

Upstream Oil & Gas Operations

Professional Training Course

Skillslab Training Provider

Skills for Tomorrow's World 



Course Description

Introduction

Upstream Oil & Gas Operations is a comprehensive five-day professional training program designed to provide participants with a practical and strategic understanding of exploration, drilling, reservoir development, well completion, production operations, and field performance management.

The upstream sector forms the foundation of the oil and gas value chain. It includes the technical and operational activities required to identify hydrocarbon resources, evaluate commercial potential, drill and complete wells, develop reservoirs, optimize production, and maintain safe and reliable field operations. Effective upstream management requires strong coordination between geology, geophysics, reservoir engineering, drilling, production, maintenance, health and safety, commercial teams, and senior decision-makers.

This advanced upstream oil and gas training course explains how technical, operational, economic, and risk considerations interact throughout the field life cycle. Participants will gain practical insight into subsurface evaluation, exploration risk, drilling programs, reservoir behavior, well performance, artificial lift, production optimization, integrity management, operational safety, and field development planning.

The executive-level value of this program lies in enabling professionals to understand upstream operations as an integrated business system rather than a collection of isolated technical activities. Organizations benefit from stronger cross-functional coordination, better operational decisions, improved production reliability, enhanced cost control, reduced technical risk, and greater alignment between field performance and corporate objectives.

The course is suitable for professionals working in national oil companies, international energy companies, government authorities, ministries, regulatory bodies, service companies, engineering organizations, and major industrial groups. Participants will leave with a structured understanding of upstream operations and practical tools that support real-world implementation and informed decision-making.

Course Objectives

- Interpret the main stages of hydrocarbon exploration and resource evaluation
- Understand how reservoirs are characterized and developed
- Explain the principles of well planning, drilling, casing, cementing, and completion
- Identify key drilling risks and operational controls
- Understand well testing, production monitoring, and performance evaluation
- Explain natural flow, artificial lift, and production enhancement methods
- Identify common causes of production decline and operational underperformance
- Understand surface production systems and field processing requirements
- Recognize major well integrity, process safety, and operational risk issues
- Evaluate the relationship between technical decisions, cost, risk, and production value
- Support cross-functional communication in upstream projects and operations
- Contribute to field development, production optimization, and continuous improvement initiatives

Course Content

Day 1: Upstream Oil and Gas Industry Fundamentals

- Overview of the global oil and gas industry
- Understanding the upstream, midstream, and downstream value chain
- Strategic importance of upstream operations
- Types of oil and gas companies and service providers
- Conventional and unconventional hydrocarbon resources
- Onshore and offshore upstream operations
- The upstream asset life cycle
- Exploration, appraisal, development, production, and abandonment
- Understanding petroleum systems
- Source rocks, migration, reservoirs, traps, and seals
- Basic oil and gas properties
- Crude oil, natural gas, condensate, and formation water
- Overview of upstream technical disciplines
- Roles of geologists, geophysicists, drilling engineers, reservoir engineers, and production engineers
- Key commercial and operational drivers

- Objectives and stages of hydrocarbon exploration
- Regional geological studies and basin analysis
- Geological mapping and subsurface interpretation
- Principles of seismic data acquisition and interpretation
- Identifying structural and stratigraphic traps
- Exploration prospect generation
- Geological and geophysical uncertainty
- Evaluating exploration risk and probability of success
- Planning and drilling exploration wells
- Formation evaluation and well logging
- Core analysis and fluid sampling
- Understanding porosity, permeability, and saturation
- Estimating hydrocarbons in place
- Resource and reserve classification
- Appraisal drilling and reservoir delineation
- Determining commercial potential
- Integrating technical and economic evaluation
- Practical exercise: evaluating an exploration and appraisal opportunity

Day 3: Well Planning, Drilling, and Completion Operations

- Objectives of well planning
- Types of wells and drilling programs
- Vertical, directional, horizontal, and multilateral wells
- Selecting well locations and target intervals
- Preparing drilling programs and operational plans
- Overview of drilling rigs and major equipment
- Drill strings, drill bits, circulation systems, and well control equipment
- Drilling fluids and their operational functions
- Managing pressure, temperature, and formation challenges
- Understanding casing design and installation
- Cementing objectives and quality requirements

- Completion design and well preparation
- Open-hole and cased-hole completions
- Perforation, stimulation, and sand-control methods
- Well integrity during drilling and completion
- Practical exercise: reviewing a drilling and completion plan

