Mini Master: Maintenance Management & Technology Course

18 – 29 January 2027
Madrid (Spain)



Dubai - UAE: +971 4 450 5697
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Ref: 9109_269088 **Date:** 18 – 29 January 2027 **Location:** Madrid (Spain) **Fees:** 11100 Euro

Introduction:

Maintenance Best Practices are essential for every successful individual and organization. This comprehensive maintenance management training course is designed to benefit qualified new professionals and experienced individuals seeking to update their skills.

This maintenance management and technology course encompasses all the core aspects of Maintenance Management required by a proficient professional. The curriculum establishes a foundational understanding and escalates complexity, culminating in a fully operational maintenance structure.

Participants in this maintenance management and technology course will gain experience similar to an MBA-level program in content, instruction, interactive discussions, and team exercises.

Maintenance Management and Technology: Enhancing Best Practices:

Maintenance management and technology constantly evolve, with definitions and strategies that lead to the most efficient practices. In this course, we will explore maintenance management best practices, leverage maintenance technology definitions to our advantage, and delve into the significance of a robust maintenance management program for any business operation.

Participants in this maintenance management and technology training will understand how to align these practices with their organizational goals to ensure their operations' reliability, efficiency, and longevity.

Targeted Groups:

- Maintenance Supervisors and Superintendents.
- Reliability Engineers.
- Operational Professionals are interested in maintenance reliability and asset management.
- Safety and Integrity Professionals.
- Other Professionals Involved in Process Improvement.

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Course Objectives:

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

- Provide a step-by-step guide to maintenance best practices, starting with foundations and building to best practices to deliver maximum business benefits.
- Instruct Maintenance optimization best practice techniques
- Provide opportunities to discuss the application of these best practices.
- Provide an opportunity to learn these concepts through practical exercises.
- Understand the Maintenance optimization best practice techniques.
- Understand a range of equipment failures and their implications for the operational organization.
- Design a maintenance plan for the upkeep and maintenance inspections of static and rotating plants.

Targeted Competencies:

By the end of this maintenance management course, participants competencies will:

- Fundamentals of maintenance, reliability, and asset management.
- Reliability modeling and failure modes for rotating and stationary machinery.
- Lessons from major failures.
- Condition-based maintenance technologies.
- Selection of suitable maintenance strategies in asset management.
- Maintenance theory and practice.
- Maintenance work processes.
- Asset Management.
- Failure Analysis.
- Preventive Maintenance.

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Course Content:

Unit 1: An Overview of Key Maintenance Work Processes:

- Introduction to Maintenance Management.
- Definitions of key terms.
- Various Maintenance types.
- Distinguishing between reactive, planned, and improvement jobs.
- Comparing preventive and proactive measures.

Unit 2: Maintenance Management Systems:

- Effective Maintenance Planning and Scheduling.
- Utilizing Computerized Maintenance Management Systems CMMS.
- Development of Maintenance Key Performance Indicators KPIs.

Unit 3: Preventive Maintenance and Maintenance Strategy:

- Maintenance Organization Structure and Policies.
- Development and Execution of a Preventive Maintenance Program.
- Application of Reliability-Based Principles to Maintenance Strategy Development.

Unit 4: Maintenance Logistics and Cost Control:

- Managing Maintenance Spare Parts and Logistics.
- Optimization of Spare Parts Inventory Levels.
- Comprehensive Maintenance Budgeting.
- Maintenance Cost Control Techniques.
- Introduction to Life Cycle Cost Concepts.

Unit 5: Maintenance Team Work:

- Collaborative efforts among Engineering, Production, and Maintenance Teams.
- Benefits of Integrated Teams.
- Strategies for Motivation and Empowerment.
- Total Productive Maintenance Concepts.
- Implementing Team-Based Continuous Improvement Strategies in Maintenance.

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Unit 6: Failure of Machines and Inspection-Based Failure Analysis - Causes of Machinery Failure in Rotating Equipment:

- Investigation into Cavitation in Pumps.
- Analysis of Tripping in Turbines.
- Understanding Surging in Compressors.
- Wear Mechanisms: Fatigue, Fretting, and Corrosion.
- Addressing Fundamental Machine Problems: Balance, Alignment, and Machinery Mounting Issues.
- Review of Fundamentals of Maintenance and Asset Management.

Unit 7: Failure Analysis and Reliability:

- Utilizing Elementary Statistics and Standards.
- Introduction to Reliability Models.
- Case Studies from Major Failures in Process and Oil & Gas Industries.
- Principles of Root Cause Analysis and Extractions of Specific and Generic Lessons.
- Reflection on Why Systems Fail.

Unit 8: Statistical Failure Analysis and Reliability:

- Advancing Reliability Definitions and Standards.
- Planning Process Illustrations.
- Analyzing the Hazard Function and Bathtub Curve.
- Mastery of Weibull Analysis.

Unit 9: Condition-Based Maintenance:

- Understanding General Purpose CBM.
- Exploration of the P-F Curve.
- Principles of Vibration Monitoring.
- Insight into Thermal Monitoring.
- Review of Acoustic Emission Techniques.
- Analysis of Lubricant Monitoring.

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Unit 10: Decision Analysis in Asset Management:

- Assessing Management of Computerized Maintenance Systems.
- An Overview of the Asset Management Framework.
- Understanding the Decision-Making Grid Approaches.
- Selection of Appropriate Maintenance Strategies.
- Integrating RCM, TPM, and CBM Approaches.

Conclusion:

Participants motivated to elevate their professional credentials in this maintenance management and technology course can consider pursuing a maintenance management professional certification.

This maintenance management and technology certification will attest to their acquired knowledge and commitment to implementing maintenance management best practices and state-of-the-art solutions within their organizations.