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OPERATION , SELECTION, AND MAINTENANCE OF PUMPS

Start Date:	04/05/2026	**End Date:**	08/05/2026
Categories:	Engineering & Maintenan	**Venues:**	Barcelona
Formats:	In Person	**Instructors:**	

OVERVIEW

This technical course equips participants with essential knowledge and skills for the efficient operation, correct selection, troubleshooting, and preventive maintenance of pumps. It covers pump types, performance characteristics, hydraulic principles, failure modes, and maintenance strategies to ensure reliable operation in industrial and process environments.

OBJECTIVES

By the end of this course, participants will be able to: – Understand the operating principles, classifications, and performance curves of different pump types. – Select appropriate pumps based on system requirements, fluid characteristics, and operational conditions. – Diagnose common pump failures and performance problems. – Apply preventive and corrective maintenance practices to extend pump life and reliability. – Optimize pump operation to reduce energy consumption and operational costs.

COURSE OUTLINE

1- Fundamentals of Pump Types, Operations, and Hydraulic Principles 2- Pump Performance Characteristics and System Curve Integration 3- Pump Selection Criteria and Sizing Calculations 4- Common Pump Failures, Troubleshooting Techniques, and Maintenance Planning 5- Energy Efficiency, Reliability Optimization, and Best Practices in Pump Management

TARGET AUDIENCE

All Supervisory Levels, Maintenance Engineers, Mechanical Engineers, Operations Supervisors, Plant Managers, Technicians, Reliability Engineers, and professionals involved in the operation, selection, or maintenance of pumping systems in industries such as oil and gas, water treatment, manufacturing, and power generation.

METHODOLOGY

The course combines technical lectures, hands-on demonstrations, pump selection workshops, maintenance planning exercises, troubleshooting simulations, and group discussions based on real-world case studies.

CONCLUSION

Upon completion, participants will have the capability to select, operate, troubleshoot, and maintain pumps more effectively, leading to improved system performance, reduced downtime, optimized energy usage, and lower maintenance costs.

DAILY AGENDA

Day 1: Understanding Pump Types, Principles, and Operations

Explore the fundamentals of centrifugal, positive displacement, and specialty pumps, including operating principles and system integration.

Day 2: Pump Performance Curves and System Analysis

Learn to interpret pump curves, system head curves, BEP (Best Efficiency Point), and calculate system requirements for proper pump operation.

Day 3: Pump Selection and Sizing Techniques

Apply selection criteria, sizing methodologies, and operational considerations to choose the right pump for specific industrial applications.

Day 4: Maintenance, Troubleshooting, and Failure Analysis

Identify common causes of pump failures, practice troubleshooting steps, and plan preventive and predictive maintenance activities.

Day 5: Energy Efficiency and Reliability Improvement Strategies

Optimize pump systems for energy efficiency, reliability, and operational cost reduction through best practices and continuous improvement initiatives.

For more information, please contact us:
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