Mastering Preventive and Predictive Maintenance: A Course for Engineers and Managers

18 – 22 January 2027
Addis Ababa

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Mastering Preventive and Predictive Maintenance: A Course for Engineers and Managers

Ref: 36242_224953 **Date:** 18 – 22 January 2027 **Location:** Addis Ababa **Fees:** 6000 Euro

Course Overview:

This Course is an advanced training program designed to equip engineers and managers with the essential skills and knowledge required to implement and manage effective maintenance strategies. This course covers preventive maintenance strategies, maintenance management methods, and the optimization of preventive maintenance. Participants will explore the economics of preventive maintenance, predictive maintenance techniques, and the design of predictive maintenance programs. The course also highlights the benefits and justification of predictive maintenance, including maintenance cost justification and condition monitoring cost benefits. Attendees will learn about the financial impact of maintenance, the maintenance mission, and evaluation, as well as the maintenance organization structure and its role within organizations. Additionally, the program covers vibration monitoring and analysis, thermography, tribology techniques, visual inspections, and ultrasonics in predictive maintenance. Participants will gain insights into machine-train monitoring parameters, drivers and intermediate drives, and the monitoring of driven components. By the end of this course, engineers and managers will be well-versed in various maintenance techniques and prepared to implement effective maintenance programs within their organizations.

Target Audience:

- Maintenance Engineers
- Maintenance Managers
- Reliability Engineers
- Plant Managers
- Operations Managers
- Maintenance Planners and Schedulers

Targeted Organizational Departments:

- Maintenance Department
- Quality Assurance
- Operations Department
- Production Department

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Targeted Industries:

- Manufacturing
- Oil and Gas
- Power Generation
- Chemical Processing
- Mining

Course Offerings:

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

- Develop and implement preventive maintenance strategies
- Apply maintenance management methods effectively
- Optimize preventive maintenance processes
- Justify and understand the economics of preventive maintenance
- Design and execute predictive maintenance programs
- Evaluate the financial impact of maintenance decisions
- Utilize condition monitoring for cost benefits
- Apply vibration monitoring and analysis techniques
- Implement thermography and tribology techniques
- Conduct effective visual inspections and use ultrasonics in maintenance

Training Methodology:

This course employs a blend of interactive and practical training methodologies to ensure an engaging learning experience. Participants will engage in case studies, group discussions, and hands-on exercises to apply the concepts learned. Interactive sessions will allow attendees to explore real-world scenarios and problem-solving techniques.

Course Toolbox:

- Comprehensive workbooks
- Reading materials and industry reports
- Checklists and templates for maintenance planning
- Access to industry case studies and best practices

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Course Agenda:

Day 1: Management of Shutdown and Turnaround

- **Topic 1:** Overview and strategy
- **Topic 2:** Turnaround management
- **Topic 3:** Component of work
- **Topic 4:** Principle of methodology
- **Topic 5:** Complexity of technology
- **Reflection & Review:** Complexity of business, Complexity of maintenance, Complexity of life, Turnaround - risk and hazard

Day 2: Fundamentals of Shutdown and Turnaround

- **Topic 1:** Structure of shutdown plan
- **Topic 2:** Types of shutdown
- **Topic 3:** Good shutdown management
- **Topic 4:** Vital elements
- **Topic 5:** Turnaround philosophy
- **Reflection & Review:** Financial implication, Past history, Project scope of work, Maintenance scope of work

Day 3: Principles of Engineering Project Management for Shutdowns

- **Topic 1:** Management plan and procedure
- **Topic 2:** The methodology
- **Topic 3:** The turnaround manager
- **Topic 4:** Roles and responsibilities of the preparation team
- **Topic 5:** Data gathering
- **Reflection & Review:** Formal meetings, Documentation, Summary

Day 4: Scope of Work

- **Topic 1:** Validation
- **Topic 2:** Unnecessary work
- **Topic 3:** Cost factor
- **Topic 4:** Examples of unnecessary work
- **Topic 5:** Work validation routine
- **Reflection & Review:** Task review, Inspections review, Project work review, Work order package

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Day 5: Pre-shutdown Work

- **Topic 1:** Preparation phase
- **Topic 2:** Planning - how?
- **Topic 3:** Contingency planning
- **Topic 4:** Prefabricated work
- **Topic 5:** Specialized technologies
- **Reflection & Review:** Managing scarcity, Services and utilities, Summary

How This Course is Different from Other Maintenance Courses:

This is course stands out due to its comprehensive approach, integrating both preventive and predictive maintenance strategies. This course emphasizes practical application through case studies, interactive sessions, and hands-on exercises. Participants will benefit from the latest industry insights and best practices, ensuring they are well-equipped to implement and manage maintenance programs effectively. The inclusion of modern tools and technologies enhances the learning experience, making this course a unique and valuable opportunity for engineers and managers seeking to advance their skills in maintenance management.