

MAINTENANCE AND ENGINEERING | COURSE BROCHURE

HVAC Systems Operation and Maintenance

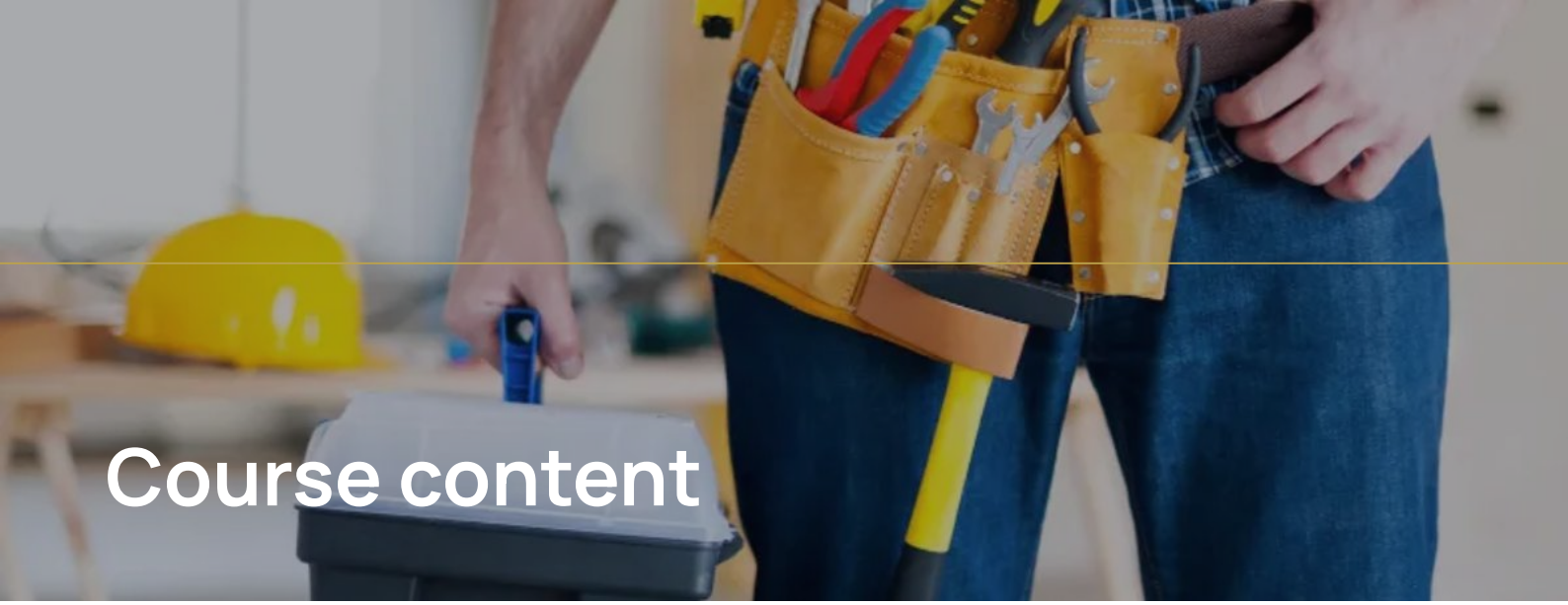
5 days | Classroom training | English

SMART HORIZON

info@smart-horizon.eu
Amsterdam
The Netherlands

Explore current programmes

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Course content

Why attend

Heating, ventilation and air conditioning systems affect comfort, health, energy use and equipment reliability. This course covers HVAC principles, system types, chillers, air handling units, controls, maintenance practices, indoor air quality, energy efficiency and troubleshooting.

Well-maintained HVAC systems reduce energy costs and complaints. This course gives practical knowledge to operate and maintain them effectively.

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

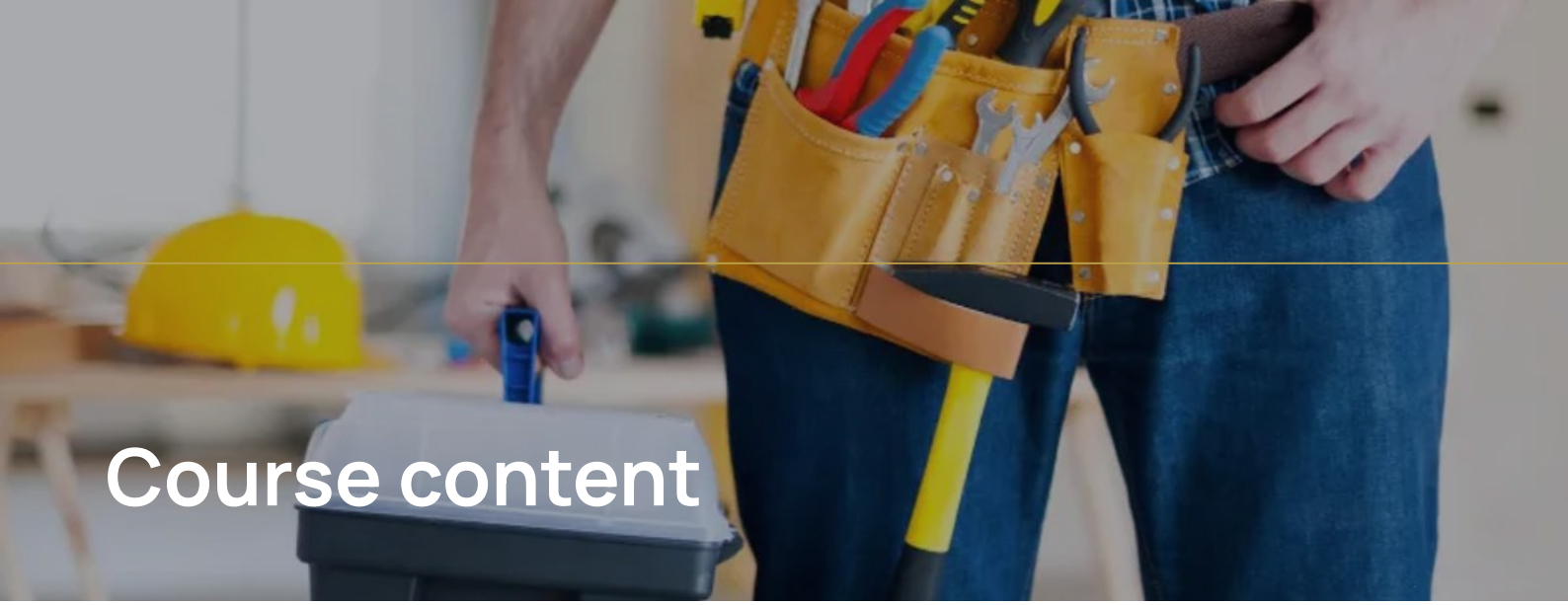
The course uses technical presentations, system diagrams, troubleshooting cases and maintenance planning exercises.

