



OIL AND GAS | OG-032

Surface Production Facilities: Design and Operation

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Course content

Why Attend

Surface production facilities separate, treat and prepare oil, gas and water for transport or disposal. Their design and operation directly affect production rates, product quality, operating costs and safety.

This Aractech course covers the main processes and equipment found in oil and gas production facilities, including separation, oil treating and dehydration, gas conditioning, water treatment, compression, pumping and storage. Participants learn design principles, operating parameters, common problems and optimisation opportunities.

Course Methodology

- Process explanation with diagrams and examples
- Practical calculations and sizing exercises
- Troubleshooting case studies
- Group discussions of operating experience
- Daily review sessions

Course Objectives

- Describe the layout and functions of surface production facilities
- Explain separation principles and separator design
- Understand oil treating, desalting and stabilisation
- Describe gas conditioning, dehydration and compression
- Understand produced water treatment and disposal
- Troubleshoot and optimise facility operations

Target Audience

- Production and process engineers

Course content

- Facility operators and supervisors
- Maintenance engineers in production facilities
- Project engineers working on facility upgrades

Course outline

Detailed course outline

Day-by-day outline for Surface Production Facilities: Design and Operation.

Day 1 - Production Facility Overview

- 09:00-09:39 | Well fluids and their properties
- 09:39-10:18 | Facility configurations onshore and offshore
- 10:18-10:57 | Process flow diagrams
- 10:57-11:00 | Production chemistry basics
- 11:00-11:30 | Coffee break
- 11:30-12:05 | Production chemistry basics (continued)
- 12:05-12:43 | Safety systems overview
- 12:43-14:00 | Exercise: Reading a facility process flow diagram

Day 2 - Separation

- 09:00-09:39 | Separation principles
- 09:39-10:18 | Two-phase and three-phase separators
- 10:18-10:57 | Separator sizing basics
- 10:57-11:00 | Internals and performance
- 11:00-11:30 | Coffee break
- 11:30-12:05 | Internals and performance (continued)
- 12:05-12:43 | Operating problems: foaming, emulsions and carryover
- 12:43-14:00 | Exercise: Separator sizing

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Day 3 - Oil Treating and Water Handling

- 09:00-09:39 | Emulsion treatment
- 09:39-10:18 | Dehydration and desalting
- 10:18-10:57 | Crude stabilisation
- 10:57-11:00 | Produced water treatment
- 11:00-11:30 | Coffee break
- 11:30-12:05 | Produced water treatment (continued)
- 12:05-12:43 | Water injection and disposal
- 12:43-14:00 | Case study: Solving an emulsion problem

Day 4 - Gas Conditioning and Compression

- 09:00-09:39 | Gas dehydration
- 09:39-10:18 | Acid gas removal overview
- 10:18-10:57 | Dew point control
- 10:57-11:00 | Compression systems
- 11:00-11:30 | Coffee break
- 11:30-12:05 | Compression systems (continued)
- 12:05-12:43 | Flare and vent systems
- 12:43-14:00 | Exercise: Gas dehydration calculations

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Day 5 - Operations and Optimisation

- 09:00-09:45 | Pumps, storage and metering
- 09:45-10:30 | Process control and instrumentation
- 10:30-11:00 | Monitoring and troubleshooting
- 11:00-11:30 | Coffee break
- 11:30-11:45 | Monitoring and troubleshooting (continued)
- 11:45-12:30 | Energy efficiency and emissions reduction
- 12:30-13:15 | Debottlenecking opportunities
- 13:15-14:00 | Capstone: Facility optimisation study

Seminar dates

Available seminar dates

Live dates and pricing for Surface Production Facilities: Design and Operation generated from the course details page.

Date	Location	Format	Fee
2 - 6 November 2026	London	Classroom	€2,315
21 - 25 December 2026	Frankfurt	Classroom	€1,875
18 - 22 January 2027	Frankfurt	Classroom	€1,875
15 - 19 February 2027	Geneva	Classroom	€4,315
15 - 19 March 2027	Frankfurt	Classroom	€1,875
19 - 23 April 2027	Rome	Classroom	€3,460
17 - 21 May 2027	Rome	Classroom	€3,460
21 - 25 June 2027	Barcelona	Classroom	€2,815
19 - 23 July 2027	London	Classroom	€2,315
16 - 20 August 2027	Frankfurt	Classroom	€1,875

Seminar dates

Available seminar dates

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Date	Location	Format	Fee
20 - 24 September 2027	Frankfurt	Classroom	€1,875
18 - 22 October 2027	Cape Town	Classroom	€1,625
15 - 19 November 2027	Frankfurt	Classroom	€1,875
20 - 24 December 2027	Rome	Classroom	€3,460
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

Seminar dates

Available seminar dates

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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
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