BLACKBIRD FOR TRAINING

Maintenance, Planning, Scheduling & Control

4 – 15 April 2027
Amman (Jordan)

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Ref: 3337_292300 **Date:** 4 – 15 April 2027 **Location:** Amman (Jordan) **Fees:** 8800 GBP

Introduction

Effective maintenance planning, scheduling, and control form the backbone of sustainable operations in every successful organization. As businesses expand and technologies evolve, the role of maintenance grows more strategic, impacting productivity, equipment reliability, safety, and overall operational efficiency. To master modern maintenance practices, professionals must understand not only what maintenance is and what maintenance means, but also how to implement advanced planning techniques and design a comprehensive maintenance plan that integrates preventive, corrective, and predictive activities.

This course offers a deep exploration of maintenance planning, scheduling, and work control, starting with the history and objectives of maintenance and progressing toward advanced strategies used by leading industries. Participants will study work order systems, preventive maintenance scheduling, lifecycle costing, resource allocation, shutdown planning, materials management, and safety protocols — all aligned with international best practices.

The program also emphasizes maintenance strategy, maintenance scheduling, and maintenance control, exploring the definition of maintenance strategies, how to develop a maintenance improvement strategy, and the importance of effective performance measurement using relevant KPIs. By the end of this course, participants will understand not only the technical side of maintenance, but also how maintenance influences cost, safety, resilience, and long-term asset performance.

Course Objectives

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

- Apply advanced methodologies for planning, scheduling, and controlling maintenance operations.
- Manage corrective, preventive, predictive, and major shutdown maintenance activities.
- Analyze operational challenges and identify the requirements of successful maintenance planning.
- Use effective KPIs to monitor and improve maintenance performance.
- Understand different types of maintenance strategies and apply them according to organizational needs.
- Develop structured maintenance plans, create planned maintenance schedules, and oversee execution.
- Implement advanced planning and scheduling techniques inspired by production planning and control.
- Control maintenance costs by optimizing resources, inventory, and equipment life cycle decisions.
- Improve the overall efficiency and reliability of the maintenance department.



Course Outlines

Day 1: Objectives of Maintenance

The course begins with a fundamental overview of maintenance and its role in operational stability.

Topics include:

- What is maintenance? A comprehensive explanation of maintenance meaning, its purpose, and its importance.
- Evolution of maintenance: From reactive maintenance to preventive and predictive strategies.
- Challenges facing maintenance: Common issues such as resource limitations, delays, and equipment failures — and how to overcome them.
- Types of maintenance strategies: corrective, preventive, predictive, condition-based, and reliability-centered maintenance.
- Maintenance role classification: Roles, responsibilities, and functions within a maintenance team.
- Customer service in maintenance: The connection between maintenance quality and customer satisfaction.

This foundation clarifies the concept of “high maintenance” and why certain systems or facilities require extensive maintenance planning.

Day 2: The Work Order System

A well-designed work order system is crucial for maintenance planning and control.

Topics include:

- Purpose of the work order system and its role in organizing maintenance tasks.
- Required information: What data should be documented in each work order?
- Job estimating methods: How to accurately estimate time, labor, and materials.
- Prioritizing maintenance work: Balancing daily tasks with urgent corrective maintenance.

This module lays the groundwork for effective maintenance planning and scheduling and prepares participants to create structured workflows.

Days 3-4: Preventive Maintenance PM

Preventive maintenance is essential to reducing downtime and maintaining equipment reliability.

Participants will learn:



- The purpose and importance of preventive maintenance.
- Developing a preventive maintenance program suited to organizational needs.
- How to establish and implement preventive maintenance schedules.
- Breaking a facility into logical zones for easier PM planning.
- Developing equipment lists and maintenance task sheets.
- Writing effective PM job descriptions.
- Creating equipment manuals for standardized maintenance procedures.
- Setting up inventory systems to support preventive maintenance requirements.

These sessions connect directly to planned maintenance definitions, helping participants understand how to create and manage a planned maintenance schedule.

