Certified Courses

Professional Certificate

Fundamentals of Maintenance Best Practice (in Arabic)

Why Attend

- This course covers the core principles of maintenance best practice. From Preventive and Predictive Maintenance, to Reliability Centered Maintenance (RCM) and Root Cause Failure Analysis (RCFA). Participants will learn the fundamentals of choosing the correct maintenance strategy, including by budget, risk or suitability to the asset. Computerized Maintenance Management Systems (CMMS) will be explained, along with their effectiveness for managing a successful maintenance program. Finally, participants will gain an insight into maintenance Key Performance Indicators (KPI's) and how their organizations can improve maintenance programs by following best in industry examples.

Course Methodology

- This course is based on open discussions, question and answer sessions, group exercises, activities, videos, case studies and presentations based on best practices and core principles.

Course Objectives

By the end of the course, participants will be able to:

- Understand the lifecycle of assets (equipment) and the role of maintenance in extending the asset life
- Understand different maintenance types such as preventive and predictive maintenance, Reliability Centered Maintenance (RCM) and Root Cause Failure Analysis (RCFA)
- Demonstrate how to choose the most cost-effective maintenance strategy for each asset to reduce breakdowns, risks and costs
- Use the Computerized Maintenance Management System (CMMS) efficiently to implement a successful maintenance management program
- Apply asset and maintenance Key Performance Indicators (KPIs) and compare with KPIs of world class international organizations

Target Audience

- This course is suitable for any participants relatively new to the maintenance field/industry; this includes maintenance engineers, maintenance technicians, maintenance officials, maintenance supervisors, operators, operations supervisors, operations engineers and technicians.

Target Competencies

- Maintenance Management
- Failure Analysis
- Cost Optimization
- Materials Management
- Performance Management

Maintenance industry concepts

- Definition of maintenance
- Definition of maintenance management and reliability
- The importance and objectives of maintenance
- The relation between maintenance and reliability
- Types of maintenance tasks
- Maintenance, Repair, and Overhaul (MRO)
- Asset definition

Maintenance applications

- Facility and buildings maintenance
- Facility maintenance versus industrial maintenance versus property maintenance
- Equipment maintenance
- Industries that use equipment maintenance
- Fleet maintenance
- Organizations that use fleet maintenance

Key maintenance types and strategies (Part 1)

- Reactive maintenance definition
- Reactive maintenance workflow
- Types of reactive maintenance
- Run to Failure (RTF) maintenance
- RTF workflow
- Know when to use RTF maintenance
- Benefits of RTF maintenance
- Advantages and disadvantages of reactive maintenance
- Corrective maintenance definition and application
- Fundamental requirements of effective Preventive Maintenance (PM)

Planned and scheduled maintenance

- Planned maintenance workflow
- Benefits of planned maintenance
- Scheduled maintenance workflow
- Benefits of scheduled maintenance
- Scheduled maintenance vs. Deferred maintenance

Key maintenance types and strategies (Part 2)

- Predictive Maintenance (PdM)
- Predictive Maintenance definition
- Predictive Maintenance workflow
- Implementing Predictive Maintenance
- Types of Predictive Maintenance
- Condition-Based Maintenance
- Vibrational Analysis - Criteria
- Acoustical Analysis (Ultrasonic) - Criteria
- Infrared Analysis - Criteria
- Oil Analysis - Criteria
- The Return on Investment (ROI) of Predictive Maintenance
- The difference between preventive and predictive maintenance

Basis and tools for choosing the right maintenance strategy

- Critical assets
- Legal requirements
- Work planning
- Frequency
- Budget
- Communication
- Reliability Centered Maintenance (RCM)
- RCM definition
- RCM workflow
- Evaluation criteria for RCM
- Components of an RCM program
- RCM vs. Preventive Maintenance

Maintenance objectives and challenges

- Optimum availability
- Optimum operating condition
- Maximum utilization of maintenance resources
- Optimum equipment life
- Minimum spares inventory
- Ability to react quickly
- Maintenance policy and strategy

Failure analysis

- Root Cause Analysis (RCA)
- 5 Whys
- Fault Tree Analysis
- Fishbone diagram
- Implementing RCA
- Failure codes and types
- Failure Modes and Effects Analysis (FMEA) method
- Failure consequences

Maintenance technologies: Computerized Maintenance Management System (CMMS)

- CMMS Definition
- Benefits of a CMMS
- CMMS implementation
- Before implementing a new CMMS
- Post-Implementation
- Utilizing data from the CMMS
- Improving maintenance scheduling and PM/PdM improvement
- Tracking budgets

Maintenance documents and documentation

- Work requests
- Work request workflow
- Types of work requests
- How work requests improve maintenance
- Work orders
- Work order workflow
- Types of work orders
- Work orders improve maintenance
- Bill of Materials (BOM)
- Components of a Bill of Materials
- Application Parts List (APL)
- APL vs. BOM
- Components of an Application Parts List
- Lockout Tagout (LOTO)
- LOTO process
- Importance of LOTO
- Standardized maintenance management process

Maintenance performance management

- Key Performance Indicators (KPIs) definition
- KPIs objectives
- KPIs types (leading and lagging KPIs)
- Examples of important KPIs
- Maintenance performance measurement
- Benchmarking against best in industry

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