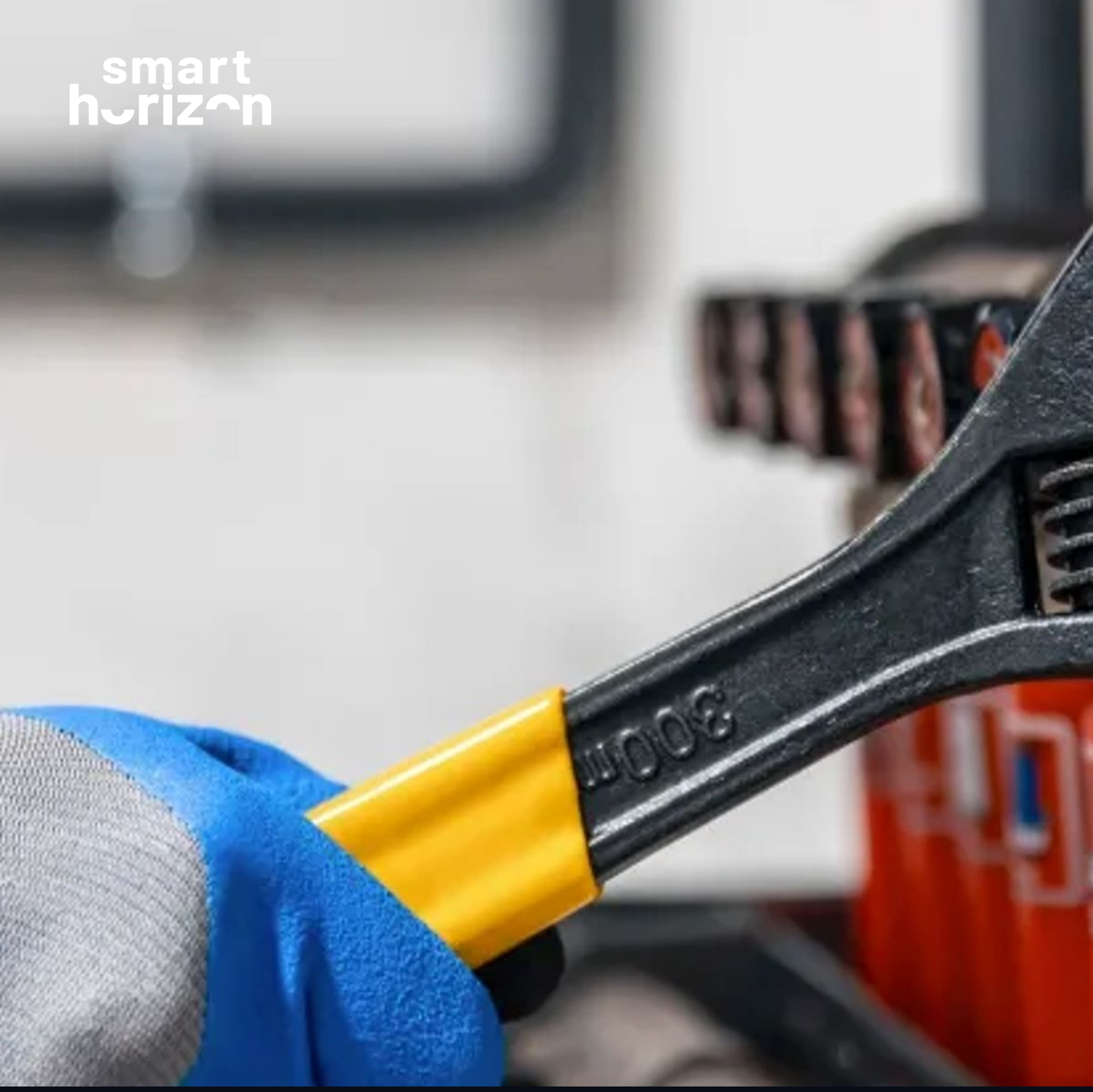


MAINTENANCE AND ENGINEERING | COURSE BROCHURE

PLC and Industrial Automation Fundamentals

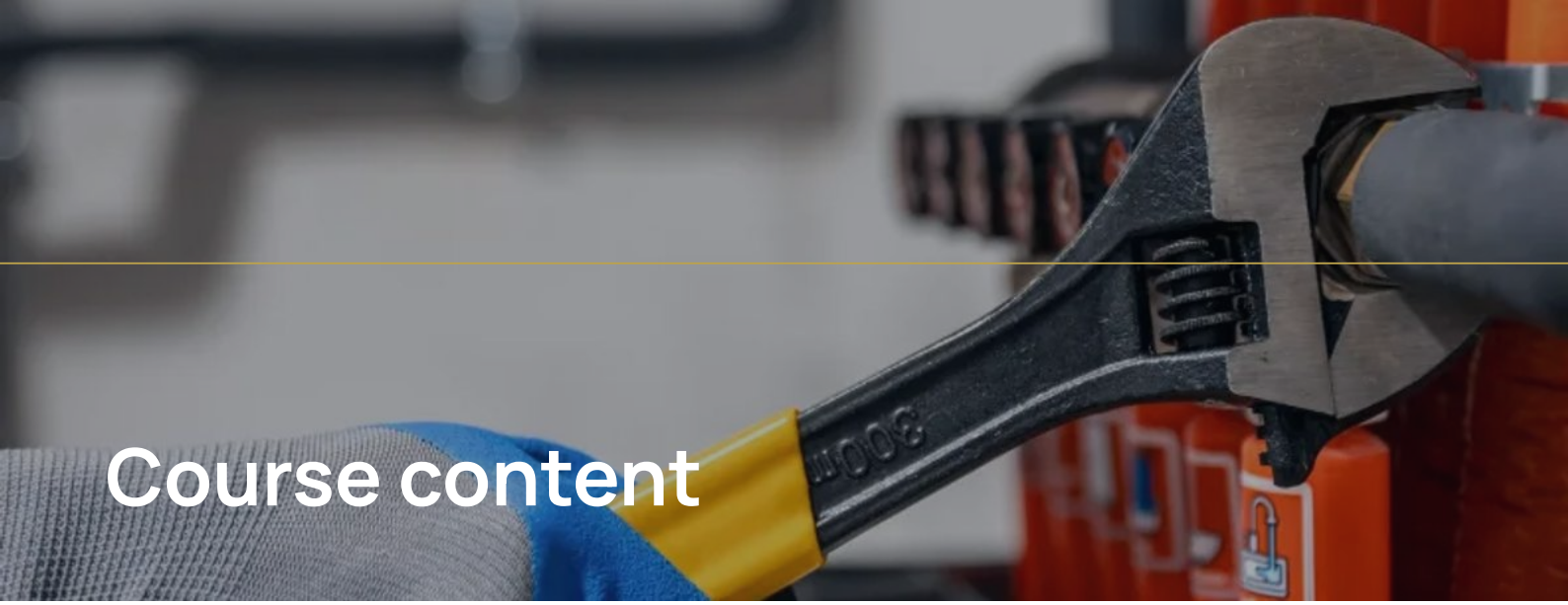
5 days | Classroom training | English

SMART HORIZON

info@smarthorizon.uk
2 Kingdom Street, Paddington
London W2 6BD, United Kingdom

Explore current programmes

https://smarthorizon.uk



Course content

Why attend

Programmable logic controllers are the backbone of industrial automation. This course covers automation system architecture, PLC hardware, inputs and outputs, programming basics in ladder logic, timers and counters, troubleshooting, HMIs and industrial networks.

Understanding PLCs helps technicians and engineers maintain and improve automated equipment. This course gives a practical foundation.

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

