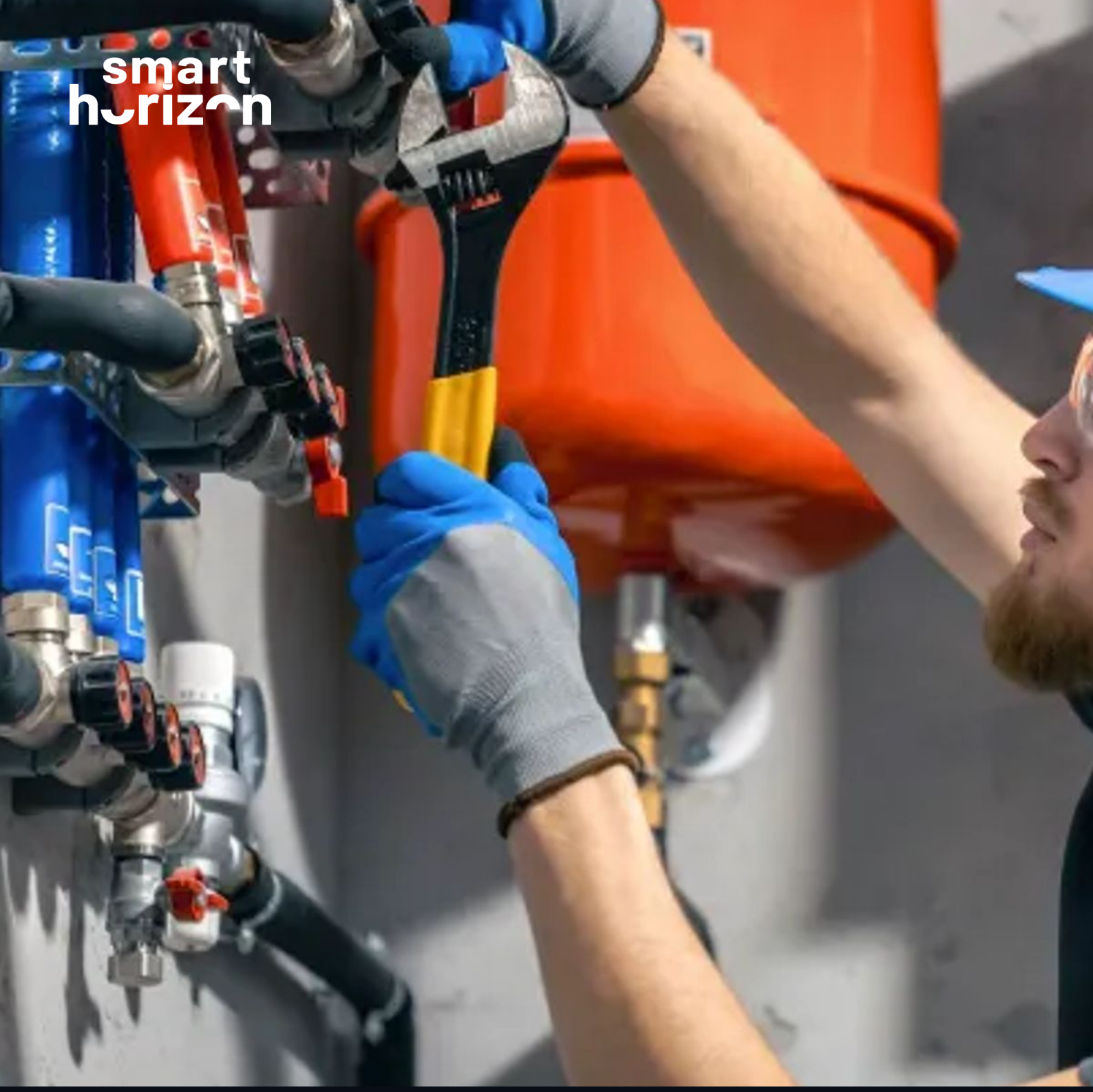


MAINTENANCE AND ENGINEERING | COURSE BROCHURE

Instrumentation and Process Control

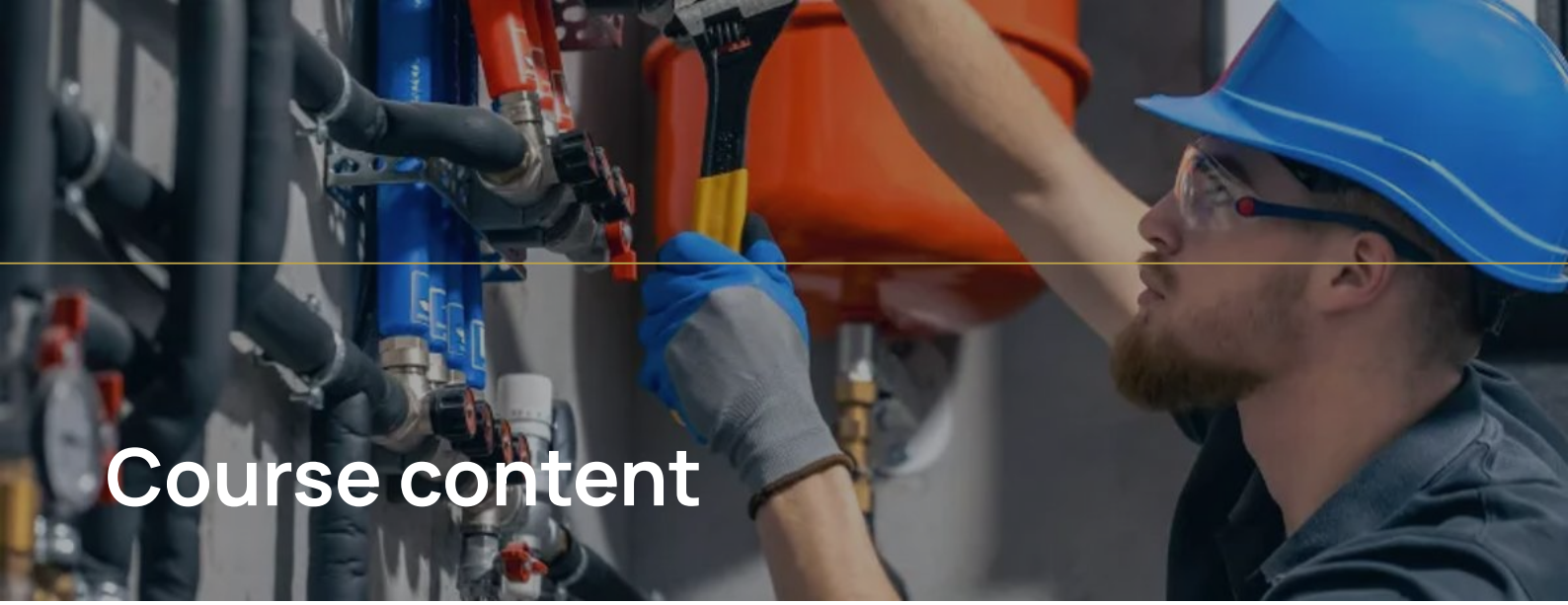
5 days | Classroom training | English

SMART HORIZON

info@smart-horizon.eu
Amsterdam
The Netherlands

Explore current programmes

https://smart-horizon.eu



Course content

Why attend

Accurate instrumentation and stable control loops are essential for safe, efficient processes. This course covers measurement of pressure, flow, level and temperature, transmitters, control valves, control loop principles, PID tuning, calibration and troubleshooting.

Poorly performing instruments and loops reduce quality and efficiency. This course gives practical skills to maintain and improve process control.

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

