

# Oil & Gas Exploration and Production

## INTRODUCTION

- Participants on this training seminar will gain a fundamental understanding of the oil and gas exploration and production. This training covers the wide range of scientific, technical, engineering, management, commercial and business topics, that are key to understanding the complex, and highly interesting, oil and gas industry.
- This Oil & Gas Exploration and Production training seminar is suitable for a wide range of participants, from both technical and non-technical backgrounds, both experienced and new to the industry, who wish to acquire a working knowledge of the industry. No prior knowledge of the topics is assumed.

## OBJECTIVES

By the end of this training seminar, participants will have an understanding of:

- The background to, and importance of, the oil and gas industry
- The wide range of professional disciplines involved in the industry
- The science behind the formation of oil and gas deposits
- How oil and gas assets (reservoirs) are discovered and developed
- The facilities and processing required to transport the oil and gas for sales
- The economics that drive the feasibility of oil and gas discoveries

## TRAINING METHODOLOGY

This training seminar is made interesting and accessible by means of:

- Interactive Presentations and Tutorials
- Videos and Posters
- Debates and Discussions
- Quizzes
- Case Studies

## WHO SHOULD ATTEND?

- This Oil & Gas Exploration and Production training seminar is suitable for a wide range of participants, from both technical and non-technical backgrounds, both experienced and new to the industry. No prior knowledge of the topics is assumed.

In particular, this training seminar will be of great interest to:

- Early career professionals 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 with energy interests
- Those working for government and non-government organisations that are involved in regulation and oversight

## Course Outline

### The Role of the Key Geoscience Disciplines

- Industry Perspectives. 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 the place in society
- Geology. The formation of oil and gas and the conditions for the existence of a 'petroleum system' from which oil and gas may be produced
- Geophysics. How geological structures deep below the earth's surface, and likely to contain oil and gas, are identified using sophisticated seismic and other survey techniques
- Petrophysics. The physical and chemical properties of the rock and fluids that make up the reservoir, leading to an understanding of how the oil and gas can be extracted from the rocks and brought to the surface

### The Role of the Key Engineering Disciplines

- Reservoir Engineering. How oil and gas that is trapped in a reservoir can be drained in the most efficient way using natural and enhanced recovery mechanisms
- Well Engineering. How oil and gas wells are planned, drilled, tested, operated, and eventually decommissioned and made safe, and the techniques used to improve well performance
- Facilities Engineering. The design, construction and operation of equipment and structures to enable oil and gas emerging from the wells to be transported to a place of sale, for example an oil refinery

### The Role of the Integrated Development Team

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

## Economics and Decision Making

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

## Commercial, Safety and Environment

- Production Contracts & Licences. The legal, fiscal and contractual conditions under which an oil company acquires the right to produce oil or gas, and the way that the revenue and wealth is 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 in a consistent manner for management, regulatory and investment and purposes
- Corporate Responsibility. How oil and gas projects are executed in a safe and sustainable manner, 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 licence to operate