

CENTRIFUGAL PUMPS MAINTENANCE & TROUBLESHOOTING

Start Date:	13/07/2026	End Date:	17/07/2026
Categories:	Engineering & Maintenance	Venues:	Amsterdam
Formats:	In Person	Instructors:	

OVERVIEW

This technical course provides practical knowledge of centrifugal pump systems, covering their design, performance, maintenance, and troubleshooting techniques. Participants will gain hands-on insight into diagnosing failures, improving reliability, and optimizing performance for process-critical equipment.

OBJECTIVES

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

- Understand the operating principles of centrifugal pumps.
- Perform routine maintenance and alignment procedures.
- Diagnose mechanical seal failures, cavitation, and vibration issues.
- Select the right pump based on system requirements.
- Apply predictive maintenance tools to minimize unplanned downtime.

COURSE OUTLINE

1- Introduction to Centrifugal Pump Principles
2- Components, Operation, and System Integration
3- Maintenance Procedures and Inspection Standards
4- Common Failures: Causes, Detection, and Prevention
5- Performance Optimization and Predictive Techniques

TARGET AUDIENCE

All Supervisory Levels, Mechanical technicians, maintenance engineers, reliability specialists, and plant supervisors working with rotating equipment.

METHODOLOGY

Hands-on disassembly/assembly, alignment practice, vibration demos, fault diagnostics, and group troubleshooting activities.

CONCLUSION

Participants will be capable of maintaining and troubleshooting centrifugal pumps to ensure smooth and safe plant operations while minimizing operational disruptions.

DAILY AGENDA

Day 1: Pump Theory and Design

Explore hydraulic principles, pump components, and the head-flow relationship.

Day 2: Operation and System Behavior

Study system curves, NPSH, cavitation effects, and performance indicators.

Day 3: Maintenance and Alignment

Perform mechanical seal inspections, bearing checks, and coupling alignment.

Day 4: Troubleshooting Techniques

Address common failures including vibration, leakage, and impeller wear.

Day 5: Predictive Tools and Optimization

Use thermography, vibration analysis, and flow data to improve reliability.

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For more information, please contact us:

Email: info@gatewayconsulting.com | Phone: +96522968641

<https://gatewayconsulting.com>