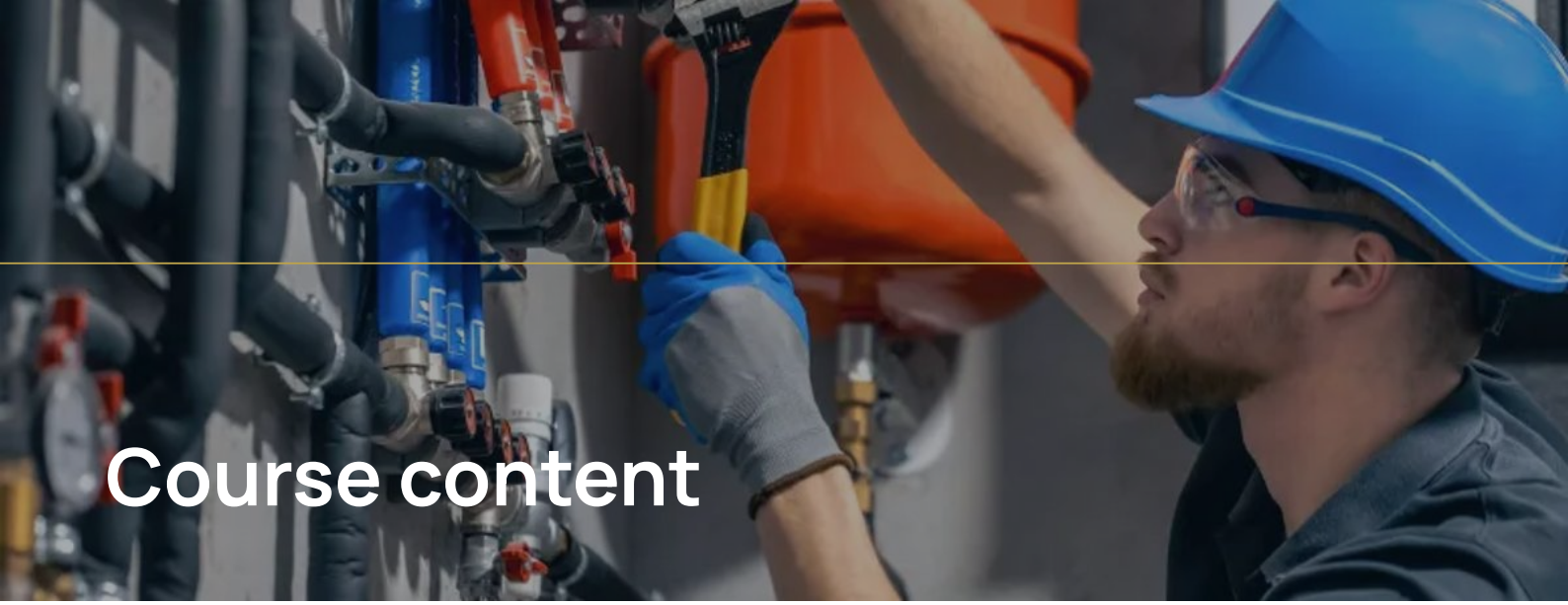
The course uses demonstrations, calibration exercises, loop tuning simulations and troubleshooting cases.

Course objectives

By the end of this course, participants will be able to:
- Explain measurement principles for key process variables
- Select and maintain transmitters and sensors
- Understand control valves and actuators
- Explain control loop concepts and PID control
- Tune and troubleshoot control loops
- Calibrate instruments and manage documentation

Target audience

This course is suitable for:
- Instrumentation technicians
- Control engineers
- Process engineers
- Maintenance engineers
- Operators



Course content

Target competencies

Participants will develop competencies in:

- Process measurement
- Instrument maintenance
- Control valves
- PID control
- Loop tuning
- Calibration