Course objectives

By the end of this course, participants will be able to:
• Explain HVAC principles and psychrometrics
• Understand common HVAC system types
• Operate and maintain chillers and air handling units
• Use building controls effectively
• Improve indoor air quality and energy efficiency
• Troubleshoot common HVAC problems

Target audience

This course is suitable for:
• Facilities and building engineers
• HVAC technicians
• Maintenance managers
• Energy managers
• Building operators



Course content

Target competencies

Participants will develop competencies in:

- HVAC principles
- System operation
- Preventive maintenance
- Controls
- Energy efficiency
- Troubleshooting

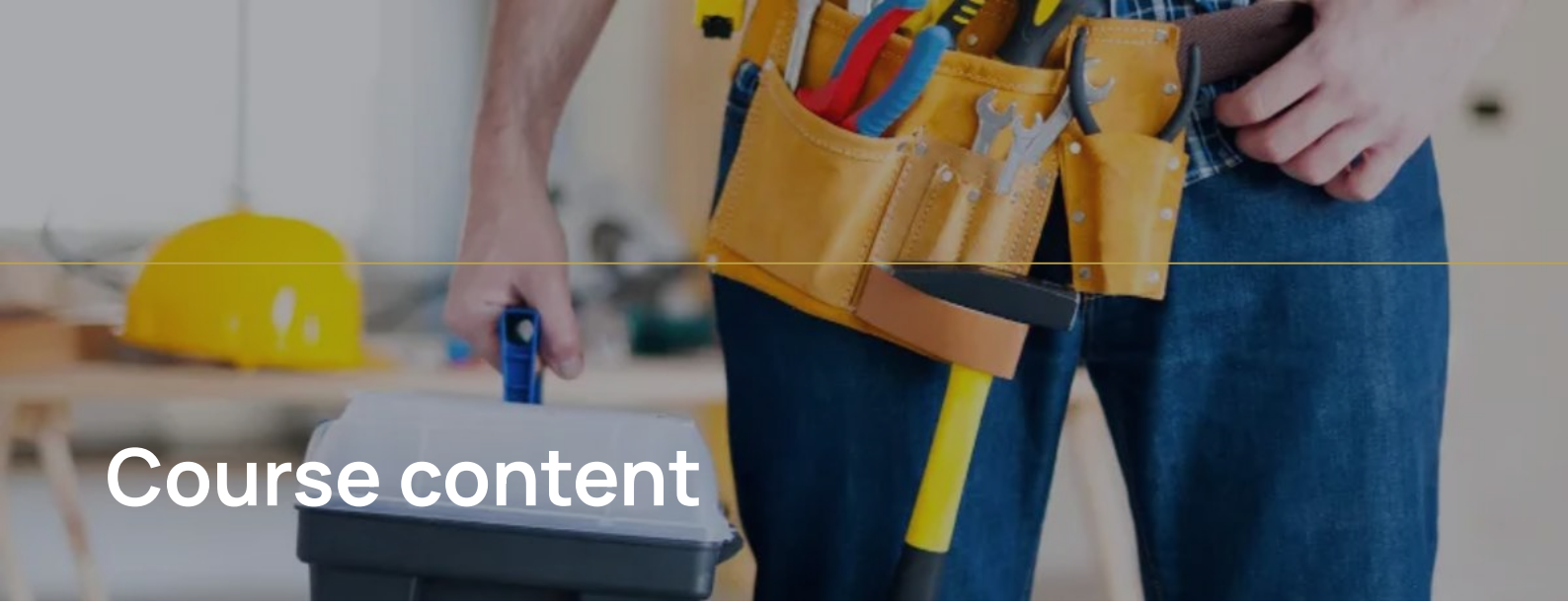
Course outline

Day 1: HVAC Fundamentals

09:00–09:54	Heat transfer
09:54–10:48	Psychrometrics
10:48–11:00	Comfort and air quality
11:00–11:30	**Coffee break**
11:30–12:12	Comfort and air quality (continued)
12:12–13:06	System types
13:06–14:00	Exercise: System review

