



Electrical Submersible Pump Application

ABOUT THE COURSE

Electrical submersible pump training course is designed to ensure that field specialists and engineers are trained on a structured program having enough flexibility to fulfill the most of requirements to handle ESP operation successfully. Course program stresses the developing of technical understanding of ESP components and operation. A developed training program integrates various needs (service and/or operation companies), specific and well recognized technology and technical solutions in ESP business, as well as a full integration of all production system components. With this vision, a training program is focused on the three most important goals: equipment, design and implementation.

DESIGNED FOR

Production engineers who already have basic knowledge of ESP application, as well as technical personnel involved in maintenance, control and monitor of the ESP system.

YOU WILL LEARN

- Principles of ESP operations
- Down-hole and surface equipment needed for operation
- How to install and prepare wells equipped with ESP for stable operation
- How to use data about ESP failure analysis and run life to predict the future run life
- To understand some fundamentals of the reservoir and production engineering concepts required for ESP analysis and design
- To apply system performance analysis to generate system performance graph and define design criteria
- To demonstrate how changes in reservoir, well and surface conditions, impact pump performance and sensitize the ESP design accordingly
- To size and select an ESP equipment
- Demonstrate, using software how to select an ESP equipment at various conditions; basic fixed speed design, viscous and gassy applications
- Demonstrate how to optimize ESP operation using downhole and surface data
- To design ESP equipment and select the optimum parameters of operation
- To perform a troubleshooting analysis using available information (real time and history data)

COURSE OUTLINE

- Basic principles of ESP operation (ESP system, selection, completion scheme)
- ESP components
 - Downhole (pumps, motors, protectors, gas separators, cables, sensors, shrouds)
 - Surface equipment (switchboard, VSD, etc.)
- System performance analysis (concept, data required, well performance, well system curve, pump performance and system graph, sensitivity analysis)
- Design and final equipment selection
- Using software for system analysis and design for various cases (effects of viscosity, high GOR, changes in well performance and the impact on the ESP operation)
- ESP system installation and servicing
- Control of ESP operation and optimization
- Trouble analysis methodology (qualitative and quantitative approach)
- Selected case studies