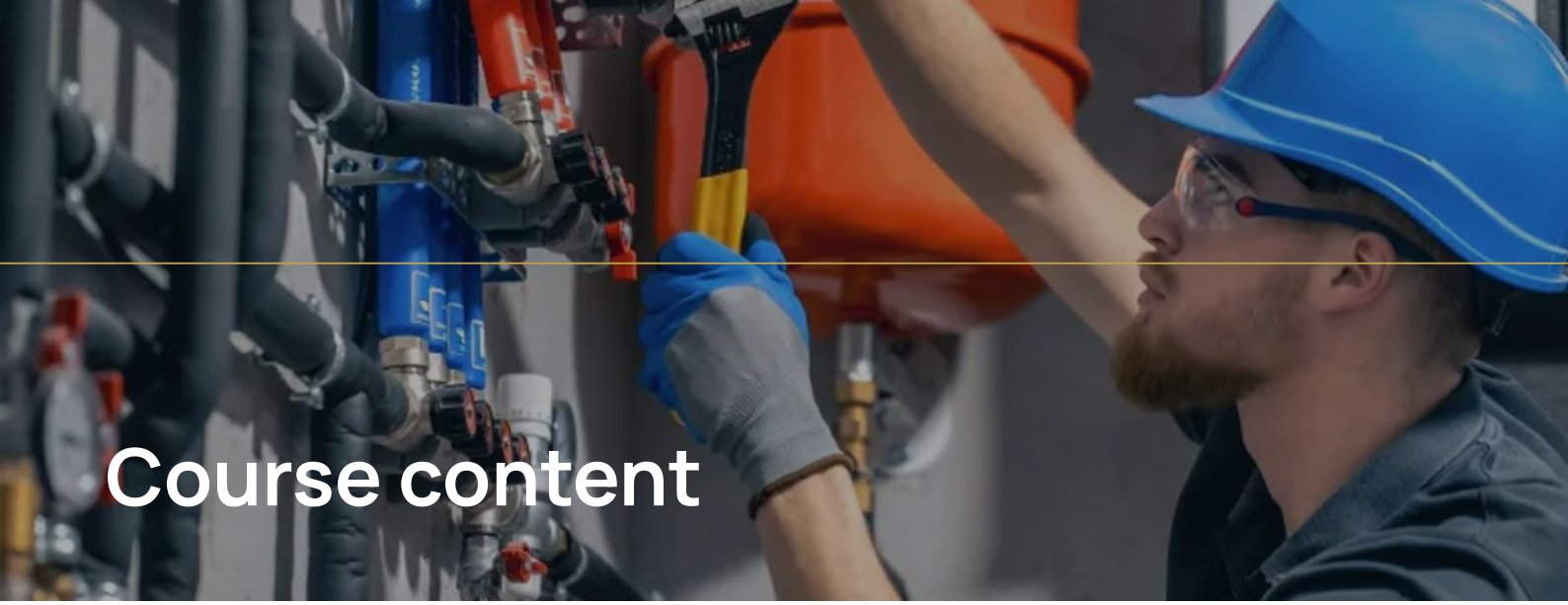
Course outline

Day 1: Process Measurement

09:00–09:54	Measurement principles
09:54–10:48	Pressure
10:48–11:00	Temperature
11:00–11:30	**Coffee break**
11:30–12:12	Temperature (continued)
12:12–13:06	Accuracy and errors
13:06–14:00	Exercise: Instrument selection

Day 2: Flow and Level

09:00–09:54	Flow meters
09:54–10:48	Level instruments
10:48–11:00	Installation effects
11:00–11:30	**Coffee break**
11:30–12:12	Installation effects (continued)
12:12–13:06	Smart transmitters
13:06–14:00	Demonstration: Instruments



Course content

Day 3: Final Control Elements

09:00–09:54	Control valves
09:54–10:48	Actuators and positioners
10:48–11:00	Valve sizing basics
11:00–11:30	**Coffee break**
11:30–12:12	Valve sizing basics (continued)
12:12–13:06	Valve problems
13:06–14:00	Case study: Valve issue

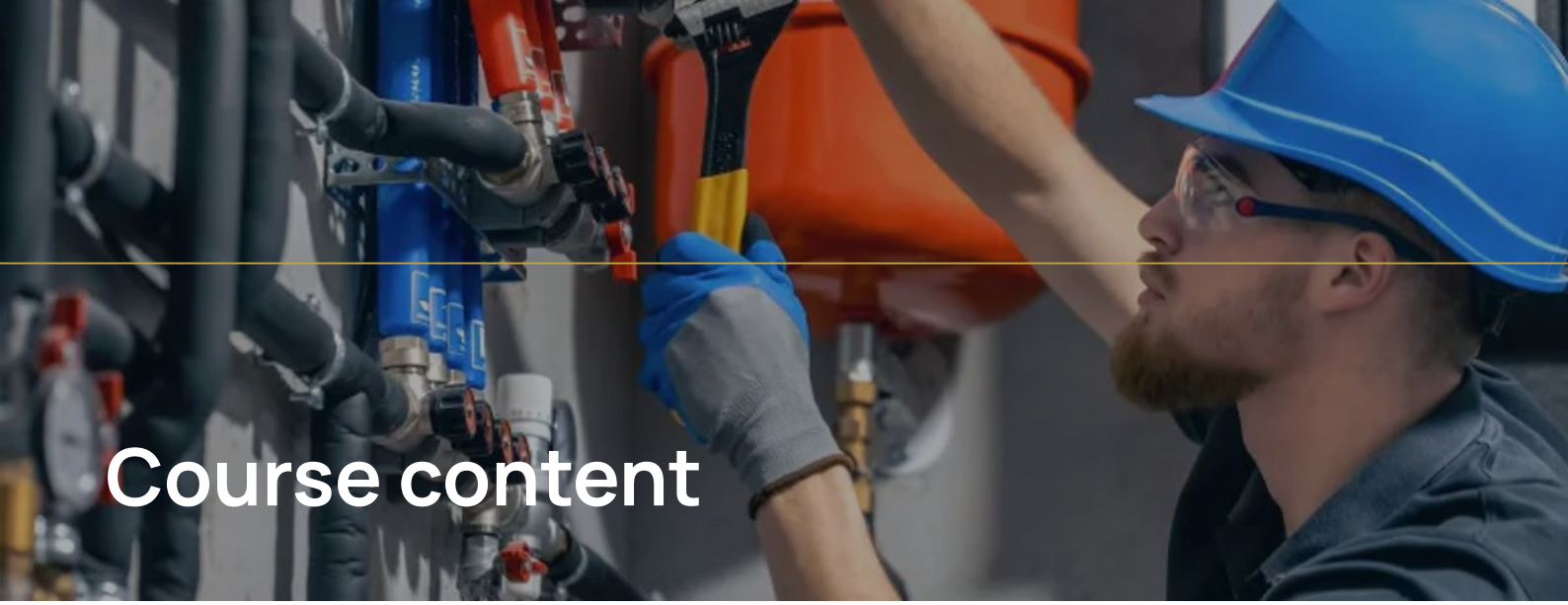
Day 4: Control Loops

09:00–09:54	Feedback control
09:54–10:48	PID modes
10:48–11:00	Tuning methods
11:00–11:30	**Coffee break**
11:30–12:12	Tuning methods (continued)
12:12–13:06	Loop performance
13:06–14:00	Simulation: Loop tuning

