



OIL AND GAS | OG-066

Instrumentation and Control in Oil and Gas Operations

Contact

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

Address

Waarderweg 50, 2031PB Haarlem - Netherlands.

Course content

Why Attend

Instrumentation and control systems keep oil and gas processes safe, stable and efficient. Measurement errors, poorly tuned loops and unreliable safety systems can cause production losses and incidents.

This Aractech course covers process measurement in oil and gas, fiscal metering, control systems and loops, distributed control systems, safety instrumented systems, alarm management and maintenance of instrumentation. Participants analyse control problems and plan instrumentation improvements.

Course Methodology

- Technical lectures
- Control loop exercises
- Case studies
- Alarm rationalisation workshop
- Group discussions

Course Objectives

- Explain process measurement in oil and gas
- Understand fiscal and custody transfer metering
- Describe control systems and control loops
- Understand safety instrumented systems
- Apply alarm management principles
- Maintain and improve instrumentation reliability

Target Audience

- Instrumentation and control engineers
- Technicians

Course content

- Process engineers
- Control room operators

Course outline

Detailed course outline

Day-by-day outline for Instrumentation and Control in Oil and Gas Operations.

Day 1 - Measurement in Oil and Gas

- 09:00-09:39 | Pressure, temperature, level and flow
- 09:39-10:18 | Transmitters
- 10:18-10:57 | Analysers
- 10:57-11:00 | Installation
- 11:00-11:30 | Coffee break
- 11:30-12:05 | Installation (continued)
- 12:05-12:43 | Hazardous areas
- 12:43-14:00 | Exercise: Instrument selection

Day 2 - Fiscal Metering

- 09:00-09:39 | Custody transfer
- 09:39-10:18 | Meter types
- 10:18-10:57 | Proving and calibration
- 10:57-11:00 | Uncertainty
- 11:00-11:30 | Coffee break
- 11:30-12:05 | Uncertainty (continued)
- 12:05-12:43 | Allocation
- 12:43-14:00 | Case study: Metering dispute

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Day 3 - Control Systems

- 09:00-09:39 | Control loops
- 09:39-10:18 | PID control
- 10:18-10:57 | DCS architecture
- 10:57-11:00 | Advanced control
- 11:00-11:30 | Coffee break
- 11:30-12:05 | Advanced control (continued)
- 12:05-12:43 | Tuning
- 12:43-14:00 | Lab: Loop tuning simulation

Day 4 - Safety Systems and Alarms

- 09:00-09:39 | Safety instrumented systems
- 09:39-10:18 | SIL concepts
- 10:18-10:57 | Emergency shutdown
- 10:57-11:00 | Alarm management
- 11:00-11:30 | Coffee break
- 11:30-12:05 | Alarm management (continued)
- 12:05-12:43 | Operator effectiveness
- 12:43-14:00 | Workshop: Alarm rationalisation

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Day 5 - Maintenance and Reliability

- 09:00-09:45 | Calibration
- 09:45-10:30 | Preventive maintenance
- 10:30-11:00 | Diagnostics
- 11:00-11:30 | Coffee break
- 11:30-11:45 | Diagnostics (continued)
- 11:45-12:30 | Obsolescence
- 12:30-13:15 | Improvement planning
- 13:15-14:00 | Capstone: Instrumentation improvement plan

Seminar dates

Available seminar dates

Live dates and pricing for Instrumentation and Control in Oil and Gas Operations generated from the course details page.

Date	Location	Format	Fee
16 - 20 November 2026	Istanbul	Classroom	€1,978
7 - 11 December 2026	Rome	Classroom	€3,460
11 - 15 January 2027	Kuala lumpur	Classroom	€1,925
8 - 12 February 2027	Barcelona	Classroom	€2,815
8 - 12 March 2027	London	Classroom	€2,315
12 - 16 April 2027	Munich	Classroom	€3,225
10 - 14 May 2027	Madrid	Classroom	€3,400
14 - 18 June 2027	Istanbul	Classroom	€1,978
12 - 16 July 2027	Rome	Classroom	€3,460
9 - 13 August 2027	Kuala lumpur	Classroom	€1,925

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11 - 15 October 2027	London	Classroom	€2,315
8 - 12 November 2027	Munich	Classroom	€3,225
13 - 17 December 2027	Dubai	Classroom	€1,845
16 - 20 November 2026	Online / Live	Online / Live	€1,815
7 - 11 December 2026	Online / Live	Online / Live	€1,815
11 - 15 January 2027	Online / Live	Online / Live	€1,815
8 - 12 February 2027	Online / Live	Online / Live	€1,815
8 - 12 March 2027	Online / Live	Online / Live	€1,815
12 - 16 April 2027	Online / Live	Online / Live	€1,815

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10 - 14 May 2027	Online / Live	Online / Live	€1,815
14 - 18 June 2027	Online / Live	Online / Live	€1,815
12 - 16 July 2027	Online / Live	Online / Live	€1,815
9 - 13 August 2027	Online / Live	Online / Live	€1,815
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