MAWA EVENTS

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

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

CRITICAL / ROTATING EQUIPMENT MAINTENANCE & RELIABILITY

"Ensuring Reliability, Safety & Uptime of Mission-Critical Rotating Assets"

Schedule

Date	Venue	Fees (Face-to-Face)
12 – 16 Oct 2026	Dubai, UAE	USD 3495 per delegate

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

Introduction

Rotating and critical equipment such as pumps, turbines, compressors, and gearboxes form the backbone of many industrial operations. Their failure can result in costly downtime, safety hazards, and reduced plant performance. Ensuring their availability and reliability is therefore a top priority for maintenance and operations teams.

This intensive 5-day course equips professionals with practical tools and engineering techniques to maintain, monitor, and improve the performance of rotating machinery. It covers failure analysis, predictive maintenance, vibration diagnostics, and reliability-centered strategies to reduce unplanned outages and improve equipment health.

Objectives

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

- Identify failure modes and root causes of rotating equipment breakdowns
- Apply preventive and predictive maintenance strategies effectively
- Interpret vibration, lubrication, and alignment data
- Improve equipment performance through reliability engineering principles
- Develop maintenance plans that optimize asset lifecycle and reduce risk

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Why Attend

- Master the fundamentals of rotating machinery health and diagnostics
- Learn how to avoid common failures and premature wear
- Enhance maintenance planning using condition-based monitoring techniques
- Reduce downtime and increase production reliability
- Support a culture of continuous improvement and equipment care

Target Audience

This program is designed for:

- Maintenance and reliability engineers
- Mechanical and plant engineers
- Rotating equipment specialists and technicians
- Asset integrity and operations professionals
- Anyone involved in the maintenance, monitoring, or design of critical equipment

Individual Benefits

Key competencies that will be developed include:

- Failure diagnosis of rotating machinery
- Application of reliability-centered maintenance (RCM)
- Use of predictive maintenance tools such as vibration and thermography
- Mechanical inspection and alignment skills
- Asset strategy development and optimization

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Improved asset uptime and reduced failure rates
- Lower maintenance costs through proactive intervention
- Increased safety and compliance with mechanical integrity standards
- Enhanced planning of shutdowns and overhauls
- Stronger performance in audits, inspections, and KPI tracking

Instructional Methodology

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

- Strategy Briefings – Rotating equipment systems, failure patterns, and reliability strategies
- Case Studies – Real-life failures, diagnostics, and repair solutions
- Workshops – Hands-on exercises with monitoring data, fault trees, and maintenance planning
- Peer Exchange – Sharing equipment challenges and reliability improvements
- Tools – Templates for RCA, PM optimization, and equipment condition reports

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Course Outline

Detailed 5-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: Overview of Critical Rotating Equipment

- Module 1: Introduction to Rotating Machinery (07:30 – 09:30) • Critical equipment categories: pumps, compressors, turbines, gearboxes • Basic mechanical design and operating principles
- Module 2: Equipment Classification and Failure Criticality (09:45 – 11:15) • Defining criticality and asset risk • Failure modes and effects analysis (FMEA)
- Module 3: Lubrication Systems and Wear Mechanisms (11:30 – 01:00) • Types of lubrication and contamination control • Common wear patterns and failure indicators
- Module 4: Workshop – Machinery Failure Mapping (02:00 – 03:30) • Group exercise to identify key failure risks

Day 2: Maintenance Strategies & Reliability Tools

- Module 1: Maintenance Approaches for Rotating Equipment (07:30 – 09:30) • Corrective vs. preventive vs. predictive • Best-fit strategies for different machine types
- Module 2: Reliability-Centered Maintenance (RCM) (09:45 – 11:15) • RCM process and decision logic • Aligning maintenance with equipment function
- Module 3: Predictive Maintenance Techniques (11:30 – 01:00) • Vibration analysis, oil analysis, thermography • Condition-based maintenance indicators
- Module 4: Workshop – Maintenance Strategy Optimization (02:00 – 03:30) • Build a maintenance plan for a sample rotating asset

Day 3: Diagnostics and Root Cause Analysis

- Module 1: Common Failure Modes and Fault Indicators (07:30 – 09:30) • Misalignment, unbalance, looseness, bearing failures • Case-based fault identification
- Module 2: Vibration Analysis Principles (09:45 – 11:15) • Frequency, amplitude, and spectrum interpretation • Using vibration data for early fault detection
- Module 3: Root Cause Analysis (RCA) (11:30 – 01:00) • 5 Whys, fishbone diagrams, fault tree analysis • Linking RCA to reliability improvement
- Module 4: Workshop – RCA for Equipment Breakdown (02:00 – 03:30) • Team analysis of a real-world rotating machinery failure

Day 4: Inspection, Overhaul & Alignment Techniques

- Module 1: Mechanical Inspection & Fit Tolerances (07:30 – 09:30) • Visual, dimensional, and NDT techniques • Shaft, bearing, and seal inspection criteria
- Module 2: Coupling, Alignment & Balancing (09:45 – 11:15) • Types of misalignment and measurement methods • In-situ balancing methods and tools
- Module 3: Overhaul Planning and Documentation (11:30 – 01:00) • Shutdown preparation, job plans, and task sequencing • Inspection reports and overhaul checklists
- Module 4: Workshop – Maintenance Job Plan Creation (02:00 – 03:30) • Group development of overhaul procedures for a pump or compressor

Day 5: Performance Monitoring, KPIs & Program Wrap-Up

- Module 1: Asset Health Monitoring & Dashboards (07:30 – 09:30) • Monitoring trends and thresholds • Machine condition reports and alerts
- Module 2: Maintenance KPIs & Continuous Improvement (09:45 – 11:15) • MTBF, MTTR, PM compliance, backlog analysis • Using metrics to optimize program effectiveness

- Module 3: Final Case Study – Plant Equipment Review (11:30 – 01:00) • Integrated review of course topics applied to a plant scenario
- Module 4: Wrap-Up & Certificate Distribution (02:00 – 03:30) • Action planning and key takeaways • Participant presentations and certification

Certification

Participants will receive a Certificate of Completion in Critical / Rotating Equipment Maintenance & Reliability, validating their ability to manage, maintain, and improve the performance and reliability of essential rotating assets in industrial operations.

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.

In-House / Customized Training Interested in running this course for your team? Please contact us:	TEL: **+601116373203**	EMAIL: **info@mawaevents.net**