Day 5: Calibration and Troubleshooting

09:00–09:54	Calibration procedures
09:54–10:48	Documentation
10:48–11:00	Troubleshooting loops
11:00–11:30	**Coffee break**
11:30–12:12	Troubleshooting loops (continued)
12:12–13:06	Maintenance programmes
13:06–14:00	Capstone: Loop improvement

The timings provided are estimates and may vary depending on the number of participants and the discussions taking place during the



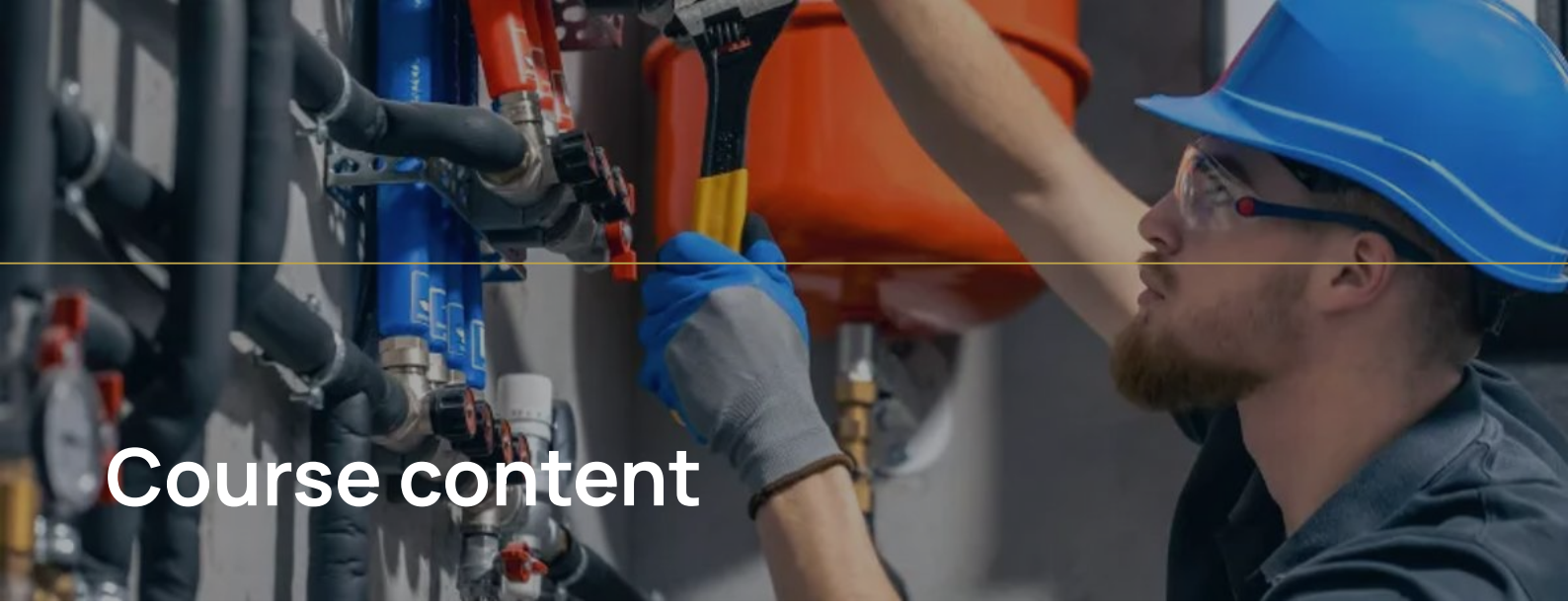
Course content

sessions. They are indicative only and do not constitute a binding commitment.

