ICTD
المركز العالمي للتدريب والتطوير
International Centre For Training & Development

ME112
Advance Engineering Management & Maintenance Techniques (Preventive, Predictive & Cost Effective Operation Management)

Course Introduction:

With ever increasing demands from top management to do more work and decrease costs, investing in predictive maintenance and condition monitoring makes more sense today than ever. While many organizations still rely heavily on time based maintenance, it's a proven fact that condition monitoring maintenance requires less personnel and saves money and downtime.

This course provides the fundamentals of PDM and condition monitoring applicable to plants, facilities and manufacturing lines. Predictive Maintenance & Condition Monitoring will provide students with a framework to make the right decisions on what equipment needs condition monitoring, what technologies to use to meet their needs and how to measure the effectiveness of their decisions. In addition to exposing participants to the principles and options for a program, they will learn about real world applications that have benefited other successful maintenance programs.

By the end of this course, participants will be able to go back to their facility and immediately apply what they learned to help make their maintenance process more efficient and less expensive.

Course Objectives:

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

- Review the key elements of a best practice approach to maintenance management
- Introduce a highly structured method for determining the optimum maintenance program
- Explore the components those comprise an effective predictive and preventive maintenance
- Present maintenance as various integrated business processes that supports the objectives of an organization in the context of total life cycle facility
- Develop a maintenance strategy that integrates all components of maintenance
- Understand current practices in maintenance management and the potential drivers for re-engineering maintenance, the planning & techniques to be applied
- Describe the role of dependability and quality in maintenance
- Explore the importance of managing risk, safety and the environment
- Understand the role of condition monitoring and information systems in predictive and preventive maintenance
- Identify and plan improvement opportunities using audit results
- Carryout a high level benchmarking analysis

Who Should Attend?

This course is intended for general managers who have oversight responsibility for maintenance and maintenance planning organizational units, operations and maintenance managers with direct line responsibility as well as staff support responsibility for maintenance management, maintenance supervisors, maintenance engineers and maintenance planners.

Course Outline:

Day 1:

Effective Organization and Management of the Maintenance Function

- Introduction to the Theory and Practice of Maintenance
- Operating Policies by which Maintenance Should Be
- Guided Operating Policies to Reduce Maintenance Work
- Reports from Maintenance
- Area and Centralized Maintenance Control
- Incentive Payment of Maintenance Workers

Recent Methodology of Establishing the Costs and Controls of Maintenance

- Work Measurement
- Rating and Evaluating Maintenance Workers
- Work Simplification in Maintenance
- Estimating Repair and Maintenance Costs
- Small-Plant Maintenance Control
- Maintenance Stores and Inventory Control
- Maintenance Stores

Day 2:

The New Horizons of Maintenance Management

- Corrective Maintenance
- Predictive Maintenance
- An Introduction to the Computer in Maintenance
- Computerized Planning and Scheduling
- New Horizons of Maintenance Stores and Inventory Control

T.P.M. Tools: Reliability, Reliability Centered Maintenance, Risk and Risk Analysis

- Introduces Reliability and the concept of Reliability Centered Maintenance and its application
- The role of inspection and its integration with maintenance in ensuring plant integrity

- An introduction to Risk, Risk analysis and Risk Based Inspection

Day 3:

Condition Monitoring & Diagnostic Engineering ¬Monitor, Diagnose, Analyze and Interpret. SAP Computer Application Program in Maintenance

- Addresses condition monitoring or the routine acquisition of data related to the operational condition of a system Inspection, instrumentation and data acquisition tools.
- The analysis of collected data to give a picture of the operational 'health' of a system.
- Information and information management

STM: Supervisor Time Management, How to Supercharge your time

- Productivity improvement through STM features
- More advanced specific time management techniques designed for maintenance supervisors.
- The seven daily habits of highly successful supervisors
- Personal planning,
- Improved productivity,
- Resources for additional focus.

Day 4:

Successful maintenance supervisors; how to motivate work group?

- Current ideas on motivation,
- Introduction of strategies of successful motivation Session 2 techniques compiled from actual maintenance crews,
- Answer the important question,
- How can a maintenance supervisor motivate the work group?

Routines -Planning, Reporting, Work Permits, Stock & Resource Management

- Checklists, flow charts, fault trees.
- Work permit systems,
- Stock and stock control: Supply chain, Resources, Materials and Resource Management Planning and Critical Path Analysis (CP A) techniques and Implementation.
- Purchasing: Planning, Techniques Involved and Purchasing Strategies.
- Asset (process Facility) Life Cycle -All phases of asset Life cycle engineering and cost optimization. Value Engineering.
- Asset Life Cycle engineering to ensure optimal design Operation and replacement/upgrading of an asset.
- Balancing the sometimes conflicting demands of lowest capital cost, lowest operating costs, reliability, maintainability and availability.

- Arguing the case for a given design from a number of alternatives applying the whole life cycle engineering approach.
- Life Cycle Cost case studies based on scenarios and analytical Value Engineering, NPV and Value Measurement Discussion period.
- Maintenance Performance -Performance indicators Measuring, Benchmarking.
- Definition and use of performance indicators to show improvements in; reducing maintenance costs, increasing reliability, increasing integrity and safety.
- Benchmarking and its application in this context

Day 5:

Organization and Management of Lubrication

- The Science and Technology of Lubrication
- Organization and Management of Lubrication
- Basic Functions, Types, and Terminology of Lubrication
- Lubricating Devices and Systems
- Additional Lubricants

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 Questionaires
- 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