

PREVENTIVE & PREDICTIVE MAINTENANCE

“Maximizing Equipment Uptime through Proactive Maintenance Strategies and Technologies”

Schedule

Date	Venue	Fees (Face-to-Face)
08 - 12 Feb 2026	Manama, Bahrain	USD 3495 per delegate

Introduction

Equipment failure is one of the primary causes of lost productivity, increased costs, and compromised safety in industrial operations. By transitioning from reactive to proactive maintenance—through preventive and predictive approaches—organizations can dramatically improve asset performance, reduce unplanned downtime, and extend equipment life.

This intensive five-day training program equips participants with the knowledge and tools needed to implement and manage effective preventive and predictive maintenance programs. It focuses on planning, condition monitoring, performance tracking, and integrating modern technologies to support data-driven maintenance decisions.

Objectives

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

- Design and implement effective preventive and predictive maintenance programs
- Identify failure modes and apply condition monitoring techniques
- Use tools such as vibration analysis, thermography, and oil analysis
- Evaluate maintenance effectiveness using KPIs and analytics
- Align maintenance strategies with asset criticality and reliability goals

Why Attend

- Reduce unexpected breakdowns and costly downtime
- Extend asset life and reduce lifecycle maintenance costs
- Gain practical knowledge of predictive technologies and tools
- Improve safety and compliance through structured maintenance programs
- Move your organization towards world-class maintenance standards

Target Audience

This program is designed for:

- Maintenance and reliability engineers
- Maintenance planners and supervisors
- Plant and operations managers
- Asset management and condition monitoring professionals
- CMMS/EAM system users and maintenance analysts

Individual Benefits

Key competencies that will be developed include:

- Development of maintenance plans and task schedules
- Application of condition-based maintenance tools and techniques
- Failure detection and diagnostic skills
- Data-driven decision-making using maintenance KPIs
- Integration of preventive and predictive maintenance into daily operations

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Increased equipment availability and reliability
- Reduced corrective maintenance and emergency work
- Enhanced safety and regulatory compliance
- Improved cost control and resource utilization
- Greater operational efficiency and asset integrity

Instructional Methodology

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

- Strategy Briefings - Best practices in proactive maintenance planning and execution
- Case Studies - Real-world equipment failures and predictive maintenance solutions
- Workshops - CMMS setup, maintenance scheduling, and data interpretation
- Peer Exchange - Group dialogue and cross-industry learning
- Tools - Templates for preventive maintenance checklists, route plans, and monitoring logs

Course Outline

Detailed 5-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: Proactive Maintenance Strategy Foundations

- Module 1: Introduction to Maintenance Strategy (07:30 – 09:30) • Reactive vs. preventive vs. predictive maintenance • Maintenance maturity models and benchmarks
- Module 2: Preventive Maintenance Planning (09:45 – 11:15) • PM task development and work order systems • Determining PM intervals and resource requirements
- Module 3: PM Documentation and Task Lists (11:30 – 01:00) • Standardizing inspection, lubrication, and replacement tasks
- Module 4: Workshop – Building a Preventive Maintenance Plan (02:00 – 03:30) • Create a task-based PM plan for a sample system

Day 2: Predictive Maintenance and Condition Monitoring

- Module 1: Condition Monitoring Fundamentals (07:30 – 09:30) • Failure curves and P-F interval concept • CBM advantages and trigger methods
- Module 2: Vibration Analysis and Motor Monitoring (09:45 – 11:15) • Common vibration faults and signatures • Motor current analysis basics
- Module 3: Thermography and Ultrasonics (11:30 – 01:00) • Detecting heat, misalignment, leaks, and electrical faults
- Module 4: Workshop – Selecting Predictive Technologies (02:00 – 03:30) • Choose condition monitoring tools for various failure modes

Day 3: Oil Analysis and Failure Investigation

- Module 1: Lubricant and Oil Condition Monitoring (07:30 – 09:30) • Sampling techniques and analysis parameters • Interpreting results for wear, contamination, and degradation
- Module 2: Root Cause Failure Analysis (RCFA) (09:45 – 11:15) • Identifying failure modes and underlying causes
- Module 3: Data-Driven Maintenance Decision-Making (11:30 – 01:00) • Setting alert thresholds and response actions
- Module 4: Workshop – Analyze Predictive Maintenance Data (02:00 – 03:30) • Interpret reports and recommend actions

Day 4: CMMS, Work Execution & Continuous Improvement

- Module 1: Integrating PM & PdM in CMMS (07:30 – 09:30) • Creating asset hierarchies and PM job plans in CMMS
- Module 2: Work Order Management and Scheduling (09:45 – 11:15) • Prioritization, scheduling, and backlog control
- Module 3: Key Maintenance Performance Indicators (11:30 – 01:00) • MTBF, MTTR, PM compliance, schedule adherence
- Module 4: Workshop – Performance Dashboard Design (02:00 – 03:30) • Build a sample maintenance KPI dashboard

Day 5: Reliability & Maintenance Excellence Framework

- Module 1: Building a Reliability Culture (07:30 – 09:30) • Cross-functional alignment and leadership commitment
- Module 2: Auditing and Improving PM/PdM Programs (09:45 – 11:15) • Assessment tools and improvement planning
- Module 3: Action Planning and Implementation Strategy (11:30 – 01:00) • Translating training into plant-wide improvements
- Module 4: Certification and Wrap-Up (02:00 – 03:30) • Final review, course reflection, and certificate distribution

Certification

Participants will receive a Certificate of Completion in Preventive & Predictive Maintenance, validating their ability to implement, manage, and continuously improve proactive maintenance strategies that drive asset performance and reliability.

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