Day 2: Cooling Systems

09:00–09:54	Refrigeration cycle
09:54–10:48	Chillers
10:48–11:00	Cooling towers
11:00–11:30	**Coffee break**
11:30–12:12	Cooling towers (continued)
12:12–13:06	Maintenance
13:06–14:00	Case study: Chiller performance



Course content

Day 3: Air Systems

09:00–09:54	Air handling units
09:54–10:48	Fans and filters
10:48–11:00	Ductwork
11:00–11:30	**Coffee break**
11:30–12:12	Ductwork (continued)
12:12–13:06	Ventilation
13:06–14:00	Workshop: AHU maintenance plan

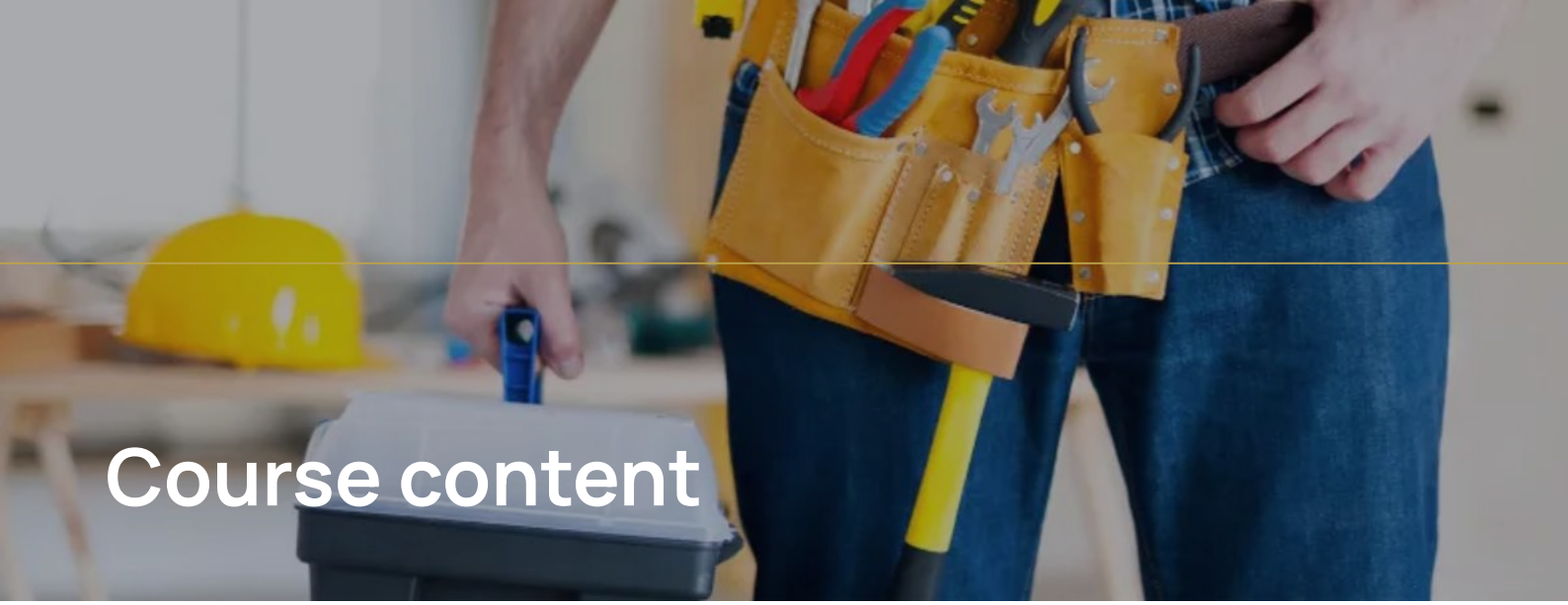
Day 4: Controls and Efficiency

09:00–09:54	Building management systems
09:54–10:48	Control strategies
10:48–11:00	Energy savings
11:00–11:30	**Coffee break**
11:30–12:12	Energy savings (continued)
12:12–13:06	Commissioning
13:06–14:00	Exercise: Control optimisation

Day 5: Maintenance and Troubleshooting

09:00–09:54	Maintenance planning
09:54–10:48	Common faults
10:48–11:00	Diagnostics
11:00–11:30	**Coffee break**
11:30–12:12	Diagnostics (continued)
12:12–13:06	Records
13:06–14:00	Capstone: HVAC maintenance programme

