

Artificial Lift: Gas Lift

5 days

GLIFT-EN-P

Overview

LEVEL

Skilled

PURPOSE

This course provides a comprehensive, practical knowledge of gas lift concepts, operations, equipment and potential problems.

LEARNING OBJECTIVES

Upon completion of the course, participants will be able to:
perform a gas lift design,
analyze gas lift operating conditions,
improve well performance.

WAYS AND MEANS

Practical exercises to grasp physical phenomena.
Numerous animations and videos.

LEARNING ASSESSMENT

Quiz.

PREREQUISITES

Basics in production engineering, well operations or well performance.

MORE INFO

Kindly refer to the following complementary course which might be of interest: "Artificial Lift: Pumping".

Agenda

FLOWING GRADIENTS - TUBING PERFORMANCE CURVES

1 d

Well representation and nodal analysis.
Inflow: Productivity Index (PI) and Inflow Performance Relationship (IPR) techniques.
Outflow: vertical flowing pressure gradient curves in diphasic flow and Tubing Performance Curve (TPC).

INTRODUCING GAS LIFT SYSTEMS

1 d

Principle and active parameters.
Characteristics and advantages.
Operating parameters determination: gas injection depth, pressure and rate.
Determination of the absolute maximum flow rate versus GLR (Gas-Liquid Ratio). Optimization with time.

GAS LIFT DOWN HOLE EQUIPMENT

0.5 d

Valve mechanics and characteristics.
IPO/Casing-operated gas lift valves.
PPO/Tubing-operated gas lift valves.

Conventional and Side Pocket Mandrel (SPM).
Miscellaneous valves and equipment.

CONTINUOUS GAS LIFT DOWN HOLE EQUIPMENT DESIGN

1 d

Side pocket mandrel spacing and valve selection.
Manual (graphical) design.
Standard completion designs and other possibilities (dual completion, macaroni/coiled tubing).

CONTINUOUS GAS LIFT OPERATION

1 d

Well surface equipment.
Unloading procedure.
Operating recommendations.
Surveillance and troubleshooting.

INTRODUCTION TO PROSPER™

0.25 d

Overview of well performance software tool and methods.
PROSPER™ methodology for gas lift design and troubleshooting, manual application.

KNOWLEDGE ASSESSMENT

0.25 d