

Directional & Horizontal Drilling Certification

Successful preparation & drilling of a directional well

5.00 days

DRIL/FDTDHE

Overview

AUDIENCE

Drilling engineers, supervisors, tool pushers.

PURPOSE

This course provides a comprehensive knowledge to prepare efficiently and succeed in drilling a directional well.

LEARNING OBJECTIVES

Upon completion of the course, participants will be able to:

- know about the equipment needed for directional drilling,
- design a directional well,
- calculate the trajectory of a deviated well in 2D,
- design the drill stem, with regard to a well's profile, in order to reach a target.

PREREQUISITE

Course "Well Architecture & Equipment" (page 160), or equivalent practical experience, is highly recommended.

WAYS AND MEANS

Exercises.

Application to a real case (project) for participants in the "Drilling & Completion Engineering" training course (page 154).

Agenda

GENERALITIES

Applications, terms and definitions.
Well profiles, coordinates' system.
Trajectory control.
Uncertainty calculation, anti-collision.

1.00 d

DIRECTIONAL DRILLING EQUIPMENT

Specific drilling equipment: downhole motors, rotary steerable system.
Measuring equipment: MWD.

0.75 d

DRILLING ENGINEERING

Well planning.
Limits of use of a drill string: buckling.
Drill string design.
Torque and drag calculation.
Drilling fluids and cementing program.
Logging.
Well control.

2.25 d

HORIZONTAL & ERD

ERD, multilateral and short radius.

0.25 d

CASE STUDIES

0.50 d

KNOWLEDGE ASSESSMENT

0.25 d