MAWA EVENTS

Address: No. 857, Block A2. Leisure Commerce Square - No 9., 46150 Petaling Jaya, Selangor, Malaysia

Phone: +601116373203 | **Email:** info@mawaevents.net

PUMPS - RELIABILITY & PERFORMANCE OPTIMISATION

"Maximize Uptime, Extend Equipment Life & Minimize Energy Losses in Pumping Systems"

Schedule

Date	Venue	Fees (Face-to-Face)
06 – 08 Oct 2026	Doha, Qatar	USD 2495 per delegate

► **Available delivery methods:** Face-to-Face & Online Training

Introduction

Pumps are at the heart of industrial and utility operations, yet they remain among the most misapplied and failure-prone pieces of equipment. Inefficiencies, cavitation, seal and bearing failures, and poor system integration are common and costly. To ensure reliable, efficient, and long-lasting pump operation, professionals must understand both the equipment and the system in which it operates.

This practical 3-day course delivers essential knowledge and best practices for improving pump reliability and optimizing performance. From selection and installation to troubleshooting and root cause analysis, participants will gain the tools to reduce failures, energy waste, and downtime.

Objectives

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

- Understand the principles of pump operation and system interaction
- Identify common causes of pump failure and apply preventive strategies
- Optimize pump performance through correct selection, installation, and maintenance
- Diagnose and troubleshoot issues such as cavitation, vibration, and seal failures
- Implement monitoring and reliability programs to extend pump life and reduce lifecycle costs

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Why Attend

This program is designed for:

- Mechanical maintenance and reliability engineers
- Process, utility, and operations supervisors
- Plant engineers, technicians, and asset managers
- Condition monitoring and vibration analysis personnel
- Professionals involved in the design, operation, or support of pumping systems

Target Audience

This program is designed for:

- Mechanical maintenance and reliability engineers
- Process, utility, and operations supervisors
- Plant engineers, technicians, and asset managers
- Condition monitoring and vibration analysis personnel
- Professionals involved in the design, operation, or support of pumping systems

Individual Benefits

Key competencies that will be developed include:

- Pump operating principles and failure modes
- Seal, bearing, and impeller inspection techniques
- Root cause analysis and condition monitoring of pumps
- System curve and pump curve interpretation
- Maintenance strategies for reliability-centered operations

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Reduced pump-related downtime and maintenance costs
- Extended equipment life and better spare parts utilization
- Improved energy efficiency through proper system-pump matching
- Enhanced ability to prevent and resolve reliability issues
- Stronger plant safety and environmental compliance

Instructional Methodology

The course follows a blended learning approach combining theory with practice:

- Strategy Briefings – Engineering principles, pump types, and performance metrics
- Case Studies – Failure scenarios and corrective actions in real plant settings
- Workshops – Pump curve analysis, troubleshooting simulations, and maintenance planning
- Peer Exchange – Lessons learned from field experiences and operational challenges
- Tools – Checklists for inspection, alignment, lubrication, and performance benchmarking

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Course Outline

DETAILED 3-DAY COURSE OUTLINE

Training Hours: 7:30 AM – 3:30 PM **Daily Format:** 3–4 Learning Modules | Coffee breaks: 09:30 & 11:15 | Lunch Buffet: 01:00 – 02:00

Day 1: Fundamentals of Pump Operation and System Dynamics

- Module 1: Types and Principles of Pumps (07:30 – 09:30) • Centrifugal, positive displacement, and specialty pumps • Pump components and flow dynamics
- Module 2: Pump/System Curve Interaction (09:45 – 11:15) • System resistance, duty point, and best efficiency point (BEP) • Impact of control valves and piping layout
- Module 3: Workshop – Reading and Matching Pump Curves (11:30 – 01:00) • Analyze system requirements and select appropriate pumps
- Module 4: Peer Exchange – Pump Application Challenges (02:00 – 03:30) • Common issues and lessons from diverse sectors

Day 2: Troubleshooting, Diagnostics, and Failure Prevention

- Module 1: Common Pump Failures and Root Causes (07:30 – 09:30) • Cavitation, misalignment, bearing failure, dry running, and seal issues
- Module 2: Condition Monitoring & Diagnostic Techniques (09:45 – 11:15) • Vibration analysis, temperature monitoring, and performance testing
- Module 3: Workshop – Troubleshooting Scenarios (11:30 – 01:00) • Case-based diagnosis of performance anomalies
- Module 4: Seal and Bearing Maintenance (02:00 – 03:30) • Proper lubrication, installation, and inspection techniques

Day 3: Reliability, Maintenance, and Lifecycle Management

- Module 1: Precision Installation and Alignment (07:30 – 09:30) • Alignment best practices and soft foot correction
- Module 2: Preventive and Predictive Maintenance Planning (09:45 – 11:15) • Reliability-centered maintenance (RCM) for pumps
- Module 3: Workshop – Pump Performance Optimization Plan (11:30 – 01:00) • Build a reliability strategy for selected pump assets
- Module 4: Final Review – From Troubleshooting to Optimization (02:00 – 03:30) • Wrap-up discussion and action planning

Certification

Participants will receive a Certificate of Completion in Pumps – Reliability & Performance Optimisation, validating their practical understanding of pump systems and ability to improve reliability, safety, and efficiency across operational environments.

Why Choose MAWA Events

- **Global Expertise:** More than 17 years of experience in professional training and consulting.
- **Industry-Leading Faculty:** Courses delivered by seasoned professionals with hands-on experience.
- **Practical Insights:** Learn to turn theory into actionable strategies for real-world business impact.
- **Client-Focused Solutions:** Customized programs designed to achieve your organisation’s unique goals.

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