



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



AGILE LEADERS
Training Center



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

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

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

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

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 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.



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**Human Resources
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Development Courses**



**IT Security Training & IT
Training Courses**



**Leadership and
Management Training
Courses**



**Legal Training,
Procurement and
Contracting Courses**



**Maintenance Training
and Engineering
Training Courses**



Training Course Categories



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Occupational Health, Safety and Security Training Courses



Oil & Gas Training and Other Technical Courses



Personal & Self-Development Training Courses



Quality and Operations Management Training Courses



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WHO WE ARE

Agile Leaders is a renowned training center with a team of experienced experts in vocational training and development. With 20 years of industry experience, we are committed to helping executives and managers replace traditional practices with more effective and agile approaches.

OUR VISION

We aspire to be the top choice training provider for organizations seeking to embrace agile business practices. As we progress towards our vision, our focus becomes increasingly customer-centric and agile.

OUR MISSION

We are dedicated to developing value-adding, customer-centric agile training courses that deliver a clear return on investment. Guided by our core agile values, we ensure our training is actionable and impactful.

WHAT DO WE OFFER

At Agile Leaders, we offer agile, bite-sized training courses that provide a real-life return on investment. Our courses focus on enhancing knowledge, improving skills, and changing attitudes. We achieve this through engaging and interactive training techniques, including Q&As, live discussions, games, and puzzles.



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