Day 5: Planning and Scheduling Major Maintenance Work Orders and Shutdowns

Major maintenance jobs and shutdown events require strategic planning.

Topics include:

- Planning and scheduling major work orders.
- Breaking down large maintenance projects using Work Breakdown Structures.
- Applying the Critical Path Method to control complex schedules.
- Ensuring optimized resource utilization during shutdowns.

Participants learn how to control project schedules effectively, ensuring maintenance activities align with operational needs.

Day 6: Resource Scheduling, Leveling & Equipment Life Cycle Costing

This day focuses on cost-effectiveness and financial planning.

Topics:

- Capital budgeting for maintenance projects.
- Accounting Rate of Return: Evaluating financial performance of maintenance investments.
- Payback method: Estimating how fast maintenance investments generate returns.
- Net Present Value: Assessing long-term financial feasibility.
- Replacement analysis: Deciding when to repair or replace equipment.

These topics reinforce the importance of financially smart maintenance strategies.

Day 7: Planning and Controlling Maintenance Materials

Materials management is critical for uninterrupted maintenance operations.

Topics include:



- Inventory cost management and its effect on maintenance budgets.
- Factors influencing decisions on spare parts and materials.
- Economic Order Quantity EOQ: Determining optimal order quantities.
- Total material cost: Analyzing and minimizing overall inventory cost.
- When to order: Establish reorder points based on consumption and criticality.

Participants gain a strong understanding of materials planning within maintenance operations.

Day 8: Safety in Maintenance

Safety forms a non-negotiable pillar of maintenance management.

Included topics:

- Debunking myths about safety.
- Causes of workplace accidents and common injury patterns.
- Unsafe acts vs. unsafe conditions: Recognizing and reducing safety risks.
- Cost of accidents: Analyzing direct and indirect financial impacts.
- Conducting safety audits to ensure compliance and continuous improvement.

This day emphasizes how safety integrates with maintenance strategy development and operational efficiency.

Days 9-10: Controlling Maintenance Work

The final part of the course focuses on monitoring, analysis, and continuous improvement.

Topics include:

- Measuring performance using relevant KPIs.
- Identifying data sources and using them for decision-making.
- Understanding backlog indices and how to reduce them.
- Schedule compliance: Ensuring maintenance activities follow the planned timeline.
- PM and emergency indices: Evaluating the effectiveness of preventive vs. emergency maintenance.
- Productivity indicators for maintenance teams.

These sessions solidify participants' ability to design and maintain an effective maintenance control system.

Why Attend This Course: Wins & Losses!

This course is an ideal opportunity for professionals seeking excellence in maintenance management. Key benefits include:



- Enhanced Maintenance Efficiency: Build and execute a strong maintenance planning and scheduling strategy that reduces downtime and boosts equipment reliability.
- Cost Reduction & Better Productivity: Optimize resources, control inventory costs, and apply financially efficient maintenance strategies.
- Stronger Safety Practices: Identify risks, prevent accidents, and implement robust safety controls to protect employees and assets.
- Leadership & Strategy Development: Develop the skills needed to lead maintenance teams, design maintenance improvement strategies, and drive continuous improvement.
- KPI-Based Performance Evaluation: Master the use of key performance indicators to measure progress and align maintenance performance with organizational goals.
- Professional Certification Readiness: Gain the competencies required to pursue a certificate in maintenance planning and scheduling based on global best practices.

Conclusion

The Maintenance Planning, Scheduling, and Control course is an essential program for anyone responsible for maintaining assets, equipment, or facilities. By mastering maintenance planning, maintenance scheduling, and maintenance control, participants will be equipped to build reliable maintenance systems that reduce costs, enhance operational performance, and support business continuity.

With the knowledge and tools gained through this training, you will be capable of designing a comprehensive maintenance strategy, developing effective maintenance plans, scheduling maintenance activities with precision, and controlling performance using measurable indicators.

Join us to advance your career and become a leader in maintenance management—where reliability, safety, and performance meet excellence.

