

1 day



Reliability Fundamentals

Equipment Reliability Awareness Training

The **Reliability Awareness** course is intended for all maintenance, operations, production, engineering, projects, graduates, service providers, contractors, planners and condition monitoring technicians, who need to understand the fundamentals of why unreliability exists and what improvement processes can be implemented.

The course explains the basics of why equipment does not often reach its design or service life and challenges some long-held beliefs of how and why equipment fails.

It is necessary that everyone understands the core principals that will set the organisation on the path to reduce maintenance costs and improve reliability and performance of operational assets.

The course is run over **one day**. There is no exam or certification.

Key Topics are:

- Reliability Theory – why do things fail?
- Data Analysis - what is happening now
- Root Cause Analysis - fixing the problems
- Defect Elimination and the main sources of unreliability
- Asset Maintenance Strategy – how to develop or improve an existing strategic plan
- Condition Monitoring Technologies & their application
- Maintenance Structure and work management

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Course Content

- 1. Introduction**
 - The business case for Reliability
 - Is it worth the effort to make changes?
 - Quantifying the benefit to the business.
- 2. Reliability Theory**
 - Defining reliability – what do we mean by reliability?
 - How and when failure occurs
 - Probability of Failure vs Time (Bathtub Curves)
- 3. Data Analysis**
 - What needs attention right now
 - Pareto
 - Root Cause failure Analysis (RCFA)
- 4. Defect Elimination and the main sources of unreliability**
 - Original Design
 - Purchasing of Spares
 - Condition of Spares
 - Precision Installation
 - Operations
 - External Repairers
 - Lubrication & Contamination
- 5. Asset Maintenance Strategy**
 - Asset Criticality Review
 - Basics of applying RCM & FMECA
 - Maintenance Strategy Steps
 - Reactive & Run-to-fail (RFT) Maintenance
 - Preventive Maintenance (PM)
 - PM optimization
 - Risk-based Maintenance
 - Condition-based Maintenance
- 6. Condition Monitoring**
 - Ultrasound
 - Thermal Imaging
 - Oil Analysis
 - Vibration Analysis
 - Motion Amplification
 - Electrical Testing
- 7. Maintenance Work Management**
 - Workflow Management and key roles for success
- 8. Summary**

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