MERCURY

# Fundamentals of drilling, completion, and workover

15 – 19 August 2027
Cairo (Egypt)



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# Fundamentals of drilling, completion, and workover

**Ref:** 16346_1016796 **Date:** 15 – 19 August 2027 **Location:** Cairo (Egypt) **Fees:** 4000 Euro

## Introduction:

The Fundamentals of Drilling, Completion, and Workover training course provides professionals in the oil and gas sector with a comprehensive understanding of key well operations. It introduces participants to the drilling process, from planning and design to execution, ensuring a clear understanding of technical and safety standards. The training course explores completion practices, covering equipment, methods, and applications to maximize well performance and production efficiency.

The Fundamentals of Drilling, Completion, and Workover program addresses workover operations, emphasizing the restoration and enhancement of well productivity. It blends theoretical frameworks with practical scenarios, allowing learners to apply concepts to real-world oilfield challenges. Participants will learn about industry best practices, safety protocols, and innovative technologies shaping modern operations. They will contribute effectively to drilling, completion, and workover projects in diverse operational environments.

## Targeted Groups:

This Fundamentals of Drilling, Completion, and Workover training targets professionals seeking specialized knowledge and skills:

- Drilling engineers aim to improve well design and performance.
- Petroleum engineers focus on field development.
- Rig supervisors and drilling crew members.
- Well completion specialists and service engineers.
- Workover engineers and maintenance professionals.
- Field operations managers in oil and gas projects.
- HSE officers engaged in well operations.
- Technical consultants supporting drilling and completion projects.
- Graduate engineers preparing for oilfield careers.
- Energy professionals seeking cross-functional expertise.

## Targeted Competencies:

Participants will gain the following competencies during the Fundamentals of Drilling, Completion, and Workover program:

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- Technical knowledge of drilling operations.
- Understanding of completion systems and applications.
- Ability to analyze and plan well operations.
- Practical skills in workover techniques.
- Problem-solving in oilfield operations.
- Decision-making in complex technical environments.
- Risk management and safety awareness.
- Communication across technical teams.
- Knowledge of oilfield equipment and tools.
- Application of innovative technologies.

## Course Objectives:

Participants will achieve the following objectives upon completion of the Fundamentals of Drilling, Completion, and Workover course:

- Understand the principles of well design and drilling operations.
- Identify the stages of the drilling process from spudding to completion.
- Apply knowledge of drilling fluids, casing, and cementing techniques to ensure optimal well construction.
- Analyze completion strategies to optimize well performance.
- Evaluate workover methods for restoring productivity.
- Demonstrate awareness of safety and risk management in well operations.
- Interpret oil and gas well data to support decision-making.
- Develop technical skills for selecting completion equipment.
- Assess the impact of new technologies in drilling and workover.
- Communicate technical solutions effectively within multidisciplinary teams.
- Apply problem-solving to case-based operational challenges.
- Integrate best practices to improve operational efficiency.
- Relate theory to practical oilfield situations.
- Enhance professional competence in the oil and gas industry.

## Studying Scenarios:

In this Fundamentals of Drilling, Completion, and Workover training, participants will develop their skills through the analysis of the following scenarios:

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- Planning a drilling operation for an onshore well.
- Responding to challenges during casing and cementing.
- Evaluating completion techniques for different reservoir types.
- Troubleshooting equipment failure in well operations.
- Designing a Safe Workover Plan for an Aging Well
- Managing unexpected drilling fluid losses.
- Applying safety protocols during high-risk operations.
- Coordinating between multidisciplinary teams in the field.
- Reviewing case data from real well interventions.
- Simulating decision-making under operational pressure.

## Course Content:

### Unit 1: Fundamentals of Drilling and Well Design:

- Overview of drilling concepts and operations.
- Rig types, functions, and components.
- Oil and gas well planning and design considerations.
- Drilling bits, parameters, and performance.
- Drilling fluids: functions, types, and applications.
- Circulation systems and hydraulics basics.
- Safety and efficiency in drilling operations.

### Unit 2: Casing, Cementing, and Well Integrity:

- Role of casing in well structure and stability.
- Types of casing and string design.
- Cementing purposes and methods.
- Cement slurry properties and additives.
- Primary and remedial cementing operations.
- Evaluation of cement bond quality.
- Ensuring long-term well integrity.

### Unit 3: Well Completion Systems and Equipment:

- Objectives and types of well completions.
- Open hole vs. cased hole completions.
- Completion fluids and perforation methods.
- Sand control and flow assurance techniques.
- Tubing, packers, and safety valves.
- Surface and subsurface equipment.
- Advances in intelligent well systems.

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## Unit 4: Workover Operations and Interventions:

- Definition and objectives of workover.
- Workover rigs and intervention methods.
- Repair and replacement of downhole equipment.
- Stimulation operations for productivity enhancement.
- Plugging and abandonment processes.
- Risk management and HSE practices.
- Case studies in well intervention success.

## Unit 5: Data Analysis, Safety, and Emerging Technologies:

- Importance of HSE in drilling and workover.
- Hazard identification and risk control.
- Blowout prevention and well control measures.
- Oil and gas well data collection, logging, and interpretation.
- Performance analysis and predictive models.
- Digitalization and automation in well operations.
- Future Technologies and Best Practices in Oilfield Operations.

# Final Insights & Key Takeaways:

This course equips participants with solid knowledge of drilling, completion, and workover fundamentals essential to oil and gas operations. It blends technical theory with practical insights to build confidence in operational decision-making. Participants will support safe, efficient, and productive well operations in diverse environments.