Artificial Lift System Selection and Optimization Training Course

7 – 11 February 2027
Cape town

AGILE LEADERS
Training Center

Artificial Lift System Selection and Optimization Training Course

Ref: 1720_229212 **Date:** 7 – 11 February 2027 **Location:** Cape town **Fees:** 6000 Euro

Overview

Artificial Lift System Selection and Optimization Training Course is a one-week course for petroleum engineers, production engineers, and well operations professionals, who leave with an Artificial Lift Decision and Optimization Pack. Participants compare lift methods, define operating envelopes, interpret surveillance evidence, diagnose performance loss, and select practical improvement actions. The course connects well conditions and production objectives with equipment constraints, reliability, energy use, and lifecycle economics. Agile Leaders Training Center presents artificial lift selection and optimization.

Who Should Attend

- Functions responsible for petroleum production planning and well performance
- Teams responsible for artificial lift design, selection, and lifecycle decisions
- Functions responsible for well operations, surveillance, and production optimization
- Teams responsible for completion, workover, and production-system reliability
- Functions responsible for field maintenance and lift-equipment performance

The course assumes participants already interpret basic well and production data and leaves out detailed equipment manufacturing, proprietary software certification, and site-specific installation authorization.

Departments and Industries

The course supports departments and industries that manage declining well pressure and lift-assisted hydrocarbon production.

- Upstream production engineering and petroleum engineering departments
- Well operations, completion, and workover functions
- Oilfield maintenance and reliability teams
- Integrated asset and production optimization groups
- Artificial lift service and equipment-support organizations

Learning Objectives

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

- Relate inflow and outflow behavior to the need for artificial lift
- Compare gas lift, ESP, sucker-rod, PCP, plunger, and hydraulic lift operating envelopes
- Build an artificial lift system selection matrix from well, fluid, facility, and economic criteria
- Interpret artificial lift surveillance data and identify performance deterioration
- Diagnose common failure signatures and define proportionate corrective actions
- Prepare an artificial lift optimization plan with monitoring and review criteria

Course Agenda

Day 1: Well Performance and Lift Selection Basis

- Reservoir Inflow Performance Relationship and Production Target
- Vertical Lift Performance and Nodal Analysis Workflow
- Natural-Flow Decline and Artificial Lift Trigger Criteria
- Well, Fluid, Completion, Facility, and HSE Constraint Register
- Artificial Lift System Selection Matrix and Lifecycle Economics

Day 2: Gas Lift and Hydraulic Lift Applications

- Continuous and Intermittent Gas Lift Operating Principles
- Gas Lift Mandrels, Valves, Injection Pressure, and Allocation
- API RP 11V5 Surveillance and Troubleshooting Considerations
- Gas Lift Performance Plot and Injection-Rate Optimization
- Hydraulic Piston, Jet Pump, and Plunger Lift Application Review

Day 3: ESP and Progressive Cavity Pump Systems

- Electric Submersible Pump System Components and Operating Envelope
- Pump Curve, Head, Rate, Staging, Motor, and Cable Considerations
- Gas Interference, Solids, Scale, Temperature, and Power Quality
- Progressive Cavity Pump Rotor-Stator and Drive Configuration
- ESP and PCP Surveillance Dashboard and Failure Signature Map

Day 4: Sucker-Rod Pumping and System Diagnostics

- Sucker-Rod Pumping Unit, Rod String, Tubing, and Downhole Pump
- Stroke, Speed, Pump Fillage, Load, and Fluid-Level Interpretation
- Dynamometer Card Interpretation and Operating Condition Diagnosis
- Rod, Tubing, Pump, Gas Interference, and Mechanical Failure Modes
- Reliability, Energy, Workover, and Run-Life Improvement Actions

Day 5: Surveillance, Optimization, and Decision Practice

- Artificial Lift Surveillance Data Quality and Exception Rules
- Performance Baseline, KPI, Alarm, and Review Frequency Design
- Optimization Opportunity Register and Constraint-Based Prioritization
- Exercise: Diagnose Underperforming Lift-System Scenarios
- Capstone Exercise: Artificial Lift Decision and Optimization Pack

Practical Exercises

The course uses suggested activities based on fictional onshore and offshore production scenarios.

- Suggested activity: build a nodal-analysis evidence sheet and identify when natural flow no longer meets the production target.
- Suggested activity: compare gas lift, ESP, sucker-rod, PCP, plunger, and hydraulic options with a weighted selection matrix.
- Suggested activity: interpret surveillance trends, pump curves, injection data, and simplified dynamometer cards.
- Suggested activity: convert a failure signature into checks, safeguards, corrective action, and post-action monitoring.
- Suggested activity: prepare an artificial lift optimization plan covering opportunity, owner, risk, economics, and verification.

FAQs

Who suits artificial lift system selection training?

Artificial lift system selection training suits engineers and operations professionals who evaluate well performance, compare lift methods, monitor producing wells, or support reliability and workover decisions.

How are artificial lift methods compared in the course?

Participants compare operating envelope, production rate, depth, fluid properties, gas and solids handling, completion constraints, surface infrastructure, reliability, energy demand, intervention needs, and lifecycle economics.

Does the course cover artificial lift troubleshooting?

Yes. Artificial lift troubleshooting uses surveillance trends and method-specific evidence to distinguish inflow, outflow, gas-handling, power, mechanical, equipment, and operating problems before selecting corrective actions.

What is included in artificial lift optimization?

Artificial lift optimization connects a validated performance baseline with production targets, constraints, injection or operating settings, energy use, reliability, intervention risk, economics, and post-change verification.

Conclusion

Participants take an Artificial Lift Decision and Optimization Pack back to work. It combines a constraint register, artificial lift system selection matrix, surveillance dashboard, failure signature map, optimization opportunity register, and implementation review criteria. The pack turns method comparison and performance evidence into a structured selection, troubleshooting, and optimization workflow.