MERCURY

Reservoir Engineering for Non-Reservoir Engineers

8 – 12 August 2027
Kuala Lumpur (Malaysia)



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Ref: 15122_303015 **Date:** 8 – 12 August 2027 **Location:** Kuala Lumpur (Malaysia) **Fees:** 4900 Euro

Introduction to Reservoir Engineering:

Reservoir Engineering is an intricate mix of scientific principles, engineering practices, and the art of understanding the nuanced behavior of hydrocarbon reservoirs. This discipline is fundamental to the technical and economic assessment of oil and gas reserves, playing a pivotal role in determining the most effective recovery strategies.

Without an in-depth analysis of reservoir data, a comprehensive grasp of how reservoirs respond to various stimuli, and the implementation of sound reservoir management tactics, significant quantities of potentially recoverable oil and gas may become irretrievable. Therefore, the mastery of reservoir engineering skills is a crucial requirement for optimizing the extraction of hydrocarbon resources.

This engineering course for non-engineers is geared towards those seeking to better understand the dynamics involved in hydrocarbon behavior within reservoirs and the array of methods available for resource recovery. It offers a practical and focused approach to the processes employed in reservoir engineering, providing insights into the industry techniques for solving reservoir-related challenges and enhancing reserve recovery.

Targeted Groups:

This reservoir engineering course is for non-reservoir engineers keen to gain a foundational knowledge of reservoir engineering. It is also suitable for professionals from other Engineering Disciplines, Geologists, Geophysicists, Mathematics and science Graduates, Operational Personnel, and Technicians, as well as newly graduated individuals aiming for careers in the petroleum industry.

Course Objectives:

Upon completing this reservoir engineering course, participants will be able to:

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- Grasp the different reservoir types, their classification, properties, and other critical aspects.
- Understand the pivotal properties of reservoir rocks and fluids and the relationships between PVT pressure, volume, temperature.
- Comprehend the principles of fluid flow within porous media.
- Characterize reservoirs by fluid type and the mechanisms that drive their behavior.
- Gain insights into reservoir fluid distribution patterns.
- Learn about oil and gas well performance, including transient test analysis.
- Grasp the fundamentals of primary, secondary, and enhanced oil recovery techniques.
- Develop a general understanding of various methods for calculating in-place oil and gas volumes and estimating hydrocarbon recovery.
- Recognize different reservoir drive mechanisms applicable to both oil and gas reservoirs.
- Gain an introductory understanding of reservoir simulation methodologies.
- Learn to forecast future production rates using decline curve analysis.
- Acquire basic knowledge of the economic considerations in reservoir development and risk analysis.

Targeted Competencies:

Upon completing this reservoir engineering training, participants' competencies will:

- Understand Basic Reservoir Engineering Principles.
- Familiarity with Reservoir Rock and Fluid Properties.
- Know Reservoir Drive Mechanisms.
- Proficiency in Reservoir Characterization and Modeling.
- Awareness of Reservoir Simulation Techniques.
- Grasp the Fundamentals of Well Testing and Analysis.
- Comprehension of Enhanced Oil Recovery Methods.
- Insight into Reservoir Management Strategies.
- Acquaintance with Reservoir Performance Monitoring.
- Integrate Reservoir Engineering with Other Petroleum Disciplines.

Course Content:

Unit 1: Introduction to Exploration and Drilling:

- Global Energy Statistics.
- Overview of the Oil and Gas Industry.
- Explore Methodologies and Practices.
- Seismic Survey Techniques.
- Fundamentals of Well Drilling, Completion, and Stimulation.
- Oil and Gas Well Logging Procedures and Analysis.
- Develop Geology Concepts.

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Unit 2: Reservoir and its Properties:

- The System of Reservoir Engineering.
- Describe the Reservoir.
- Key Rock Properties.
- Core Analysis and Interpretation.
- Mechanisms of Fluid Flow in Porous Media.
- Distribution of Reservoir Fluids.
- Detailed Fluid Properties.
- PVT Analysis and its Importance.
- Understand Phase Diagrams.

Unit 3: Reservoir Testing and Reserves Calculation:

- Fluid Distribution Patterns in Reservoir Engineering.
- Principles of Well Testing.
- Address Pressure Transients and Reservoir Damage.
- Analysis of Problematic Wells.
- Approaches to Reserves Calculation.
- Material Balance Calculation Techniques.
- Examine Relative Permeability.

Unit 4: Reservoir Performance:

- Employ Decline Curve Analysis.
- Identify and Understand Driving Mechanisms.
- Overview of Recovery Types.
- Primary Recovery Methods.
- Techniques for Secondary Recovery.

Unit 5: Reservoir Management:

- Concept of Fractional Flow in Reservoirs.
- Enhance Oil Recovery EOR Strategies.
- Basics of Reservoir Simulation.
- Essentials of Reservoir Management.
- Analyze the Economics of Reservoir Development.