MERCURY

Certified Advanced Maintenance Management Course

23 November – 4 December 2026
Madrid (Spain)



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Ref: 16008_1002443 **Date:** 23 November – 4 December 2026 **Location:** Madrid (Spain) **Fees:** 11100 Euro

Introduction:

The Certified Advanced Maintenance Management course equips professionals with the essential tools, strategies, and insights required to enhance industrial asset reliability. This course integrates advanced maintenance technology with strategic planning, focusing on predictive, preventive, and smart maintenance practices. Learners will explore cutting-edge systems and digital tools that reshape traditional maintenance workflows.

The Certified Advanced Maintenance Management training course emphasizes both theoretical knowledge and real-world applications, reinforced by case studies and interactive activities. Participants will learn how to use data for informed decision-making and maintenance optimization. In addition to technical expertise, the course develops leadership, cost control, and risk management capabilities within a maintenance context.

Professionals will be fully prepared to lead maintenance teams, implement advanced maintenance systems, and support strategic growth. This Certified Advanced Maintenance Management program delivers robust solutions for overcoming the complex challenges facing today's maintenance leaders.

Targeted Groups:

This Certified Advanced Maintenance Management training course targets professionals seeking specialized knowledge and skills:

- Maintenance managers are responsible for ensuring asset reliability and controlling costs.
- Operations supervisors are aiming to reduce production downtime.
- Mechanical, electrical, and industrial engineers are seeking advanced tools and solutions.
- Facility managers focused on performance optimization.
- Senior technicians are looking to adopt new technologies.
- Quality and compliance officers ensure adherence to regulations.
- Reliability engineers are driving data-based maintenance planning.
- Team leaders are improving workforce coordination.
- Plant and utility managers are pursuing structured maintenance improvements.
- Professionals are aiming to become certified in advanced maintenance systems.

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Course Objectives:

Participants will achieve the following objectives by completing the Certified Advanced Maintenance Management course:

- Define the scope and value of advanced maintenance management in operational excellence.
- Align maintenance strategies with long-term business objectives.
- Develop comprehensive plans using advanced maintenance solutions.
- Apply predictive maintenance to prevent equipment failure.
- Design preventive programs based on historical data and diagnostics.
- Conduct risk-based assessments to prioritize tasks effectively.
- Integrate digital tools such as smart maintenance systems for real-time monitoring.
- Use IoT and analytics for performance optimization and diagnostics.
- Reduce costs through maintenance management analysis and return on investment ROI strategies.
- Build dashboards for data visualization and KPI tracking.
- Improve team collaboration through leadership and communication.
- Implement lean maintenance principles for continuous improvement.
- Create action plans with measurable outcomes to optimize ongoing processes.
- Analyze failure modes to support safer operations and risk mitigation.
- Review case studies to assess the practical application of advanced maintenance.
- Manage lifecycle costs to enhance asset longevity and improve cost efficiency.
- Foster a culture of innovation and continuous learning within teams.
- Lead digital transformation in maintenance through strategic implementation.
- Establish sustainable systems to support organizational growth.
- Prepare for industry-recognized certification and advance your professional career.

Targeted Competencies:

Participants will gain the following competencies during the Certified Advanced Maintenance Management program:

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- Mastery of advanced maintenance management concepts and execution.
- Skillful planning using predictive and preventive strategies.
- Confidence in using advanced maintenance technology for diagnostics.
- Ability to analyze asset data for targeted improvements.
- Competence in safety compliance and regulatory alignment.
- Proficiency in lean and cost-optimized maintenance practices.
- Leadership in guiding maintenance teams with clarity and purpose.
- Readiness for career advancement through certification and practical skills.

Course Content:

Unit 1: Introduction to Advanced Maintenance Management:

- Define advanced maintenance management and its strategic significance.
- Describe the evolution from reactive to predictive maintenance systems.
- Outline critical success components: planning, KPIs, and reliability.
- Discuss benefits like reduced downtime and increased equipment lifespan.
- Present key industry trends and advanced maintenance systems.
- Highlight challenges and opportunities in modern maintenance frameworks.

