MERCURY

Oil & Gas Well Test Analysis and Water Flooding Course

31 May – 11 June 2027
Paris (France)



Dubai - UAE: +971 4 450 5697
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Oil & Gas Well Test Analysis and Water Flooding Course

Ref: 15724_322413 **Date:** 31 May – 11 June 2027 **Location:** Paris (France) **Fees:** 10500 Euro

Introduction:

Welcome to the Oil and Gas Well Test Analysis and Water Flooding Course. This specialized program, designed by Mercury Training Center for professionals seeking to deepen their expertise in the oil and gas industry's critical areas of well testing and water flooding, provides a comprehensive overview of oil and gas well test analysis, including methodologies for evaluating reservoir performance, diagnosing operational issues, and optimizing production.

Additionally, this Oil and Gas Well Test Analysis and Water Flooding course covers the principles and practices of water flooding as a vital enhanced oil recovery technique, addressing theoretical concepts and practical applications. Participants will have advanced knowledge and skills to analyze well tests effectively, implement water flooding strategies, and contribute to enhanced reservoir management and production optimization.

The Oil and Gas Well Test Analysis and Water Flooding course offers an in-depth exploration of critical techniques in the oil and gas industry. Participants will gain expertise in well-testing oil and gas operations, learn what well-testing is in oil and gas, and understand the definition of well-testing in oil and gas contexts. Through oil and gas well testing, attendees will develop skills in well analysis and evaluating oil and gas well production testing.

This Oil and Gas Well Test Analysis and Water Flooding training delves into water flooding in the oil reservoir, a key method in enhanced oil recovery. By mastering water flooding oil recovery and oil flooding strategies, participants will enhance their ability to optimize reservoir performance.

Targeted Groups:

- Reservoir Engineers.
- Production Engineers.
- Oil and Gas Well Test Engineers.
- Field Operations Supervisors.
- Oil and Gas Consultants.
- Enhanced Oil Recovery Specialists.
- Geoscientists.
- Asset Managers.

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Course Objectives:

At the end of this Oil and Gas Well Test Analysis and Water Flooding course, the participants will be able to:

- Master advanced techniques in oil and gas well test analysis.
- Accurately evaluate and interpret reservoir performance data.
- Design and implement effective water flooding strategies.
- Optimize production and recovery rates through enhanced methods.
- Diagnose and resolve common operational issues in well testing.
- Utilize data analysis to enhance reservoir management practices.
- Develop expertise in advanced reservoir engineering principles.
- Apply theoretical knowledge to practical oil and gas well test scenarios.
- Integrate oil and gas well test data with reservoir simulation models.
- Assess the impact of water flooding on overall field performance.

Targeted Competencies:

By the end of this Oil and Gas Well Test Analysis and Water Flooding training, participants competencies will:

- Advanced Oil and Gas Well Test Interpretation.
- Reservoir Performance Analysis.
- Water Flooding Techniques.
- Production Optimization Strategies.
- Diagnostic Skills for Operational Issues.
- Enhanced Oil Recovery Methods.
- Data Analysis and Interpretation.
- Effective Reservoir Management.

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Course Content:

Unit 1: Introduction to Oil & Gas Well Test Analysis:

- Overview of oil and gas well testing principles and practices.
- Objectives and significance of well testing in reservoir management.
- Types of well tests: drawdown, buildup, and interference tests.
- Basic terminology and key concepts: pressure, rate, and time.
- Introduction to understanding oil and gas well test data interpretation.

Unit 2: Oil & Gas Well Test Data Acquisition:

- Methods for collecting oil and gas well test data: manual and automated.
- Equipment used for data acquisition: pressure gauges and flow meters.
- Ensuring data quality: calibration, maintenance, and accuracy.
- Procedures for recording and managing oil and gas well test data.
- Data storage systems and best practices for data integrity.

Unit 3: Oil & gas Well Test Interpretation Techniques:

- Analyzing pressure and flow rate data.
- Using diagnostic plots: Horner, type curves, and log-log plots.
- Identifying reservoir characteristics: permeability, skin effect, and reservoir boundaries.
- Interpreting transient and pseudo-steady-state conditions.
- Evaluating oil and gas well performance and identifying operational issues.

Unit 4: Reservoir Performance Analysis:

- Techniques for assessing reservoir behavior: material balance, decline curves.
- Analyzing production and injection rates to determine reservoir health.
- Evaluating reservoir drive mechanisms: gas, water, and solution gas drive.
- Understanding well performance indicators: production decline, pressure buildup.
- Modeling reservoir behavior to predict future performance.

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Unit 5: Water Flooding Fundamentals:

- Principles and objectives of water flooding for enhanced oil recovery.
- Types of water flooding techniques: pattern flooding, water flooding, and water injection.
- Factors affecting water flooding effectiveness: rock properties, fluid characteristics.
- Design and planning of water flooding projects: well placement, injection strategies.
- Assessing water flood potential and feasibility.

Unit 6: Water Flooding Implementation:

- Procedures for initiating and managing water flooding projects.
- Techniques for optimizing water injection rates and patterns.
- Monitoring waterfront movement and adjusting operations as needed.
- Managing water quality and minimizing contamination risks.
- Evaluating the impact of water flooding on production rates and reservoir performance.

Unit 7: Data Analysis and Interpretation for Water Flooding:

- Analyzing water injection and production data for effectiveness.
- Identifying patterns, trends, and anomalies in water flooding operations.
- Integrating water flooding data with reservoir simulation models.
- Using data to optimize water flooding strategies and improve efficiency.
- Predicting future performance based on historical data and simulations.

Unit 8: Troubleshooting and Problem Solving:

- Identifying and addressing common issues in well testing and water flooding.
- Diagnostic approaches: pressure buildup anomalies, poor waterfront control.
- Case studies of well testing and water flooding challenges.
- Developing solutions and corrective actions to improve performance.
- Implementing best practices to avoid recurring problems.

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Unit 9: Advanced Oil & Gas Well Test Analysis:

- Utilizing complex oil and gas well test analysis techniques for detailed insights.
- Employing advanced software tools for simulation and data interpretation.
- Modeling and simulating various oil and gas well test scenarios and their impacts.
- Integrating multiple data sources for comprehensive oil and gas well test analysis.
- Assessing advanced techniques: multiphase flow, high-pressure/high-temperature wells.

Unit 10: Practical Applications and Case Studies:

- Reviewing real-world examples and case studies in well testing and water flooding.
- Analyzing lessons learned from industry experiences and applying them to current practices.
- Applying course concepts to practical scenarios in the field.
- Developing effective strategies for reservoir management and optimization.