



Maintenance & Reliability Management

Maintenance Planning and Reliability Engineering

Course Introduction

This training program is designed to cater to the needs of mechanical, electrical, operations and instruments personnel involved in maintenance activities such as Planning, Organizing, Directing, Staffing, Coordinating and Budgeting of maintenance activities related to any type of production organization.

After attending this training program, participants shall be able to carry out maintenance planning and scheduling activities and reliability engineering activities more scientifically, using the knowledge gained by this program. For improving the understanding of the topic, a number of hands-on exercises are provided to the participants for their active role in the interactive training

Target Audience

Maintenance engineers, Operations, Instrumentation engineers, Planning Engineers, Reliability Engineers.

Learning Objectives

- Understand planned vs unplanned maintenance.
- Prioritize maintenance tasks effectively.
- Learn key metrics for measuring maintenance performance.
- Allocate resources and estimate availability for maintenance planning.
- Develop realistic and effective maintenance programs.
- Monitor and evaluate maintenance performance with ratios and KPIs.
- Measure maintenance productivity and reliability statistically.

- Minimize emergency maintenance.
- Understand and implement KPIs for maintenance performance.
- Develop and manage a maintenance schedule.
- Learn scheduling methods: allocation, dynamic, queuing models.
- Optimize resources and manage pending jobs.
- Troubleshoot electrical motor problems.
- Generate effective maintenance performance reports.
- Understand Reliability Engineering concepts.
- Learn why Reliability Engineering is crucial for maintenance.
- Explore reliability predictions and their impact.
- Apply fault tree and event tree analysis in maintenance.
- Understand Reliability Block Diagrams (RBD).
- Learn key concepts: MTBF and HAZOP for maintenance optimization.

Course Outline

• 01 DAY ONE

Maintenance types.

- Planned vs Unplanned maintenance
- Prioritization of maintenance activities.
- Measurements of maintenance

Planning :

- Identifying and allocating of maintenance resources
- Estimating resources availability
- Developing maintenance plans
- The planner's "Tool Box" – aids to improved planning
- Developing effective and realistic maintenance programs

- Equipment and maintenance standards
- Monitoring maintenance performance
- Quantitative techniques / ratios
- Maintenance scheduling / controlling pending jobs

• 02 DAY TWO

Measuring Maintenance Performance and Making Improvements :

- Statistical measurement of the maintenance efforts
- Maintenance productivity and reliability
- Minimizing emergency maintenance
- Understanding KPI (Key Performance Index)

• 03 DAY THREE

Scheduling :- Work Control & Monitoring

- Developing a maintenance schedule
- Scheduling methods – allocation, dynamic, queuing models
- Developing daily and weekly work schedule
- Optimizing resources, lead leveling, CIN scheduling
- Trouble shooting electrical motor problems
- Evaluating electrical systems

Report generation and Graphical Presentation:

- Maintenance performance indices
- Effective presentation of maintenance data
- Graphical “do’s and “don’t’s “

• 04 DAY FOUR

CPM Scheduling

- What is Reliability Engineering?
- Why do I need Reliability Engineering?
- What are Reliability Predictions?

• 05 DAY FIVE

The techniques used in Scheduling Support.

- Fault Tree Analysis
- Event Tree Analysis
- Reliability Block Diagrams (RBD)

- Understanding MTBF
- Understanding HAZOP

Confirmed Sessions

| FROM | TO | DURATION | FEES | LOCATION |
|---------------|---------------|----------|------------|-----------------|
| May 5, 2025 | May 9, 2025 | 5 days | 4250.00 \$ | UAE - Dubai |
| Aug. 24, 2025 | Aug. 28, 2025 | 5 days | 4250.00 \$ | UAE - Abu Dhabi |
| Dec. 28, 2025 | Jan. 1, 2026 | 5 days | 4250.00 \$ | KSA - Riyadh |