

# Production Engineering Training to Analyze Well Performance

UK Training

# PARTNER



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## Introduction

The Production Engineering Training to Analyze Well Performance course is designed to provide participants with a comprehensive understanding of the principles, techniques, and practical applications used to evaluate and improve oil and gas well performance. In today's energy industry, maximizing production efficiency and ensuring optimal well productivity are critical objectives that directly impact operational performance, profitability, and field development strategies.

Production engineers play a vital role in analyzing production behavior, identifying flow restrictions, diagnosing performance issues, and implementing solutions that enhance hydrocarbon recovery. Effective well performance analysis requires a strong understanding of reservoir behavior, inflow and outflow relationships, production system components, artificial lift performance, and production optimization methodologies.

This course provides a structured learning experience that combines theoretical knowledge with practical applications. Participants will learn how to analyze well performance data, evaluate production trends, assess well productivity, identify operational bottlenecks, and apply engineering techniques to optimize production systems. Through practical examples, industry case studies, and engineering exercises, participants will gain the skills needed to support efficient well operations and improve overall production performance.

## Course Objectives

By the end of this course, participants will be able to:

- Understand the fundamentals of production engineering and well-performance analysis.
- Interpret production data and evaluate well productivity.
- Analyze reservoir-to-wellbore flow behavior and production mechanisms.
- Apply inflow and outflow performance analysis techniques.
- Assess well deliverability and production system performance.
- Identify production constraints and operational bottlenecks.
- Evaluate pressure, rate, and production trends.
- Understand the impact of well completion and stimulation on productivity.
- Analyze artificial lift system performance and optimization opportunities.
- Diagnose common well performance problems and recommend corrective actions.
- Apply production optimization techniques to maximize hydrocarbon recovery.
- Support field development and production enhancement initiatives through engineering analysis.

## Course Outlines

### Day 1: Fundamentals of Production Engineering and Well Performance

- Introduction to production engineering principles.
- Understanding the production system from reservoir to surface facilities.
- Well performance concepts and productivity indicators.
- Reservoir behavior and fluid flow fundamentals.
- Key production engineering terminology and calculations.
- Production data sources and field measurements.
- Practical exercise on production system evaluation.



## Day 2: Well Performance Analysis and Productivity Evaluation

- Introduction to well performance analysis methodologies.
- Inflow Performance Relationship IPR concepts.
- Well productivity index calculations.
- Pressure and rate data interpretation.
- Production testing fundamentals.
- Well deliverability analysis.
- Practical workshop on productivity assessment.

## Day 3: Production System Analysis and Optimization

- Outflow Performance Relationship OPR analysis.
- Nodal analysis principles and applications.
- Identifying production restrictions and bottlenecks.
- Surface and downhole equipment performance evaluation.
- Production system sensitivity analysis.
- Optimization opportunities within production systems.
- Case study on production improvement strategies.

## Day 4: Artificial Lift and Production Enhancement Techniques

- Overview of artificial lift systems.
- Beam pumping systems and performance evaluation.
- Electrical submersible pumps and operational considerations.
- Gas lift fundamentals and optimization.
- Production stimulation techniques.
- Evaluating the impact of artificial lift on well performance.
- Practical exercises on lift system selection and optimization.

## Day 5: Integrated Well Performance Analysis and Field Applications

- Diagnosing common production problems.
- Integrated reservoir-to-surface performance analysis.
- Production surveillance and monitoring strategies.
- Data-driven decision-making in production engineering.
- Field case studies and production optimization projects.
- Developing recommendations for production improvement.
- Final workshop and performance review.

## Why Attend This Course? Wins & Losses!

- Develop a solid understanding of production engineering principles.
- Improve the ability to analyze and interpret well performance data.
- Enhance skills in production optimization and troubleshooting.
- Strengthen understanding of inflow and outflow performance relationships.
- Improve decision-making related to production enhancement initiatives.
- Learn practical techniques used by production engineers in the field.
- Support improved well productivity and operational efficiency.
- Gain valuable knowledge applicable to upstream oil and gas operations.

## Conclusion





The Production Engineering Training to Analyze Well Performance course provides a comprehensive framework for understanding, evaluating, and improving well productivity within oil and gas operations. By combining production engineering fundamentals with practical well performance analysis techniques, the course enables participants to develop the knowledge and skills required to assess production behavior and support operational excellence.

Throughout the program, participants explore the complete production system, including reservoir performance, well productivity, inflow and outflow analysis, artificial lift systems, and production optimization methodologies. These competencies help engineers and technical professionals identify opportunities for improvement, diagnose production challenges, and implement effective solutions that enhance well performance.

The course also emphasizes practical application through real-world examples, engineering exercises, and industry case studies. This approach allows participants to strengthen their analytical capabilities and apply proven production engineering techniques to support efficient field operations and maximize hydrocarbon recovery.

Upon completion, participants will be better equipped to evaluate well performance, optimize production systems, improve operational efficiency, and contribute to sustainable production growth across a wide range of oil and gas assets.



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