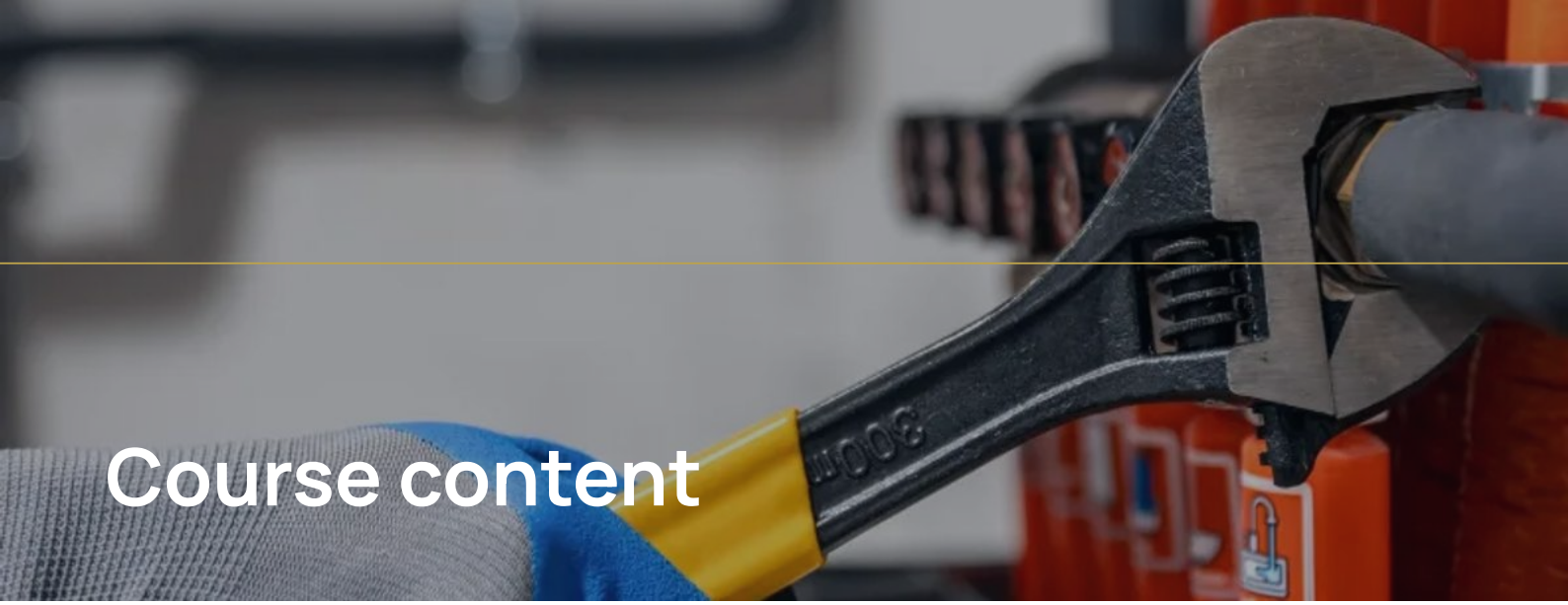
The course uses simulations, programming exercises, troubleshooting scenarios and demonstrations.

Course objectives

By the end of this course, participants will be able to:
• Explain industrial automation architecture
• Understand PLC hardware and I/O
• Write basic ladder logic programs
• Use timers, counters and comparison functions
• Troubleshoot PLC systems
• Understand HMIs and industrial networks

Target audience

This course is suitable for:
• Maintenance technicians
• Electrical and instrumentation technicians
• Production engineers
• Automation engineers new to PLCs
• Maintenance supervisors



Course content

Target competencies

Participants will develop competencies in:

- Automation architecture
- PLC hardware
- Ladder logic
- Timers and counters
- Troubleshooting
- HMI and networks

