TECHNICAL EDUCATION ACADEMY

School of Engineering

COURSE PROGRAMME

000201

WELL001 - Basic Drilling Technology

This five-days course is intended to cover different aspects of crude oil production right from the exploration stage.



Learn from the Best in the Business!

Course overview

Foundation level

Why take this course

This five-days course is intended to cover different aspects of crude oil production right from the exploration stage. The course will cover exploration, drilling technology, various types of well completion and testing methods, artificial lift, reservoir pressure maintenance practices, work-over, well stimulation and production.

Deep-water Technology, being latest, is also included. The theory and practical aspects of geology, completion in horizontal and vertical well, multilateral wells, rig layout- components, various types of fluids used in drilling, workover operations, and various well stimulation techniques will be discussed.

A highly interactive combination of lectures and discussion sessions will be managed to maximize the amount and quality of information and knowledge transfer. The sessions will start by raising the most relevant questions, and motivate everybody to find the right answers.

The delegates will also be encouraged to raise their own questions and share in the development of the right answers using their own analysis and experiences.

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

- Review the basics of geology of the suitable rocks for favorable deposition of hydrocarbons
- Understanding the basics of drilling technology
- In depth study of the well completion and various modes of testing
- Production from depleted zones by means of suitable modes of Artificial Lift
- Reservoir management
- Imparting knowledge of Well repair and damage control
- Highlight the frontier area of offshore technology including Deep Water

Curriculum

Modules 01–04

01 Introduction to Drilling technology

- Introduction to Drilling technology

02 Basic of Oil Field Geology

- Terms and nomenclature of geology used in oil industry
- Petroleum: How it is formed and trapped, geology of the suitable rocks for favourable
- Deposition of hydro-carbons
- Introduction to seismic survey

03 Drilling Technology

- Technical Definitions
- Practical Units
- Rotary Drilling practices
- Well Construction and Design of Casing String
- Drilling fluids
- Well control Equipment
- Fishing and fishing Tools
- Offshore drilling Practices
- Safety on the rig

04 Well completion & testing

- Reservoir engineering aspects for well completion and testing
- Objectives of well testing
- Classification of well production test
- Various steps in well test programme
- Basis of completion design
- Types of well completion: open hole completion, cased hole completion, examples of
- typical offshore well completions,
- Slotted liner completion
- Artificial Lift : SRP, ESP, Gas Lift and Hydraulic lift completion
- Horizontal and multilayered completion

Curriculum

Modules 04–07 · Module 04 — continued

- Tail Pipe completion
- Perforation Techniques: over balanced and under balanced
- Well head equipments
- Down hole tools
- Well activation and flow measurements
- Well Test Concepts

05 Artificial lift

- Need for artificial lift
- Various modes of lifts
- Selection criterion and design of suitable lift
- Trouble shooting
- Optimization

06 Reservoir pressure maintenance

- Need for reservoir health management
- Types of water injection methods, peripheral and spot injection
- Frontier areas of EOR
- Compatibility of injection fluids
- Monitoring

07 Work over rig components

- Introduction
- Rig components
- Draw works
- Hoisting System
- Rotary equipment
- Mud Pumps
- Prime over

Curriculum

Modules 08–11

08 Work over Jobs

- Routine Servicing of the wells
- Usage of work-over fluids
- Main Repair Jobs
- Water and gas shut-off
- Casing Damage repair
- Fishing

09 Well Stimulation

- Formation Damage
- Stimulation techniques
- Gravel packing
- Activation

10 Production Facilities

- Introduction to Group Gathering Stations
- Layout of GGS/GCS/ EPS/CTF
- Sour component handling
- Oil, Gas and water separation
- Demulsification and desalting
- Functioning of Heater Treater
- Overview of offshore process platforms

11 Offshore Drilling Practices

- Introduction to offshore technology
- Deep water: frontier area of technology

Participation and contacts

Joining the programme

Contact the Academy and quote course code 000201 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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