

Oil & Gas Exploration & Production

Fundamental, Technical & Commercial

PRD063

Course Description

This course provides a comprehensive understanding of the oil and gas industry, focusing on exploration, production, and the commercial aspects that drive the sector. Participants will gain an in-depth understanding of upstream processes, from geological surveys and drilling techniques to well completion and production optimization. The course covers both the technical challenges involved in oil and gas exploration and production and commercial dynamics such as market trends, pricing mechanisms, and contract negotiations. The course is designed to equip professionals with the necessary skills to navigate the complexities of the oil and gas industry.

Course Objectives

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

- Understand the key processes involved in oil and gas exploration and production.
- Analyze the technical challenges and technologies used in upstream oil and gas operations.
- Gain insights into the commercial factors influencing the oil and gas market, including pricing and contract negotiation.
- Identify the environmental, health, and safety (EHS) standards governing the oil and gas industry.
- Learn about advanced technologies used in drilling, reservoir management, and production optimization.

Who Should Attend

- Engineers, geologists, and other professionals involved in the oil and gas industry.
- Individuals interested in gaining a deeper understanding of upstream oil and gas operations.
- Professionals working in strategic planning, project management, and business development in the oil and gas sector.
- Those looking to improve their knowledge of technical and commercial aspects of oil and gas exploration and production.

Course Duration

5 Working Days

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Course Outlines

1. Introduction to Oil & Gas Exploration

- Overview of the oil and gas industry and its importance to the global economy.
- Introduction to exploration methods: geological surveys, seismic data, and exploration wells.
- The exploration process: prospecting, exploration drilling, and early-stage risk management.

2. Drilling Techniques and Well Completion

- Types of drilling techniques: rotary, percussion, and directional drilling.
- Well completion: casing, cementing, and perforation methods.
- The role of drilling engineers and geologists in designing and executing well plans.

3. Reservoir Management and Production Optimization

- Understanding reservoir dynamics: petrophysics, fluid behavior, and reservoir management.
- Techniques for enhanced oil recovery (EOR): water flooding, gas injection, and thermal recovery.
- Methods for optimizing production: flow assurance, artificial lift systems, and well stimulation.

4. Oil & Gas Production Systems

- Overview of offshore and onshore production systems.
- Surface facilities: platforms, storage tanks, and transportation systems.
- Production optimization techniques for improving field efficiency and reducing downtime.

5. Commercial Aspects of Oil & Gas

- Global oil and gas pricing mechanisms: market factors, OPEC, and geopolitical influences.
- Oil & gas contracts: exploration agreements, production sharing contracts (PSCs), and joint ventures.
- Risk management in commercial negotiations: price fluctuations, contract clauses, and financial terms.

6. Environmental, Health, and Safety (EHS) Considerations

- Overview of EHS standards in the oil and gas industry.
- Environmental risks: oil spills, gas flaring, and water contamination.
- Health and safety regulations: managing risks to workers and the community, and industry best practices.

7. Emerging Technologies and Trends in Exploration & Production

- Innovations in drilling and exploration technology: deepwater drilling, horizontal drilling, and fracking.
- The role of automation, AI, and data analytics in oil and gas operations.
- Future trends: renewable energy integration, carbon capture, and decarbonization efforts in the industry.

8. Case Studies and Real-World Applications

- Analyzing successful oil and gas exploration and production projects.
- Lessons learned from operational challenges and failures.
- Group discussions on real-world problems and solutions in exploration and production.

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