GLOBAL TRAINING INSTITUTE

Centrifugal Pump Mastery: Operation and Maintenance



GTI - Coordination Office and International Relations (Accredited Programs)

Course Description

The Centrifugal Pump Mastery: Operation and Maintenance Training Course provides a comprehensive overview of ESP technology, covering fundamental concepts, equipment selection, installation, operation, monitoring, and maintenance. This course equips participants with the knowledge necessary to effectively utilize ESP systems in oil production operations. Delegates will also explore recent innovations in ESP technology and engage in practical exercises to apply their learning. By the end of the course, participants will be well-prepared to manage and troubleshoot ESP systems, ensuring efficient and safe operations.

Who Should Attend

This course is ideal for:

- Design and maintenance professionals involved in ESP systems.
- Petroleum, chemical, and mechanical engineers.
- Electrical engineers working with ESP installations.
- Field operators and technicians responsible for ESP operation.
- Maintenance engineers and personnel engaged in ESP maintenance.

Course Objectives

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

- Identify the different types of ESP systems and their specific applications.
- Understand the components and equipment associated with ESP installations.
- Recognize recent innovations in ESP technology.
- Select appropriate ESPs for various operational requirements.
- Conduct performance calculations for ESP systems.
- Describe the advantages and limitations of different ESP drive systems.
- Maintain and troubleshoot ESP systems effectively.

Course Content

Fundamentals and Applications of ESP

- Overview of ESP technology and system components.
- Challenges and requirements for ESP applications in various environments.

ESP Pump Technology and Equipment

- Evolution of ESP pump design and technology.
- Key components and equipment used in ESP systems.

Performance Calculations and Equipment Sizing

- Requirements for well production capacity and dynamic head calculations.
- Optimization of pump and motor types, as well as power supply configurations.

Monitoring, Control, and Protection

- Downhole monitoring techniques and safety systems for ESPs.
- Electrical protection equipment and management systems for ESP installations.

Commissioning, Operation, and Maintenance

- Procedures for commissioning ESP systems and ensuring safe operation.
- Troubleshooting common ESP issues and maintenance best practices.