QUEST
Professional Center

PROFESSIONAL TRAINING COURSE

Course No. 1631

Total Productive Maintenance (TPM) & Equipment Effectiveness Training Course

INDUSTRIAL ENGINEERING & OPERATIONAL EXCELLENCE
INDUSTRIAL ENGINEERING, MAINTENANCE & OPERATIONS

DURATION
5 Days

DELIVERY
Classroom

Course Overview

The Total Productive Maintenance (TPM) & Equipment Effectiveness Training Course is a practical and comprehensive program designed to strengthen organizational capability in equipment reliability, maintenance performance, operational efficiency, and asset utilization. The course provides participants with a structured understanding of Total Productive Maintenance and how it can be integrated with operations, maintenance, engineering, quality, and continuous improvement practices.

Equipment effectiveness is a critical component of operational performance because unplanned downtime, equipment failures, speed losses, quality problems, and inefficient maintenance practices can significantly affect productivity, operating costs, delivery performance, and asset utilization. This training course provides practical methods for identifying equipment losses, measuring performance, analyzing causes, and implementing improvement initiatives that support more stable and reliable operations.

The program covers the core principles of Total Productive Maintenance, Overall Equipment Effectiveness, autonomous maintenance, planned maintenance, focused improvement, equipment failure analysis, loss elimination, changeover improvement, maintenance performance indicators, and continuous improvement. Participants will learn how to use operational and maintenance data to identify priorities and develop more proactive approaches to equipment management.

The Total Productive Maintenance (TPM) & Equipment Effectiveness Training Course is suitable for manufacturing organizations, oil and gas companies, energy and utilities organizations, petrochemical operations, logistics facilities, government entities, and large corporations that depend on reliable equipment and operational assets. The course also supports stronger collaboration between operations, maintenance, engineering, and quality teams to improve equipment performance and sustain operational excellence.

Objectives

- Analyze the fundamental principles of Total Productive Maintenance and their relationship with equipment reliability and operational excellence during the training program.
- Develop a practical understanding of TPM pillars and the responsibilities of operations, maintenance, engineering, and quality teams.

- Evaluate equipment effectiveness using availability, performance, quality, and Overall Equipment Effectiveness measures.
- Analyze equipment losses, downtime, speed losses, defects, and operational interruptions to identify high-priority improvement opportunities.
- Apply autonomous maintenance practices to strengthen operator involvement in equipment care and early problem detection.
- Design planned maintenance strategies based on equipment condition, failure history, operational requirements, and performance data.
- Apply focused improvement techniques to address recurring equipment problems and reduce operational losses.
- Improve equipment changeover and setup activities by identifying opportunities to reduce unnecessary downtime.
- Assess maintenance and reliability performance using appropriate maintenance and equipment effectiveness indicators.
- Strengthen cooperation between operations, maintenance, engineering, and quality teams to support shared equipment performance objectives.
- Implement practical mechanisms for monitoring TPM initiatives and verifying the sustainability of equipment improvements.
- Develop a workplace-focused plan for improving equipment effectiveness and implementing Total Productive Maintenance practices by the end of the course.

Who Should Attend

The Total Productive Maintenance (TPM) & Equipment Effectiveness Training Course is designed for managers, supervisors, engineers, and specialists responsible for equipment performance, maintenance, reliability, production, and operational excellence. It is particularly suitable for Maintenance Managers, Operations Managers, Production Managers, Plant Managers, Maintenance Engineers, Reliability Engineers, Industrial Engineers, Equipment Engineers, Maintenance Supervisors, Production Supervisors, Asset Management Specialists, Operational Excellence Professionals, and Continuous Improvement Specialists.

The course is also relevant to asset management, reliability, engineering, quality, production, facilities, and operations teams, as well as professionals leading performance improvement initiatives. Senior managers, department heads, executives, and decision makers responsible for asset utilization, operational efficiency, maintenance strategy, and production performance can also

benefit from the program. It is particularly applicable to manufacturing, oil and gas, petrochemicals, energy, utilities, logistics, and other asset-intensive environments.

Learning Outcomes

- Explain the core principles of Total Productive Maintenance and its contribution to operational excellence.
- Calculate and interpret Overall Equipment Effectiveness using availability, performance, and quality measures.
- Identify and categorize major equipment losses affecting productivity, reliability, and operational performance.
- Analyze downtime and equipment failure data to identify high-priority performance problems.
- Apply autonomous maintenance practices to support operators in equipment inspection, care, and early abnormality detection.
- Develop planned maintenance approaches based on equipment requirements, performance data, and failure history.
- Apply focused improvement techniques to address equipment losses and improve operational performance.
- Analyze recurring equipment failures and develop appropriate corrective and preventive actions.
- Evaluate equipment setup and changeover activities and identify opportunities for reducing downtime.
- Select appropriate maintenance, reliability, and equipment effectiveness indicators for performance monitoring.
- Strengthen collaboration between operations, maintenance, engineering, quality, and asset management teams.
- Prepare a practical TPM and equipment effectiveness improvement plan that can be applied within the workplace.

