

Deepwater Challenges

Course Price

£3050

Course Description

This short course covers drilling in the offshore and deepwater environment challenges. Types of rigs and rig moving practices are discussed along with drilling equipment and downhole tools. A geology overview is given together with wellbore stability and well design including casing design, drilling fluids and cementing. Well control and sub-sea BOP equipment are covered together with directional drilling and completion design. The Macondo accident is presented together with analysis, implications, and new tool development, procedures and regulations for offshore industry.

Course Objectives

The goal of this course is to present deepwater exploration and development challenges and take the participants in the journey through the steps on how industry has evolved and how it meets them. Drilling challenges are covered and the selection of “fit for purpose” tools, equipment, people and processes, which are required to meet project objectives.

We will be discussing ways of identifying, preventing and mitigating deepwater operations, drilling hazards, risks, drilling problems, and project delivery issues as well as presenting lessons learned from several projects all over the world. Deepwater well control management techniques using the IADC guidelines and new regulations and tools now in place following post-Macondo developments will also be covered in detail.

Who Should Attend

Drilling supervisors, drilling superintendents, senior and junior drilling engineers, operators, drilling managers, and other interested disciplines requiring offshore knowledge.

Course Content

DAY 1



- Deepwater History and Industry Evolution
- Terminology of Deepwater, Influence of Deepwater
- Geology, Overburden, Compaction
- Worldwide Activity
- Deepwater Concerns, Effects of Water Depth, Shallow Gas, Hydrates

Video: Offshore exploration and production industry

Quiz-1: 15-min assessment of today's lecture

DAY 2

- Offshore Drilling Procedures Overview
- Planning
- Risk Management
- Drilling Hazard Management
- Seas and Weather Conditions
- Positioning the Drilling Unit
- Standard Equipment For Deepwater Operations

Video: Offshore drilling

Quiz-2: 15-min assessment of today's lecture

DAY 3

- Deepwater Drilling Issues
- Well Design, Rig Selection
- Deepwater Well Control
- Bop Stack and Control System
- Subsea Drilling Equipment
- Marine Drilling Riser
- Blowout Contingency Plan, Relief Well
- Analysis of Macondo Well, Lessons Learned

Video: Macondo well analysis

Quiz-3: 15-min assessment of today's lecture

DAY 4

- Deepwater Well Construction and Integrity
- Deepwater Drilling Procedures
- Challenges for Drilling Fluids, Choice, Problems, Mitigation
- Challenges for Cements and Cement Placement
- Casing Design
- Drill Bits, Choice, Issues, Optimization

Video: Fluids in Deepwater Exploration

Quiz-4: 15-min assessment of today's lecture

DAY 5

- Deepwater Completion System Challenges, Open Hole, Cased Hole
- Intelligent Completions
- Deepwater Testing Challenges
- Design and Pressure Testing of Deepwater Equipment
- Advances in Deepwater Hardware and Operations

Video: Deepwater Novel Hardware

Final Quiz: 30-min assessment of course content

CPD Unit

Continuing Professional Development

35 HOURS CPD