

MAINTENANCE AND ENGINEERING | COURSE BROCHURE

Instrumentation and Control Maintenance

5 days | Classroom training | English

SMART HORIZON

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Amsterdam
The Netherlands

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Course content

Why attend

Instruments and control systems keep processes safe and efficient. This course covers maintenance of instrumentation and control equipment: pressure, flow, level and temperature measurement, transmitters and calibration, control valves, loop checking, basic control loops, safety instrumented functions and troubleshooting.

Inaccurate instruments cause off-spec products, inefficiency and safety risks. You will learn practical skills to keep instrumentation reliable.

Professional Problems This Course Is Designed to Solve

• Difficulty translating subject knowledge into practical workplace decisions.
• Inconsistent approaches to the activities covered in the course outline.
• Lack of a structured plan for applying and reviewing new skills.

Course methodology

Calibration exercises, loop diagram reading, troubleshooting scenarios and demonstrations.

Course objectives

By the end of this course, participants will be able to:
• Explain measurement principles for key process variables
• Calibrate transmitters and instruments
• Maintain control valves and positioners
• Perform loop checks
• Troubleshoot instrumentation and control problems
• Understand maintenance of safety instrumented functions

Target audience

This course is suitable for:
• Instrument technicians
• Control and automation engineers
• Maintenance engineers
• Process operators
• Maintenance supervisors



Course content

Target competencies

Participants will develop competencies in:

- Measurement principles
- Calibration
- Loop checking
- Troubleshooting
- Safety awareness

Course outline

Day 1: Measurement

09:00–10:08	Pressure and temperature
10:08–11:00	Flow and level
11:00–11:30	**Coffee break**
11:30–11:45	Flow and level (continued)
11:45–12:53	Accuracy and uncertainty
12:53–14:00	Exercise

Day 2: Transmitters and Calibration

09:00–10:08	Smart transmitters
10:08–11:00	Calibration procedures
11:00–11:30	**Coffee break**
11:30–11:45	Calibration procedures (continued)
11:45–12:53	Records
12:53–14:00	Practice

Day 3: Control Valves and Loops

09:00–10:08	Valves and positioners
10:08–11:00	Loop diagrams
11:00–11:30	**Coffee break**



Course content

11:30–11:45	Loop diagrams (continued)
11:45–12:53	Loop checks
12:53–14:00	Exercise

Day 4: Control Basics

09:00–10:08	Feedback control
10:08–11:00	Tuning concepts
11:00–11:30	**Coffee break**
11:30–11:45	Tuning concepts (continued)
11:45–12:53	Common problems
12:53–14:00	Case study

Day 5: Safety and Troubleshooting

09:00–10:08	Safety instrumented functions
10:08–11:00	Proof testing
11:00–11:30	**Coffee break**
11:30–11:45	Proof testing (continued)
11:45–12:53	Troubleshooting method
12:53–14:00	Action plan

The timings provided are estimates and may vary depending on the number of participants and the discussions taking place during the sessions. They are indicative only and do not constitute a binding commitment.



Course content

Dates, venues and fees

Current published course plans. Fees are per participant in EUR, excluding unconfirmed taxes.

Venue	Start date	End date	Fee (EUR)
Barcelona Confirmed dates	16 Nov 2026	20 Nov 2026	**€5,680.–**
Online Confirmed dates	16 Nov 2026	20 Nov 2026	**€1,250.–**
Amsterdam Confirmed dates	7 Dec 2026	11 Dec 2026	**€5,080.–**
Online Confirmed dates	7 Dec 2026	11 Dec 2026	**€1,250.–**
London Confirmed dates	11 Jan 2027	15 Jan 2027	**€4,900.–**
Online Confirmed dates	11 Jan 2027	15 Jan 2027	**€1,250.–**
Vienna Confirmed dates	1 Feb 2027	5 Feb 2027	**€5,880.–**
Online Confirmed dates	1 Feb 2027	5 Feb 2027	**€1,250.–**
Rome Confirmed dates	22 Feb 2027	26 Feb 2027	**€4,900.–**



