

An LDI Training Course

Modern Maintenance Management

Total Productive Maintenance and Reliability Centered Maintenance

by
DR. Ir. I WAYAN SUWECA & TEAM

This course is designed to give participants a comprehensive knowledge of maintenance management.

In this course, participants will learn practical skills that can be applied to the job right away, build a solid maintenance program, and increase your value to your organization.

Here are the benefits of attending this course:

1. Build and sustain a maintenance program
2. Select the optimum equipment maintenance strategy
3. Implement work management strategies
4. Improve asset availability and utilization
5. Increase maintenance personnel productivity
6. Build a problem-solving culture
7. Manage an effective maintenance budget

Course Outline

Introduction of Modern Maintenance Management as a part of World Class Maintenance

- What is Modern Maintenance Management
- What is World Class Maintenance
- Various concepts of World Class Maintenance

World Class Maintenance Organization

- Directives (VISION, MISSION, Corporate Planning: Short-Long Term Planning)
- Maintenance Classification and Implementation
- Equipment Maintenance Sub-systems Relation
- Correlation Between Maintenance Functional Elements in Plant Maintenance
- Enterprise Asset Management System
- World Class Maintenance Organization Recommendation

Maintenance Strategies

- Policies
- Organization / Human Resources
- Employee Empowerment
- Maintenance Tactics
- Reliability Analysis
- Performance Measure / Benchmarking
- Information Technology
- Planning and Scheduling
- Material Management
- Maintenance Process Reengineering

Maintenance Values

Maintenance Management Information System

- Importance of Computerized Maintenance Management System (CMMS)
- Enterprise Asset Management System, advance development of CMMS
- Activity in EAMS:
- Functional Location and Equipment Tree/Hierarchy
- Work Flow and Work Order Management Flow Diagram
- BM, PM, PdM, PaM
- Maintenance Management Business Process Flow Diagram
- Inventory Management, Purchasing and Supply Chains Philosophy
- Document and Catalog Management
- DCS and Condition Monitoring Integration
- Labor
- Report Writer
- Integrated Enterprise Asset Management System (IEAMS)
- Flow Diagram of EAMS
- Where & When in using IAMS

Maintenance Planning & Scheduling

- What is Maintenance Planning
- What is Maintenance Scheduling
- Maintenance & Scheduling Flow Process
- The Criteria for Planner and Scheduler
- Planning & Scheduling of Shutdown and Turn Around Activities

Proactive Maintenance

- **Introduction of Proactive Maintenance (PaM)**
 - What is Proactive Maintenance
 - Comparison of various maintenance methods: BM, PdM, PM, RACi
- **Predictive Maintenance (Condition Based Maintenance) as a part of Proactive Maintenance**
 - Definition & principles of Condition Based Maintenance
 - The role of Condition Based Maintenance in the Maintenance System
 - Condition Based Maintenance: Methods & techniques
 - Dynamic Monitoring and Analysis/Vibration Analysis /Balancing / Alignment
 - Particle & Chemical Monitoring and Analysis/Oil & Contamination Analysis
 - Physical Effects Monitoring and Analysis
 - Temperature and Electrical Effects Monitoring and Analysis/Thermography
 - The benefits of Condition Based Maintenance
- **Preventive Maintenance as a part of Proactive Maintenance**
 - Definition & Principles of Preventive Maintenance
 - The role of Preventive Maintenance in the maintenance system
 - Preventive Maintenance: Methods & Techniques
 - The benefits of Preventive Maintenance
- **Root Cause Analysis and Failure Modes and Effects Analysis**
 - Importance of FMEA
 - Principles of FMEA
 - How and where we use FMEA

Total Productive Maintenance

- **Introduction of Total Productive Maintenance (TPM)**
 - What is TPM
 - Pillars of TPM & Twelve Stages in Building TPM
 - Benefits of TPM
 - Overall Equipment Effectiveness
 - Organizational Learning; Culture Change / Autonomous Maintenance; Learning Organization
 - Health Safety and Environment in Modern Maintenance Management
- **Reliability Centered Maintenance (RCM)**
 - Definition & Principles of RCM
 - RCM Standard SAE JA1011
 - The role of RCM in the Maintenance System
 - Reliability Centered Maintenance Process Analysis and Techniques: Function, Functional Failure, Failure Modes, Effect and Consequences of Failure, Proactive and Default Actions
 - The Benefits of RCM
 - Continuous Improvement / Reliability Improvement
 - Concept of Zero Breakdown

Who Should Attend

This course will greatly benefit engineers, supervisors, and managers involved in maintenance.

About Instructor

DR. Ir. I Wayan Suweca graduated from Department of Mechanical Engineering Institute Technology of Bandung in 1985. He received his Master degree, in 1987 from Ecole Centrale de Lyon, French. He then continued to pursue a Ph.D. degree and he was awarded in 1990. He is a faculty member of the Mechanical Engineering Department, since 1987. He gives courses on Mechanical Drawing, Design of Machine Element, Finite Element Method, Computer Aided Design/Engineering, Fundamental of Mechanical Design, and Design Optimization. His research interests are in mechanical design, in design optimization, in design methodology, in vibration control, and in reliability centered maintenance. He has published/presented many papers in national and international seminars/proceeding in the field of mechanical design, design optimization, vibration control, finite element, stress analysis, and computer aided design. His experience in many industries as an engineering consultant and/or as inhouse training instructor for PT Tambang Batubara Bukit Asam, PT Timah Tbk, PT Tambang Timah, PT PAMA Persada, PT Freeport Indonesia, PT Pertamina, PT Kondur Petroleum S.A., PT Chevron Indonesia, Total Indonesie, PT Astra International, PT Daihatsu Motor, PT INKA, PT KAI, PT Medco Energy, PT PGN, and many others. He also gives several short courses for public in Pipe Stress Analysis, Failure Analysis, Finite Element Method, Mechanical Design, Bearing Technology & Lubrication, Integrated Maintenance Management, Best Practices in Preventive and Predictive Maintenance, Maintenance Planning and Scheduling, Industrial Valve Technology, Industrial Hydraulic, and many others.

For more information about the course, please visit lditraining.com or contact LDI Training at lditrain@indo.net.id