

# Production Technology

## INTRODUCTION

- The Production Technologist's mission is to design, construct, operate and maintain any well, so that it is safe for use from spud to abandonment, delivering maximum value to the business. Production Technology is the discipline that integrates subsurface and surface in the oil and gas upstream industry. Traditionally, Production Technologists are known as "Well Doctors", as their focus area is the well. However, their remit extends from the reservoir, through the well into the production system and export. Over the years, the Production Technologist has taken centre stage in the development of Well, Reservoir and Facility Management and Production Optimisation.
- This Production Technology training course lays the foundation for Production Technology, covering the essential components of the discipline, with theory, exercises and group work. In addition, we will cover the application of Production Technology on Well Performance, Completion Design, Perforating, Artificial Lift, Stimulation, Sand Management, Well, Reservoir and Facility Management and Production Optimisation. The whole training course is highly interactive with opportunities for participants to share their experience and expertise. At the end of the training course, there is an opportunity to brainstorm and troubleshoot real issues, that participants have, which they can take back and apply their learnings to their wells and fields.

This training course will highlight:

- The Role of the Production Technology
- Essential Components of the Production Technology Discipline
- The Application of Production Technology in the Oil and Gas Business
- Fundamentals of Well Completion Design
- How to Maximise Oil and Gas Production and Recovery

## OBJECTIVES

By the end of this training course, participants will learn to:

- Define the role of the Production Technology function in the oil and gas business
- Describe the essential components of the Production Technology discipline
- Explain how the basic applications of Production Technology tools and techniques work
- Apply the fundamentals of Well Completion Design
- Describe how to maximise oil and gas production and recovery

## **TRAINING METHODOLOGY**

- Participants will engage in a highly interactive learning experience, with a blend of class room learning, exercises, group work and discussion. The instructor will apply a range of proven adult learning teaching and facilitation techniques, which will address participants' learning preference styles. Active participation is essential, to share experiences and expertise of the tutor, as well as the participants. We can all learn from each other.

## **ORGANISATIONAL IMPACT**

By attending this Production Technology training course, the organisation will develop staff that can maximise production and recovery, in a safe, sustainable and cost-effective manner. The organisation will benefit from:

- Improved well completion design to safeguard well integrity and well operations
- Skilled well performance analysis to optimise production and injection
- Optimal artificial lift and stimulation solutions
- Safe operations from Integrated Sand Management to the production system
- Implementation of Well, Reservoir and Facility Management
- Production System Optimisation with an integrated team

## **PERSONAL IMPACT**

- Apply well completion design to improve well integrity and safe well operations
- Analyse well performance to optimise production and injection
- Recommend artificial lift and stimulation techniques
- Apply Integrated Sand Management to the production system
- Implement Well, Reservoir and Facility Management
- Carry out Production System Optimisation with an integrated team

## **WHO SHOULD ATTEND?**

- This Production Technology training course is designed for people who want to become Production Technologists and for other disciplines who wish to broaden their skill base, to include Production Technology. This training course is suitable to a wide range of professionals and will greatly benefit:
  - New Production Technologists
  - Reservoir Engineers, Geoscientists & Petrophysicists
  - Well Engineers, Drilling Engineers and Well Services Personnel
  - Production Engineers, Facility Engineers and other Surface Engineers
  - Managers who want to maximise production and recovery

## Course Outline

### Well Fundamentals and Inflow

- Production Technology Introduction
- The DNA of a Well – What makes a well?
- PVT
- Inflow Theory
- Inflow Performance Relationship

### Outflow and Perforating

- Outflow Theory
- Vertical Lift Performance
- Perforating Theory
- Perforating Selection

### Stimulation and Sand Management

- Formation Damage
- Stimulation Theory (Matrix Stimulation and Hydraulic Fracking)
- Stimulation Selection
- Downhole Sand Control
- Integrated Sand Management

### Artificial Lift, Well, Reservoir & Facility Management

- Artificial Lift Theory (focus on Gas Lift and Electrical Submersible Pumps)
- Artificial Lift Selection
- Well, Reservoir & Facility Management Theory
- Well, Reservoir & Facility Management Implementation

### Production System Optimisation and Finding Solutions

- Production System Optimisation
- Finding Solutions Theory
- Solutions Selection
- Participants' Production Technology Challenges