Dates, venues and fees

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

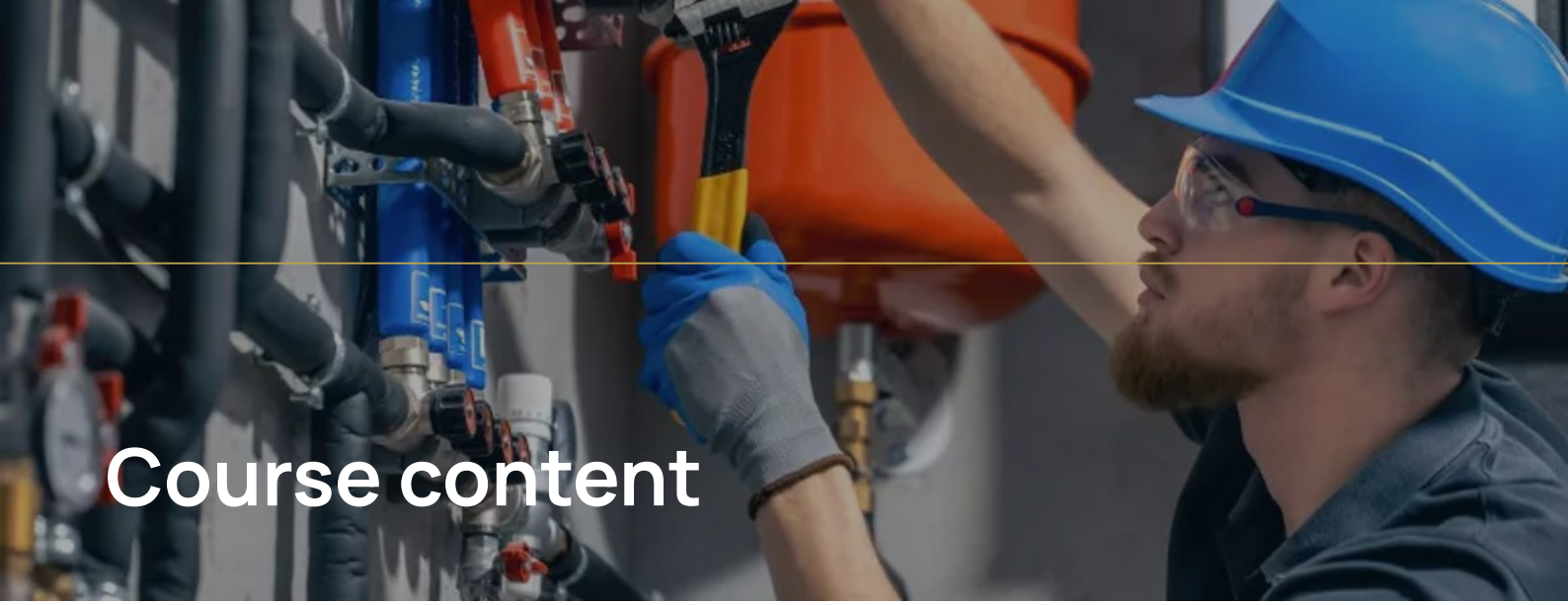
Venue	Start date	End date	Fee (EUR)
Dubai Confirmed dates	16 Nov 2026	20 Nov 2026	**€6,300.–**
Online Confirmed dates	16 Nov 2026	20 Nov 2026	**€1,250.–**
Vienna Confirmed dates	23 Nov 2026	27 Nov 2026	**€5,880.–**
Online Confirmed dates	23 Nov 2026	27 Nov 2026	**€1,250.–**
Frankfurt Confirmed dates	7 Dec 2026	11 Dec 2026	**€5,300.–**
Online Confirmed dates	7 Dec 2026	11 Dec 2026	**€1,250.–**
Kuala Lumpur Confirmed dates	14 Dec 2026	18 Dec 2026	**€2,900.–**
Online Confirmed dates	14 Dec 2026	18 Dec 2026	**€1,250.–**



Course content

Dates, venues and fees (continued)

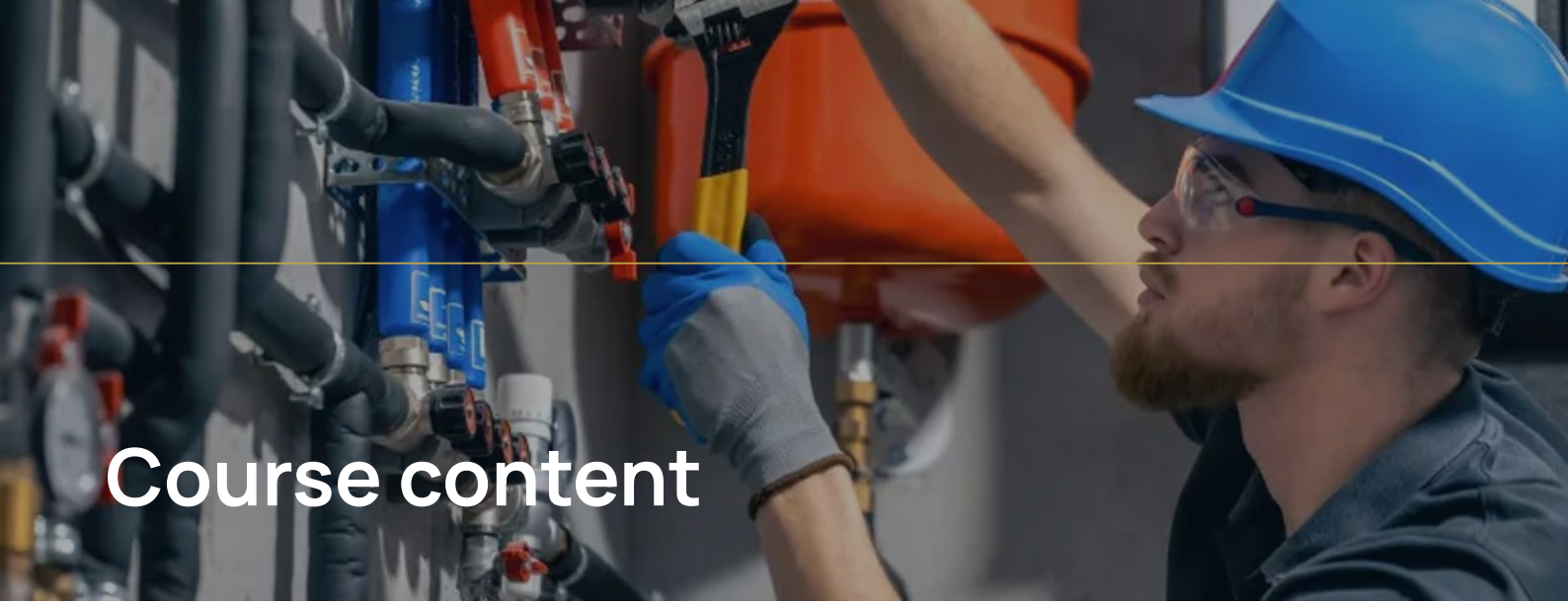
Venue	Start date	End date	Fee (EUR)
Paris Confirmed dates	4 Jan 2027	8 Jan 2027	**€5,720.-**
Online Confirmed dates	4 Jan 2027	8 Jan 2027	**€1,250.-**
Istanbul Confirmed dates	18 Jan 2027	22 Jan 2027	**€5,300.-**
Online Confirmed dates	18 Jan 2027	22 Jan 2027	**€1,250.-**
Amsterdam Confirmed dates	1 Feb 2027	5 Feb 2027	**€5,080.-**
Online Confirmed dates	1 Feb 2027	5 Feb 2027	**€1,250.-**
Singapore Confirmed dates	15 Feb 2027	19 Feb 2027	**€5,640.-**
Online Confirmed dates	15 Feb 2027	19 Feb 2027	**€1,250.-**
Rome Confirmed dates	22 Feb 2027	26 Feb 2027	**€4,900.-**



