TECHNICAL
EDUCATION
ACADEMY

School of Engineering

COURSE PROGRAMME

000108

PROD007a - Basic Drilling Technology

This 3-day course presents a thorough overview of current drilling equipment, technology and practices being used worldwide in various drilling environments.



Learn from the Best in the Business!

Course overview

Foundation level

Why take this course

This 3-day course presents a thorough overview of current drilling equipment, technology and practices being used worldwide in various drilling environments. Participants will learn the general methodology for planning, designing and executing a drilling project, as well as the basic tools involved.

Besides a review of onshore and offshore drilling units and systems, topics include AFE preparation, key elements of well plans, wellbore pressure dynamics, well control, downhole equipment, drilling fluids, and casing and cementing operations. Additionally, a basic introduction to unconventional drilling practices such as Underbalanced and Managed Pressure drilling is included.

Who it is for and how it helps

Petroleum Engineers, Completion and Reservoir Engineers, Geologists, Geophysicists, Entry-level Drilling Engineers and non-technical personnel with at least 1-3 years of industry experience.

What you will learn

- Understand the construction and components of drilling well plans
- Learn how to prepare the AFE for new wells
- Understand the operating limits for drilling a well
- Learn wellbore pressure dynamics
- Gain a knowledge of onshore and offshore drilling units and their equipment
- Gain a knowledge of the typical drilling components and operations such as casing, bits, cementing, formation evaluation
- Gain a basic introduction to unconventional drilling applications such as Underbalanced and Managed Pressure drilling

Curriculum

Modules 01–06

01 Drilling Technology Outline

- Drilling Technology Outline

02 Planning the Drilling Project

- Types of Well Plan
- Directional / Horizontal Drilling
- Data Acquisition
- Determining the Operating Window
- Pressures (Hydrostatics and Geopressures)
- Understanding How Pore/Fracture Pressures Impacts Drilling Operations
- Elements of the Well Plan
- The AFE (Approval for Expenditure) & Typical Drilling Prognosis

03 The Drilling Rig and Its Components

- The Drilling Rig and Its Components

04 Types of Drilling Units

- Types of Drilling Units

05 Drilling Rig Equipment Systems

- The Hoisting System
- The Rotating System
- The Circulating System
- The Power System
- Other Tools and Equipment

06 Downhole Sub-Surface Equipment

- Drill String and BHA Elements
- MWD (Measurement While Drilling)
- LWD (Logging While Drilling)

Curriculum

Modules 06–11 · Module 06 — continued

- Downhole Motors

07 Types of Drilling Fluids and Their Purpose

- Water Based
- Oil Muds
- Non Aqueous
- Gasified / Aerated Fluids

08 Drilling Fluid Components

- Continuous Phase
- Solid Components
- Additives
- Drilling Fluid Properties
- Testing and Control
- Daily Mud Report

09 Hydraulics and Hole Cleaning

- Hydraulics and Hole Cleaning

10 Fluid Flow Pressure Losses and ECD

- Fluid Flow Pressure Losses and ECD

11 Casing

- Basic Well Construction
- Building the Wellhead
- Types of Casing
- Casing Specification
- Basic Casing Design
- Casing Seat Selection

Curriculum

Modules 12–14

12 Cementing

- Definition of Oilfield Cement
- Types of Cement
- Uses of Cement

13 Typical Drilling Operations

- On Bottom Drilling Ahead
- Sliding (Deviated and Horizontal Wells)
- Connections
- Tripping
- E-Logging
- Formation Testing / Evaluation

14 Advanced Drilling Technologies

- Underbalanced Drilling
- Managed Pressure Drilling

Participation and contacts

Joining the programme

Contact the Academy and quote course code 000108 to confirm dates, delivery format, prices and enrolment terms.

Training for your team

Tell us your business goals, the roles and number of participants, and your preferred dates and location. This will help us discuss the right training option.

Preparing for the programme

The published programme does not specify any prerequisites. Contact us before enrolling to confirm how to prepare.

Discuss your training needs

mail@tecedu.org
www.tecedu.academy

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