



Oil & Gas Exploration and Production  
Industry Course





# Oil & Gas Exploration and Production Industry Course

## Introduction:

Participants in this oil and gas exploration and production training course will gain a fundamental understanding of the oil and gas exploration industry.

This oil and gas exploration and production industry training covers a wide range of scientific, technical, engineering, management, commercial, and business topics that are key to understanding the complex and highly interesting oil and gas exploration and production industry.

This oil and gas exploration and production industry course suits a wide range of participants from technical and non-technical backgrounds, both experienced and new to the industry, who wish to acquire a working knowledge of it.

## Targeted Groups:

- Early career professionals are within oil and gas and other energy sectors.
- Persons within service sector companies that serve the oil and gas industry.
- Commercial, financial, insurance and legal professionals are interested in energy.
- Those working for the government and non-government organizations are involved in regulation and oversight.

## Course Objectives:

At the end of this oil and gas exploration and production industry course, the participants will be able to:

- Understand the background and importance of the oil and gas industry.
- Explore a wide range of professional disciplines involved in the industry.
- Learn about the science behind the formation of oil and gas deposits.
- Understand how oil and gas assets reservoirs are discovered and developed.
- Learn about the facilities and processing required to transport the oil and gas for sale.
- Understand the economics that drives the feasibility of oil and gas discoveries.

## Targeted Competencies:

By the end of this oil and gas exploration and production industry training, the participant's competencies will be able to:

- The oil and gas exploration and production industry is essential for highlighting success factors in each category of the energy business model.
- Understand and effectively clarify core issues, tactics, and concepts in the oil and gas exploration and production industry.
- Apply a more comprehensive management perspective to the global oil and gas business.
- Understanding how the expectation for oil and gas demand will shape the industry in the future is needed.

## **Environmental Management and Impact:**

An essential aspect of oil and gas exploration and production industry training is understanding the environmental impact of exploration and production and how environmental management is pivotal in operating industry projects.

Participants in this oil and gas exploration and production industry course will examine how the exploration process affects ecosystems and methods for minimizing ecological disruption.

This oil and gas exploration and production industry course will explore best practices for environmental management and examine case studies illustrating the importance of sustaining environmental integrity.

## **Course Content:**

### **Unit 1: The Role of the Key Geoscience Disciplines:**

- **Industry Perspectives:** This section examines the upstream oil and gas industry from various key 'perspectives', such as the oil and gas asset lifecycle, the value chain, the industry players, and its place in society.
- **Geology:** The formation of oil and gas and the conditions for a 'petroleum system' from which oil and gas may be produced.
- **Geophysics:** How are geological structures deep below the earth's surface likely to contain oil and gas identified using sophisticated seismic and other survey techniques?
- **Petrophysics:** The physical and chemical properties of the rock and fluids that make up the reservoir help explain how oil and gas can be extracted from the rocks and brought to the surface.

### **Unit 2: The Role of the Key Engineering Disciplines:**

- **Reservoir Engineering:** How can oil and gas trapped in a reservoir be drained most efficiently using natural and enhanced recovery mechanisms?
- **Well, Engineering:** How are oil and gas wells planned, drilled, tested, operated, eventually decommissioned and made safe, and what techniques are used to improve sound performance?
- **Facilities Engineering** involves designing, building, and operating equipment and structures that enable oil and gas emerging from wells to be transported to a place of sale, such as an oil refinery.

### **Unit 3: The Role of the Integrated Development Team:**

- **Field Development Planning.**
- How does the integrated team, drawn from all disciplines commercial, scientific, and engineering, collaborate to identify the best way to develop a reservoir?

#### **Unit 4: Economics and Decision Making:**

- **Petroleum Economics:** The role of economics in the planning of oil and gas developments to maximize value, including the use of cash flow analysis, time value of money, and investment indicators.
- **Decision Analysis:** How does the integrated field development team make complex decisions involving many input parameters to ensure that huge investments are made rationally and efficiently, using tools such as expected value, sensitivity analysis, decision trees, and Monte Carlo simulation?

#### **Unit 5: Commercial, Safety, and Environment:**

- **Production Contracts and Licenses:** The legal, fiscal, and contractual conditions under which an oil company acquires the right to produce oil or gas and how the revenue and wealth are shared with the host country.
- **Petroleum Resources Management:** How quantities of oil and gas in the reservoir reserves and resources are calculated, classified, and reported consistently for management, regulatory, and investment purposes?
- **Corporate Responsibility:** How oil and gas projects are executed safely and sustainably, with due respect for the environment, and in a way that benefits the local communities in which activities take place, covering topics such as safety, environmental impact, and social license to operate?