Course content

Dates, venues and fees (continued)

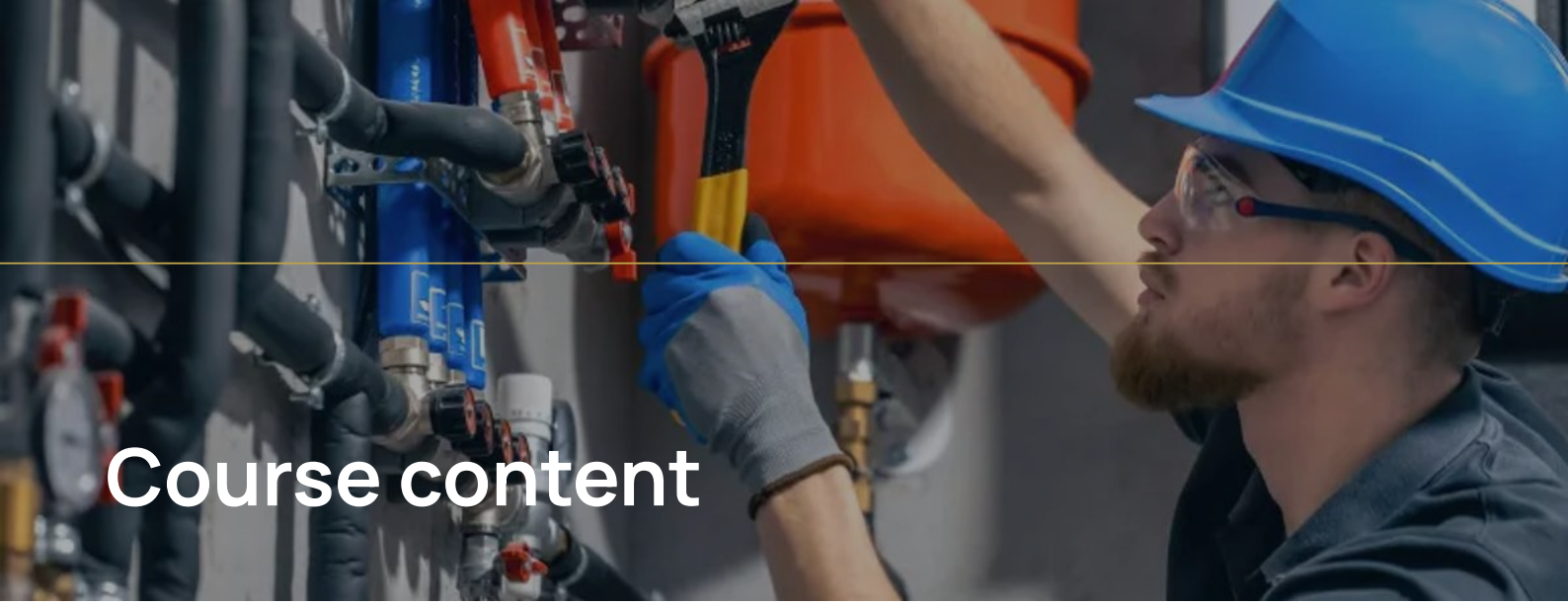
Venue	Start date	End date	Fee (EUR)
Online Confirmed dates	22 Feb 2027	26 Feb 2027	**€1,250.–**
London Confirmed dates	1 Mar 2027	5 Mar 2027	**€4,900.–**
Online Confirmed dates	1 Mar 2027	5 Mar 2027	**€1,250.–**
Dubai Confirmed dates	15 Mar 2027	19 Mar 2027	**€6,300.–**
Online Confirmed dates	15 Mar 2027	19 Mar 2027	**€1,250.–**
Frankfurt Confirmed dates	5 Apr 2027	9 Apr 2027	**€5,300.–**
Online Confirmed dates	5 Apr 2027	9 Apr 2027	**€1,250.–**
Kuala Lumpur Confirmed dates	19 Apr 2027	23 Apr 2027	**€2,900.–**
Online Confirmed dates	19 Apr 2027	23 Apr 2027	**€1,250.–**



Course content

Dates, venues and fees (continued)

