TECHNICAL
EDUCATION
ACADEMY

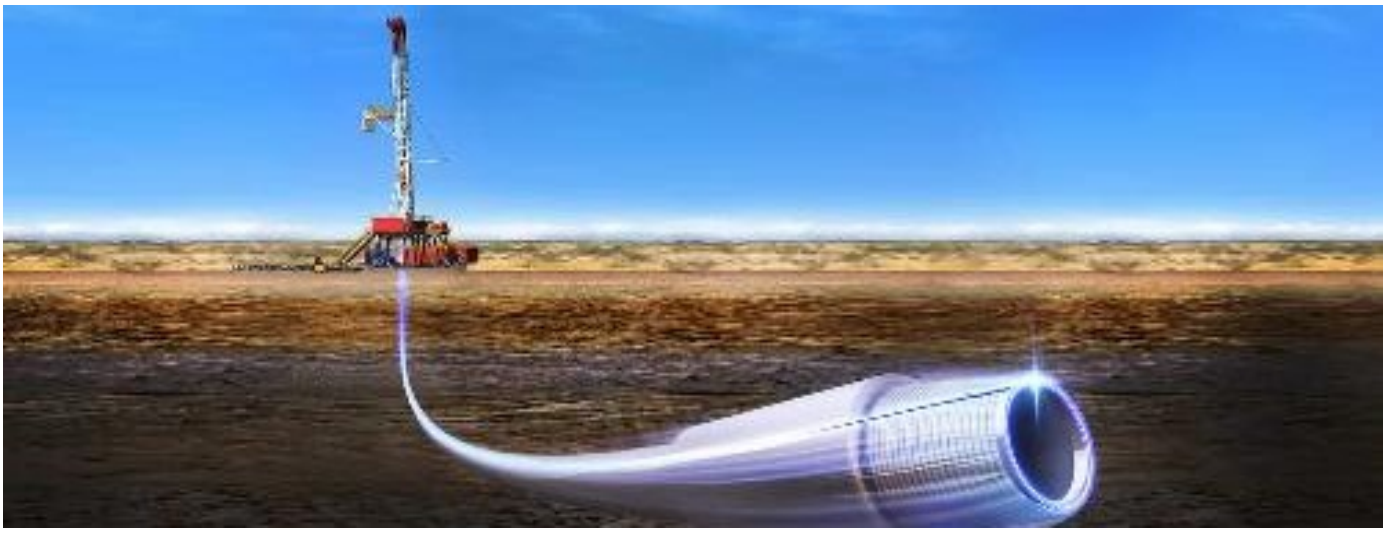
School of Engineering

COURSE PROGRAMME

000115

WELL003 - Directional, Horizontal, and Multilateral Drilling

Directional drilling technology is being pushed further with increasingly complex well paths, distant targets, and more difficult drilling environments.



Learn from the Best in the Business!

Course overview

Intermediate level

Why take this course

Directional drilling technology is being pushed further with increasingly complex well paths, distant targets, and more difficult drilling environments. This technology is the heart of many unconventional resource plays.

This course is designed to provide the candidates with knowledge in the principles and practice of directional drilling, Oil well planning and construction, calculation, Bottom hole Assembly Selection and Design for directional and horizontal well. Included in this course are specific problems associated with directional and horizontal drilling such as torque, drags, hole cleaning, logging and drilling string component design.

Who it is for and how it helps

Drilling Supervisors, Trainee Directional Drillers, Drilling Engineers, Managers of Drilling Personnel, Geologists, Well Planners etc.

What you will learn

- Appreciate the equipment needed for directional drilling
- Design a directional well
- Calculate the trajectory of a deviated well
- Design the drill stem, with regards to a well's profile

Curriculum

Modules 01–04

01 Directional Profiles and Other Applications of Directional Drilling

- Directional Drilling Fundamentals and short history
- Applications and Limitations
- History and applications of Extended Reach Drilling
- Directional Well profiles (2D, 3D, designer wells)
- Survey calculation methods: Tangential, Balanced Tangential,
- Average Angle, Radius of curvature, Minimum Curvature
- Survey calculation exercises

02 Dogleg, Torque and Drag Calculations

- Factors that affect torque and drag
- Friction Coefficient
- Directional Profile
- String Weight
- Directional Drill String Design
- Conventional directional well
- High Angle or Horizontal Well
- Problems & Case history

03 Planning Directional and Horizontal Wells including Extended Reach Wells (ERD)

- Determining directional well plan
- Planning directional well with single equation
- Planning Horizontal Wells
- Planning ERD

04 Hole Cleaning Practices in Deviated and Horizontal Wells

- Hole Cleaning Problems Associated with Inclination
- Annular Velocity
- Flow Regime and Viscosity
- Drill Pipe Rotation and Reciprocation
- Multi-lateral wells concepts and application

Curriculum

Modules 04–05 · Module 04 — continued

- Horizontal and Multilateral Drilling Technology
- New technologies application (Rotary Steerable, Thin Wall motors etc.)

05 Completion for Horizontal and Multi-lateral Wells

- Production: horizontal vs vertical
- Production: horizontal vs ERD
- Production: horizontal vs multi-lateral

Joining the programme

Contact the Academy and quote course code 000115 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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