



Well Design and Engineering Optimization

20 - 24 May 2024
London (UK)



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Ref.: 15132_265019 **Date:** 20 - 24 May 2024 **Location:** London (UK) **Fees:** 5800 **Euro**

Introduction:

This course will increase the participants understanding Well construction process and gives an overview of the well construction Cycle and an introduction to drilling operations. The goal of the course is to provide an insight into the planning and execution of a modern drilling operation for the new generation of Drilling Optimization. Significance will be on the conceptual design and detailed engineering design calculations involved in planning a well.

This training course will feature:

- Identify Drill string and BHA Design and Design Bit technology
- Wellbore stability and casing point selection
- Drilling fluids and solids control
- Casing design
- Primary cementing
- Trajectory design

Targeted Groups:

- Drilling engineer
- Completion engineers
- Drilling supervisors with some experience in drilling

Course Objectives:

At the end of this course the participants will be able to:

- Achieving the optimum design of well, and avoiding the risk
- Extending the well life and control it
- Ensuring the well integrity in all stages.
- Obtain integrating knowledge to mitigate and eliminate the drilling problems
- Hone their knowledge and get the self-confidence for doing the proper well design, in addition, how to eliminate all kinds of problems
- Understand main concepts associated with well construction of multilateral wells

Course Content:

Unit 1:

- Overview of Drilling Operations
- Exploration & production licenses, Drilling personnel and Rotary drilling equipment
- The drilling process onshore and offshore
- Drilling economics
- Rig Components
- The Drill string

- Design of the drill string
- Drilling Bits
- Design of PDC and Roller Cone Bits, selection of bits, grading of dull bits, assessing and improving the performance of drill bits

Unit 2:

- Formation Pressures & Well Control
- Introduction to origin and representation of pore pressures and fracture pressures
- Origin, prediction and detection of abnormal pressures
- Drilling problems associated with abnormal pressures
- Prediction and confirmation of formation fracture pressures
- Principles of primary & secondary well control
- Warning signs of kicks
- Well killing procedures

Unit 3:

- Drilling Fluids, Hydraulics and Casing
- Functions, properties, design/selection of various types of drilling fluid
- Wellsite tests performed on drilling fluids
- Design of a solids control system
- Introduction to pressure losses in the drilling system
- Optimization of bit hydraulics
- Major functions and properties of casing and casing string configurations
- Casing running operations
- The casing design process

Unit 4:

- Cementing and Directional Drilling
- Functions and properties of cement, single and multiple stage cementing operations
- Designing a cementing operation
- Assessing the quality of the cement sheath
- Introduction to directional drilling
- Designing the trajectory for a directional well
- Directional drilling tools and BHAs
- Introduction to wellbore surveying
- Calculating the trajectory of a directional well based on survey data
- Directional surveying tools

Unit 5:

- Measurement While Drilling and Subsea Drilling
- Introduction to MWD and the value of real-time data
- MWD data collection and transmission technique



**Registration form on the :
Well Design and Engineering Optimization**

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Complete & Mail or fax to Mercury Training Center at the address given below

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Company Information

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