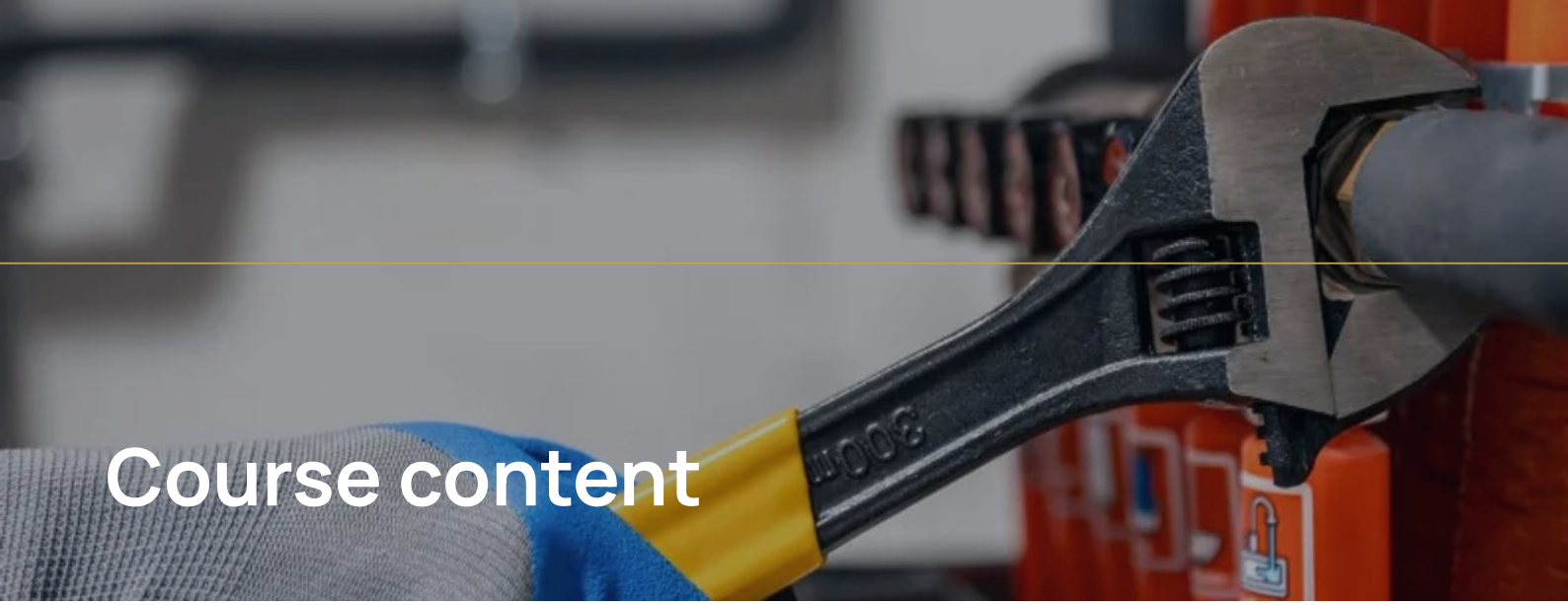
Course outline

Day 1: Automation Basics

09:00–09:54	Automation systems
09:54–10:48	Sensors and actuators
10:48–11:00	Control concepts
11:00–11:30	**Coffee break**
11:30–12:12	Control concepts (continued)
12:12–13:06	PLC role
13:06–14:00	Exercise: System overview

Day 2: PLC Hardware

09:00–09:54	CPU and I/O modules
09:54–10:48	Digital and analogue signals
10:48–11:00	Wiring
11:00–11:30	**Coffee break**
11:30–12:12	Wiring (continued)
12:12–13:06	Memory
13:06–14:00	Demonstration: PLC hardware



Course content

Day 3: Programming

09:00–09:54	Ladder logic
09:54–10:48	Contacts and coils
10:48–11:00	Timers and counters
11:00–11:30	**Coffee break**
11:30–12:12	Timers and counters (continued)
12:12–13:06	Program structure
13:06–14:00	Lab: Ladder programming

