



OIL AND GAS | OG-039

Reservoir Engineering Fundamentals

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Course content

Why Attend

Reservoir engineering determines how much oil and gas can be recovered and how best to produce it. Its outputs drive field development plans, reserves estimates and investment decisions worth billions.

This Aractech course introduces the fundamentals of reservoir engineering: rock and fluid properties, reservoir drive mechanisms, material balance, well testing basics, decline curve analysis, reserves estimation and an introduction to reservoir simulation. Participants work through calculations and case studies that illustrate how reservoir engineers support development decisions.

Course Methodology

- Concept lectures with worked examples
- Calculation exercises
- Field case studies
- Group discussions
- Daily review

Course Objectives

- Describe reservoir rock and fluid properties
- Explain reservoir drive mechanisms
- Apply material balance concepts
- Understand well test and decline curve analysis
- Explain reserves classification and estimation
- Understand the role of reservoir simulation

Target Audience

- Petroleum and production engineers

Course content

- Geologists and geophysicists
- Junior reservoir engineers
- Asset and development managers

Course outline

Detailed course outline

Day-by-day outline for Reservoir Engineering Fundamentals.

Day 1 - Reservoir Rock and Fluid Properties

- 09:00-09:39 | Porosity, permeability and saturation
- 09:39-10:18 | Capillary pressure and wettability
- 10:18-10:57 | Reservoir fluid types
- 10:57-11:00 | PVT properties
- 11:00-11:30 | Coffee break
- 11:30-12:05 | PVT properties (continued)
- 12:05-12:43 | Data sources
- 12:43-14:00 | Exercise: Volumetric calculations

Day 2 - Drive Mechanisms and Material Balance

- 09:00-09:39 | Solution gas, gas cap and water drive
- 09:39-10:18 | Recovery factors
- 10:18-10:57 | Material balance equation
- 10:57-11:00 | Aquifer influence
- 11:00-11:30 | Coffee break
- 11:30-12:05 | Aquifer influence (continued)
- 12:05-12:43 | Gas reservoirs
- 12:43-14:00 | Exercise: Material balance calculation

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Day 3 - Well Performance and Testing

- 09:00-09:34 | Inflow performance
- 09:34-10:08 | Well test objectives
- 10:08-11:00 | Pressure build-up and drawdown
- 11:00-11:30 | Coffee break
- 11:30-11:45 | Pressure build-up and drawdown (continued)
- 11:45-12:19 | Interpreting test results
- 12:19-12:53 | Productivity improvement
- 12:53-14:00 | Case study: Well test interpretation

Day 4 - Production Forecasting and Reserves

- 09:00-09:39 | Decline curve analysis
- 09:39-10:18 | Reserves and resources classification
- 10:18-10:57 | Probabilistic estimates
- 10:57-11:00 | Reserves reporting
- 11:00-11:30 | Coffee break
- 11:30-12:05 | Reserves reporting (continued)
- 12:05-12:43 | Uncertainty
- 12:43-14:00 | Exercise: Decline curve forecast

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Day 5 - Field Development

- 09:00-10:17 | Reservoir simulation overview
- 10:17-10:56 | Waterflooding basics
- 10:56-11:00 | Development planning
- 11:00-11:30 | Coffee break
- 11:30-12:05 | Development planning (continued)
- 12:05-12:44 | Integrating subsurface and surface
- 12:44-13:22 | Reservoir management
- 13:22-14:00 | Capstone: Development options review

Seminar dates

Available seminar dates

Live dates and pricing for Reservoir Engineering Fundamentals generated from the course details page.

Date	Location	Format	Fee
2 - 6 November 2026	Frankfurt	Classroom	€1,875
21 - 25 December 2026	Barcelona	Classroom	€2,815
18 - 22 January 2027	Barcelona	Classroom	€2,815
15 - 19 February 2027	Frankfurt	Classroom	€1,875
15 - 19 March 2027	Rome	Classroom	€3,460
19 - 23 April 2027	Kuala lumpur	Classroom	€1,925
17 - 21 May 2027	Barcelona	Classroom	€2,815
21 - 25 June 2027	London	Classroom	€2,315
19 - 23 July 2027	Frankfurt	Classroom	€1,875
16 - 20 August 2027	Barcelona	Classroom	€2,815

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18 - 22 October 2027	Frankfurt	Classroom	€1,875
15 - 19 November 2027	Rome	Classroom	€3,460
20 - 24 December 2027	Kuala Lumpur	Classroom	€1,925
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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