstone

- Exercise on Measurement and Calculation Questions
- Exercise on Calibration and Maintenance Scenarios
- Exercise on Troubleshooting and Repair Decisions
- Exercise on Commissioning and Documentation Cases
- Capstone Exercise: Technician Review and Practice File

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Practical Exercises

The course uses suggested activities that convert technician tasks into review evidence and study priorities.

- Suggested activity: solve range, span, signal, accuracy, and unit-conversion problems
- Suggested activity: complete calibration records from as-found and as-left data
- Suggested activity: diagnose a control-loop fault using drawings and measurements
- Suggested activity: classify practice-question errors and build a targeted review plan

FAQs

Who suits control systems technician exam preparation, and what does it assume?

Practicing control, instrumentation, maintenance, and automation technicians suit the course. It assumes field experience with measurement and control systems and does not replace any education or experience requirements set by a certification body.

How does control systems technician exam preparation differ from general instrumentation training?

Exam preparation organizes existing knowledge around published technician domains and practice questions. General instrumentation training develops selected technical skills without necessarily mapping them to an examination blueprint or individual study-gap record.

Does the control systems technician preparation course award CCST certification?

No. The course is an independent preparation activity and does not award CCST certification, determine eligibility, register candidates, or guarantee examination results. ISA controls the certification process and its current requirements.

What technician topics should candidates review before an examination?

Candidates should review measurement, signals, calculations, calibration, maintenance, repair, troubleshooting, control loops, final elements, commissioning, loop checks, planning, safety, drawings, documentation, and the current public examination domains relevant to their intended level.

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How should control systems technicians use practice questions?

Technicians should answer under controlled conditions, document the reasoning and evidence, classify each error by domain, revisit the underlying task, and repeat a different question set. Memorizing isolated answers does not demonstrate transferable technician judgment.

Conclusion

Participants take back a Technician Review and Practice File containing domain maps, calculation work, calibration records, troubleshooting evidence, commissioning checks, practice results, and study priorities. The file changes scattered revision into a traceable preparation plan. Participants can update it as gaps close and use it to direct further independent study.