



OIL AND GAS | OG-038

Drilling Operations and Well Control Fundamentals

Contact

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

Address

Waarderweg 50, 2031PB Haarlem - Netherlands.

Course content

Why Attend

Drilling is one of the most expensive and hazardous activities in the oil and gas industry. Understanding drilling operations and well control principles is essential not only for drilling engineers but also for geoscientists, managers and support staff involved in well delivery.

This Aractech course provides a structured introduction to drilling rigs and equipment, well planning, drilling fluids, casing and cementing, directional drilling, drilling problems and well control principles including kick detection and shut-in procedures. Participants also explore drilling performance, cost control and safety management.

Course Methodology

- Illustrated technical presentations
- Well planning exercises
- Drilling problem case studies
- Well control scenario discussions
- Daily knowledge checks

Course Objectives

- Describe drilling rigs, equipment and operations
- Explain the well planning process
- Understand drilling fluids, casing and cementing
- Recognise drilling problems and mitigation
- Explain well control principles and kick response
- Understand drilling performance and cost management

Course content

| Target Audience

- Junior drilling engineers
- Geologists and petroleum engineers
- Drilling support and logistics staff
- Contracts and procurement staff supporting drilling

Course outline

Detailed course outline

Day-by-day outline for Drilling Operations and Well Control Fundamentals.

Day 1 - Drilling Rigs and Equipment

- 09:00-09:39 | Rig types onshore and offshore
- 09:39-10:18 | Hoisting, rotating and circulating systems
- 10:18-10:57 | Drill string components
- 10:57-11:00 | Rig personnel and roles
- 11:00-11:30 | Coffee break
- 11:30-12:05 | Rig personnel and roles (continued)
- 12:05-12:43 | Drilling operations sequence
- 12:43-14:00 | Exercise: Identifying rig components

Day 2 - Well Planning

- 09:00-10:00 | Well objectives and design basis
- 10:00-10:30 | Pore pressure and fracture gradient
- 10:30-11:00 | Casing design basics
- 11:00-11:30 | Coffee break
- 11:30-12:00 | Casing design basics (continued)
- 12:00-12:30 | Drilling programme
- 12:30-13:00 | Cost estimation
- 13:00-14:00 | Exercise: Outline well plan

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Day 3 - Drilling Fluids, Casing and Cementing

- 09:00-09:39 | Functions of drilling fluids
- 09:39-10:18 | Mud types and properties
- 10:18-10:57 | Casing running
- 10:57-11:00 | Cementing operations
- 11:00-11:30 | Coffee break
- 11:30-12:05 | Cementing operations (continued)
- 12:05-12:43 | Cement evaluation
- 12:43-14:00 | Case study: Lost circulation event

Day 4 - Drilling Problems and Directional Drilling

- 09:00-09:39 | Stuck pipe
- 09:39-10:18 | Hole instability
- 10:18-10:57 | Lost circulation
- 10:57-11:00 | Directional and horizontal drilling
- 11:00-11:30 | Coffee break
- 11:30-12:05 | Directional and horizontal drilling (continued)
- 12:05-12:43 | Measurement while drilling
- 12:43-14:00 | Workshop: Diagnosing drilling problems

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Day 5 - Well Control and Performance

- 09:00-09:45 | Causes of kicks
- 09:45-10:30 | Kick detection and shut-in
- 10:30-11:00 | Well control methods overview
- 11:00-11:30 | Coffee break
- 11:30-11:45 | Well control methods overview (continued)
- 11:45-12:30 | Blowout preventers
- 12:30-13:15 | Drilling performance and safety
- 13:15-14:00 | Capstone: Drilling scenario review

Seminar dates

Available seminar dates

Live dates and pricing for Drilling Operations and Well Control Fundamentals generated from the course details page.

Date	Location	Format	Fee
2 - 6 November 2026	Barcelona	Classroom	€2,815
21 - 25 December 2026	Frankfurt	Classroom	€1,875
18 - 22 January 2027	London	Classroom	€2,315
15 - 19 February 2027	Istanbul	Classroom	€1,978
15 - 19 March 2027	Vienna	Classroom	€3,225
19 - 23 April 2027	Barcelona	Classroom	€2,815
17 - 21 May 2027	Paris	Classroom	€3,825
21 - 25 June 2027	Frankfurt	Classroom	€1,875
19 - 23 July 2027	Barcelona	Classroom	€2,815
16 - 20 August 2027	Frankfurt	Classroom	€1,875

Seminar dates

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Date	Location	Format	Fee
20 - 24 September 2027	London	Classroom	€2,315
18 - 22 October 2027	Istanbul	Classroom	€1,978
15 - 19 November 2027	Cape Town	Classroom	€1,625
20 - 24 December 2027	Barcelona	Classroom	€2,815
2 - 6 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

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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
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