



Artificial Lift Methods

05 - 20 May 2025
Rome (Italy)



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Ref.: 15280_247785 **Date:** 05 - 20 May 2025 **Location:** Rome (Italy) **Fees:** 5500 **Euro**

Introduction

Artificial raise refers to the usage of synthetic manner to growth the glide of liquids, which include crude oil or water, from a manufacturing nicely. Generally, that is done via way of means of the usage of a mechanical tool withinside the nicely called pump or speed string or via way of means of lowering the burden of the hydrostatic column via way of means of injecting fueloline into the liquid far down the nicely.

This route will assist increase a stable basis in all kinds of raise and the standards of the choice technique to maximise manufacturing and go back on investment.

Artificial raise is wanted in wells while there may be inadequate stress withinside the reservoir to boost the produced fluids to the surface, however regularly utilized in clearly flowing wells which do now no longer technically want it to growth the glide fee above what could glide clearly. The produced fluid may be oil, water or a combination of oil and water, normally blended with a few quantity of fueloline.

Targeted Groups

- Production and field operations engineers,
- Junior and Senior Petroleum Engineers
- Field Technicians
- Geoscientists
- Reservoir engineers
- Those who wish to understand the implications of production systems on their field reservoirs.

Course Objectives

Participants will find out how to:

- Apply strategies to maximise oil manufacturing economically with synthetic elevate structures
- Make primary PVT homes and influx overall performance calculations associated with synthetic elevate
- Understand and follow multiphase tubing and pipe go with the drift ideas
- Select the perfect synthetic elevate gadget through analyzing the drawdown ability of every approach, the preliminary and working price and the variety of manufacturing and intensity feasible with every approach; unique issues including sand/scale/deviation etc. are mentioned with every approach
- Specify additives and auxiliary system wanted for every gadget
- Know what high-quality practices are to be had to increase the lifestyles of system and hooked up elevate structures
- Apply primary layout and evaluation principles
- Design and perform gadget functions for every approach below harsh conditions

Course Content

Unit 1: Oil and gas production introduction

- Reservoir properties
- Reservoir pressure
- Types of production
- The need for artificial lift
- Recovery factor from artificial lift
- Selection of artificial lift method

Unit 2: Beam pump technology

- The Basic Beam Pumping System
- Basic Operation of Beam pump
- Components of Beam Pumping System
- Beam Pump Instrumentation and Control
- Beam Pump Operation Modes
- Well Communication with Central Control Room

Unit 3: Gas lift systems concepts and equipment

- Gas lift introduction; concepts and theory, gas lift performance curves and depth of injection
- Gas lift equipment overview; gas lift valve operation and equations; installation and removal
- Gas lift systems design
- Gas lift design overview conceptual vs. detailed and principles
- Generating 4 variable lift curves for gas lift wells
- Gas lift unloading process and key factors to ensure success
- Consideration of safety factors for mandrel spacing and valves operation
- Detailed gas lift design procedure for continuous gas lift wells; special applications
- Gas lift systems diagnosis, practical troubleshooting and optimization
- Gas lift operations, monitoring and procedure for unloading a new well
- Gas lift diagnosis and troubleshooting; key concepts and procedure for analysis
- Flowing gradient survey interpretation and matching; determination of injection depth, orifice pressure drop, etc.
- Dealing with problem wells instability, slugging, multi-point injection etc.
- Re-design of a gas lift valve setting for an existing well to address these problems
- Shortage of gas supply; gas-lift allocation concepts & multi-well optimization techniques

Unit 4: ESP technology

- Different types of ESP Systems and where they are used
- Components and equipment used in ESP Systems
- ESP Pump Technology
- ESP Selection and Performance Calculations
- Advantages and Limitations of various ESP Drive Systems
- The Power Supply Requirements of ESP Installations
- Installing, maintaining and troubleshooting ESP systems



Istanbul - Turkey: +90 539 599 12 06

Amman - Jordan: +962 785 666 966

WhatsApp London - UK: +44 748 136 28 02

Unit 5: PCP technology

- Progressive cavity pump history
- Progressive cavity pump design
- Materials of construction
- Elastomer characteristics
- PC pump identification
- Typical PCP configuration
- Well preparation
- Stator installation
- Rotor installation
- Identification of the most common stator failures
- Identification of the most common rotor failures



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