



# Well Control Equipment Course Level 1

ModuSpec's Well Control Equipment Course – Level 1 (WCEC) is globally renowned within the operator community for those who are involved in daily rig operations, rig intake/inspection projects and those who want to understand how the blow out preventer (BOP) and well control equipment functions, what can go wrong and aspects of compliance.

The course presents the working principles of the BOP and well control equipment including explaining the correct inspection and maintenance procedures needed to ensure integrity and compliance, underpinned by ModuSpec's 39+ years of experience.

The WCEC covers equipment installed on conventional and new generation:

- Jack-ups
- Semi-submersibles
- Drillships
- Land rigs

Candidates will learn of the common equipment and system deficiencies and recurring problems, including correct standards (API etc.) and regulatory requirements of the industry.

Our knowledge. Your knowledge.

### Who should attend

This course is aimed at candidates involved with drilling rigs including:

- Drilling managers, Superintendents, Supervisors and Engineers
- Rig managers, OIMs, Project engineers
- New entrant rig maintenance crew looking after surface equipment and trainee subsea engineers

### Delivery method

The course is a highly interactive mix of PowerPoint presentations, videos, animations, exercises, and case studies.

### Course duration

3 days

### Course aims

After completion of the WCEC, attendees will be able to:

- Identify major items that may impact safety and operational capability of well control.
- Describe the criteria for the major items of well control equipment including the LMRP, ram preventers, annual preventers, hydraulic connectors, BOP control systems and the choke and kill manifold.
- Recognise indicators of overall condition and level of previous maintenance.
- Identify standards used in the drilling industry (e.g., API) and their application to well control equipment.
- Explain the purpose and meaning of an equipment certificate and understand the content of the certificate.

### Course outline

#### Introduction to guidelines

- Introduction to API
- Introduction to Original Equipment Manufacturer and OEM and OEM

#### High-level overview of well control equipment components

- Components of an LMRP
- Components of a BOP
- Marine riser and diverter system

#### Ram preventers

- Ram blocks
- Hydraulic ram operators
- Operation and sealing of ram BOPs
- Ram locking systems

#### Annular preventers

- Hydril annular preventers
- NOV shaffer annular preventers
- Cameron annular preventers

#### Hydraulic connectors

- Types of hydraulic connectors
- Operation of hydraulic connectors
- Sealing and seal rings

#### BOP gate valves

- Gate valves

#### BOP control systems

- Hydraulic system and equipment
- MUX control systems
- Marine riser systems and tensioner systems
- Marine riser joint
- Vessel heave compensation and tensioning systems
- Marine riser tensioners

#### Choke and kill manifold

- Pressure testing
- Gate valves in the choke and kill manifold
- Layout of the choke and kill manifold
- Piping inspection and maintenance
- Flexible hoses

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