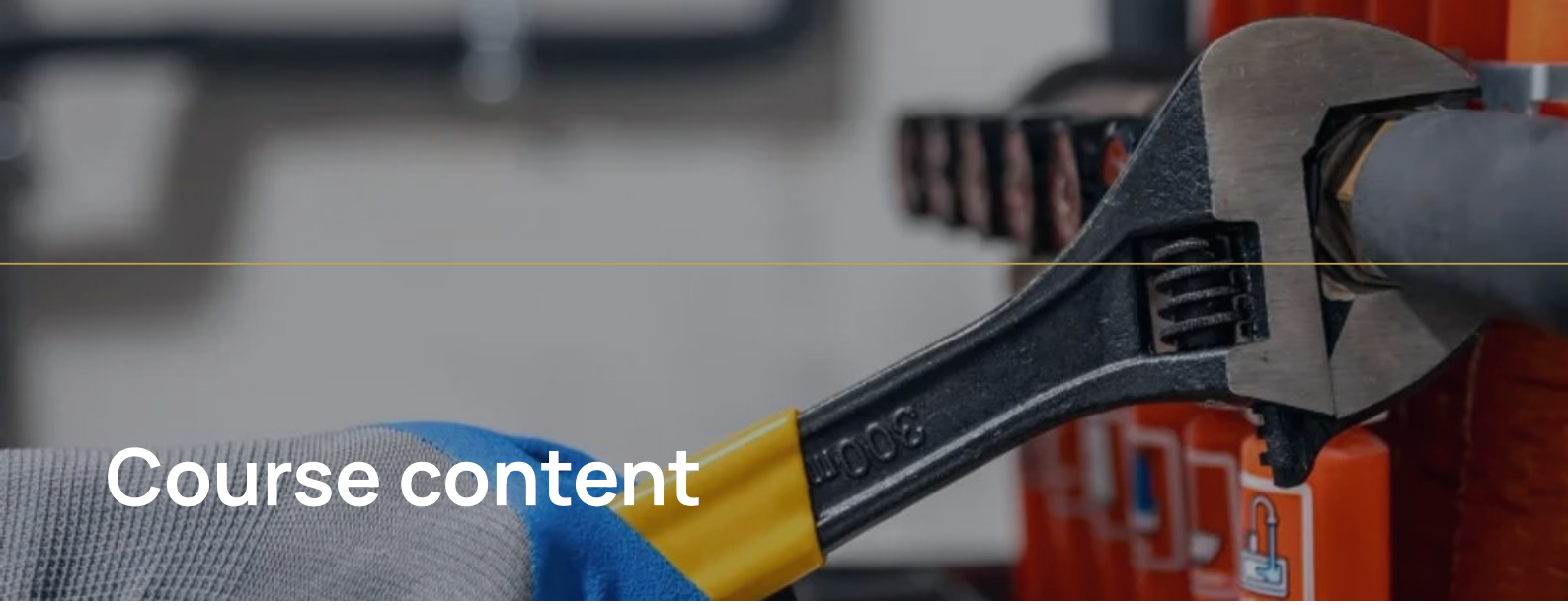
Day 4: Troubleshooting

09:00–09:54	Diagnostics
09:54–10:48	Online monitoring
10:48–11:00	Fault finding
11:00–11:30	**Coffee break**
11:30–12:12	Fault finding (continued)
12:12–13:06	Safety
13:06–14:00	Lab: Troubleshooting

Day 5: HMI and Networks

09:00–09:54	HMI basics
09:54–10:48	Industrial networks
10:48–11:00	Data integration
11:00–11:30	**Coffee break**
11:30–12:12	Data integration (continued)
12:12–13:06	Cybersecurity awareness
13:06–14:00	Capstone: Automation project

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



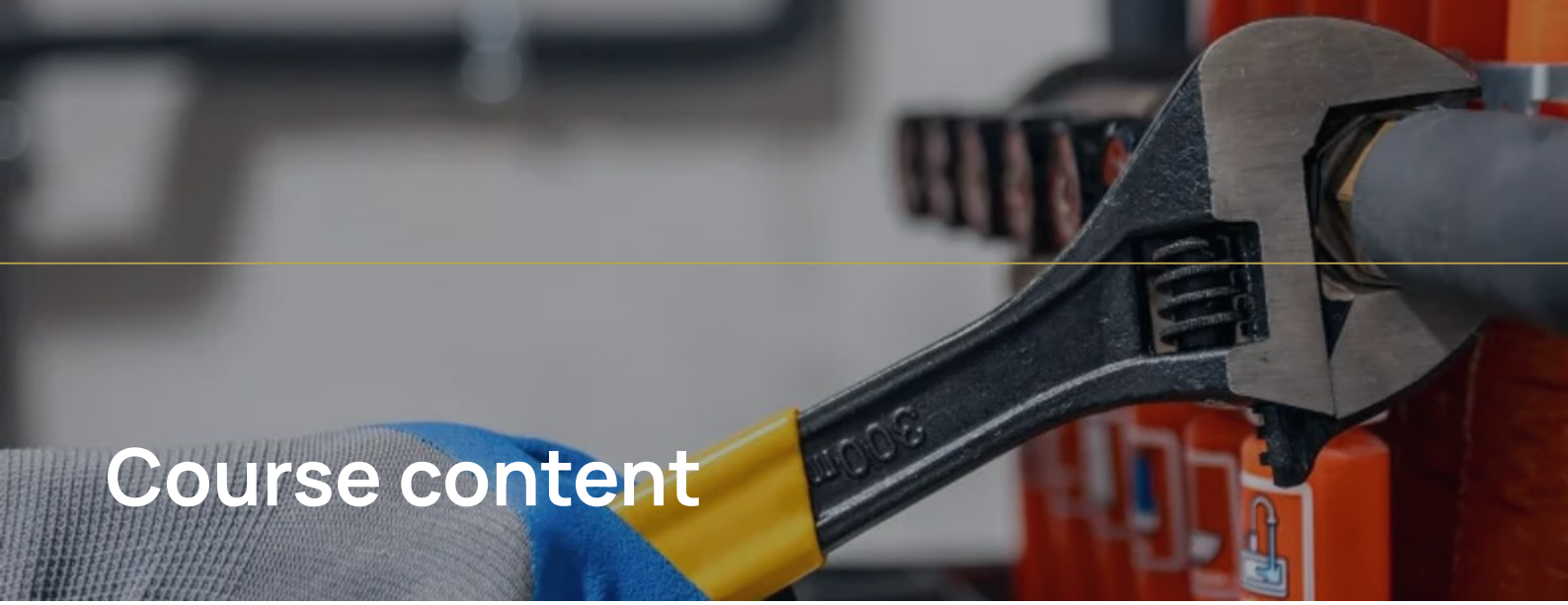
Course content

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 GBP, excluding unconfirmed taxes.