Day 4: Reservoir Development and Production Operations

- Understanding reservoir behavior
- Reservoir pressure, fluid movement, and drive mechanisms
- Depletion, water drive, gas-cap drive, and solution-gas drive
- Reservoir performance monitoring
- Pressure surveys and production data interpretation
- Well testing and productivity evaluation
- Developing reservoir models and forecasts
- Field development planning
- Well count, spacing, location, and production strategy
- Primary, secondary, and enhanced recovery methods
- Water injection and gas injection
- Production from naturally flowing wells
- Understanding well inflow and outflow performance
- Artificial lift methods
- Gas lift, electric pumps, rod pumps, and other lifting systems
- Identifying production constraints
- Water production, gas breakthrough, scaling, corrosion, and sand
- Well intervention and production restoration
- Production optimization techniques
- Practical exercise: diagnosing a declining well and recommending improvements

Day 5: Surface Facilities, Operational Risk, and Asset Performance

- Overview of upstream surface production systems
- Wellheads, flowlines, manifolds, and gathering systems

- Produced-water treatment and disposal
- Measurement, metering, and allocation
- Storage, export, and transfer arrangements
- Flow assurance challenges
- Hydrates, wax, scale, corrosion, and pressure losses
- Managing well and facility integrity
- Inspection, maintenance, and reliability practices
- Process safety in upstream operations
- Hazard identification and operational controls
- Permit systems, isolation, and emergency preparedness
- Environmental performance and emissions management
- Production surveillance and performance indicators
- Cost control and production efficiency
- Managing shutdowns, losses, and operational interruptions
- Field optimization and continuous improvement
- Final practical project: preparing an integrated upstream operations improvement plan

Target Audience

This course is designed for professionals working in or supporting upstream oil and gas operations, including:

- Petroleum engineers
- Reservoir engineers
- Drilling engineers
- Production engineers
- Well completion engineers
- Geologists and geophysicists
- Field operations personnel
- Operations supervisors
- Maintenance and reliability professionals
- Process and facilities engineers
- Health, safety, and environmental professionals

- Supply chain and procurement professionals
- Government and ministry officials
- Energy regulators and policy professionals
- National oil company employees
- Oilfield service company personnel
- Finance and investment professionals supporting energy projects
- New professionals entering the upstream oil and gas sector
- Nontechnical managers requiring an integrated understanding of upstream operations

Course Requirements

No advanced specialist qualification is required to attend this course. Participants should preferably:

- Have basic professional experience in oil and gas, energy, engineering, operations, projects, or technical support
- Possess a general understanding of industrial or energy-sector activities
- Be interested in understanding upstream operations across multiple technical disciplines
- Be prepared to participate in case studies, exercises, and group discussions
- Bring examples of upstream operational or coordination challenges from their workplace
- Be willing to analyze technical, commercial, and operational decisions

Participants with limited technical backgrounds will be guided through the core concepts using clear explanations, visual models, practical examples, and structured applications.

Training Methodology

The course uses an interactive and application-focused methodology designed to translate upstream oil and gas concepts into practical operational understanding.

The training approach includes:

- Expert-led technical presentations
- Facilitated discussions and industry analysis
- Upstream field life-cycle case studies
- Exploration and reservoir evaluation exercises
- Drilling and completion scenarios

- Cross-functional decision-making simulations
- Group problem-solving workshops
- Technical diagrams and process illustrations
- Practical checklists and evaluation tools
- Performance monitoring examples
- Final integrated field operations project

This methodology enables participants to connect technical principles with practical field decisions and understand how different upstream functions contribute to production, safety, cost control, and asset value.

Learning Outcomes

Upon successful completion of the course, participants will be able to:

- Explain the complete upstream oil and gas operating model
- Understand how hydrocarbon resources are explored, evaluated, developed, and produced
- Describe the main responsibilities of upstream technical and operational teams
- Interpret basic reservoir, drilling, completion, and production concepts
- Identify key factors affecting well and field performance
- Understand the purpose and structure of drilling and completion programs
- Recognize common well-control and drilling risks
- Evaluate production constraints and performance decline
- Explain the role of artificial lift and production enhancement methods
- Understand the operation of upstream surface facilities
- Identify major integrity, safety, and environmental risks
- Connect technical decisions with cost, risk, production, and commercial value
- Communicate more effectively across upstream disciplines
- Support field development and production optimization activities
- Contribute to operational improvement and asset performance initiatives
- Apply an integrated perspective to real-world upstream oil and gas operations

Instructor Profile

An internationally certified expert with extensive practical and consulting experience.

The training approach combines internationally recognized industry practices with practical applications from onshore and offshore oil and gas environments. Participants benefit from realistic case studies, technical insight, operational experience, and implementation tools that support improved decision-making, stronger cross-functional coordination, and measurable field performance enhancement.

Contact Us

For registration inquiries, upcoming dates, or group pricing, please contact us:

Websitewww.skillslab-training.com**Email**info@skillslab-training.com**WhatsApp**

+966 559 653 447

Generated by Skillslab Traininginfo@skillslab-training.com | WhatsApp: +966 559 653 447www.skillslab-training.com