

INSPECTION & PERFORMANCE EVALUATION OF ROTATING EQUIPMENT

COURSE OUTLINE 2025

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TRAINING TITLE

INSPECTION & PERFORMANCE EVALUATION OF ROTATING EQUIPMENT

<u>VENUE</u>

DUBAI, UAE

DURATION

5 Days

DATES

18-22 August 2025

PRICE

\$5,250 per attendee including training material/handouts, morning/afternoon coffee breaks, and Lunch.

TRAINING INTRODUCTION

This 5-day course provides a comprehensive understanding of the inspection and performance evaluation of rotating equipment, such as pumps, motors, compressors, and turbines, commonly found in industrial plants. The course covers the principles of rotating machinery, common inspection techniques, condition monitoring, and performance analysis to ensure optimal operation and prevent unexpected failures. Participants will gain practical knowledge on assessing equipment condition, identifying performance issues, and implementing strategies for preventive maintenance to improve equipment reliability and minimize downtime.

TRAINING OBJECTIVES

By the end of the course, participants will be able to:

- Understand the operating principles and components of rotating equipment.
- Apply various inspection and condition monitoring techniques for rotating machinery.
- Evaluate the performance of rotating equipment and identify signs of wear, misalignment, or imbalance.
- Develop effective maintenance strategies to ensure equipment reliability and minimize downtime.

• Interpret data from performance evaluations and integrate findings into a proactive maintenance plan.

TRAINING AUDIENCE

- Mechanical and maintenance engineers
- Reliability engineers and technicians
- Rotating equipment operators and supervisors
- Plant and operations managers
- Equipment inspectors and maintenance planners
- Professionals involved in the operation, maintenance, and optimization of rotating equipment

TRAINING OUTLINE

Day 1: Introduction to Rotating Equipment

- Overview of rotating equipment types: pumps, compressors, turbines, and motors
- Basic operating principles and components
- Common failure modes and causes of equipment degradation
- Introduction to vibration analysis and condition monitoring
- Importance of inspection and performance evaluation

Day 2: Inspection Techniques for Rotating Equipment

- Visual inspection methods and techniques
- Vibration monitoring and analysis
- Temperature and noise analysis for early fault detection
- Bearing condition monitoring and lubrication analysis
- Using infrared thermography and ultrasonic testing

Day 3: Performance Evaluation Methods

- Evaluating pump performance: flow, head, and efficiency
- Compressor performance analysis: pressure, temperature, and power consumption
- Motor performance evaluation: power factor, load, and efficiency

- Turbine performance analysis: speed, load, and efficiency
- Benchmarking equipment performance against design specifications

Day 4: Root Cause Analysis and Fault Diagnosis

- Identifying common faults in rotating equipment (misalignment, imbalance, bearing failure, etc.)
- Root cause analysis methods for rotating equipment failures
- Interpreting inspection and performance data to identify issues
- Techniques for diagnosing faults through vibration and thermal analysis
- Developing corrective action plans based on fault diagnosis

Day 5: Maintenance Strategies and Reliability Optimization

- Developing a preventive maintenance program for rotating equipment
- Predictive maintenance: techniques and tools
- Performance monitoring and trending analysis
- Best practices for optimizing rotating equipment reliability
- Strategies for reducing downtime and improving asset life

TRAINING CERTIFICATE

MAESTRO CONSULTANTS Certificate of Completion for delegates who attend and complete the training course.

<u>METHODOLOGY</u>

Our courses are highly interactive, typically taking a case study approach that we have found to be an effective method of fostering discussions and transferring knowledge. Participants will learn by active participation during the program through the use of individual exercises, questionnaires, team exercises, training videos and discussions of "real life" issues in their organizations. The material has been designed to enable delegates to apply all of the material with immediate effect back in the workplace.