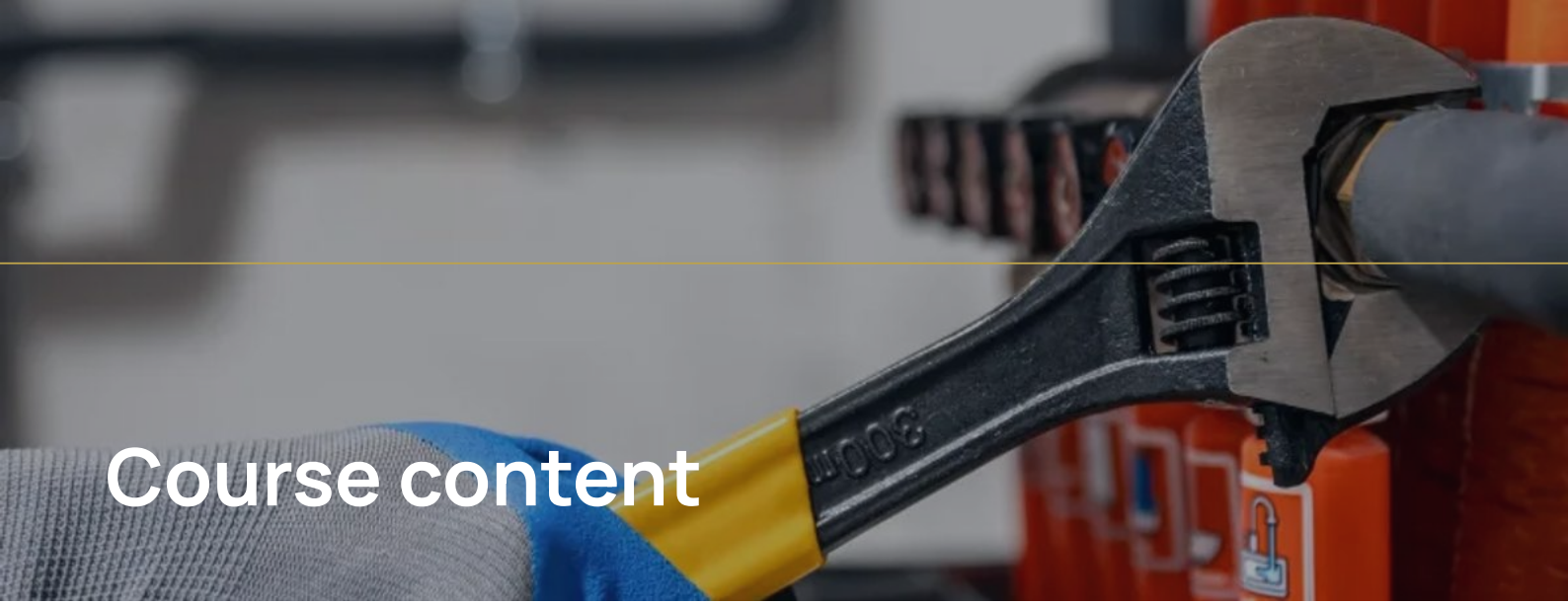
Venue	Start date	End date	Fee (GBP)
Istanbul Confirmed dates	16 Nov 2026	20 Nov 2026	**£5,300.–**
Online Confirmed dates	16 Nov 2026	20 Nov 2026	**£1,250.–**
Amsterdam Confirmed dates	7 Dec 2026	11 Dec 2026	**£5,080.–**
Online Confirmed dates	7 Dec 2026	11 Dec 2026	**£1,250.–**
Singapore Confirmed dates	14 Dec 2026	18 Dec 2026	**£5,640.–**
Online Confirmed dates	14 Dec 2026	18 Dec 2026	**£1,250.–**
London Confirmed dates	4 Jan 2027	8 Jan 2027	**£4,900.–**
Online Confirmed dates	4 Jan 2027	8 Jan 2027	**£1,250.–**



Course content

Dates, venues and fees (continued)

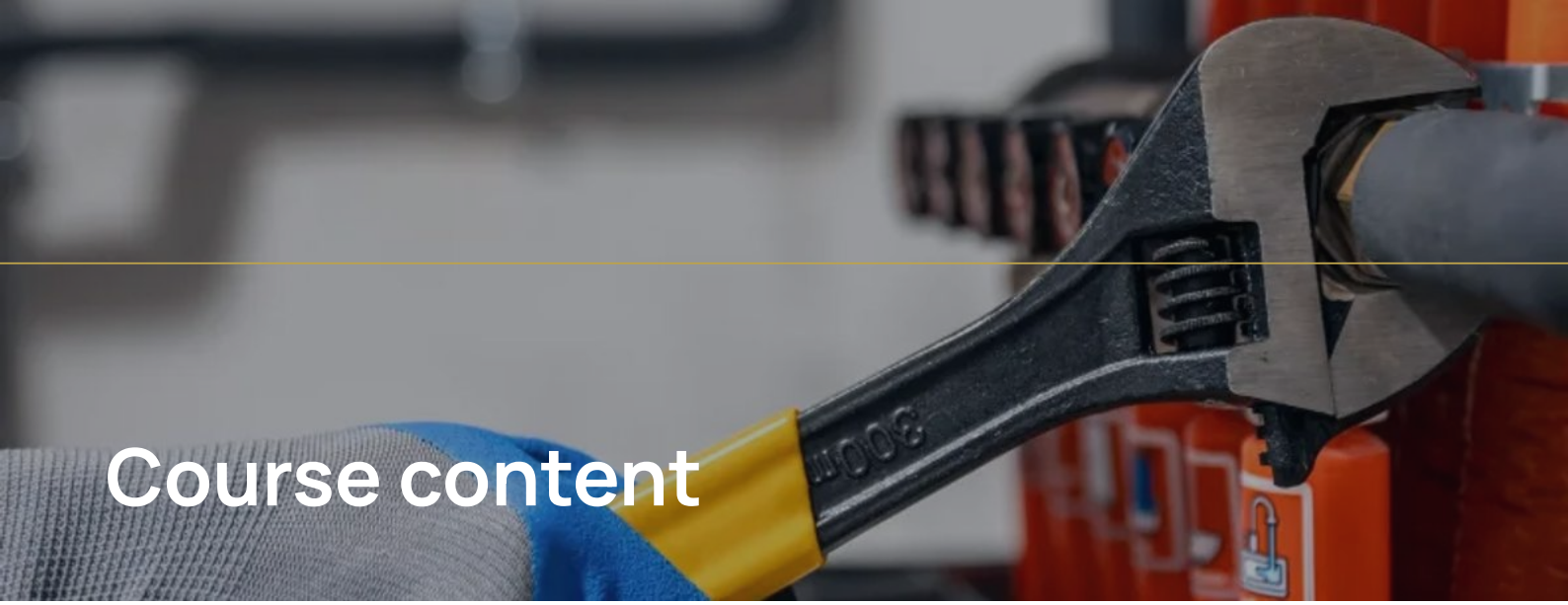
Venue	Start date	End date	Fee (GBP)
Barcelona Confirmed dates	11 Jan 2027	15 Jan 2027	**£5,680.–**
Online Confirmed dates	11 Jan 2027	15 Jan 2027	**£1,250.–**
Dubai Confirmed dates	18 Jan 2027	22 Jan 2027	**£6,300.–**
Online Confirmed dates	18 Jan 2027	22 Jan 2027	**£1,250.–**
Frankfurt Confirmed dates	1 Feb 2027	5 Feb 2027	**£5,300.–**
Online Confirmed dates	1 Feb 2027	5 Feb 2027	**£1,250.–**
Kuala Lumpur Confirmed dates	15 Feb 2027	19 Feb 2027	**£2,900.–**
Online Confirmed dates	15 Feb 2027	19 Feb 2027	**£1,250.–**
Paris Confirmed dates	1 Mar 2027	5 Mar 2027	**£5,720.–**