Unit 2: Strategic Maintenance Planning and Scheduling:

- Align maintenance plans with strategic business goals.
- Break down scheduling processes for efficient execution.
- Introduce workforce and spare parts resource management.
- Explore data-driven planning using historical asset performance.
- Integrate planning into continuous improvement cycles.
- Demonstrate use of digital scheduling software.
- Identify bottlenecks in current planning systems.
- Implement contingency planning for emergency scenarios.

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Unit 3: Predictive and Preventive Maintenance Techniques:

- Explain predictive maintenance and its technology backbone.
- Use sensor data for real-time monitoring and forecasting.
- Plan preventive maintenance to eliminate unplanned downtimes.
- Compare and integrate predictive and preventive approaches.
- Explore cost-saving implications of early intervention.
- Evaluate case studies that demonstrate successful smart maintenance.
- Discuss condition-based maintenance versus time-based strategies.
- Evaluate metrics for preventive plan effectiveness.

Unit 4: Maintenance Risk Assessment and Safety Compliance:

- Conduct structured maintenance risk assessments.
- Use Failure Modes and Effects Analysis FMEA.
- Apply risk matrices to prioritize critical tasks.
- Ensure compliance with ISO and safety regulations.
- Design emergency and contingency response protocols.
- Review incidents and identify root causes.
- Implement safe work procedures and PPE requirements.
- Foster a proactive safety culture across teams.

Unit 5: Cost Optimization and Life Cycle Costing:

- Understand maintenance management cost structures.
- Introduce life cycle costing in asset management.
- Identify high-cost areas through financial analysis.
- Calculate ROI for new advanced maintenance solutions.
- Explore condition-based asset replacement strategies.
- Reduce spare parts inventory without increasing risk.
- Use case studies to compare cost-reduction tactics.
- Align budgeting with performance outcomes.

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Unit 6: Smart Maintenance Technologies and Digital Tools:

- Define smart maintenance and its components.
- Use IoT-enabled devices for live asset monitoring.
- Integrate AI for predictive analytics.
- Leverage cloud-based advanced maintenance management systems.
- Automate task management and reporting.
- Improve accuracy using digital inspection tools.
- Visualize asset health via dashboards and alerts.
- Review successful implementations of smart technologies.

Unit 7: Data Analysis and Performance Measurement in Maintenance:

- Collect and validate maintenance data systematically.
- Define key performance indicators KPIs for maintenance.
- Create reports and dashboards for transparency.
- Analyze trends for performance improvement.
- Identify hidden costs using maintenance data.
- Benchmark against industry standards.
- Apply findings to support decision-making.
- Measure improvements over time using control charts.

Unit 8: Maintenance Process Improvement and Lean Management:

- Introduce lean maintenance and its core principles.
- Map workflows to identify non-value-adding steps.
- Reduce waste in time, inventory, and motion.
- Create standard operating procedures for consistency.
- Use visual controls to enhance accountability.
- Foster continuous improvement using Kaizen events.
- Apply 5S for organized and efficient workspaces.
- Present real-world examples of lean implementation success.

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Unit 9: Leadership and Team Coordination in Maintenance:

- Explore leadership styles for maintenance settings.
- Build cohesive, high-performing maintenance teams.
- Communicate clearly to align tasks and ensure expectations are clear.
- Resolve conflicts constructively and promptly.
- Mentor junior staff for skills transfer and development.
- Assign roles based on strengths and technical needs.
- Encourage feedback loops and team ownership.
- Celebrate wins to boost morale and retention.

Unit 10: Capstone Project - Maintenance Optimization Strategy Implementation:

- Conduct detailed audits of existing maintenance frameworks.
- Identify inefficiencies and opportunities using maintenance management analysis.
- Use data analytics for improvement planning.
- Develop a strategy integrating smart tools and lean methods.
- Set measurable KPIs aligned with organizational objectives.
- Present project proposals to industry experts for review.
- Refine strategy based on expert and peer feedback.
- Prepare a final presentation that demonstrates advanced maintenance capabilities.

Final Insights & Key Takeaways:

The Certified Advanced Maintenance Management course provides a structured pathway for mastering advanced maintenance systems and techniques. Learners gain actionable insights and leadership skills to drive operational efficiency and asset performance. The course bridges theoretical frameworks with digital transformation and real-world applications. Participants emerge with practical tools to lead innovation and sustainable improvements in maintenance management.