

QUALITY AND PRODUCTIVITY | QP-013

Measurement System Analysis and Gauge R&R

Contact

+31 85 7444446
info@aractech.com
https://aractech.com

Address

Waarderweg 50, 2031PB Haarlem - Netherlands.

Course content

Why Attend

Decisions based on measurement data are only as good as the measurement system itself. Poor measurement systems lead to wrong conclusions, unnecessary rework and accepting bad product.

This Aractech course explains measurement system concepts, bias, linearity, stability, repeatability and reproducibility, gauge R&R studies, attribute agreement analysis and improving measurement systems. Participants conduct and analyse studies using sample data.

Course Methodology

- Concept explanations
- Hands-on studies
- Data analysis exercises
- Case studies
- Group discussions

Course Objectives

- Explain measurement system variation
- Assess bias, linearity and stability
- Plan and conduct gauge R&R studies
- Analyse attribute measurement systems
- Interpret MSA results and acceptance criteria
- Improve measurement systems

Target Audience

- Quality engineers
- Metrology and calibration staff

Course content

- Six Sigma practitioners
- Laboratory technicians

Course outline

Detailed course outline

Day-by-day outline for Measurement System Analysis and Gauge R&R.

Day 1 - Measurement Systems

- 09:00-09:39 | Measurement process
- 09:39-10:18 | Sources of variation
- 10:18-10:57 | Resolution
- 10:57-11:00 | Calibration versus MSA
- 11:00-11:30 | Coffee break
- 11:30-12:05 | Calibration versus MSA (continued)
- 12:05-12:43 | MSA requirements
- 12:43-14:00 | Exercise: Measurement process review

Day 2 - Bias, Linearity and Stability

- 09:00-09:39 | Bias studies
- 09:39-10:18 | Linearity
- 10:18-10:57 | Stability
- 10:57-11:00 | Control charts for measurement
- 11:00-11:30 | Coffee break
- 11:30-12:05 | Control charts for measurement (continued)
- 12:05-12:43 | Interpretation
- 12:43-14:00 | Lab: Bias study

Course outline

Detailed course outline

Day-by-day outline for Measurement System Analysis and Gauge R&R.

Day 3 - Gauge R&R

- 09:00-09:34 | Repeatability
- 09:34-10:08 | Reproducibility
- 10:08-11:00 | Study design
- 11:00-11:30 | Coffee break
- 11:30-11:45 | Study design (continued)
- 11:45-12:19 | ANOVA method
- 12:19-12:53 | Acceptance criteria
- 12:53-14:00 | Lab: Gauge R&R study

Day 4 - Attribute Studies

- 09:00-09:34 | Attribute agreement analysis
- 09:34-10:08 | Kappa
- 10:08-10:42 | Inspector training
- 10:42-11:00 | Visual standards
- 11:00-11:30 | Coffee break
- 11:30-11:46 | Visual standards (continued)
- 11:46-12:53 | Case study: Inspection agreement
- 12:53-14:00 | Exercise: Attribute study

Course outline

Detailed course outline

Day-by-day outline for Measurement System Analysis and Gauge R&R.

Day 5 - Improving Measurement

- 09:00-09:45 | Root causes of variation
- 09:45-10:30 | Fixtures and methods
- 10:30-11:00 | Training
- 11:00-11:30 | Coffee break
- 11:30-11:45 | Training (continued)
- 11:45-12:30 | Ongoing monitoring
- 12:30-13:15 | MSA programmes
- 13:15-14:00 | Capstone: MSA plan

Seminar dates

Available seminar dates

Live dates and pricing for Measurement System Analysis and Gauge R&R generated from the course details page.

Date	Location	Format	Fee
16 - 20 November 2026	Barcelona	Classroom	€2,815
21 - 25 December 2026	London	Classroom	€2,315
18 - 22 January 2027	Cape Town	Classroom	€1,625
15 - 19 February 2027	Amsterdam	Classroom	€2,830
15 - 19 March 2027	London	Classroom	€2,315
19 - 23 April 2027	Istanbul	Classroom	€1,978
17 - 21 May 2027	Munich	Classroom	€3,225
21 - 25 June 2027	Paris	Classroom	€3,825
19 - 23 July 2027	Frankfurt	Classroom	€1,875
16 - 20 August 2027	Kuala Lumpur	Classroom	€1,925

Seminar dates

Available seminar dates

Live dates and pricing for Measurement System Analysis and Gauge R&R generated from the course details page.

Date	Location	Format	Fee
20 - 24 September 2027	Rome	Classroom	€3,460
18 - 22 October 2027	Vienna	Classroom	€3,225
15 - 19 November 2027	Geneva	Classroom	€4,315
20 - 24 December 2027	Madrid	Classroom	€3,400
16 - 20 November 2026	Online / Live	Online / Live	€1,815
21 - 25 December 2026	Online / Live	Online / Live	€1,815
18 - 22 January 2027	Online / Live	Online / Live	€1,815
15 - 19 February 2027	Online / Live	Online / Live	€1,815
15 - 19 March 2027	Online / Live	Online / Live	€1,815
19 - 23 April 2027	Online / Live	Online / Live	€1,815

Seminar dates

Available seminar dates

Live dates and pricing for Measurement System Analysis and Gauge R&R generated from the course details page.

Date	Location	Format	Fee
17 - 21 May 2027	Online / Live	Online / Live	€1,815
21 - 25 June 2027	Online / Live	Online / Live	€1,815
19 - 23 July 2027	Online / Live	Online / Live	€1,815
16 - 20 August 2027	Online / Live	Online / Live	€1,815
20 - 24 September 2027	Online / Live	Online / Live	€1,815
18 - 22 October 2027	Online / Live	Online / Live	€1,815
15 - 19 November 2027	Online / Live	Online / Live	€1,815
20 - 24 December 2027	Online / Live	Online / Live	€1,815