

GLOBAL EXPERTS INSTITUTE FOR TRAINING.
ISO 9001-2008 TRAINING PROVISION CERTIFIED

Artificial Lift SRP Downhole Equipment and Applications

Schedule Dates:

Start Date	End Date	Place
4 Mar 2024	8 Mar 2024	Dubai

Program Introduction:

This course introduces artificial lift solutions and production optimization concepts, focusing on the reservoir life cycle. It begins by explaining the need for artificial lift systems. Then it covers various methods, including Gas Lift, Reciprocating Rod Lift, Progressive Cavity Pumping (PCP), Hydraulic Pumping (HP), Electrical Submersible Pumping (ESP), Plunger, and Capillary Systems.

Each lift type is discussed, covering components, application range, and strengths and weaknesses. The course also includes interactive discussion sessions where trainees can share challenges and plans for lift systems, applying the concepts learned.

Program Objective:

- ✓ Gain a comprehensive understanding of various artificial lift methodologies and their impact on production performance.
- ✓ Increase knowledge about factors influencing optimal designs and operations, including fluid properties and multiphase flow regimes.
- ✓ Receive an overview of lift techniques, technologies, and equipment, exploring alternate deployment scenarios and multisensory applications for surveillance and optimization.
- ✓ Acquire the necessary skills to select and size artificial lift systems effectively.
- ✓ Develop the ability to choose a suitable artificial lift system, plan its operation, and monitor and analyze its performance.
- ✓ Learn strategies for maximizing oil production economically using artificial lift systems.
- ✓ Perform basic calculations related to PVT properties and inflow performance in the context of artificial lift.
- ✓ Select the appropriate artificial lift system by evaluating factors such as drawdown potential, initial and operating expenses, production range, depth limitations, and specific challenges like sand, scale, and deviation.
- ✓ Design and operate system features for each method, considering harsh environmental conditions.

Who should attend?

- Production Engineers with 0-10 years of experience
- Field Operations Engineers with 0-10 years of experience
- Operators with 0-10 years of experience
- Geoscientists with 0-10 years of experience
- Reservoir Engineers with 0-10 years of experience
- Petroleum Engineers with 0-10 years of experience

Program Outlines

Day One

Module 1 : Oil Field Production System, including:

- Oil origin and Geology
- Well-drilling and completion types
- Surface production facilities
- Reservoir recovery methods

Module 2 : Reservoir Performance IPR & OPR

- Wellbore and reservoir performance overview
- Pressure losses in the system
- Well Productivity
- Concepts of productivity index
- IPR & OPR
- Nodal System Analysis

Day Two

Module 3: Why & When Artificial Lift is Required?

- Well-production problems
- Formation damage
- Formation damage causes and prevention techniques
- The change in the reservoir conditions and impact on well performance
- When is the artificial lift recommended? Why? Which system?
- Overview of artificial lift technology: GL, SRP, HPs, ESP, PCP, Plunger system & Capillary system.
- Application of artificial lift technology and limitations
- Artificial lift screening methods
- Basis for selection of artificial lift system

Module 4 : Gas Lift (GL)

- Introduction
- Components and Operation concept
- Elastomer
- Design
- Lifting capability compared to other artificial lift methods
- PCP troubleshooting
- Case Study: Understanding & improving gas lift compressor, Gas lift optimization, and Gas lift well performance prediction

Day Three

Module 5 : Sucker Rod Pump (SRP)

- Concept, types, limitations, and advantages
- Design, components, and operations
- Limitations and advantages
- Main equipment parts

- Production system operations by SRP
- Lifting capability compared to other artificial lift methods
- Intake Pump Curve
- Production Optimization
- Design Sucker Rod Pump
- Factors affecting the movement of the rod
- Lifting capability compared to other artificial lift methods
- Importance of correctly matching well productivity to pump performance
- Use of data to diagnose well/equipment problems
- SRP Troubleshooting
- Case Study: Pump stroke optimization and Sucker rod failure analysis

Module 6 : Progressive Cavity Pump (PCP)

- Concept, types, limitations, and advantages
- Design, components, and operations
- Limitations and advantages
- Main equipment parts
- Production system operations by PCP
- Lifting capability compared to other artificial lift methods
- Elastomer
- Design
- Lifting capability compared to other artificial lift methods
- Importance of correctly matching well productivity to pump performance
- Use of data to diagnose well/equipment problems
- PCP troubleshooting
- Case Study: Rotor failure analysis and Pump performance

Day Four

Module 7 : Electric Submersible Pump (ESP)

- Concept, types, limitations, and advantages
- Design, components, and operations

- Limitations and advantages
- Main equipment parts
- Production system operations by ESP
- Lifting capability compared to other artificial lift methods
- Basics of ESP calculations
- ESP Construction
- Pump Selection
- Applications in the Field
- Importance of correctly matching well productivity to pump performance
- Use of data to diagnose well/equipment problems
- ESP Troubleshooting
- Case Study: Pump failure analysis, Y-tool system & reservoir surveillance, Power saving with permanent magnet motor, and Change in contract strategy save millions

Day Five

Module 8: Plunger System




- Introduction
- Components and Operation Concept
- Conventional and Continuous Plunger Lift
- Lifting capability compared to other artificial lift methods
- Drawdown and IPRs for Plunger Lift
- Importance of correctly matching well productivity to system performance
- Use of data to diagnose well/equipment problems
- ESP Troubleshooting
- Plunger Lift Troubleshooting
- Case Study: Impact of the well deviation angle on system performance

Training Methodology:

- Slide presentations
- Interactive discussion
- Simulations and Gamification
- Online Video material

Cost Quotation in Kuwaiti Dinars

The total cost includes:

-  Instructor(s) expenses
-  Training materials
-  Certification

Total Cost: 1250 KD per Participant
(One Thousand Two Hundred Fifty Kuwaiti Dinar)