

PUMPS & COMPRESSORS MAINTENANCE TECHNIQUES



OUR ACCREDITATION & PARTNERS



PUMPS & COMPRESSORS MAINTENANCE TECHNIQUES



OVERALL DESCRIPTION:

In the heart of every industrial operation, pumps and compressors are the vital organs, silently driving critical processes. Their unwavering performance is not merely a technical detail; it's a strategic business imperative that directly impacts productivity, operational costs, and safety. Unplanned failures lead to expensive downtime, missed deadlines, and compromised system integrity.

This course is designed to shift your approach from reactive problem-solving to proactive, strategic maintenance. We will equip your team with the essential knowledge and practical techniques to not only diagnose and repair issues but to predict and prevent them entirely. By mastering the fundamentals of modern maintenance strategies, participants will learn to unlock greater asset reliability, extend the lifecycle of their equipment, and contribute directly to the bottom line by transforming maintenance from a cost center into a value driver.

Course Objectives:

- **Apply** structured maintenance methodologies, including preventive and predictive techniques, to reduce equipment failure rates.
- **Implement** effective inspection and lubrication programs to improve the health and longevity of pumps and compressors.
- **Recognize** the critical operational parameters and early warning signs of mechanical faults through practical diagnostic tools and techniques.
- **Perform** root cause analysis (RCA) on common failures to prevent recurrence.
- **Troubleshoot** a wide range of common mechanical and operational issues with confidence and precision.
- **Adhere** to best practice safety protocols during all maintenance and repair activities.



PUMPS & COMPRESSORS MAINTENANCE TECHNIQUES



Course Outline:

- **Foundations of Pumps & Compressors**
 - Types, principles, and key components of centrifugal and positive displacement pumps and compressors.
 - Understanding system design and performance curves.
 - Criticality of alignment and balancing.
- **Proactive Maintenance Strategies**
 - Developing and implementing effective preventive maintenance (PM) schedules.
 - Introduction to predictive maintenance (PdM) technologies: vibration analysis, thermography, and oil analysis.
 - Establishing a reliability-centered maintenance (RCM) culture.
- **Practical Inspection & Repair Techniques**
 - Shaft seals and packing: selection, installation, and common failure modes.
 - Bearing technology and maintenance: inspection, installation, and lubrication.
 - Couplings and gears: alignment procedures and fault detection.
 - Troubleshooting common mechanical faults (e.g., cavitation, surge, excessive vibration).
- **Diagnostics, Safety, & Best Practices**
 - Systematic troubleshooting methodologies.
 - Conducting root cause analysis (RCA) for equipment failures.
 - Essential safety procedures and lockout/tagout (LOTO) protocols for maintenance.
 - Best practices for spare parts management and documentation.

WHO SHOULD ATTEND?

- Maintenance Engineers, Technicians, and Supervisors
- Plant Operators and Team Leaders
- Mechanical and Electrical Engineers
- Reliability and Asset Management Professionals
- Anyone involved in the operation and maintenance of rotating equipment within industrial facilities.

Course Methodology:

We utilize a variety of proven adult learning techniques to ensure maximum understanding, comprehension and retention of the information presented. This training course will be conducted as a highly interactive workshop session. A variety of training methodologies will be used Before and during the course whenever applicable. Some of these methods are gamification, online pre-post test, role plays, self-assessment instruments, group exercises & case studies.

