

TRAINING COURSE

Fundamental of Drilling Operation

Course Overview

This 5-day course is designed to provide attendees with a robust knowledge of drilling and/or well engineering principles. Based on the global practices, and standards and using real examples, it represents how drilling is managed in the oil and gas industry.

As drilling tools and technology evolves, the drilling community must keep pace in order to make the right decisions at the right time. Some of these decisions have a significant impact on reducing non-productive time. However, they are also important to manage process safety as major well control incidents have repeatedly taught us in the past. We need a consistent and technology-based approach to decision-making. This can only be achieved if the basics of drilling have been understood and mastered, and then wisely applied.

Course Objectives

By the end of the course, participants will:

1. Define the critical elements of a drilling program, the practices that contribute to minimize non-productive time, the equipment, and tools we need to collect downhole information, the high standards required to maintain process safety and the methodologies that enable analyzing and solving of drilling problems.
2. Demonstrate how to apply a methodical approach to well planning, which can then be used to implement good practices at the wellsite.
3. Have a thorough understanding of basic well engineering and the essential skills to work as a team member.
4. Understand that opportunities are always available to broaden our foundation of knowledge, so that we can rise to the challenge.
5. Focus on several well design and well operational elements that either enhance or hinder us in getting to a successful end result.
6. Illustrate the benefits of having sound well engineering skills that enable a consistent well delivery in the office or field.

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Targeted Audiences

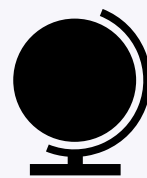
This course is tailored for:

- Rig Crew Members (Roustabouts, Floorhands, Derrickhands, Drillers).
- Drilling Engineers & Completion Engineers
- HSE Officers & Safety Representatives.
- Oil & Gas Professionals seeking to enhance their knowledge in drilling operations.
- Contractors & Service Providers working in drilling environments.

Delivery Method



Interactive Lectures



Case Studies



Group Discussion

Certification

Participants who complete the course will receive a Certificate of Completion for "Fundamental of Drilling Operation". This certificate validates their knowledge in drilling planning, design and execution.

Key Benefits of This Course

- ☒ Comprehensive Understanding of Drilling Operations
- ☒ Hands-On Learning & Practical Exposure
- ☒ Enhanced Safety Awareness & Compliance
- ☒ Stronger Career Prospects & Skill Development
- ☒ Exposure to Industry Best Practices & Technologies
- ☒ Networking with Industry Professionals
- ☒ Certification & Credibility

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Course Outline

DAY	TOPIC
Day 1	<ul style="list-style-type: none">• Welcome & Introduction• Pre-Course Assessment• Personal and Process Safety Principles• Preventive and Escalation Barriers• Planning of a Well [Pore/Fracture Pressure, Stability]• Rock Mechanics• Casing Design Principles• Pipe Strengths• Casing Seat Selection• Installation and Operational Load/Test Scenarios• Connections, Casing Wear and Corrosion• Final Casing Selection• Exercise on Casing Seat Selection and Casing Design• Recap and Question/Answer Session
Day 2	<ul style="list-style-type: none">• Recap Day 1• Drill String Design• BHA Design• Drill String Dynamics• Drill Bits• Hydraulic Pressure Losses and ECD• Exercise on Drill String Design and Hydraulics• Drilling Optimization Techniques [such as MSE]• Use of Road Maps for Drag/Torque and Hookload• Recap and Question/Answer Session
Day 3	<ul style="list-style-type: none">• Recap Day 2• Drilling Fluids• Solids Control Equipment• Casing and Liner Cementations• Integrity and Cement Bond Logs• Directional Drilling and Associated Tools• Kicking off and Side-tracking Techniques• Exercise on Planning a Directional Well• Surveying Tools and Selection• Recap and Question/Answer Session

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Day 4	<ul style="list-style-type: none">• Recap Day 3• Mud Logging Overview & Concept• Gas Monitoring & Data Interpretation• Well Control Basics• Kick Tolerance• Well Control Equipment• Exercise in Well Control Calculations• Managed Pressure Drilling• High Pressure/High Temperature Drilling• Recap and Question/Answer Session
Day 5	<ul style="list-style-type: none">• Recap Day 4• Stuck Pipe Prevention – The Mechanisms• Hole Cleaning• Stuck Pipe Prevention – Freeing & Recovery Methods• Overall Drilling Performance• Wellheads and Xmas Tree [Surface/Subsea]• Subsea Drilling and its Challenges• Completion and Stimulation Techniques• Post-Course Assessment• Recap and Question/Answer Session