Course Outline

DAY 01

Total Productive Maintenance Foundations and Equipment Effectiveness

- Understanding Total Productive Maintenance and its role in operational excellence.
- Evolution, principles, objectives, and organizational requirements of TPM.
- Linking maintenance, production, quality, reliability, and asset management.
- Defining shared responsibilities between operations, maintenance, engineering, and quality teams.
- Understanding equipment losses and their impact on productivity, cost, quality, and operational continuity.
- Introduction to Overall Equipment Effectiveness and its three core components.
- Understanding availability, performance, and quality measurements.
- Establishing equipment performance baselines and identifying improvement opportunities.

> **PRACTICAL APPLICATION OR DISCUSSION**
>
> Calculate Overall Equipment Effectiveness for a selected operation and identify the major sources of equipment loss.

DAY 02

Autonomous Maintenance and Operator Involvement

- Understanding autonomous maintenance and its role within Total Productive Maintenance.
- Defining operator responsibilities for basic equipment care and condition monitoring.
- Cleaning, inspection, lubrication, tightening, and basic equipment care practices.
- Identifying abnormal conditions and early indicators of equipment deterioration.
- Developing daily and weekly equipment inspection standards.
- Identifying critical inspection points and appropriate response requirements.
- Building operator capability and ownership of equipment condition.
- Strengthening cooperation between operators, maintenance technicians, and engineers.

DAY 02 — CONTINUED

> **PRACTICAL APPLICATION OR DISCUSSION**
>
> Develop an autonomous maintenance checklist for a selected piece of equipment and identify conditions requiring maintenance intervention.

DAY 03

Planned Maintenance, Reliability, and Failure Analysis

- Understanding planned maintenance and its relationship with equipment reliability.
- Developing preventive and predictive maintenance strategies based on equipment requirements.
- Analyzing equipment failure records, downtime history, and failure patterns.
- Understanding recurring failures, random failures, and progressive equipment deterioration.
- Using maintenance data to identify critical equipment and improvement priorities.
- Applying Root Cause Analysis to recurring equipment failures.
- Developing corrective and preventive actions for repeated equipment problems.
- Selecting and monitoring maintenance and reliability performance indicators.

> **PRACTICAL APPLICATION OR DISCUSSION**
>
> Analyze an equipment failure history, identify major causes, and develop an improved maintenance strategy.

DAY 04

Focused Improvement and Equipment Loss Elimination

- Understanding focused improvement and its role in eliminating operational losses.
- Identifying, categorizing, and prioritizing major equipment losses.
- Analyzing unplanned downtime and its impact on production performance.
- Reducing speed losses and improving equipment operating stability.
- Identifying quality losses associated with equipment condition and performance.
- Improving equipment setup and changeover activities.
- Applying continuous improvement methods to equipment and operational problems.

DAY 04 — CONTINUED

- Using performance data to evaluate the impact of improvement initiatives.
- Developing practical improvement solutions for priority equipment losses.

PRACTICAL APPLICATION OR DISCUSSION

Select a major equipment loss, analyze its causes, and design a measurable focused improvement initiative.

DAY 05

TPM Implementation, Performance Management, and Sustainability

- Developing a practical framework for implementing Total Productive Maintenance.
- Prioritizing equipment and improvement opportunities according to operational impact.
- Developing maintenance and equipment effectiveness performance indicators.
- Establishing mechanisms for regular review of equipment and maintenance performance.
- Integrating operations, maintenance, engineering, quality, and asset management activities.
- Managing organizational change and strengthening adoption of TPM practices.
- Standardizing equipment inspection, maintenance, operating, and care procedures.
- Using performance results to drive continuous improvement initiatives.
- Establishing mechanisms for sustaining improvements and preventing recurring losses.
- Integrating TPM with asset management, reliability engineering, and operational excellence.

FINAL WORKSHOP, ACTION PLAN, OR IMPLEMENTATION EXERCISE

Develop a comprehensive TPM and equipment effectiveness improvement plan covering current performance, equipment losses, performance indicators, maintenance strategy, improvement initiatives, responsibilities, implementation priorities, and monitoring mechanisms.

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Register or Request More Information

Course page: https://quest-training.com/courses/total-productive-maintenance-tpm-equipment-effectiveness-training-course
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