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



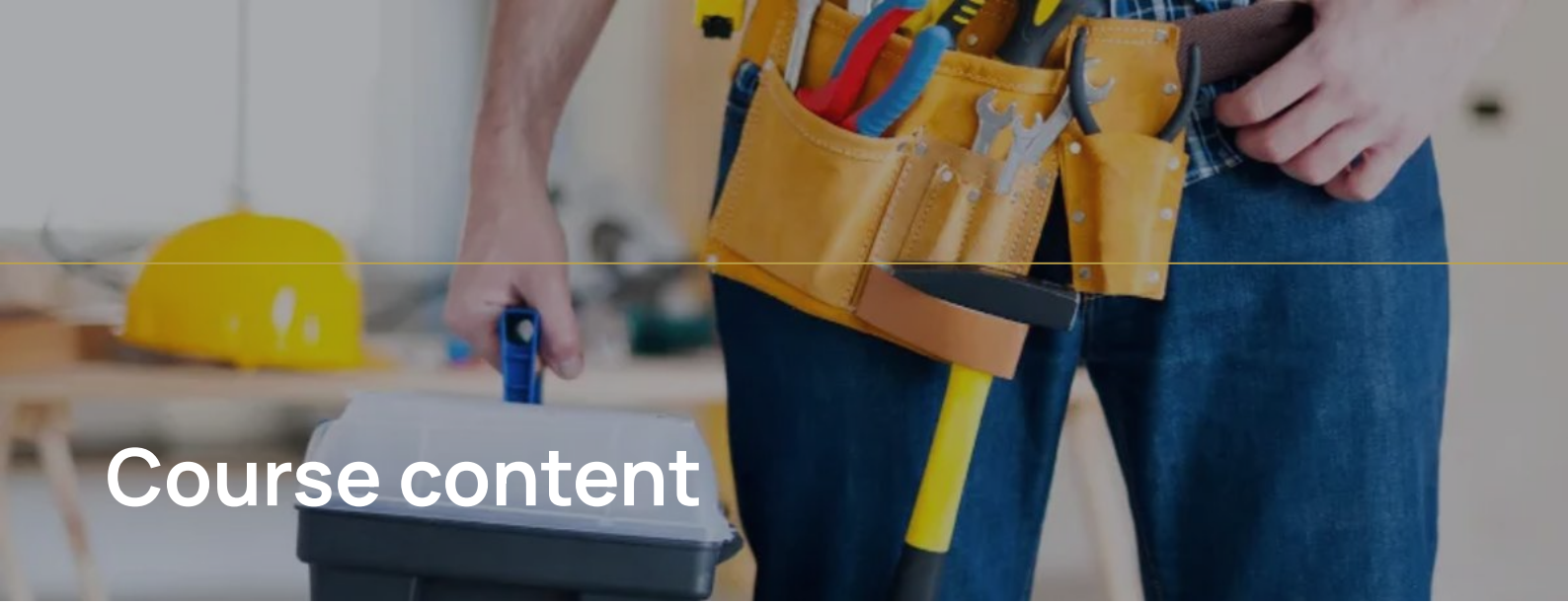
Course content

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.

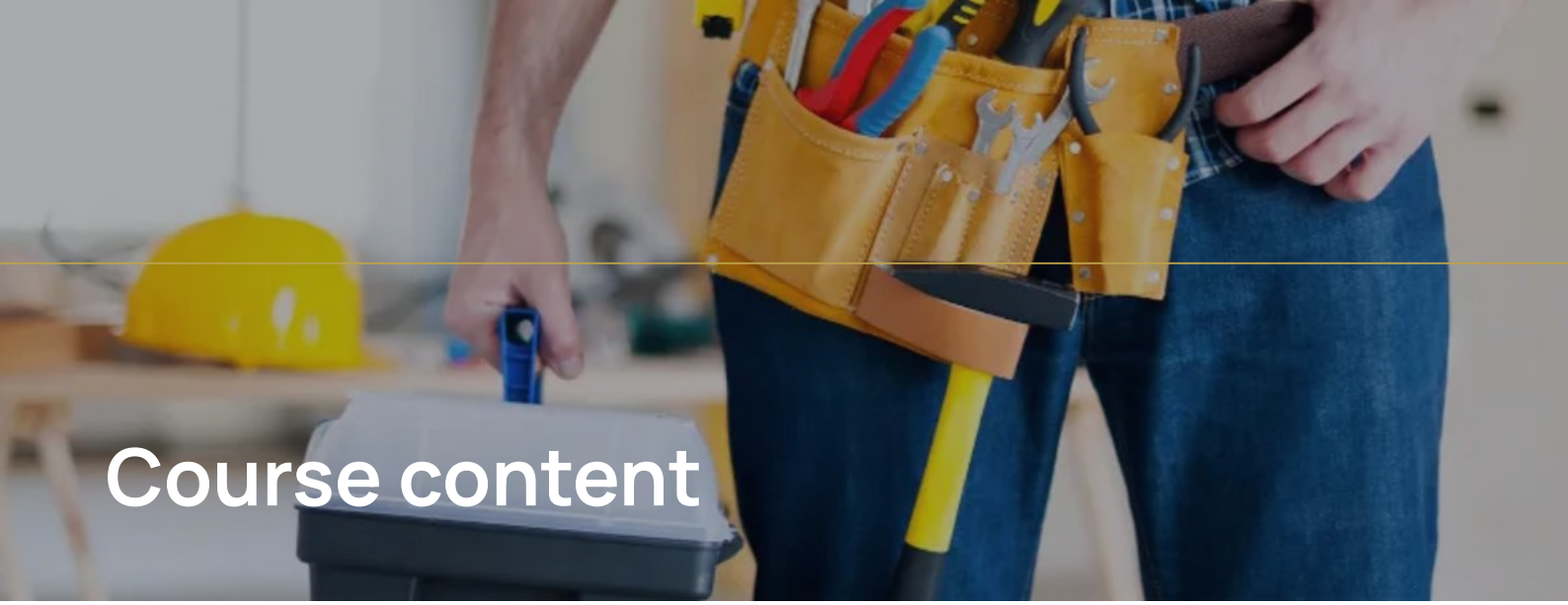
Venue	Start date	End date	Fee (EUR)
Singapore Confirmed dates	16 Nov 2026	20 Nov 2026	**€5,640.–**
Online Confirmed dates	16 Nov 2026	20 Nov 2026	**€1,250.–**
Cape Town Confirmed dates	30 Nov 2026	4 Dec 2026	**€3,780.–**
Online Confirmed dates	30 Nov 2026	4 Dec 2026	**€1,250.–**
London Confirmed dates	7 Dec 2026	11 Dec 2026	**€4,900.–**
Online Confirmed dates	7 Dec 2026	11 Dec 2026	**€1,250.–**
Dubai Confirmed dates	14 Dec 2026	18 Dec 2026	**€6,300.–**
Online Confirmed dates	14 Dec 2026	18 Dec 2026	**€1,250.–**



