

Maintenance Planning & Scheduling & Work Control

Course general description:

The aim of a Maintenance Planning & scheduling is to maximize production equipment effectiveness in terms of economic efficiency and profitability. The maintenance planning & scheduling is effective if every effort is applied to eliminate in every case the cause of lost production due to equipment failure or to maximize equipment effectiveness.

The most efficient way of achieving this goal is through proper maintenance planning & scheduling. Hand-on experience is crucial for performing successful maintenance. Yet, many new engineers lack the experience to successfully manage a program. This is why so many readers regard the Maintenance Planning as the chief authority for establishing effective maintenance management in the real world. It is designed to further develop many existing discussions in a more comprehensive and helpful way.

Audience:

This course is designed for:

1. Operations and maintenance engineers
2. Planning engineers, planners and qualified assistance planners
3. Maintenance managers, maintenance engineers
4. Maintenance Supervisors and qualified senior technicians
5. Anyone who wishes to update themselves on modern maintenance planning technologies, judge the suitability of these technologies for their needs, and learn how to implement them for the benefit of their organizations

Course objectives:

At the end of this course participants will be able to understand and practice the basics and fundamentals of the following Maintenance Planning foundation:

- Overview on maintenance
- Maintenance Policies & Philosophy (PM, CM, PdM, RCM..etc.)
- Maintenance planning & Scheduling
- Overview on Computerized Maintenance Management System
- Manage through KPI's & Benchmark & Audit
- Maintenance Activities Management
- Root Cause Analysis (RCA)
- Maintenance budget and cost reports
- Spare Parts management
- Maintenance contracts & outsourcing strategy & contractor management

Course duration:

5 days

Course location:

Cairo-Dubai-Istanbul

Course contents:

Day-1

- General definitions
- Overview on maintenance
- Maintenance classification based on (Cost, Priorities, Policies)

- Effective Maintenance Management Process
- Understand the different between Preventive Predictive Maintenance (PM & PdM)
- Predictive Maintenance techniques
- Understand the different between Proactive & Reactive Maintenance
- Workshop to understand the different between PM & RTF policies
- Overview on Advanced Maintenance Polices (RCM, RBI,TPM)
- How to utilize RCM and RBM to minimize the failures
- Criticality Analysis
- Reliability Excellence
- Case Study to understand the meaning of maintenance planning
- Understand the different between Maintenance planning & Scheduling
- Workshop to understand how to calculate Manpower size & Maintenance Cost and work load distribution.

Day-2

- The road to Asset Management
 - Asset Management Standardization
 - Asset Management Cycle
 - PAS-55-1:2008 & PAS-55-2:2008
 - ISO-55000 & 55001 & 55002
 - Key elements of Asset Management System
- Overview on CMMS & ERP
- What Should CMMS & ERP do
- CMMS benefits
- CMMS implementation process
- How to utilize CMMS in Asset Management & Work Management & Planning
- Controlling Maintenance Work
 - Understand backlog
 - Backlog route cause
 - Backlog monitoring
- Causes of Equipment Failures
- Understand the Failure Code Hierarchy
 - Overview on Failure classes & problem & Cause & Remedy
- Applying Root Cause Analysis (RCA)
 - Failure patterns and the different between RCA & RCFA
 - Choosing the appropriate maintenance task
 - The role of operators: Autonomous Maintenance
 - Finding root causes to improve maintenance.
 - Useful tools for Determining Root Cause
 - Utilize the 5 whys method & Fishbone diagram to eliminate defects.
- Case studies

Day-3

- Maintenance Activities Management
 - Work Scope development & Work Package Preparation
 - . Procedures
 - . Resources Estimations (Manpower & Tools & Material)
 - . Building a Job Plan
 - . Overview on Material Requisitions & Purchase Requisitions
 - . Overview on Safety Plan (Hazards & Precautions & JSEA & PTW)
 - Time management (Scheduling)
 - . Estimated Time
 - . Critical Path Analysis
 - . Pert and Gantt Diagrams
 - . Milestones
 - . Possible causes of Delay
 - Progress report (S-Curve)
 - Work completion and reporting
 - Analysis & Improvement
 - Case study (Shutdown Management using MS-Project & Excel)

Day-4

- Maintenance Assessments & Benchmarking
 - Process audits
 - Where are we now – benchmarking & assessments?
 - What to improve – goal setting
 - Action plan
 - Developing an improvement action plan and fitting in modern maintenance Technologies
- Performance Management & Implementation aspects
 - Manage using KPI's
 - What is the Overall equipment effectiveness (OEE)?
 - What is Total effective equipment performance (TEEP)?
 - Workshop to Calculate KPI's, OEE and TEEP
 - Performance management: behavior of people
- Continuous improvement
- Implementation aspects

Day-5

- Maintenance contracts & outsourcing strategy & contractor management
- Recourse optimization using Spare Parts Management
 - Material Classifications
 - Understand the meaning of Lead Time
 - Criticality of utilization
 - Law of Pareto
 - Index of Rotation (LIR & NIR)
 - Spare Parts tests

- Stock holding costs
- Stock ordering costs
- Economical order quantity (EOQ)
 - Workshop to calculate EOQ and Reorder level
- Maintenance budget & Cost Control
 - . Policies, Procedures & Rules
 - . Program & Budget
 - . Budgeting Principals & objectives
 - . Budget advantages
 - . Budget types
 - . Type of Costs
 - . Responsibility Centers
 - . Oil agreements and chart of accounts
 - . Distinguish between Capex and Opex
 - . Case Study
 - . Case study from one of gulf oil company
 - Finance business process
 - Budget Procedure
 - Budget in Spot (AFE & Fund Check)
 - Chart of account
 - Sample of budget request form
 - Sample of maintenance normal operating preparation sheet
(Man powers & Materials & Services)
 - . Why do you need a budget for maintenance?
 - . Sources of information for the preparation of Budget Maintenance
 - . Aggregation of the activities in events
 - . Classification of Maintenance activities by types
 - . Definition of volumes and resources
 - . Maintenance contracts & outsourcing strategy & contractor management
 - . Third Party Contractors
 - . Costs for Origin
 - . Costs for Destination
 - . Updating and prediction
 - . Management and control of operations
 - . Control of budget
 - . Case study
 - . Workshop to calculate oil and fuel consumption.
- Describe the difference between a static budget and a flexible budget.
- Develop a flexible budget.
- Define the master budget and explain its major benefits to an organization.

Methodology:

- 50% lectures & concepts

- 10% Videos
- 10% Case studies
- 10% Exercises
- 10% Discussions
- 10% Software (if applicable or examples)

Course code: (TEME018)