



HARNESS THE POWER
OF KNOWLEDGE

Gas Lift: Fundamentals, Design, and Optimization

TRAIN



Course Overview:

Gas lift is a crucial artificial lift method used to enhance well productivity and recover hydrocarbons from mature and depleted reservoirs

This comprehensive 5-day professional training course will provide a thorough understanding of gas lift principles, design concepts, operational considerations, and optimization strategies to maximize well performance and extend reservoir life

Course Objectives:

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

1

Grasp the fundamental principles of gas lift and its applications in various wellbore configurations and reservoir conditions

2

Identify the different types of gas lift systems, their components, and their operational characteristics

3

Understand the design considerations for gas lift systems, including gas lift injection points, gas lift valves, and compressor selection

4

Apply gas lift principles to optimize well performance, improve production rates, and extend reservoir life

5

Analyze gas lift operational challenges, troubleshooting techniques, and safety procedures

Course Agenda:

Day 1: Introduction to Gas Lift

- Delve into the historical context of gas lift and its evolution in oil and gas production
- Explore the regulatory framework and safety standards governing gas lift operations
- Discuss the environmental considerations associated with gas lift activities and mitigation strategies
- Analyze the applications of gas lift in various wellbore configurations, reservoir types, and production scenarios

Day 2: Gas Lift Fundamentals and Design Concepts

- Understand the fundamental principles of gas lift and its impact on wellbore fluid flow and reservoir dynamics
- Identify the different types of gas lift systems, including continuous flow, intermittent gas lift, and low-pressure gas lift
- Discuss the design considerations for gas lift systems, including gas lift injection points, gas lift valves, and compressor selection
- Explore advanced gas lift technologies, such as variable orifice valves, multistage gas lift, and gas lift optimization software

Day 3: Gas Lift Operations and Troubleshooting

- Delve into the operational considerations for gas lift systems, including gas lift injection rates, system monitoring, and troubleshooting techniques
- Analyze gas lift operational challenges, such as gas lift valve malfunction, hydrate formation, and compressor issues
- Discuss safety procedures for gas lift operations, including gas detection systems, emergency shutdown protocols, and maintenance practices
- Explore advanced gas lift monitoring and control systems, such as real-time data acquisition and supervisory control and data acquisition (SCADA) implementation

Day 4: Gas Lift Optimization Strategies

- Understand the principles of gas lift optimization and its impact on well performance and reservoir

productivity

- Discuss techniques for optimizing gas lift injection rates, gas lift valve settings, and compressor operation
- Analyze gas lift optimization strategies based on reservoir characteristics, wellbore geometry, and production goals
- Explore advanced gas lift optimization techniques, such as nodal analysis, artificial intelligence, and machine learning applications

Day 5: Gas Lift Case Studies and Best Practices

- Analyze case studies of successful gas lift implementations, highlighting design considerations, operational challenges, and optimization strategies
- Discuss best practices for gas lift system design, operation, and maintenance to ensure well performance, safety, and environmental compliance
- Explore emerging technologies and advancements in gas lift, such as intelligent gas lift valves, adaptive gas lift control, and real-time optimization algorithms

Course Benefits:

- Develop a comprehensive understanding of gas lift principles, design concepts, and optimization strategies
- Gain hands-on experience in gas lift system design, operation, and troubleshooting through case studies and real-world scenarios
- Enhance your ability to implement and optimize gas lift systems for maximum well performance and reservoir life extension
- Stay updated on the latest advancements in gas lift technologies and optimization methodologies
- Network with other professionals from diverse backgrounds within the oil and gas industry