Course content

Dates, venues and fees (continued)

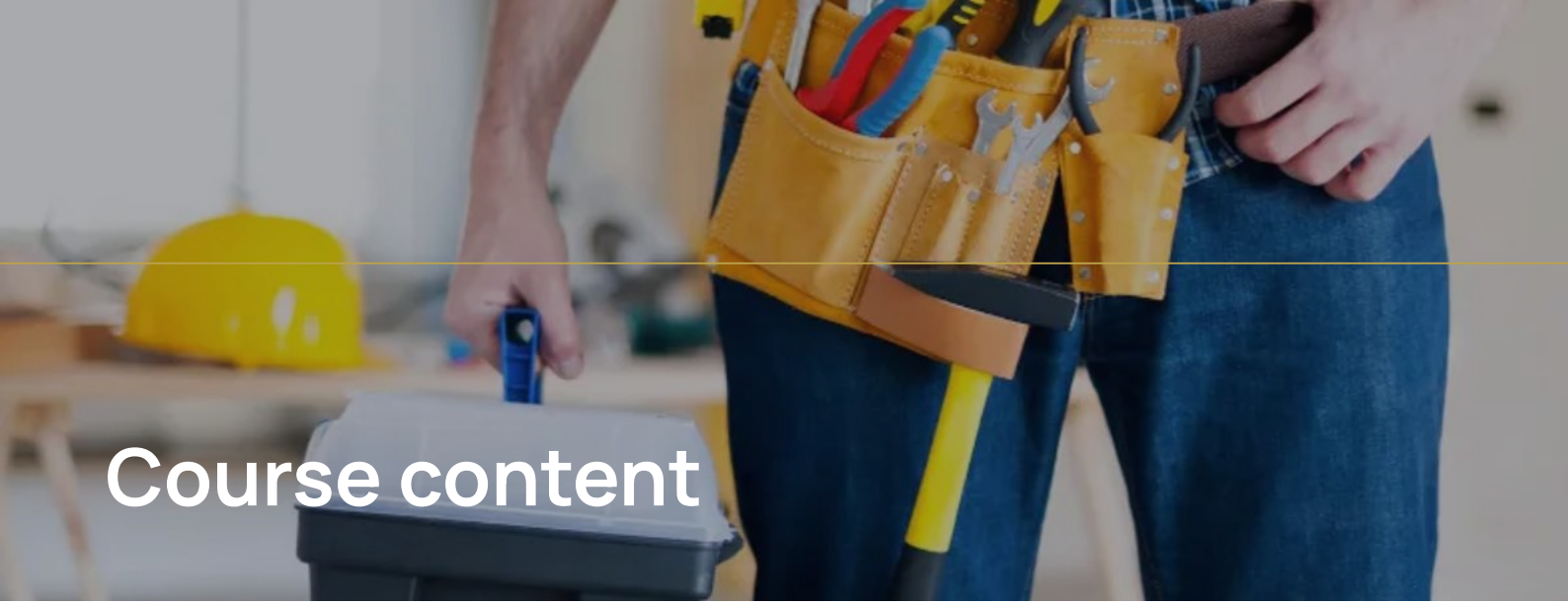
Venue	Start date	End date	Fee (EUR)
Frankfurt Confirmed dates	4 Jan 2027	8 Jan 2027	**€5,300.–**
Online Confirmed dates	4 Jan 2027	8 Jan 2027	**€1,250.–**
Kuala Lumpur Confirmed dates	18 Jan 2027	22 Jan 2027	**€2,900.–**
Online Confirmed dates	18 Jan 2027	22 Jan 2027	**€1,250.–**
Paris Confirmed dates	1 Feb 2027	5 Feb 2027	**€5,720.–**
Online Confirmed dates	1 Feb 2027	5 Feb 2027	**€1,250.–**
Istanbul Confirmed dates	15 Feb 2027	19 Feb 2027	**€5,300.–**
Online Confirmed dates	15 Feb 2027	19 Feb 2027	**€1,250.–**
Barcelona Confirmed dates	22 Feb 2027	26 Feb 2027	**€5,680.–**



Course content

Dates, venues and fees (continued)

