

Basic Subsea

Basic Subsea course widens the delegate's knowledge base in the field of practical subsea engineering drilling. The course provides a clear insight and understanding of all the equipment, maintenance, repair and operational philosophies associated with well control equipment, whether it uses the latest technologies available or long field-proven equipment. Current legislation and standards are used throughout the course. This course can be considered suitable for personnel who either have no former first hand and/or hands-on experience of well control equipment, its operation and maintenance or only minimal experience. The course can also serve to refresh the equipment and systems awareness to working subsea engineers with a modicum of work experience.

Course Outline

- Introduction
- Ram Preventers
- Annular Preventers
- BOP-Mounted Valves
- Hydraulic Connectors
- Choke and Kill Manifolds, Mud Gas Separators
- BOP Control Systems
- Heave Compensation Systems
- Marine Drilling Riser Systems
- Diverter Systems
- Wellhead Systems
- Pressure and Safety

Who Should Attend

- Subsea Trainees, Assistant Subsea Engineers, Subsea Section Leaders, Drilling Supervisors, Chief Mechanics, Maintenance Section Leaders, Rig Managers, Offshore Installation Managers.

Course Duration

- 3 Days

Certification

The course has a pre-test and a final test. The pre-test is not assessable and the final test at the end of the course requires a pass rate of 70%. After successful course completion delegates receive a certificate accredited by International Association of Drilling Contractors Drilling Industry Training (IADC DIT).

Course Overview

This course has been designed to provide an in-depth overview of all subsea system components, including detailed procedures for maintenance of all major well control equipment components, understanding of typical standing procedures, and current standards, rules and regulations.

If you are interested in attending the course or looking
for more information about the training please contact

COURSE CONTENT AIMS AND OBJECTIVES

SECTION 1: INTRODUCTION

Commencing the course with a high level overview of all major subsea system components.

SECTION 2: RAM PREVENTERS

All major vendors of ram type preventers and ram locking systems are described in detail. The physics and design of each ram type preventer is outlined and discussed.

SECTION 3: ANNULAR PREVENTERS

All operating principles of different vendors' annular preventers are animated and described in detail, together with the design characteristics. Stripping philosophies and extensive maintenance routines are covered with emphasis on current rules and regulations.

SECTION 4: BOP-MOUNTED VALVES

Design rationale behind current stack-mounted valve assemblies, pressure ratings and discussion of water depth threshold for pressure/vent controls or complete open/close with hydraulic assist circuits. Applicable API legislation for stack-mounted valves is also addressed.

SECTION 5: HYDRAULIC CONNECTORS

An introduction to all types of connectors used on drilling BOP stacks, ranging from main connectors to auxiliary connectors. Pressure testing and trouble-shooting of connectors are part of this section, together with gasket ring technology and preload debate.

SECTION 6: CHOKE AND KILL MANIFOLDS, MUD GAS SEPARATORS

All choke and kill valve manifold arrangements and current safety cases and legislation is covered in detail, together with the maintenance and testing of manifolds. Design rationale and variations on all choke and kill manifold control systems/panels. Mud gas separators and mud gas separator sizing calculations/parameters.

SECTION 7: BOP CONTROLS

The historical background into the development of both the hydraulic pilot-operated and multiplexing BOP control systems is covered in this part of the course. Principles of all systems communication: surface – subsea, including an exhaustive study of single function flow paths. A high level overview of current emergency systems in use on DP MODU's will round off this element of the course.

SECTION 8: HEAVE COMPENSATION SYSTEMS

Heave compensators, their design rationale, operating principles, limitations and the basic maintenance of heave compensators is outlined in detail. In-depth study into wire-line riser tensioner systems and control. Application of high pressure air/gas systems used on heave compensation systems. Contingencies for applied top tension settings: top and base tensions.

SECTION 9: MARINE DRILLING RISER SYSTEMS

An in-depth look into both shallow/medium water depth marine drilling riser systems and deep/ultra-deep water systems. Ancillary equipment for handling, running/pulling riser. Operational considerations, maintenance schedules and details. Discussion of applied top tension, riser space-out and riser management arrangements.

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SECTION 10: DIVERTER SYSTEMS

All diverter systems, type of diverters are discussed, their background philosophies and enabling technologies throughout evolving systems from 3rd to 7th generation MODUs. Hydrostatic pressure testing of diverter systems, API recommendations, maintenance and modern modes of operation are also discussed.

SECTION 11: WELLHEAD SYSTEMS

Wellhead systems overview, ranging from full guideline/baseplate combination systems through to guidelineless deep/ultra-deep water systems. Full description of both consumables and non-consumables with full explanation of all wellhead system components.

SECTION 12: PRESSURE AND SAFETY

Concluding lecture and presentation regarding safety issues whilst working on pressurised systems.

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