

# **SUBSURFACE PRODUCTION OPERATIONS**



**DRPT125  
Drilling,  
Reservoir &  
Petroleum  
Training**

**COURSE TITLE****SUBSURFACE PRODUCTION OPERATIONS****COURSE DATE/ VENUE**

31 October – 04 November 2022

Dubai, UAE

**COURSE REFERENCE**

DRPT125

**COURSE DURATION**

05 Days

**DISCIPLINE**

Drilling, Reservoir & Petroleum Training

**COURSE INTRODUCTION**

This course covers the production subsurface operations. It provides information and concentrate on the proper selection, operation and maintenance of subsurface operation. The course gives structure geology review and covers rock properties, fluid properties and well analysis tools.

**COURSE OBJECTIVE****Upon successful completion of this course, the delegates will be able to:**

- ✓ Improve understanding and awareness of rocky & fluid properties and well analysis tools.
- ✓ Recognize geology structure.
- ✓ Recognize rock properties.
- ✓ List fluid properties.
- ✓ Use and employ well analysis tools
- ✓ Improve awareness of rocky & fluid properties and well analysis tools.

- ✓ Explain Subsurface production operations
- ✓ Discuss about Inflow and outflow performances completion systems & tubing selection, design & installation
- ✓ Discuss about Perforation methods, formation damage , matrix acidizing & hydraulic fracturing
- ✓ Explain Well production problems such as toxic material production, inorganic scale formation, corrosion etc.
- ✓ Discuss about Artificial lift selection, ESP systems selections & performance calculations & design gas lift systems.
- ✓ Discuss about Hydraulic pumping oil wells, progress cavity pumping design gas lift systems & evaluation & installation of downhole plunger equipment well head & plunger surface equipment.

### **COURSE AUDIENCE**

For all engineers working in oil and gas fields: Reservoir Engineers, Production Technology Engineers, Production Operation Engineers, and Production Managers.

### **COURSE CONTENT**

#### **DAY 1**

- Introduction
- Structure geology review
  - Structure
  - Faulting
  - Types & formation of structure
  - Rock properties
  - Porosity and permeability
- Inflow & out flow performance relationship
- Drive mechanism types
- Water drive, gas cap & gas dissolved

#### **DAY 2**

## Well completion types

- Casing & tubing types
- Completion equipment and design practices
- Packers types and applications
- Down hole completion
- Seating nipples
- Sliding sleeves
- Blast joints and flow couplings
- Subsurface safety valve (SSSVS)

## **DAY 3**

### Perforations

- Under balance and over balance
- Stimulation
- Hydraulic fracturing
- Equations and calculations
- Fracturing fluids and additives
- Water base and oil base fluid
- Applications
- Oil well performance curves
- Gas well performance curves
- Injection well performance curves

## **DAY 4:**

### Production problems and its solutions

- Corrosion, paraffin, foams
- Asphltenic, scales
- Inhibitors avoiding this problems
- Artificial lift methods
- Objectives
- Decreasing BHP and increase rate

- Popular lift types
- Choice of artificial lift

## **DAY 5**

- Gas lift advantages and disadvantages
- Gas lift valves applications
- Beam pumping
- Description surface beam
- Down hole pump chamber
- Up stroke and down stroke
- Electrical submersible pumps ( ESP)
- Surface and subsurface equipment
- Design electrical motor and multistage pumps
- Advantages and disadvantages
  - Progressive cavity pump (PCP)
  - Heavy oil using
  - Descriptions and applications
  - Hydraulic jet pump
  - Descriptions and applications

## **COURSE CERTIFICATE**

**TRAINIT ACADEMY** will award an internationally recognized certificate(s) for each delegate on completion of training.

## **COURSE FEES**

\$4,150 per Delegate. This rate includes participant's manual, Hand-Outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

## **COURSE METHODOLOGY**

The training course will be highly participatory and the course leader will present, guide and facilitate learning, using a range of methods including formal presentation,

discussions, sector-specific case studies and exercises. Above all, the course leader will make extensive use of real-life case examples in which he has been personally involved. You will also be encouraged to raise your own questions and to share in the development of the right answers using your own analysis and experiences. Tests of multiple-choice type will be made available on daily basis to examine the effectiveness of delivering the course.

- 30% Lectures
- 30% Workshops and work presentation
- 20% Case studies & Practical Exercises
- 10% Role Play
- 10% Videos, Software or Simulators (as applicable) & General Discussions