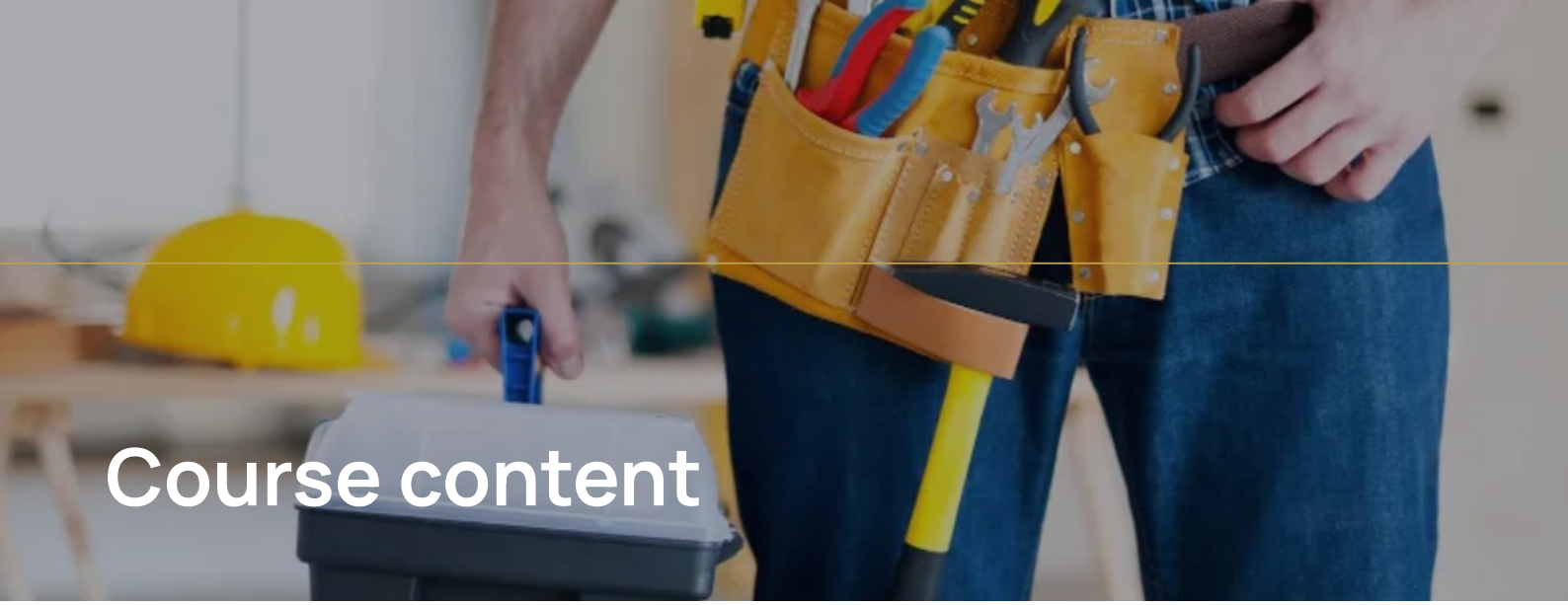
Venue	Start date	End date	Fee (EUR)
Online Confirmed dates	22 Feb 2027	26 Feb 2027	**€1,250.-**
Amsterdam Confirmed dates	1 Mar 2027	5 Mar 2027	**€5,080.-**
Online Confirmed dates	1 Mar 2027	5 Mar 2027	**€1,250.-**
Singapore Confirmed dates	15 Mar 2027	19 Mar 2027	**€5,640.-**
Online Confirmed dates	15 Mar 2027	19 Mar 2027	**€1,250.-**
London Confirmed dates	5 Apr 2027	9 Apr 2027	**€4,900.-**
Online Confirmed dates	5 Apr 2027	9 Apr 2027	**€1,250.-**
Dubai Confirmed dates	19 Apr 2027	23 Apr 2027	**€6,300.-**
Online Confirmed dates	19 Apr 2027	23 Apr 2027	**€1,250.-**



Course content

Dates, venues and fees (continued)

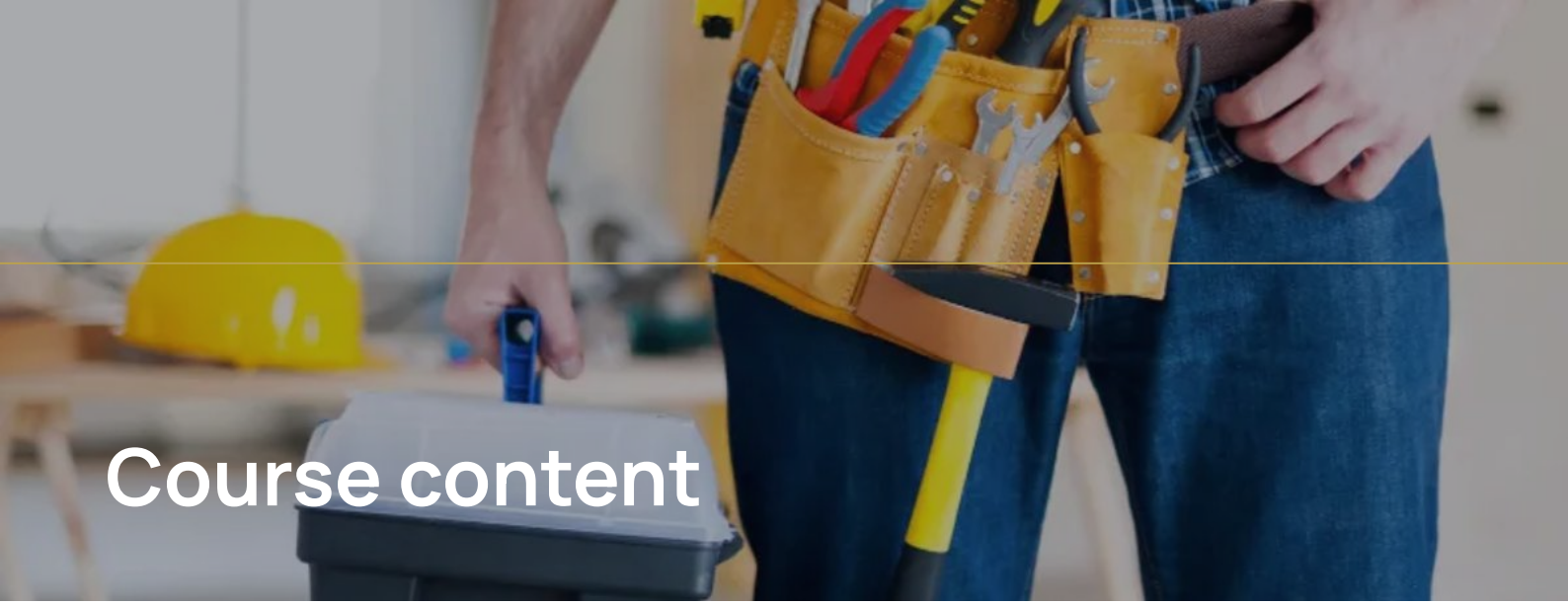
Venue	Start date	End date	Fee (EUR)
Rome Confirmed dates	26 Apr 2027	30 Apr 2027	**€4,900.–**
Online Confirmed dates	26 Apr 2027	30 Apr 2027	**€1,250.–**
Frankfurt Confirmed dates	3 May 2027	7 May 2027	**€5,300.–**
Online Confirmed dates	3 May 2027	7 May 2027	**€1,250.–**
Kuala Lumpur Confirmed dates	17 May 2027	21 May 2027	**€2,900.–**
Online Confirmed dates	17 May 2027	21 May 2027	**€1,250.–**
Paris Confirmed dates	7 Jun 2027	11 Jun 2027	**€5,720.–**
Online Confirmed dates	7 Jun 2027	11 Jun 2027	**€1,250.–**
Istanbul Confirmed dates	21 Jun 2027	25 Jun 2027	**€5,300.–**



