

**TRAINING TITLE**

**WORKSHOP MACHINERY MANAGEMENT: OPERATION AND MAINTENANCE**

**Training Duration**

**5 day**

**Training Venue and Dates**

<b>Ref. NO.</b>	<b>Workshop Machinery Management: ME197      Operation and Maintenance</b>	<b>5</b>	<b>11-15 Aug. 2025</b>	<b>\$5,500</b>	<b>Abu Dhabi, UAE</b>
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In any of the 4 or 5-star hotels. The exact venue will be informed later.

**Training Fees**

- \$5,500 per participant for Public Training includes Materials/Handouts, tea/coffee breaks, refreshments & Lunch

**Training Certificate**

**Define** Management Consultants Certificate of course completion will be issued to all attendees.

**TRAINING DESCRIPTION**

This course is designed to provide participants with a comprehensive understanding of workshop machinery, focusing on both its operation and maintenance. Participants will learn how to efficiently manage and operate workshop machines, ensure their optimal performance, and minimize downtime through effective maintenance strategies.

**TRAINING OBJECTIVES**

By the end of the course, participants will be well-equipped to manage workshop machinery efficiently, ensuring high performance, minimizing downtime, and reducing maintenance costs in their respective workplaces.

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**WHO SHOULD ATTEND?**

This course is ideal for:

- Maintenance engineers, technicians, and supervisors working with workshop machinery.
- Operations and production managers in manufacturing or engineering workshops.
- Those responsible for managing and maintaining workshop equipment.
- Anyone seeking to improve their technical skills in machinery operation, maintenance, and management.

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## **TRAINING METHODOLOGY**

A highly interactive combination of lectures and discussion sessions will be managed to maximize the amount and quality of information and knowledge transfer. The sessions will start by raising the most relevant questions and motivating everybody to find the right answers. You will also be encouraged to raise your own questions and to share in the development of the right answers using your own analysis and experiences. Tests of multiple-choice type will be made available on daily basis to examine the effectiveness of delivering the course.

Very useful Course Materials will be given.

- 30% Lectures
- 30% Workshops and work presentation
- 20% Group Work & Practical Exercises
- 20% Videos & General Discussions

## **COURSE PROGRAM:**

### **Day 1: Introduction to Workshop Machinery**

- Session 1: Overview of Workshop Machinery
  - Types of workshop machinery (e.g., CNC machines, lathes, milling machines, grinders, drills).
  - Key components and functions of different machines used in workshops.
  - Understanding the role of workshop machinery in manufacturing, production, and fabrication.
- Session 2: Basic Operations of Workshop Machinery
  - How to safely operate common workshop machines.
  - Basic machine setup and adjustments: speed settings, feed rates, tool selection, and material handling.
  - Introduction to machine controls, manual and automated systems, and operating software.
- Session 3: Safety Protocols and Best Practices
  - Understanding and applying safety protocols when operating machinery.
  - Use of personal protective equipment (PPE), machine guarding, and hazard identification.
  - Emergency shutdown procedures and proper emergency response techniques.

### **Day 2: Machinery Setup, Calibration, and Optimization**

- Session 1: Setting Up Workshop Machinery

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- How to prepare and set up workshop machinery for specific tasks (cutting, grinding, milling, etc.).
- Importance of proper calibration for accurate machining and part production.
- Adjusting machine parameters for optimal performance.
- Session 2: Optimizing Machine Operations
  - Techniques for improving efficiency and reducing cycle times.
  - Identifying and troubleshooting common operational inefficiencies.
  - Balancing machine speed, feed rates, and tool wear to ensure quality output.
- Session 3: Preventive Maintenance Overview
  - Introduction to preventive maintenance (PM) practices and their importance.
  - Key PM tasks: cleaning, lubrication, checking for wear, and inspecting key components.
  - Scheduling and documenting maintenance tasks to ensure long-term machine reliability.

### Day 3: Maintenance Practices for Workshop Machinery

- Session 1: Types of Maintenance: Corrective, Preventive, and Predictive
  - Understanding corrective maintenance (CM): identifying and addressing machine failures.
  - Preventive maintenance (PM): regular inspection and servicing to avoid unexpected breakdowns.
  - Predictive maintenance (PdM): using data and sensors to predict potential failures before they occur.
- Session 2: Maintenance Tools and Techniques
  - Overview of tools required for machine maintenance (e.g., wrenches, torque tools, lubricants, cleaning equipment).
  - Techniques for performing routine machine maintenance, including lubrication, cleaning, and part replacement.
  - Calibration of measuring instruments and ensuring machine accuracy.
- Session 3: Common Machine Failures and Troubleshooting
  - Identifying common mechanical, electrical, and operational faults in workshop machinery.
  - Troubleshooting techniques for diagnosing and fixing machine problems.
  - When to repair, replace, or upgrade components.

### Day 4: Advanced Maintenance Techniques and Machine Lifecycle Management

- Session 1: Advanced Troubleshooting and Diagnostics

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- In-depth troubleshooting of complex machine issues, such as electrical failures, mechanical breakdowns, and software malfunctions.
- Using diagnostic tools like vibration analysis, thermography, and oil analysis.
- Session 2: Managing Machine Lifecycles
  - Understanding the concept of asset management and machinery lifecycle.
  - Evaluating machine performance over time and making decisions on repair, replacement, or upgrading.
  - Developing a machine replacement strategy based on performance and cost.
- Session 3: Spare Parts Management
  - Understanding the importance of spare parts inventory management.
  - Best practices for maintaining a sufficient supply of critical parts and tools.
  - How to streamline parts ordering and reduce downtime during repairs.

#### Day 5: Workshop Machinery Efficiency and Cost Management

- Session 1: Maximizing Machine Efficiency
  - Techniques for reducing machine downtime, increasing throughput, and improving product quality.
  - Understanding energy consumption and strategies to reduce energy costs in machinery operations.
- Session 2: Cost Management in Machinery Operation and Maintenance
  - Understanding the cost factors involved in operating and maintaining workshop machinery.
  - Developing cost-effective strategies for maintenance and repair.
  - Key performance indicators (KPIs) for evaluating machinery efficiency and cost-effectiveness.
- Session 3: Continuous Improvement and Technological Advancements
  - How to apply continuous improvement methodologies (e.g., Kaizen, Six Sigma) to machinery management.
  - Understanding technological advancements in machinery (e.g., automation, IoT) and how they impact maintenance and operations.
  - Leveraging data analytics and digital tools for predictive maintenance and machine optimization.

#### **NOTE:**

**Pre-& Post Tests will be conducted.**

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Case Studies, Group Exercises, Group Discussions, Last Day reviews, and assessments will be carried out.

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