

ELECTRICAL SUBMERSIBLE PUMPS: ADVANCED ESP DESIGN & TROUBLESHOOTING



**DRPT134
Drilling,
Reservoir &
Petroleum
Training**

COURSE TITLE**ELECTRICAL SUBMERSIBLE PUMPS: ADVANCED ESP DESIGN & TROUBLESHOOTING****COURSE DATE/VENUE**

04 - 08 July, 2022

Doha, Qatar

COURSE REFERENCE

DRPT134

COURSE DURATION

05 Days

DISCIPLINE

Drilling, Reservoir & Petroleum Training

**COURSE INTRODUCTION**

The Electric Submersible Pump System (ESP) is considered an effective and economical means of lifting large volume of fluids from great depths under a variety of well conditions. Over the years, the ESP companies, in conjunction with the major oil companies, have gained considerable experience in producing high viscosity fluids, gassy wells, high temperature wells, etc. With this experience and improved technology, wells that were once considered non-feasible for submersibles are now being pumped economically. This course is designed to provide recommendations for designing ESP systems for special applications including gassy wells, production of fluids with solids, viscous oil, dual completions, Ytool applications, shrouded motors, production through the annular, high temperature and recirculation. Pump curves (Head vs. Flow rate) for several pump speeds are generated in class as an exercise.

COURSE OBJECTIVE

Provide in depth knowledge of the advantages and limitations of the Electric Submersible Pumps used in aggressive environment applications. Participants will learn well optimization and troubleshooting.

COURSE AUDIENCE

Production Engineers, technologists, people who are involved in Production Optimization. Specifically people who want to gain more knowledge about ESP

COURSE CONTENT

Day 1

- Review of Reservoir Performance
- Productivity Index – Darcy Exercise
- Vogel Exercise
- Centrifugal Pump Curve Development
- Applications 3.1 Standard 3.1 Non-Standard
- Equipment Selection - Exercise

Day 2

- Affinity Laws & Nodal Analysis 4.1. Exercise
- Amperimetric Charts
- Design of High Gas Application - Exercise

Day 3

- ESP Design for Highly Deviated Wells
- Viscous Fluids and Emulsion Application
- Production of Abrasive Fluids

Day 4

- New Technologies
- CrossFlow

- ESP – TCP – Ytool
- Hybrid ESP – Gas Lift Application
- Recirculation System

Day 5

- Troubleshooting
- Evaluation of Specific Cases Using Appropriate Software (DesignPro, Prosper, SubPump, etc.)
- Equipment Handling
- Introduction to ESP Failure Analysis

COURSE CERTIFICATE

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

COURSE FEES

\$4,400 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