Course content

Dates, venues and fees (continued)

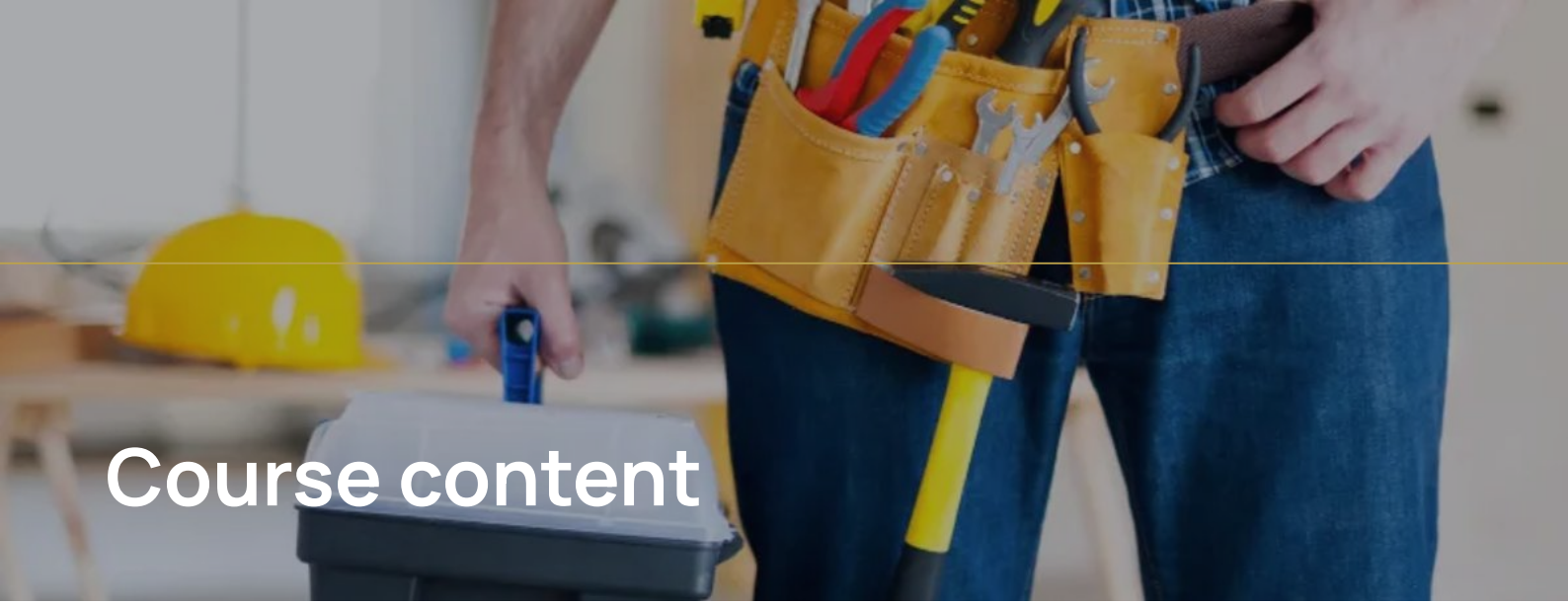
Venue	Start date	End date	Fee (EUR)
Online Confirmed dates	21 Jun 2027	25 Jun 2027	**€1,250.-**
Cape Town Confirmed dates	28 Jun 2027	2 Jul 2027	**€3,780.-**
Online Confirmed dates	28 Jun 2027	2 Jul 2027	**€1,250.-**
Amsterdam Confirmed dates	5 Jul 2027	9 Jul 2027	**€5,080.-**
Online Confirmed dates	5 Jul 2027	9 Jul 2027	**€1,250.-**
Singapore Confirmed dates	19 Jul 2027	23 Jul 2027	**€5,640.-**
Online Confirmed dates	19 Jul 2027	23 Jul 2027	**€1,250.-**
London Confirmed dates	2 Aug 2027	6 Aug 2027	**€4,900.-**
Online Confirmed dates	2 Aug 2027	6 Aug 2027	**€1,250.-**



