MAWA EVENTS

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

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

COMPRESSORS & TURBINES - OPERATIONS & MAINTENANCE

""Enhancing Equipment Reliability through Operational Excellence and Maintenance Best Practices""

Schedule

Date	Venue	Fees (Face-to-Face)
24 – 26 Feb 2026	Kuwait	USD 2495 per delegate
03 – 05 Mar 2026	Doha, Qatar	USD 2495 per delegate
22 – 24 Apr 2026	Dubai, UAE	USD 2495 per delegate

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

Introduction

Compressors and turbines are critical assets in industrial operations, from power generation and petrochemicals to oil & gas and manufacturing. Ensuring their optimal performance and reliability is essential to avoid costly downtime, extend equipment life, and improve plant efficiency.

This focused three-day course delivers essential knowledge and hands-on insights into the operation, monitoring, troubleshooting, and maintenance of compressors and turbines. Participants will gain a practical understanding of mechanical systems, failure modes, diagnostics, and maintenance planning tailored to rotating equipment.

Objectives

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

- Understand operating principles of different types of compressors and turbines
- Apply condition monitoring techniques for early fault detection
- Interpret vibration, temperature, and performance data to prevent failure
- Perform routine and preventive maintenance procedures safely and effectively
- Diagnose root causes of common faults in compressors and turbines

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Why Attend

- Minimize downtime and improve performance of rotating equipment
- Learn practical diagnostic and maintenance techniques
- Reduce repair costs through predictive maintenance practices
- Enhance safety and compliance in compressor and turbine operations
- Improve communication with OEMs, vendors, and maintenance teams

Target Audience

This program is designed for:

- Mechanical, operations, and maintenance engineers working with rotating machinery
- Plant technicians and operators involved in compressor/turbine systems
- Reliability engineers and condition monitoring personnel
- Engineering supervisors responsible for equipment performance
- Professionals in oil & gas, energy, power generation, and manufacturing sectors

Individual Benefits

Key competencies that will be developed include:

- Equipment diagnostics and failure analysis
- Preventive and predictive maintenance techniques
- Safe operational practices for compressors and turbines
- Interpretation of machinery monitoring data
- Increased confidence in equipment management

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Improved uptime and operational efficiency of compressors and turbines
- Reduced maintenance costs through early fault detection
- Enhanced team capability in managing critical rotating assets
- Lower risk of unplanned outages and safety incidents
- More reliable and energy-efficient operation of mechanical systems

Instructional Methodology

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

- Strategy Briefings – Operational principles and maintenance strategies for compressors and turbines
- Case Studies – Equipment failures and recovery actions in real-world scenarios
- Workshops – Hands-on maintenance planning and troubleshooting exercises
- Peer Exchange – Shared learning from participant experience in different industries
- Tools – Templates for maintenance schedules, inspection checklists, and root cause analysis

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Course Outline

Detailed 3-Day Course Outline

Training Hours: 07:30 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 Compressors & Turbines

- Module 1: Operating Principles and Classifications (07:30 – 09:30) • Types of compressors (reciprocating, centrifugal, screw) and turbines (gas, steam) • Principles of operation and thermodynamic cycles • Typical applications and selection criteria
- Module 2: System Components and Functions (09:45 – 11:15) • Major components: bearings, seals, shafts, rotors, and casings • Ancillary systems: lubrication, cooling, and control systems • Design parameters and performance ratings
- Module 3: Operational Parameters and Controls (11:30 – 01:00) • Key indicators: flow, pressure, temperature, vibration • Start-up, shutdown, and load management procedures • Integration with plant control systems
- Module 4: Safety and Operational Best Practices (02:00 – 03:30) • Safety hazards and protective measures • OEM and regulatory safety guidelines • Operator responsibilities and routine checks

Day 2: Maintenance, Troubleshooting & Diagnostics

- Module 1: Preventive and Predictive Maintenance (07:30 – 09:30) • Maintenance strategies: time-based, condition-based, reliability-centered • Scheduling inspections and service intervals • Aligning with OEM recommendations
- Module 2: Common Failure Modes and Causes (09:45 – 11:15) • Mechanical failures: wear, imbalance, misalignment, thermal distortion • Operational issues: surge, stall, cavitation, fouling • Electrical and instrumentation faults
- Module 3: Condition Monitoring Techniques (11:30 – 01:00) • Vibration analysis, oil analysis, thermography, and ultrasound • Interpreting monitoring data and setting alarm thresholds • Using data to drive maintenance actions
- Module 4: Root Cause Analysis for Equipment Failures (02:00 – 03:30) • Failure investigation process • Fault tree and cause-effect diagrams • Documentation and reporting best practices

Day 3: Performance Optimization and Reliability Planning

- Module 1: Performance Evaluation and Efficiency (07:30 – 09:30) • Measuring and benchmarking compressor and turbine performance • Identifying performance degradation and corrective actions • Impact of system conditions on efficiency
- Module 2: Spare Parts and Inventory Management (09:45 – 11:15) • Critical spares for compressors and turbines • Inventory optimization and lead-time considerations • Maintenance spare part planning
- Module 3: Reliability Improvement Programs (11:30 – 01:00) • Developing reliability metrics and KPIs • Implementing equipment reliability strategies • Cross-functional collaboration in reliability management
- Module 4: Wrap-Up, Q&A, and Action Planning (02:00 – 03:30) • Consolidating key learning points • Creating individual maintenance improvement plans • Interactive Q&A and feedback session

Certification

Participants will receive a Certificate of Completion in Compressors & Turbines – Operations & Maintenance, validating their technical proficiency in operating, maintaining, and optimizing rotating machinery for long-term performance and reliability.

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