



المركز العالمي للتدريب والتطوير
International Centre For Training & Development



ME165 Maintenance Management & Technology A to Z of Best Practices™



ACTVET
Abu Dhabi Centre for
Technical and Vocational
Education and Training
مركز أبوظبي
للتعليم والتدريب
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Course Introduction:

This course examines techniques for decision analysis with emphasis on prioritization and the decision making process to be carried out by Operation & Maintenance Professionals. Decision-making is the most central human activity, intrinsic in our biology and done both consciously and unconsciously. We need it to survive. Taking a decision is not just a question of selecting the best alternative. Often one needs to prioritize all the alternatives for resource allocation among a portfolio of option, or to examine the effect of changes introduced to initial judgments. We need to set priorities on these solutions according to their effectiveness by considering their benefits, costs, risks, and opportunities, and the resources they need.

This course will feature:

- Breaking a problem down into its constituent parts or components, in the framework of a hierarchy.
- Establishing importance or priority to rank the alternatives is a comprehensive & general way to look at the problem in a formal manner.
- Application of multi criteria decision-making (MCDM) to practical problems.
- Introduction to different operational research & management science methods.
- Enhance decision-making with goals and criteria & show how to measure and rank them

Course Objectives:

Upon successful completion of this course, the delegates will be able to:

- Provide a step-by-step guide to maintenance best practice starting with foundations and building up to best practice that will deliver maximum business benefits
- Instruct Maintenance optimization best practice techniques
- Provide opportunities to discuss the application of these best practices
- Provide an opportunity to learn these concepts through practical exercises

Who Should Attend?

This course is highly recommended to all Maintenance, Reliability, Engineering and technical support staff including leadership and management.

Course Outline:

Day 1:

Maintenance Management Best Practices: Systems, Tools & Techniques
An Overview of Key Maintenance Work Processes

- Introduction to Maintenance Management
- Definitions of key terms
- Types of Maintenance - Reactive, planned and improvement jobs, Preventive and Proactive

Maintenance Management Systems

- Maintenance Planning and Scheduling
- Computerized Maintenance Management Systems
- Developing Maintenance Key Performance Indicators

Preventive Maintenance and Maintenance Strategy

- Maintenance Organization Structure and Policies
- Developing and Implementing a Preventive Maintenance Program
- Applying Reliability Based principles to Maintenance Strategy Development

Day 2:

Maintenance Logistics and Cost Control

- Managing Maintenance Spare Parts and Logistics
- Optimizing Spare Parts Inventory Levels
- Maintenance Budgeting
- Controlling Maintenance Costs
- Introduction to Life Cycle Cost Concepts

Maintenance Team Work

- Engineering, Production & Maintenance Teams
- Benefits of Integrated teams
- Motivation and empowerment
- Total Productive Maintenance Concepts
- Implementing Team Based Continuous Improvement in Maintenance

Maintenance Technology Best Practices: Inspection, Analysis & Monitoring

Failure of Machines and Inspection Based Failure Analysis

Causes of Machinery Failure

- Wear Mechanisms
- Fatigue
- Fretting
- Corrosion and Electrolytic

Day 3:

Fundamental Machine Problems

- Balance Problems
- Alignment Problems
- Machinery Mounting Problems

Component Failure

- Plain Bearings
- Rolling Element Bearings
- Couplings
- Seals
- Gears Drives
- Belt Drives

Day 4:

Statistical Failure Analysis and Reliability

- Job Feedback and the Importance of History Records
- Pareto Effects
- Elementary Statistics
- Collection, Analysis, Representation and Interpretation of Statistical Data
- Reliability Models
- Maintenance Cost Optimization

Condition Based Maintenance

The Condition Based Approach

- What to Monitor and Where
- Condition Monitoring Systems
- Trending of Monitored Data
- Frequency of Measurement
- Parameter Symptom Limits
- Remaining Life Prediction

Day 5:

Machinery Condition Monitoring

- General Purpose CM
- Thermal Monitoring
- Lubricant Monitoring
- The Essentials of Vibration Monitoring
- What is Vibration
- How to Measure Vibration
- Where to Measure Vibration

- How to Represent Vibration

Vibration Analysis

- Overall and Spectral Representation
- The Big Five Machine Faults
- Detecting Faults Using Vibration
- Diagnosing Faults Using Vibration

Course Certificate:

International Center for Training & Development (ICTD) will award an internationally recognized certificate(s) for each delegate on completion of training.

Course Methodology:

A variety of methodologies will be used during the course that includes:

- (30%) Based on Case Studies
- (30%) Techniques
- (30%) Role Play
- (10%) Concepts
- Pre-test and Post-test
- Variety of Learning Methods
- Lectures
- Case Studies and Self Questionnaires
- Group Work
- Discussion
- Presentation

Course Fees:

To be advised as per course locations. This rate includes participant's manual, Hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Timings:

Daily Course Timings:

08:00 - 08:20	Morning Coffee / Tea
08:20 - 10:00	First Session
10:00 - 10:20	Coffee / Tea / Snacks
10:20 - 12:20	Second Session
12:20 - 13:30	Lunch Break & Prayer Break
13:30 - 15:00	Last Session