Course content

Dates, venues and fees (continued)

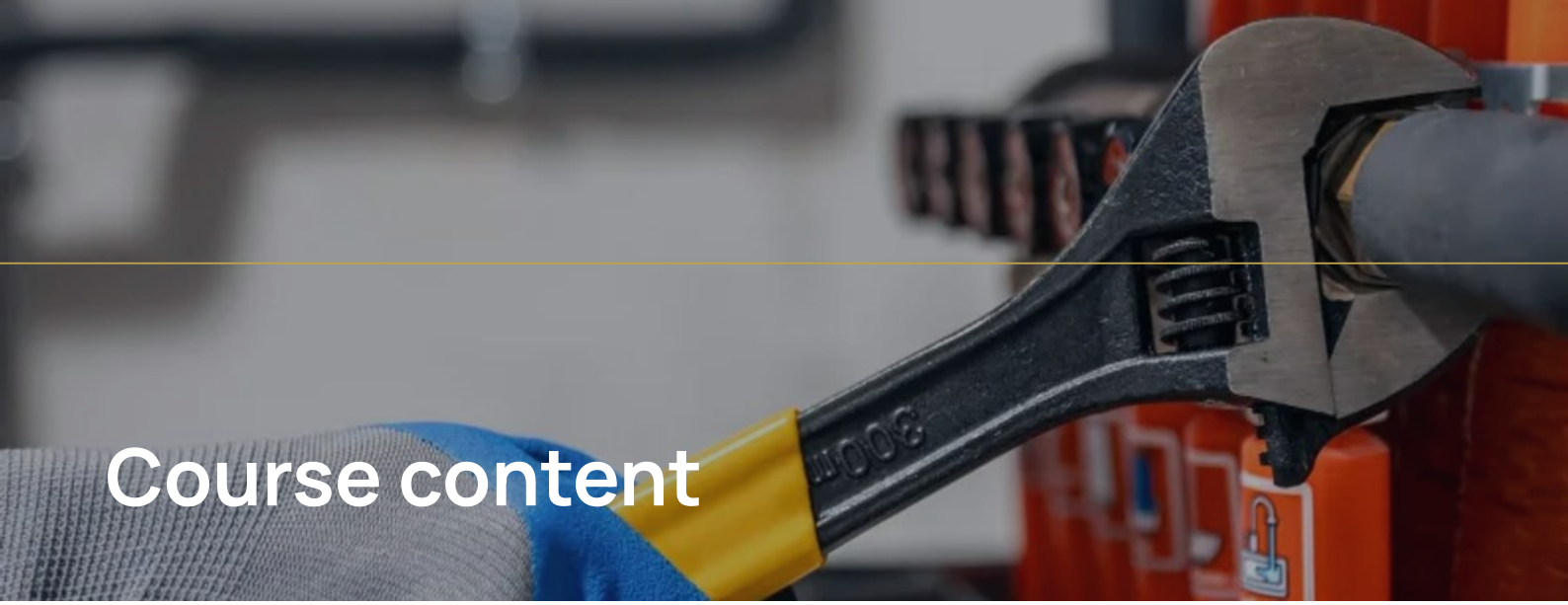
Venue	Start date	End date	Fee (GBP)
Online Confirmed dates	1 Mar 2027	5 Mar 2027	**£1,250.–**
Istanbul Confirmed dates	15 Mar 2027	19 Mar 2027	**£5,300.–**
Online Confirmed dates	15 Mar 2027	19 Mar 2027	**£1,250.–**
Cape Town Confirmed dates	22 Mar 2027	26 Mar 2027	**£3,780.–**
Online Confirmed dates	22 Mar 2027	26 Mar 2027	**£1,250.–**
Amsterdam Confirmed dates	5 Apr 2027	9 Apr 2027	**£5,080.–**
Online Confirmed dates	5 Apr 2027	9 Apr 2027	**£1,250.–**
Singapore Confirmed dates	19 Apr 2027	23 Apr 2027	**£5,640.–**
Online Confirmed dates	19 Apr 2027	23 Apr 2027	**£1,250.–**



Course content

Dates, venues and fees (continued)

