

OIL EXPLORATION & PRODUCTION MASTERCLASS - BASIC PROCESS INVOLVED IN THE DRILLING, EXTRACTION & PROCESSING OF CRUDE OIL

“Comprehensive Overview of Upstream Oil Operations from Subsurface to Surface Facilities”

Schedule

Date	Venue	Fees (Face-to-Face)
01 - 05 Mar 2026	Doha, Qatar	USD 3495 per delegate

Introduction

Oil exploration and production (E&P) lie at the heart of the energy industry, involving complex technical operations that begin deep beneath the Earth’s surface and end at the delivery of crude oil to processing facilities. A foundational understanding of the upstream value chain is essential for professionals involved in the oil and gas sector—whether in engineering, planning, operations, or support roles.

This intensive five-day masterclass provides a broad yet practical overview of the entire upstream process: from geological surveys and drilling techniques to well completion, production operations, and surface processing. Participants will gain critical insights into how crude oil is discovered, extracted, and prepared for downstream use—enabling stronger decision-making and cross-functional collaboration across the E&P lifecycle.

Objectives

By the end of this course, participants will be able to:

- Understand the full upstream oil production lifecycle—from exploration to well abandonment
- Identify key technologies, equipment, and processes used in drilling and extraction
- Recognize the roles of geophysics, drilling fluids, casing, and cementing in well design
- Explain how crude oil is separated, treated, and stabilized at surface facilities
- Evaluate basic HSE and economic considerations in field operations

Why Attend

- Build or strengthen your technical foundation in upstream oil operations
- Gain familiarity with terminology, equipment, and surface/subsurface concepts
- Enhance cross-disciplinary collaboration with field, subsurface, and facility teams
- Understand how upstream activities influence production efficiency and economics
- Apply upstream knowledge to roles in engineering, logistics, finance, or HSE

Target Audience

This program is designed for:

- Engineers and technicians new to the oil & gas sector
- Project managers and operations support staff
- Supply chain, procurement, or HSE professionals in upstream projects
- Business analysts, planners, and finance professionals in energy
- Anyone seeking a structured introduction to E&P operations

Individual Benefits

Key competencies that will be developed include:

- Oilfield development planning and drilling sequence understanding
- Equipment and facility recognition across upstream phases
- Oil treatment, separation, and measurement knowledge
- Operational risk awareness and safety considerations
- Improved communication with technical field teams

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Increased internal capability to support upstream operations and planning
- Better cross-functional alignment between technical and non-technical teams
- More informed capital allocation and field development decisions
- Improved safety awareness and risk mitigation culture
- Stronger onboarding and development for energy sector talent

Instructional Methodology

The course follows a blended learning approach combining theory with practice:

- Strategy Briefings - Step-by-step walkthrough of exploration and production stages
- Case Studies - Real-world examples from oilfield development projects
- Workshops - Well diagram interpretation, process flow analysis, and field planning
- Peer Exchange - Experience sharing among multidisciplinary professionals
- Tools - Process diagrams, drilling and completion charts, and HSE templates

Course Outline

Detailed 5-Day Course Outline

Training Hours: 07:30 AM – 3:30 PM **Daily Format:** 3–4 Learning Modules | Coffee breaks: 09:30 & 11:15 | Lunch Buffet: 01:00 – 02:00

Day 1: Overview of the Upstream Oil & Gas Sector

- Module 1: Oil & Gas Industry Structure and Value Chain (07:30 – 09:30) • Upstream, midstream, downstream segments
- Module 2: Petroleum Geology and Exploration Techniques (09:45 – 11:15) • Seismic surveys, geological formations, reservoir types
- Module 3: Licensing, Reserves, and Field Appraisal (11:30 – 01:00) • Asset life cycle, field development plans, E&P economics
- Module 4: Workshop – Identifying Reservoir Types from Seismic Data (02:00 – 03:30)

Day 2: Drilling Engineering and Well Design

- Module 1: Rotary Drilling Operations and Equipment (07:30 – 09:30) • Rigs, bits, drill strings, blowout preventers
- Module 2: Drilling Fluids, Casing, and Cementing (09:45 – 11:15) • Fluid properties, mud logging, casing programs
- Module 3: Directional Drilling and Logging While Drilling (11:30 – 01:00) • MWD/LWD, horizontal wells, logging tools
- Module 4: Workshop – Constructing a Well Profile (02:00 – 03:30)

Day 3: Completion, Production, and Lifting Methods

- Module 1: Well Completion and Perforation (07:30 – 09:30) • Packers, tubing, sand control, stimulation
- Module 2: Natural Flow and Artificial Lift Methods (09:45 – 11:15) • ESP, gas lift, rod pumps, plunger lift
- Module 3: Well Testing and Production Monitoring (11:30 – 01:00) • Pressure analysis, production logs, flow rates
- Module 4: Workshop – Selecting Artificial Lift Techniques (02:00 – 03:30)

Day 4: Surface Facilities and Oil Processing

- Module 1: Surface Gathering and Flowline Systems (07:30 – 09:30) • Manifolds, separators, and choke valves
- Module 2: Oil Separation, Treatment, and Stabilization (09:45 – 11:15) • Emulsion breaking, dehydration, gas flaring
- Module 3: Produced Water and Gas Handling (11:30 – 01:00) • Water injection, gas compression, metering
- Module 4: Workshop – Designing a Simple Processing Facility Layout (02:00 – 03:30)

Day 5: HSE, Decommissioning, and Final Review

- Module 1: HSE Considerations in Upstream Operations (07:30 – 09:30) • Risk identification, emergency response, safety culture
- Module 2: Environmental and Regulatory Requirements (09:45 – 11:15) • Flaring limits, spill prevention, reporting
- Module 3: Well Abandonment and Site Restoration (11:30 – 01:00) • Plugging procedures, asset retirement obligations
- Module 4: Certification and Wrap-Up (02:00 – 03:30) • Final review, participant Q&A, certificate distribution

Certification

Participants will receive a Certificate of Completion in Oil Exploration & Production Masterclass, validating their understanding of the full upstream process—from geological surveys to surface treatment—and their readiness to contribute effectively to E&P operations.

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