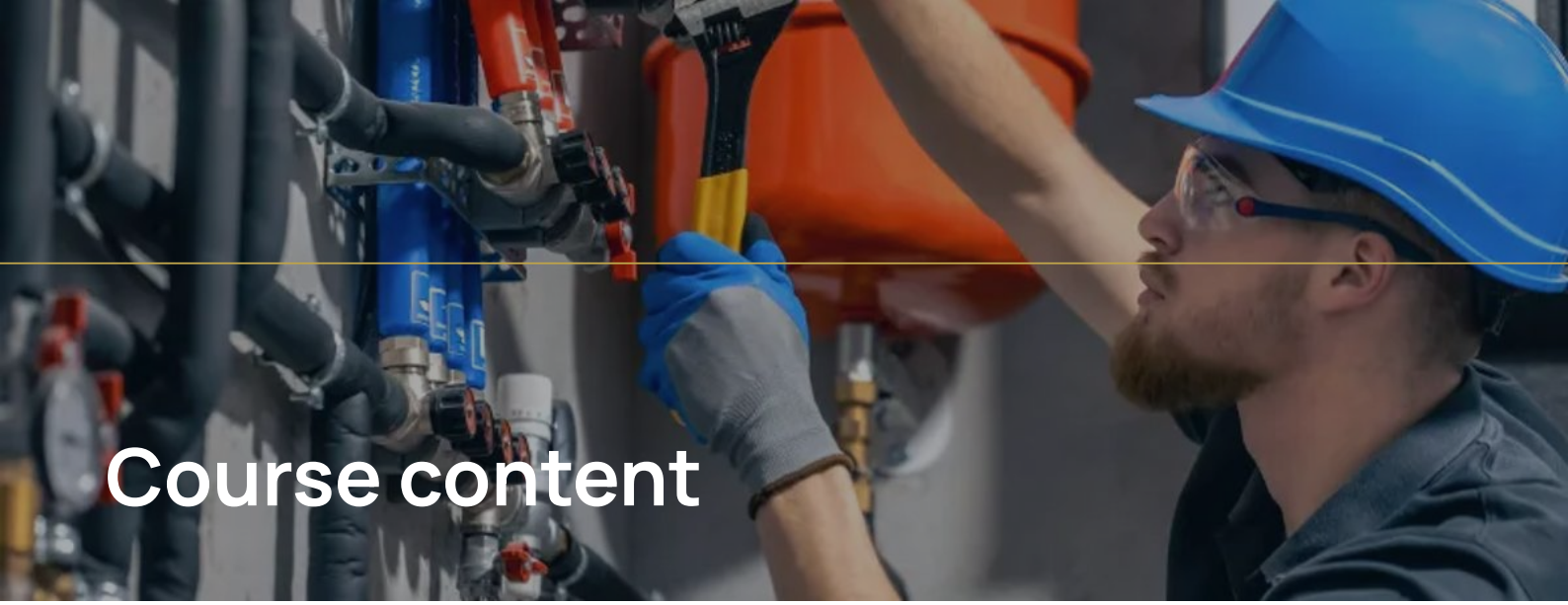
Venue	Start date	End date	Fee (EUR)
Barcelona Confirmed dates	26 Apr 2027	30 Apr 2027	**€5,680.-**
Online Confirmed dates	26 Apr 2027	30 Apr 2027	**€1,250.-**
Paris Confirmed dates	3 May 2027	7 May 2027	**€5,720.-**
Online Confirmed dates	3 May 2027	7 May 2027	**€1,250.-**
Istanbul Confirmed dates	17 May 2027	21 May 2027	**€5,300.-**
Online Confirmed dates	17 May 2027	21 May 2027	**€1,250.-**
Amsterdam Confirmed dates	7 Jun 2027	11 Jun 2027	**€5,080.-**
Online Confirmed dates	7 Jun 2027	11 Jun 2027	**€1,250.-**
Cape Town Confirmed dates	14 Jun 2027	18 Jun 2027	**€3,780.-**



Course content

Dates, venues and fees (continued)

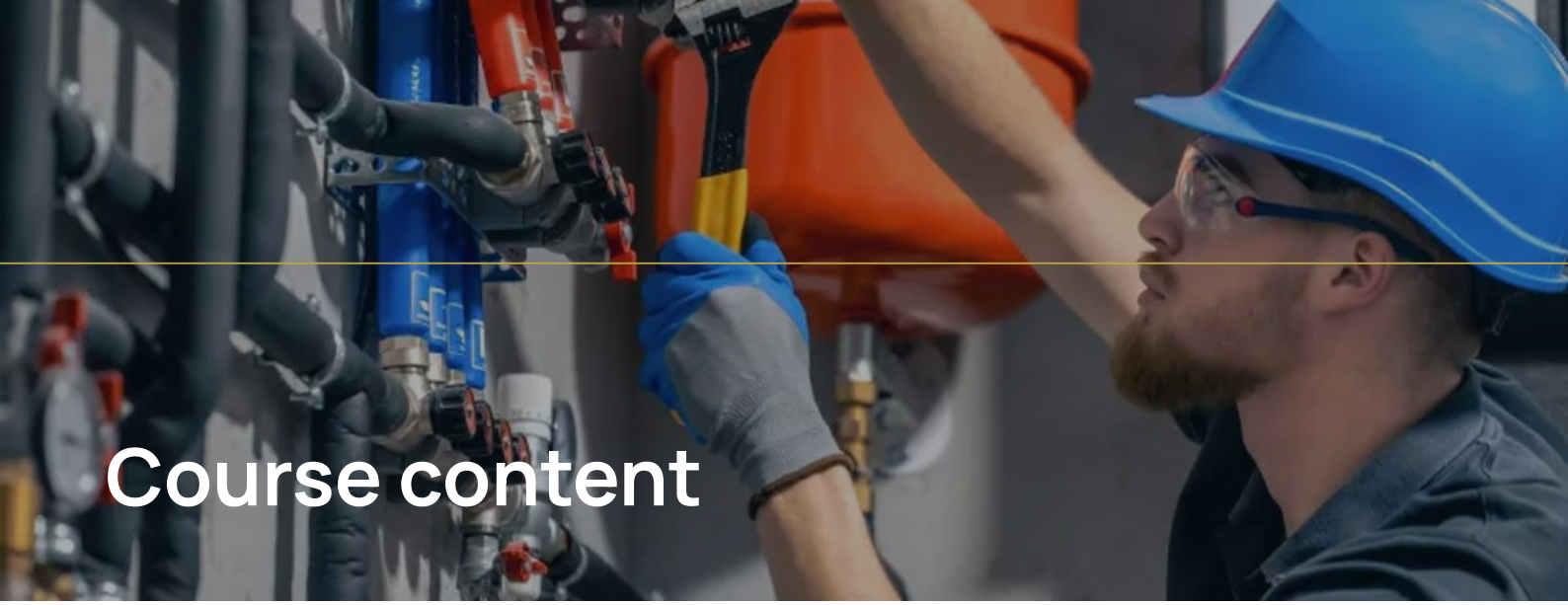
Venue	Start date	End date	Fee (EUR)
Online Confirmed dates	14 Jun 2027	18 Jun 2027	**€1,250.-**
Singapore Confirmed dates	21 Jun 2027	25 Jun 2027	**€5,640.-**
Online Confirmed dates	21 Jun 2027	25 Jun 2027	**€1,250.-**
London Confirmed dates	5 Jul 2027	9 Jul 2027	**€4,900.-**
Online Confirmed dates	5 Jul 2027	9 Jul 2027	**€1,250.-**
Dubai Confirmed dates	19 Jul 2027	23 Jul 2027	**€6,300.-**
Online Confirmed dates	19 Jul 2027	23 Jul 2027	**€1,250.-**
Frankfurt Confirmed dates	2 Aug 2027	6 Aug 2027	**€5,300.-**
Online Confirmed dates	2 Aug 2027	6 Aug 2027	**€1,250.-**



