

QUALITY & OPERATIONAL EXCELLENCE | COURSE BROCHURE

Measurement Systems Analysis

5 days | Classroom training | English

SMART HORIZON

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Course content

Why attend

If measurements are unreliable, every decision based on them is questionable. This course covers measurement systems analysis: measurement error, bias, linearity and stability, gauge repeatability and reproducibility studies, attribute agreement analysis, interpreting results and improving measurement systems.

Many quality problems are actually measurement problems. You will learn to test whether your measurements can be trusted.

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

Gauge R&R studies with real measurements, attribute agreement exercises, software analysis and case studies.

Course objectives

By the end of this course, participants will be able to:
• Explain sources of measurement error
• Assess bias, linearity and stability
• Conduct gauge R&R studies
• Perform attribute agreement analysis
• Interpret MSA results against criteria
• Improve measurement systems

Target audience

This course is suitable for:
• Quality engineers and technicians
• Metrology and calibration staff
• Process engineers
• Laboratory staff
• Six Sigma practitioners



Course content

Target competencies

Participants will develop competencies in:

- Measurement error analysis
- Gauge R&R
- Attribute agreement
- Interpretation
- Improvement

Course outline

Day 1: Measurement Systems

09:00–10:08	Why MSA
10:08–11:00	Sources of error
11:00–11:30	**Coffee break**
11:30–11:45	Sources of error (continued)
11:45–12:53	Terminology
12:53–14:00	Exercise

Day 2: Accuracy

09:00–10:08	Bias
10:08–11:00	Linearity
11:00–11:30	**Coffee break**
11:30–11:45	Linearity (continued)
11:45–12:53	Stability
12:53–14:00	Exercise

Day 3: Gauge R&R

09:00–10:08	Study design
10:08–11:00	Crossed studies
11:00–11:30	**Coffee break**



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11:30–11:45	Crossed studies (continued)
11:45–12:53	Analysis
12:53–14:00	Hands-on study

Day 4: Attribute Data

09:00–10:08	Attribute agreement
10:08–11:00	Kappa
11:00–11:30	**Coffee break**
11:30–11:45	Kappa (continued)
11:45–12:53	Inspection consistency
12:53–14:00	Exercise

Day 5: Improvement

09:00–10:08	Acceptance criteria
10:08–11:00	Improving systems
11:00–11:30	**Coffee break**
11:30–11:45	Improving systems (continued)
11:45–12:53	Ongoing control
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)
Vienna Confirmed dates	9 Nov 2026	13 Nov 2026	**€2,940.–**
Online Confirmed dates	9 Nov 2026	13 Nov 2026	**€1,250.–**
Rome Confirmed dates	30 Nov 2026	4 Dec 2026	**€2,450.–**
Online Confirmed dates	30 Nov 2026	4 Dec 2026	**€1,250.–**
Paris Confirmed dates	4 Jan 2027	8 Jan 2027	**€2,860.–**
Online Confirmed dates	4 Jan 2027	8 Jan 2027	**€1,250.–**
Amsterdam Confirmed dates	25 Jan 2027	29 Jan 2027	**€2,540.–**
Online Confirmed dates	25 Jan 2027	29 Jan 2027	**€1,250.–**
London Confirmed dates	15 Feb 2027	19 Feb 2027	**€2,450.–**



Course content

Dates, venues and fees (continued)

Venue	Start date	End date	Fee (EUR)
Online Confirmed dates	15 Feb 2027	19 Feb 2027	**€1,250.–**
Barcelona Confirmed dates	1 Mar 2027	5 Mar 2027	**€2,840.–**
Online Confirmed dates	1 Mar 2027	5 Mar 2027	**€1,250.–**
Dubai Confirmed dates	22 Mar 2027	26 Mar 2027	**€3,150.–**
Online Confirmed dates	22 Mar 2027	26 Mar 2027	**€1,250.–**
Barcelona Confirmed dates	12 Apr 2027	16 Apr 2027	**€2,840.–**
Online Confirmed dates	12 Apr 2027	16 Apr 2027	**€1,250.–**
Cape Town Confirmed dates	3 May 2027	7 May 2027	**€1,890.–**
Online Confirmed dates	3 May 2027	7 May 2027	**€1,250.–**



Course content

Dates, venues and fees (continued)

Venue	Start date	End date	Fee (EUR)
Istanbul Confirmed dates	24 May 2027	28 May 2027	**€2,650.-**
Online Confirmed dates	24 May 2027	28 May 2027	**€1,250.-**
Cape Town Confirmed dates	7 Jun 2027	11 Jun 2027	**€1,890.-**
Online Confirmed dates	7 Jun 2027	11 Jun 2027	**€1,250.-**
Rome Confirmed dates	28 Jun 2027	2 Jul 2027	**€2,450.-**
Online Confirmed dates	28 Jun 2027	2 Jul 2027	**€1,250.-**
Cape Town Confirmed dates	19 Jul 2027	23 Jul 2027	**€1,890.-**
Online Confirmed dates	19 Jul 2027	23 Jul 2027	**€1,250.-**
Dubai Confirmed dates	9 Aug 2027	13 Aug 2027	**€3,150.-**



Course content

Dates, venues and fees (continued)

Venue	Start date	End date	Fee (EUR)
Online Confirmed dates	9 Aug 2027	13 Aug 2027	**€1,250.-**
Frankfurt Confirmed dates	30 Aug 2027	3 Sept 2027	**€2,650.-**
Online Confirmed dates	30 Aug 2027	3 Sept 2027	**€1,250.-**
London Confirmed dates	13 Sept 2027	17 Sept 2027	**€2,450.-**
Online Confirmed dates	13 Sept 2027	17 Sept 2027	**€1,250.-**
Rome Confirmed dates	4 Oct 2027	8 Oct 2027	**€2,450.-**
Online Confirmed dates	4 Oct 2027	8 Oct 2027	**€1,250.-**
Dubai Confirmed dates	25 Oct 2027	29 Oct 2027	**€3,150.-**
Online Confirmed dates	25 Oct 2027	29 Oct 2027	**€1,250.-**



Course content

Dates, venues and fees (continued)

Venue	Start date	End date	Fee (EUR)
Kuala Lumpur Confirmed dates	15 Nov 2027	19 Nov 2027	**€1,450.-**
Online Confirmed dates	15 Nov 2027	19 Nov 2027	**€1,250.-**
Vienna Confirmed dates	6 Dec 2027	10 Dec 2027	**€2,940.-**
Online Confirmed dates	6 Dec 2027	10 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