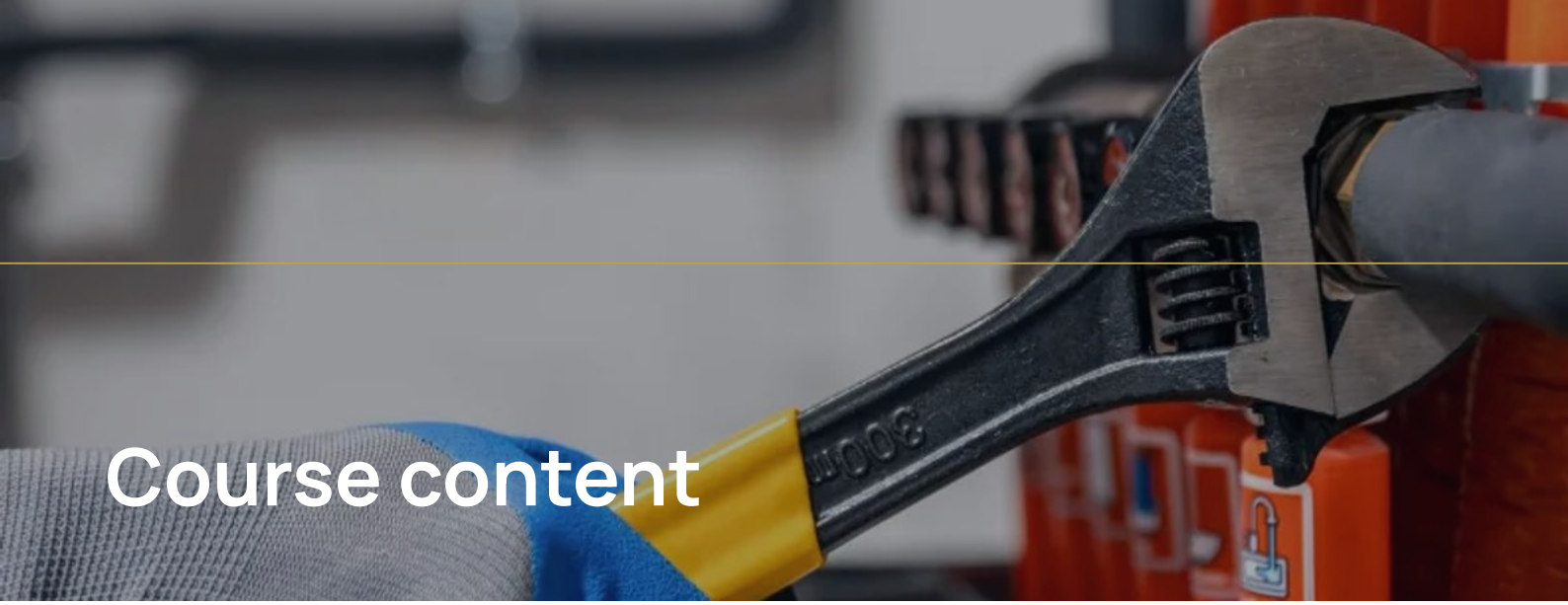
Venue	Start date	End date	Fee (GBP)
London Confirmed dates	3 May 2027	7 May 2027	**£4,900.-**
Online Confirmed dates	3 May 2027	7 May 2027	**£1,250.-**
Dubai Confirmed dates	17 May 2027	21 May 2027	**£6,300.-**
Online Confirmed dates	17 May 2027	21 May 2027	**£1,250.-**
Rome Confirmed dates	24 May 2027	28 May 2027	**£4,900.-**
Online Confirmed dates	24 May 2027	28 May 2027	**£1,250.-**
Frankfurt Confirmed dates	7 Jun 2027	11 Jun 2027	**£5,300.-**
Online Confirmed dates	7 Jun 2027	11 Jun 2027	**£1,250.-**
Kuala Lumpur Confirmed dates	21 Jun 2027	25 Jun 2027	**£2,900.-**



Course content

Dates, venues and fees (continued)

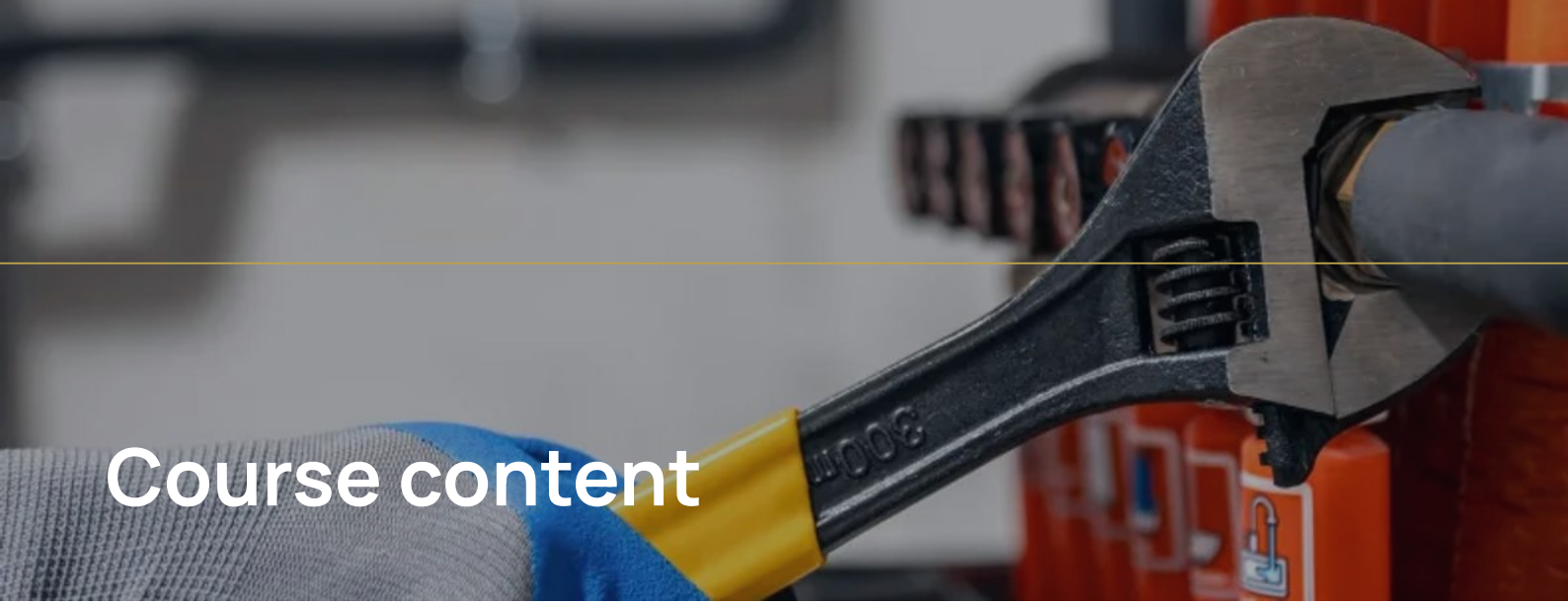
Venue	Start date	End date	Fee (GBP)
Online Confirmed dates	21 Jun 2027	25 Jun 2027	**£1,250.–**
Paris Confirmed dates	5 Jul 2027	9 Jul 2027	**£5,720.–**
Online Confirmed dates	5 Jul 2027	9 Jul 2027	**£1,250.–**
Cape Town Confirmed dates	12 Jul 2027	16 Jul 2027	**£3,780.–**
Online Confirmed dates	12 Jul 2027	16 Jul 2027	**£1,250.–**
Istanbul Confirmed dates	19 Jul 2027	23 Jul 2027	**£5,300.–**
Online Confirmed dates	19 Jul 2027	23 Jul 2027	**£1,250.–**
Amsterdam Confirmed dates	2 Aug 2027	6 Aug 2027	**£5,080.–**
Online Confirmed dates	2 Aug 2027	6 Aug 2027	**£1,250.–**



