Introduction to Offshore Drilling

Duration

Two classroom days providing 1.6 CEU (Continuing Education Credits) or 16 PDH (Professional Development Hours)

Summary

This two-day course provides a non-technical overview of the phases, operations, and terminology used in the drilling and completion of an offshore oil or gas well. It is intended for non-drilling personnel who work in the offshore drilling industry. This includes marine and logistics personnel, accounting, administrative and support staff, environmental professionals, etc. No prior experience or knowledge of drilling operations is required. The course will provide participants with a better understanding of the issues faced in all aspects of drilling operations, with a particular focus on the unique aspects of offshore operations.

For a course related to onshore drilling operations, we recommend the "Introduction to Onshore Drilling" course.

Who Should Attend

No prior experience of knowledge of drilling operations is required. The course will provide participants with a better understanding of issues faced in all aspects of drilling operations, with a particular focus on the unique aspects of offshore operations.

Course Outline

- Basic Petroleum Geology
- Offshore Well Construction Process
- Drilling Rig Components and their Functions
- Bottom Founded Offshore Rigs (types and description)
- Drilling a Well from a Bottom Founded Rig
- Drill Bits, Drilling Fluids, Casing and Cementing, Evaluation
- Offshore Drilling from a Floating Rig (Drillships, Semisubmersibles)
- Anchoring, Dynamic Positioning, Motion Compensation, Subsea BOPs, ROVs, Supply Boats, Personnel Transfer
- Completion and Testing
- Directional Drilling and Relief Wells
- Offshore Production Systems
- Offshore Pipelines

Course Agenda

Day One

The first day is focused on drilling and related operations on bottom founded drilling units. These include jackups, fixed production platforms (jackets), swamp barges, tender rigs, and gravity based structures (GBS).

1. Petroleum Introduction
    a. Basic Petroleum Geology
    b. Porosity & Permeability
    c. How Petroleum is Formed
    d. Petroleum Traps (Reservoirs)
2. Well Design & Construction
    a. Concepts and Considerations in Designing a Well
3. Types of Bottom Founded Offshore Rigs
    a. (Jackups, Fixed Production Platforms (jackets), Swamp Barges, Tender Rigs, and Gravity Based Structures (GBS)
4. Drilling Rig – Components & Functions
   (a description of the four basic systems common to all rotary drilling operations)
    a. Hoist & Rotary
    b. Mud System
    c. Drillstring
    d. Blowout Preventer System (surface stacks)
5. Personnel & Contracts
    a. Personnel & Responsibilities on a Rig
    b. Offshore Conditions & Lifestyle
    c. Rig Contract Formats
6. Drilling an Example Well from Top to Bottom
   (this introduces the various activities as they are encountered during the drilling of the well)
    a. Drill Bits
    b. Drilling Fluids
    c. Drillstring Operations (Making a Connection & Tripping
    d. Casing & Cementing
    e. Formation Evaluation

Day Two

The second day builds on the concepts of the first, by introducing the additional issues that arise in floating drilling operations, and discusses additional topics including completions, directional drilling, offshore support operations, and offshore production concepts.

1. Personnel on a Floating Offshore Drilling Rig
2. Types of Floating Offshore Rigs
    a. Drillships
    b. Semisubmersibles
3. Additional Considerations for a Floating Drilling Operation

   a. Rig Positioning - Anchoring and Dynamic Positioning (DP)
   b. Motion Compensation
   c. Subsea Blowout Preventer Systems (BOPs) & Riser (components and operation)
4. Support of Offshore Operations
   a. Divers & ROVs
   b. Supply Boats
   c. Personnel transportation
5. Completions (brief overview)
   a. Typical Completion - Tubing Conveyed Perforation (TCP)
   b. Acidizing & Hydraulic Fracturing
   c. Multi-zone completions
6. Directional Drilling & Relief Wells
7. Offshore Production Systems
   a. Bottom Founded & Floating Production Options
   b. Workover Options for Offshore Wells
   c. FPSOs & Offshore Pipelines

Auxiliary Material

These subjects are added if time permits (depending questions and discussions in previous two days)

1. Fishing
2. Well Control

Instructor

Dick Heenan has over thirty-five years of experience in the upstream petroleum industry in a variety of technical and managerial positions. This includes supervision of both on and offshore operations, domestically and internationally. Job assignments have included field supervision of drilling and service rigs, testimony as an expert witness in well control, preparation of Arctic offshore drilling and development scenarios, and US Department of Justice Anti-Trust presentations. Mr. Heenan is registered as a professional engineer in Alberta, the Northwest Territories and Nunavut, and is a member of the Society of Petroleum Engineers (SPE). He has published papers and articles through the SPE, the Canadian Association of Drilling Engineers, and several commercial publications. Mr. Heenan currently has a private drilling and completions consulting practice based in Calgary Alberta.

Course Dates

Please visit the course details webpage for currently scheduled course dates.

Available for In-House Group Delivery

This course is available for In-House Training and the content can be customized to suit the needs of your organization. For more information or to request a proposal, please email inhouserequests@peice.com or call 713-482-3858 (USA), 403-284-1250 (Canada) or 011 44 20 7280 3333 (International).