Course content

Dates, venues and fees (continued)

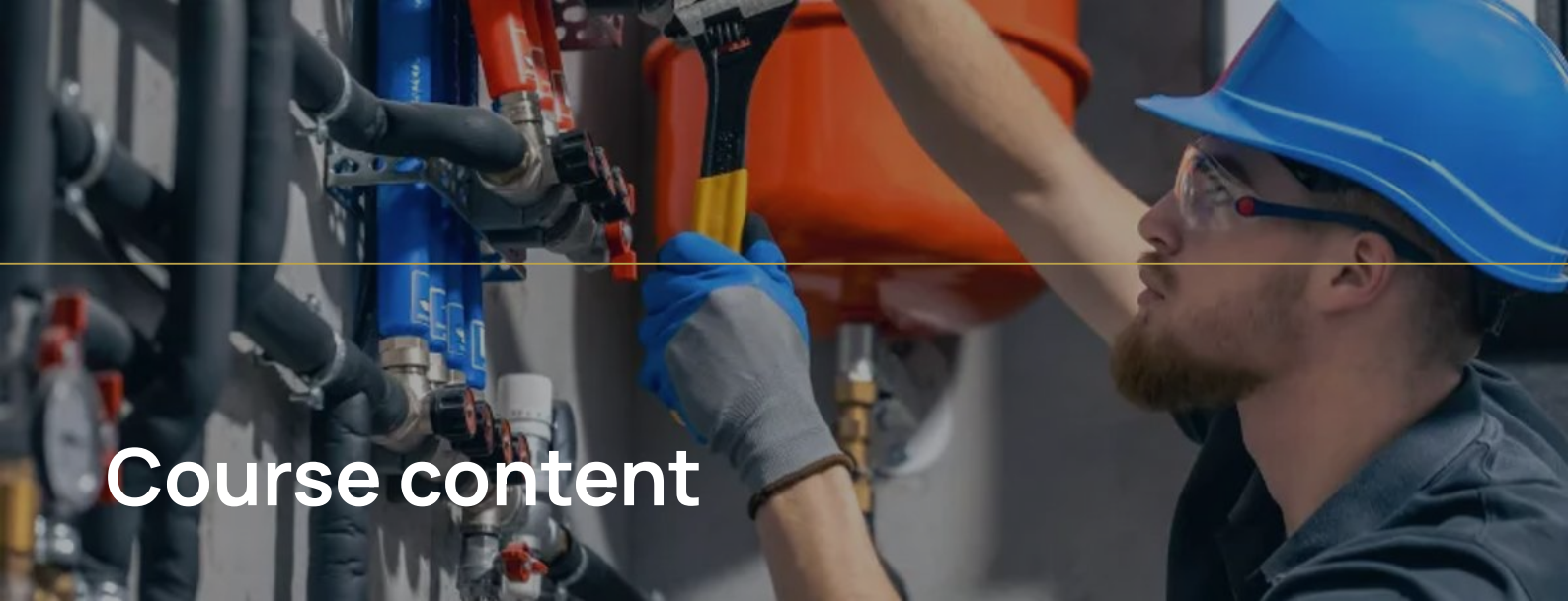
Venue	Start date	End date	Fee (EUR)
Kuala Lumpur Confirmed dates	16 Aug 2027	20 Aug 2027	**€2,900.-**
Online Confirmed dates	16 Aug 2027	20 Aug 2027	**€1,250.-**
Rome Confirmed dates	23 Aug 2027	27 Aug 2027	**€4,900.-**
Online Confirmed dates	23 Aug 2027	27 Aug 2027	**€1,250.-**
Paris Confirmed dates	6 Sept 2027	10 Sept 2027	**€5,720.-**
Online Confirmed dates	6 Sept 2027	10 Sept 2027	**€1,250.-**
Istanbul Confirmed dates	20 Sept 2027	24 Sept 2027	**€5,300.-**
Online Confirmed dates	20 Sept 2027	24 Sept 2027	**€1,250.-**
Amsterdam Confirmed dates	4 Oct 2027	8 Oct 2027	**€5,080.-**



Course content

Dates, venues and fees (continued)

Venue	Start date	End date	Fee (EUR)
Online Confirmed dates	4 Oct 2027	8 Oct 2027	**€1,250.-**
Singapore Confirmed dates	18 Oct 2027	22 Oct 2027	**€5,640.-**
Online Confirmed dates	18 Oct 2027	22 Oct 2027	**€1,250.-**
Cape Town Confirmed dates	25 Oct 2027	29 Oct 2027	**€3,780.-**
Online Confirmed dates	25 Oct 2027	29 Oct 2027	**€1,250.-**
London Confirmed dates	1 Nov 2027	5 Nov 2027	**€4,900.-**
Online Confirmed dates	1 Nov 2027	5 Nov 2027	**€1,250.-**
Dubai Confirmed dates	15 Nov 2027	19 Nov 2027	**€6,300.-**
Online Confirmed dates	15 Nov 2027	19 Nov 2027	**€1,250.-**



Course content

Dates, venues and fees (continued)

Venue	Start date	End date	Fee (EUR)
Frankfurt Confirmed dates	6 Dec 2027	10 Dec 2027	**€5,300.-**
Online Confirmed dates	6 Dec 2027	10 Dec 2027	**€1,250.-**
Kuala Lumpur Confirmed dates	13 Dec 2027	17 Dec 2027	**€2,900.-**
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

info@smart-horizon.eu
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