Industrial Maintenance Engineering Training Course

Professional Development Training Course Outline

Category	General Training	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Industrial Maintenance Engineering is a critical discipline that ensures the reliability, efficiency, and safety of modern industrial operations. In today's highly competitive manufacturing and production environments, organizations are increasingly adopting predictive maintenance, condition monitoring, reliability-centered maintenance (RCM), and asset optimization strategies to minimize downtime and maximize productivity. This training course is designed to equip participants with cutting-edge technical skills and industry-relevant knowledge to manage complex industrial systems effectively using modern maintenance engineering practices.

With the rapid rise of Industry 4.0, smart manufacturing, IoT-based predictive analytics, and AI-driven maintenance systems, maintenance engineering has evolved into a data-driven and strategic function. Industrial Maintenance Engineering Training Course provides hands-on exposure to advanced maintenance methodologies, failure analysis techniques, equipment lifecycle management, and reliability engineering principles. Participants will gain practical insights into reducing operational costs, improving equipment availability, and implementing world-class maintenance systems aligned with global industrial standards.

Programme Curriculum

Industrial Maintenance Engineering Training Course

Introduction

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Course Duration

5 days

Course Objectives

1. Master preventive, predictive, and proactive maintenance strategies
2. Understand Reliability-Centered Maintenance (RCM) frameworks
3. Apply condition-based monitoring and diagnostics techniques
4. Develop skills in root cause failure analysis (RCFA)
5. Optimize asset lifecycle management and equipment reliability
6. Implement Total Productive Maintenance (TPM) systems
7. Enhance knowledge of industrial lubrication and tribology
8. Apply vibration analysis and thermal imaging techniques
9. Improve maintenance planning and scheduling efficiency
10. Reduce downtime through failure mode and effects analysis (FMEA)
11. Integrate IoT and smart sensors in maintenance systems
12. Strengthen safety, risk management, and compliance in maintenance
13. Develop data-driven decision-making using maintenance KPIs and analytics

Target Audience

1. Maintenance Engineers and Technicians
2. Mechanical and Electrical Engineers
3. Plant and Production Managers
4. Reliability Engineers
5. Industrial Operations Supervisors
6. Facility Management Professionals
7. Engineering Graduates entering industry
8. Energy and Process Industry Professionals

Course Modules

Module 1: Fundamentals of Industrial Maintenance Engineering

- Maintenance types-preventive, predictive, corrective
- Industrial equipment lifecycle concepts
- Maintenance planning structures
- Introduction to reliability engineering
- Case Study: Reducing downtime in a manufacturing plant through preventive maintenance scheduling

Module 2: Reliability-Centered Maintenance (RCM)

- RCM decision-making process
- Critical asset identification
- Failure modes analysis
- Maintenance task optimization
- Case Study: RCM implementation in a power generation facility improving uptime by 25%

Module 3: Predictive Maintenance & Condition Monitoring

- Vibration analysis fundamentals
- Infrared thermography applications
- Oil and wear particle analysis
- Sensor-based monitoring systems
- Case Study: Predictive maintenance reducing gearbox failure in a cement plant

Module 4: Root Cause Failure Analysis (RCFA)

- Failure investigation techniques
- 5 Whys and Fishbone analysis
- Data collection and interpretation
- Corrective action planning
- Case Study: Eliminating repeated pump failures in a chemical processing unit

Module 5: Total Productive Maintenance (TPM)

- Autonomous maintenance principles
- Equipment efficiency improvement (OEE)
- Operator involvement strategies
- TPM pillars implementation
- Case Study: TPM boosting production efficiency in an automotive assembly line

Module 6: Industrial Asset Management

- Asset lifecycle optimization
- Spare parts inventory control
- Maintenance cost management
- Digital asset tracking systems
- Case Study: Reducing maintenance costs in a food processing plant through asset optimization

Module 7: Smart Maintenance & Industry 4.0 Integration

- IoT in maintenance engineering
- AI-driven predictive analytics
- Digital twin technology
- Cloud-based maintenance systems
- Case Study: Smart monitoring system preventing turbine failure in energy sector

Module 8: Safety, Risk & Maintenance Excellence

- Industrial safety standards
- Risk-based maintenance strategies
- Maintenance KPIs and benchmarking
- Continuous improvement systems

- Case Study: Safety-driven maintenance redesign reducing workplace incidents in heavy industry

Training Methodology

This course employs a participatory and hands-on approach to ensure practical learning, including:

- Interactive lectures and presentations.
- Group discussions and brainstorming sessions.
- Hands-on exercises using real-world datasets.
- Role-playing and scenario-based simulations.
- Analysis of case studies to bridge theory and practice.
- Peer-to-peer learning and networking.
- Expert-led Q&A sessions.
- Continuous feedback and personalized guidance.

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

Ready to enroll or request a customized program? Book online or contact us:

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