

Professional Engineering Services

Maintenance Planning, Scheduling & Workload

Course Duration 5 Days

Designed For

Delegates should represent a wide range of personnel in the organization who are Involved in, or dependent on, effective maintenance planning, scheduling and work Control. These should include:

- Maintenance Managers
- Maintenance Supervisors
- Personnel designated as planners, or identified to become planners
- Key leaders from each Maintenance craft
- Key Operations Supervisors
- Materials Management Managers/Supervisors
- CMMS Administrator or key users
- Key Maintenance support assistants
- Other stakeholders in the Work Planning Function

Course Objectives

Leading industrial organizations are evolving away from reactive ("fix-it-when-it breaks") Management into predictive, productive management ("anticipating, planning and fix-it-before-it-breaks"). This evolution requires well-planned and executed actions on several fronts:

- Identify planning best practices and key elements for taking action on them
- Understand how world-class organizations solve common planning problems,
- Evaluate your practices compared to those of others
- Improve the use of your information and communication tools
- Improve productivity through use of better, more timely information
- Create and preserve lead-time in work management and use it for planning and Scheduling resources
- Improve consistency and reliability of asset information
- Achieve more productive turnarounds
- Optimize preventive and predictive maintenance strategies

Course Contents:

Part I: Modern Maintenance Management Practice in Perspective

- Introduction to Maintenance Planning, Scheduling & Workload
- Maintenance Concepts & definitions
- Maintenance in the Business Process
- Evolution in Maintenance Management
- Business Objectives Examples

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- Maintenance objectives and benefits
- The Strategic Importance of Maintenance and Reliability
- Modern Maintenance Management Functions
- Maintenance Engineering Objectives
- *Maintenance Terms , Definitions and Key Performance Area*
- Modern Maintenance Management Practice in Perspective
- Introduction to Maintenance Planning, Scheduling & Workload
- Business Objectives Examples
- Maintenance Management
- Preventive Maintenance
- Corrective Maintenance

Part II: Maintenance Policies and Logistics Planning

- *Introduction*
- Maintenance Management
- *Material Control*
- *Work Order System*
- *Equipment Records*
- PM & CM
- *Job Planning and Scheduling*
- *Backlog control and priority system*
- *Performance Measurements*
- Maintenance KPI's
- *How to Control a Maintenance Project?*
- Methods of Applying PERT & CPM
- Critical Path Method Advantages and Disadvantages
- Human Errors in Maintenance
- Maintenance and Reliability
- Lifetime Failure Rates
- Providing Redundancy
- Maintenance Decisions
- Operator-Ownership Approach
- Contract for Preventive Maintenance

- Features of A Good Maintenance Facility
- Total Productive Maintenance
- Other Techniques for Establishing Maintenance Policies
- Logistics Planning:
 - ✚ Introduction & Historical Information
 - ✚ Inventory Purposes
 - ✚ Basic Areas of MM Make Decisions
 - ✚ ABC Approach

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- ✚ Steps for Grouping annual Usage
- ✚ Items Cost & Annual Consumption
- ✚ Control Policies
- ✚ Quantity Models
- ✚ Types Of Costs (Holding, ordering & setup)
- ✚ Safety Stock
- ✚ Increasing / Decreasing Maintenance Inventory-associated Factors
- ✚ Estimating Spare Part Quantity Model

Part III: Failure Management Program Development FMEA :

- Quality, Reliability and Failure Prevention
- Failure Mode & Effects Analysis (FMEA)
- FMEA/FMECA History & Guidelines
- FMEA Purposes & benefits
- SFMEA, DFMEA, and PFMEA
- FMEA Objectives
- Potential Applications & outcomes for FMEA
- How to FMEA
- Block Diagram
- Assumptions of DFMEA
- Potential Failure mode
- Potential Effect(s) of Failure
- Severity , Classification, Occurrence, Current Design Controls & Detection
- RPN (Risk Priority Number)
- Recommended Actions
- Responsibility & Target Completion Date
- Action Results
- Exercise Design FMEA
- Process FMEA
- PFMEA as a tool
- Risk Priority Number (RPN)
- Software Recommendations

- Bibliography

Part IV: Work Planning, Scheduling and Control

- Maintenance Pyramid of Excellence
- Maintenance Work Processes – Typical/Benchmark
- The Maintenance Cost Ratio
- Planning and Scheduling importance and definition
- Work Planning:
 - ✚ Maintenance planning horizons

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- ✚ Work Planning
- ✚ Job planning phase
- ✚ What does a Job Plan contain?
- ✚ Planning Process
- ✚ Job Plan Details
- ✚ Job Title and Scope
- ✚ Calculate Job Duration
- ✚ Maintenance Shutdown Timeframe
- ✚ Parts Required: What do we need to know about their availability?
- ✚ The Linked Maintenance & Materials Process
- ✚ Tools & special equipment?
- ✚ Pre-Job and post job Preparation
- ✚ Standard Job Plans and Safety requirements
- ✚ Contingency planning for critical jobs
- ✚ What is the Planner's Role?
- ✚ Key Roles and Relationships
- Work Scheduling:
 - ✚ Backlog
 - ✚ Net Capacity
 - ✚ WEEKLY NET CRAFT CAPACITY CALCULATION
 - ✚ Cycle Time
 - ✚ To schedule work
 - ✚ Weekly and daily Schedules
 - ✚ Schedule development
 - ✚ *Best Practice*
- Planning & Scheduling Tools

Part V: Information Management CMMS:

- Introduction
- Enterprise Asset Management EAM
- CMMS Capabilities, objectives, functions, benefits, statistics, tips and constraints.
- Steps to Select a CMMS:
 - ✚ Step 1 — Set up a selection committee

 - ✚ Step 2 — Perform system functional analysis
 - ✚ Step 3 — Identify potential vendors
 - ✚ Step 4 — Screen short list
 - ✚ Step 5 — Demo product
 - ✚ Step 6 — Make and validate selection
- CMMS Selection Criteria



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