

2 DAYS PRIMER COURSE IN MARINE DRILLING TECHNOLOGY

COURSE OVERVIEW

The course is designed to help the participants to acquire the fundamental knowledge on Marine Drilling processes on offshore jack-up and floater drilling rigs. The course outlines the various types of drilling rig and details their drilling facilities and systems employed in drilling wells (the derrick, the drill string, the use of drilling muds and cementing). Special attention is given to the Marine Drilling components of the Blow Out Preventer, The Marine Drilling Riser the Riser Tensioner and Heave Compensation Systems. Upon completion of the course, participants should be able to understand the basics of offshore rigs design, their working principles and how wells are drilled offshore. Case Studies and videos will be used to illustrate lessons learned from past successful projects. The case of the failure and oil spillage from the rig in the Gulf of Mexico will be also discussed.

A CDROM of the powerpoint presentation in colour will be distributed with the lecture materials.

WHO SHOULD ATTEND

Shipyards, Oil Rig-building yards, subcontractors, offshore construction companies and service providers, and marine & offshore related SMEs personnel involved in design & engineering, planning, procurement, project management, engineering production, vessel construction, commercial, commissioning and administration.

COURSE CONTENT

- Introduction to Offshore Drilling Activities
- Offshore Drilling Hosts
- Drill Floor Layout and Drilling Rig Components
- Drill String Design and Components
- Drilling Mud Systems
- Marine Riser and Offshore Drilling Components
- Formation Pressure Control – Blowout Preventers
- Drilling Offshore Wells – Conventional and Advanced
- Advanced and New Drilling Approaches
- Offshore Support Vessels
- Case Studies and Video examples

PRIMER COURSE IN MARINE DRILLING TECHNOLOGY

Day 1

09.00 Welcome Speech

09.15 L1 INTRODUCTION OFFSHORE DRILLING ACTIVITIES

- * PAST AND CURRENT DRILLING REQUIREMENTS
- * EXPLORATION ACTIVITIES - FINDING THE OIL
- * TYPICAL OPERATIONAL AREAS – WATER DEPTHS & SEA STATES
- * DEVELOPING AND IMPLEMENTATION OF DRILLING PROGRAMS
- * TYPES OF OFFSHORE DRILLING RIGS – PLATFORM & MODUS
- * FIELD EXAMPLES

10.15 Break

10.30 L2 OFFSHORE DRILLING HOSTS

- * JACK-UP RIGS
- * SEMI-SUBMERSIBLES
- * DRILL SHIPS
 - General Characteristics & Capabilities
 - Moored or DP
 - Shallow Water Rigs
 - Deepwater, Advanced Capability Rigs

12.00 Lunch

13.00 L3 DRILL FLOOR LAYOUT AND DRILLING RIG COMPONENTS

- * RIG FLOOR OPERATIONS & LAYOUT
- * DERRICK & DRAWWORKS
- * PIPE HANDLING & STORAGE
- * ROTARY TABLE
- * TOP DRIVE
- * TUBULAR CONNECTIONS
- * DRILLING AHEAD

14.00 L4 DRILL STRING DESIGN AND COMPONENTS

- * DRILL BITS
- * DRILL STRING
 - Drill Pipe
 - Heavy Weight
 - Drill Collars
 - Stabilisers
- * BOTTOM HOLE ASSEMBLIES (BHA)
 - Steerable
 - Instrumentation
 - Measurement While Drilling (MWD)

14.30 Break

14.45 L5 DRILLING MUD SYSTEMS

- * MUD FUNCTIONS
- * MUD COMPOSITIONS
- * MUD HANDLING EQUIPMENT
 - Storage & Mixing
 - Mud Pits
 - Mud Pumps
 - Mud Cleaning System
 - Shakers, Desanders, Desilters and Degassers

16.30 Questions Followed by close of Day One

Day 2

09.00 L6 MARINE RISER AND OFFSHORE DRILLING COMPONENTS

- * GENERAL OFFSHORE REQUIREMENTS
- * GUIDE BASE
- * SUBSEA WELLHEADS
- * BLOW OUT PREVENTERS
- * LOWER RISER PACKAGE
- * MARINE RISER
- * FLEX & TELESCOPE JOINTS
- * RISER TENSIONER
- * VESSEL MOTION COMPENSATOR
- * DRILLING CONTROL SYSTEM

09.45 L7 FORMATION PRESSURE CONTROL – BLOWOUT PREVENTERS (BOP)

- * NEED FOR PRESSURE CONTROL
- * BOP DESIGN AND FUNCTION
- * BOP RAMS (Pipe, Blind and Shear)
- * ANNULAR BOP
- * TYPICAL PLATFORM BOPs
- * TYPICAL SUBSEA BOPs
- * CHOKE AND KILL FUNCTIONS
- * CHOKE MANIFOLD
- * BOP TESTING

10.30 Break

10.45 L8 DRILLING OFFSHORE WELLS - Conventional and Advanced

- * FIXED PLATFORM WELLS
- * SPAR OR TLP WELLS
- * SUBSEA WELLS
- * CASING PROGRAMS
- * CASING CEMENTING ACTIVITIES
- * CORE SAMPLING & WELL LOGGING
- * DRILLING PRODUCTION TESTING
- * DIRECTIONAL DRILLING
- * HORIZONTAL DRILLING

12.00 Lunch

13.00 L9 ADVANCED AND NEW DRILLING APPROACHES

- * DUAL ACTIVITY DRILLING DERRICKS
- * BATCH DRILLING PROGRAMS
- * AUTOMATED PIPE HANDLING FACILITIES
- * DRILL THRU XMAS TREES
- * NEW DRILLING SYSTEMS

14.15 Break

14.30 L10 DRILLING INCIDENTS AND SAFETY

- * Drilling Incidents
- * Oil Spills and Blowouts
- * Deepwater Horizon Incident

15.15 L11 OFFSHORE SUPPORT VESSELS

- * DRILL RIG TRANSPORT VESSELS
- * ANCHOR HANDLING, TOWING & SUPPLY (AHT) VESSELS
 - Towing Drilling Units
 - Mooring Jack-up and Semi-Sub Drilling Units
- * PLATFORM SUPPORT VESSELS (PSV)
- * DYNAMIC POSITIONING REQUIREMENTS FOR DRILLING AND SUPPLY VESSELS

16.30 Questions followed by Close of Course