Course content

Dates, venues and fees (continued)

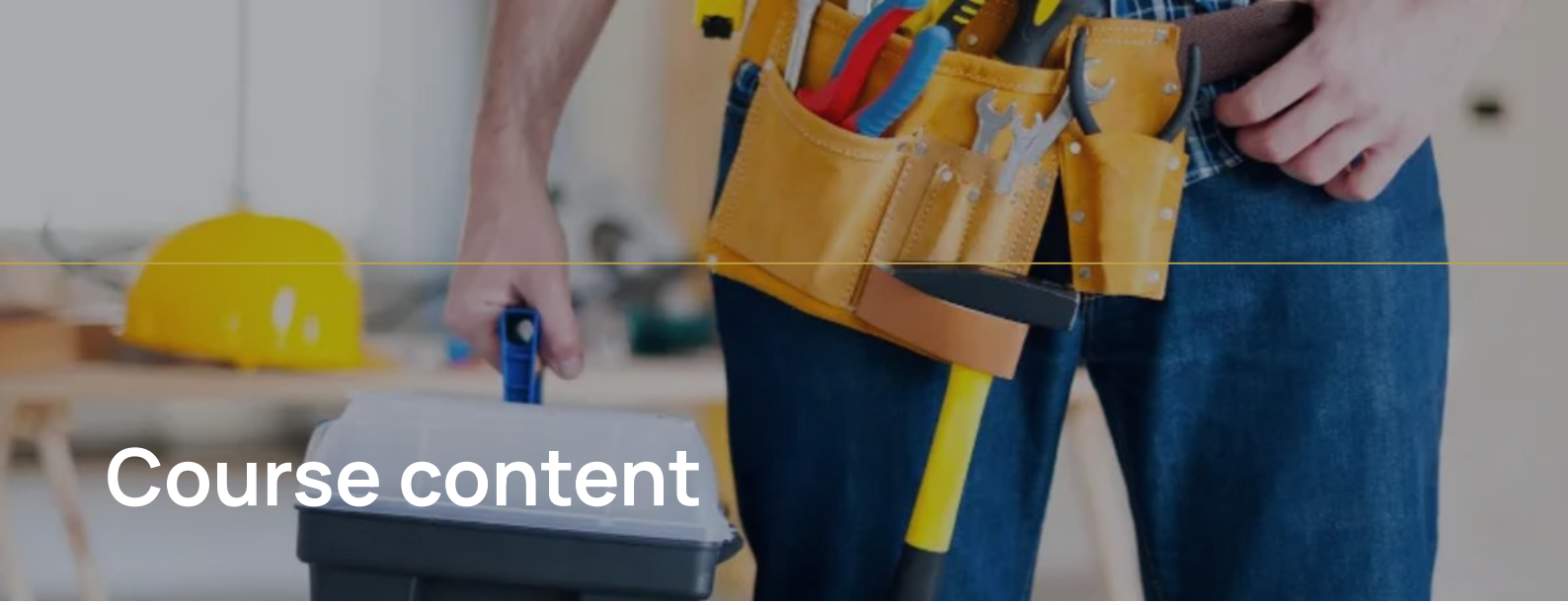
Venue	Start date	End date	Fee (EUR)
Dubai Confirmed dates	16 Aug 2027	20 Aug 2027	**€6,300.-**
Online Confirmed dates	16 Aug 2027	20 Aug 2027	**€1,250.-**
Rome Confirmed dates	30 Aug 2027	3 Sept 2027	**€4,900.-**
Online Confirmed dates	30 Aug 2027	3 Sept 2027	**€1,250.-**
Frankfurt Confirmed dates	6 Sept 2027	10 Sept 2027	**€5,300.-**
Online Confirmed dates	6 Sept 2027	10 Sept 2027	**€1,250.-**
Kuala Lumpur Confirmed dates	20 Sept 2027	24 Sept 2027	**€2,900.-**
Online Confirmed dates	20 Sept 2027	24 Sept 2027	**€1,250.-**
Paris Confirmed dates	4 Oct 2027	8 Oct 2027	**€5,720.-**



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Dates, venues and fees (continued)

Venue	Start date	End date	Fee (EUR)
Online Confirmed dates	4 Oct 2027	8 Oct 2027	**€1,250.-**
Istanbul Confirmed dates	18 Oct 2027	22 Oct 2027	**€5,300.-**
Online Confirmed dates	18 Oct 2027	22 Oct 2027	**€1,250.-**
Amsterdam Confirmed dates	1 Nov 2027	5 Nov 2027	**€5,080.-**
Online Confirmed dates	1 Nov 2027	5 Nov 2027	**€1,250.-**
Vienna Confirmed dates	8 Nov 2027	12 Nov 2027	**€5,880.-**
Online Confirmed dates	8 Nov 2027	12 Nov 2027	**€1,250.-**
Singapore Confirmed dates	15 Nov 2027	19 Nov 2027	**€5,640.-**
Online Confirmed dates	15 Nov 2027	19 Nov 2027	**€1,250.-**



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Dates, venues and fees (continued)

Venue	Start date	End date	Fee (EUR)
London Confirmed dates	6 Dec 2027	10 Dec 2027	**€4,900.-**
Online Confirmed dates	6 Dec 2027	10 Dec 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

info@smart-horizon.eu
Amsterdam
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