Course content

Dates, venues and fees (continued)

Venue	Start date	End date	Fee (EUR)
Online Confirmed dates	22 Feb 2027	26 Feb 2027	**€1,250.–**
Kuala Lumpur Confirmed dates	8 Mar 2027	12 Mar 2027	**€2,900.–**
Online Confirmed dates	8 Mar 2027	12 Mar 2027	**€1,250.–**
Cape Town Confirmed dates	29 Mar 2027	2 Apr 2027	**€3,780.–**
Online Confirmed dates	29 Mar 2027	2 Apr 2027	**€1,250.–**
Rome Confirmed dates	19 Apr 2027	23 Apr 2027	**€4,900.–**
Online Confirmed dates	19 Apr 2027	23 Apr 2027	**€1,250.–**
Cape Town Confirmed dates	10 May 2027	14 May 2027	**€3,780.–**
Online Confirmed dates	10 May 2027	14 May 2027	**€1,250.–**



Course content

Dates, venues and fees (continued)

Venue	Start date	End date	Fee (EUR)
Vienna Confirmed dates	31 May 2027	4 Jun 2027	**€5,880.–**
Online Confirmed dates	31 May 2027	4 Jun 2027	**€1,250.–**
Dubai Confirmed dates	14 Jun 2027	18 Jun 2027	**€6,300.–**
Online Confirmed dates	14 Jun 2027	18 Jun 2027	**€1,250.–**
London Confirmed dates	5 Jul 2027	9 Jul 2027	**€4,900.–**
Online Confirmed dates	5 Jul 2027	9 Jul 2027	**€1,250.–**
Dubai Confirmed dates	26 Jul 2027	30 Jul 2027	**€6,300.–**
Online Confirmed dates	26 Jul 2027	30 Jul 2027	**€1,250.–**
Frankfurt Confirmed dates	16 Aug 2027	20 Aug 2027	**€5,300.–**



Course content

Dates, venues and fees (continued)

Venue	Start date	End date	Fee (EUR)
Online Confirmed dates	16 Aug 2027	20 Aug 2027	**€1,250.-**
Rome Confirmed dates	6 Sept 2027	10 Sept 2027	**€4,900.-**
Online Confirmed dates	6 Sept 2027	10 Sept 2027	**€1,250.-**
Paris Confirmed dates	20 Sept 2027	24 Sept 2027	**€5,720.-**
Online Confirmed dates	20 Sept 2027	24 Sept 2027	**€1,250.-**
Cape Town Confirmed dates	11 Oct 2027	15 Oct 2027	**€3,780.-**
Online Confirmed dates	11 Oct 2027	15 Oct 2027	**€1,250.-**
Istanbul Confirmed dates	1 Nov 2027	5 Nov 2027	**€5,300.-**
Online Confirmed dates	1 Nov 2027	5 Nov 2027	**€1,250.-**



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Dates, venues and fees (continued)

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Barcelona Confirmed dates	22 Nov 2027	26 Nov 2027	**€5,680.-**
Online Confirmed dates	22 Nov 2027	26 Nov 2027	**€1,250.-**
Dubai Confirmed dates	13 Dec 2027	17 Dec 2027	**€6,300.-**
Online Confirmed dates	13 Dec 2027	17 Dec 2027	**€1,250.-**

Plan your next step

Dates, availability, exact venue, taxes, inclusions and payment terms require written confirmation. This brochure is not a quotation, registration, booking confirmation or visa invitation. Participants receive a Smart Horizon certificate of attendance; programmes are not externally accredited and do not award a professional qualification or designation. Confirm arrangements before booking travel.

For group or in-house training, contact our learning team to discuss your objectives and delivery arrangements.

Contact Smart Horizon

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View the latest course details online