Course content

Dates, venues and fees (continued)

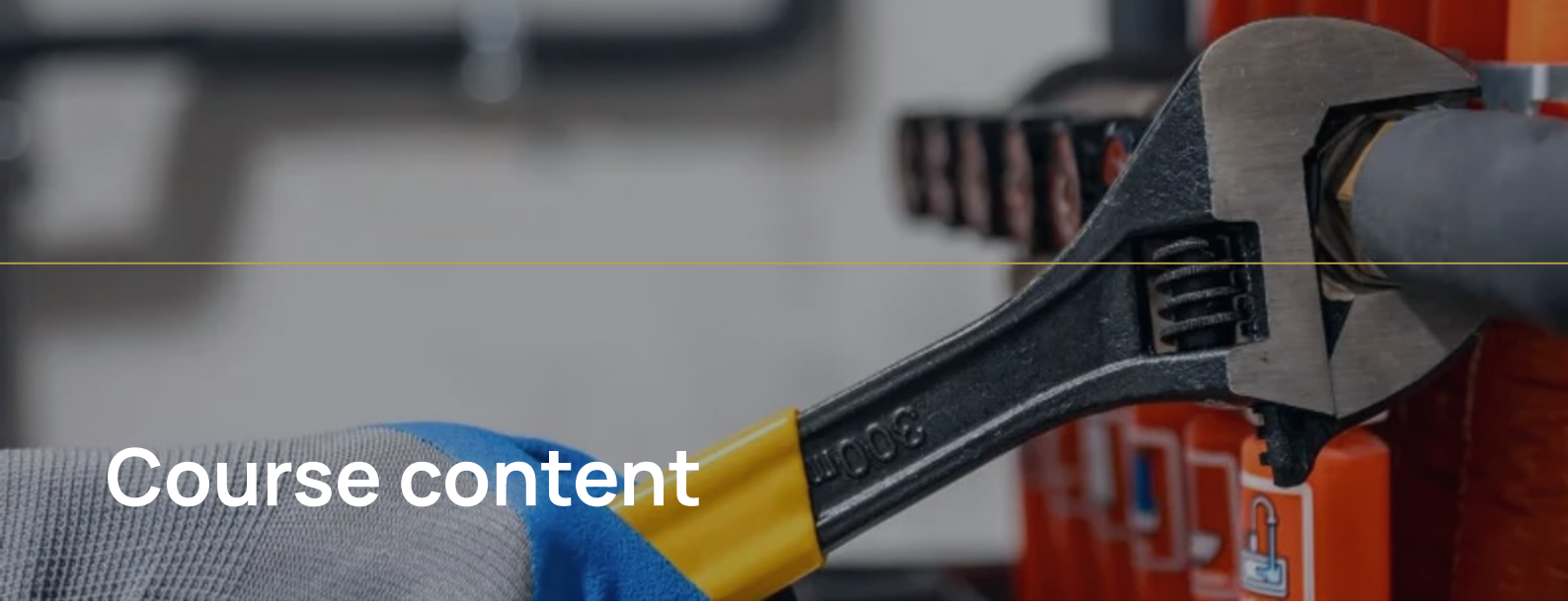
Venue	Start date	End date	Fee (GBP)
Singapore Confirmed dates	16 Aug 2027	20 Aug 2027	**£5,640.-**
Online Confirmed dates	16 Aug 2027	20 Aug 2027	**£1,250.-**
London Confirmed dates	6 Sept 2027	10 Sept 2027	**£4,900.-**
Online Confirmed dates	6 Sept 2027	10 Sept 2027	**£1,250.-**
Rome Confirmed dates	13 Sept 2027	17 Sept 2027	**£4,900.-**
Online Confirmed dates	13 Sept 2027	17 Sept 2027	**£1,250.-**
Dubai Confirmed dates	20 Sept 2027	24 Sept 2027	**£6,300.-**
Online Confirmed dates	20 Sept 2027	24 Sept 2027	**£1,250.-**
Frankfurt Confirmed dates	4 Oct 2027	8 Oct 2027	**£5,300.-**



Course content

Dates, venues and fees (continued)

Venue	Start date	End date	Fee (GBP)
Online Confirmed dates	4 Oct 2027	8 Oct 2027	**£1,250.–**
Kuala Lumpur Confirmed dates	18 Oct 2027	22 Oct 2027	**£2,900.–**
Online Confirmed dates	18 Oct 2027	22 Oct 2027	**£1,250.–**
Paris Confirmed dates	1 Nov 2027	5 Nov 2027	**£5,720.–**
Online Confirmed dates	1 Nov 2027	5 Nov 2027	**£1,250.–**
Istanbul Confirmed dates	15 Nov 2027	19 Nov 2027	**£5,300.–**
Online Confirmed dates	15 Nov 2027	19 Nov 2027	**£1,250.–**
Vienna Confirmed dates	22 Nov 2027	26 Nov 2027	**£5,880.–**
Online Confirmed dates	22 Nov 2027	26 Nov 2027	**£1,250.–**



Course content

Dates, venues and fees (continued)

Venue	Start date	End date	Fee (GBP)
Amsterdam Confirmed dates	6 Dec 2027	10 Dec 2027	**£5,080.-**
Online Confirmed dates	6 Dec 2027	10 Dec 2027	**£1,250.-**
Singapore Confirmed dates	13 Dec 2027	17 Dec 2027	**£5,640.-**
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 UK 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@smarthorizon.uk
2 Kingdom Street, Paddington
London W2 6BD, United Kingdom

View the latest course details online