Rotating Equipment_(Pumps & Compressors) Design, Operation, Maintenance &Troubleshooting

MUE205

Mechanical &

Utility Engineering

TRAINIT ACADEMY

COURSE TITLE

Rotating Equipment_(Pumps & Compressors) Design, Operation, Maintenance &Troubleshooting

COURSE DATE/ VENUE

4TH-8TH MAR 24'

London

COURSE REFERENCE

MUE205

COURSE DURATION

05 Days

DISCIPLINE

Mechanical & Utility Engineering

COURSE INTRODUCTION

This is a comprehensive 5-day course on Rotating Equipment, focusing on Pumps and Compressors. This program is designed to equip participants with in-depth knowledge and practical skills necessary for the effective design, operation, maintenance, and troubleshooting of these critical components in industrial processes.

COURSE OBJECTIVE

The primary objective of this course is to provide a holistic understanding of rotating equipment, emphasizing the intricate details of pumps and compressors. Participants will gain insights into the theoretical principles, practical applications, and real-world problem-solving strategies associated with the entire lifecycle of these crucial assets.

COURSE AUDIENCE

- ✓ . Engineers and Technicians involved in the design, operation, and maintenance of rotating equipment.

- ✓ Maintenance Managers and Supervisors seeking to enhance reliability and reduce downtime.
- ✓ Professionals involved in plant engineering, process optimization, and asset management.

COURSE CONTENT

Day 1: Introduction to Rotating Equipment and Basic Principles

- ✓ Overview of Rotating Equipment
- ✓ Importance of Pumps and Compressors in Industrial Processes
- ✓ Types of Pumps and Compressors
- ✓ Basic Operating Principles

- ✓ Pump Design Fundamentals
- ✓ Compressor Design Fundamentals
- ✓ Key Components and Terminology
- ✓ Safety Considerations

Day 2: Pump Operation, Maintenance, and Troubleshooting

- ✓ Pump Classification and Selection
- ✓ Pump Curves and Performance Characteristics
- ✓ Pump Operation and Control
- ✓ Pump Cavitation and NPSH
- ✓ Pump Maintenance Practices
- ✓ Common Pump Failures and Troubleshooting

Day 3: Compressor Operation, Maintenance, and Troubleshooting

- ✓ Compressor Classification and Selection
- ✓ Compression Ratios and Efficiency
- ✓ Types of Compressors: Positive Displacement vs. Dynamic
- ✓ Control Systems for Compressors
- ✓ Compressor Maintenance Practices
- ✓ Common Compressor Failures and Troubleshooting

Day 4: System Integration and Reliability

- ✓ Integration of Pumps and Compressors in Industrial Systems
- ✓ Piping Design Considerations
- ✓ System Dynamics and Interactions
- ✓ Energy Efficiency Considerations
- ✓ Reliability Engineering Principles
- ✓ Risk Assessment and Mitigation Strategies
- ✓ Asset Management for Rotating Equipment
- ✓ Case Studies on System Failures

Day 5: Emerging Technologies and Future Trends

- ✓ Advancements in Pump and Compressor Technologies
- ✓ Industry 4.0 and Smart Manufacturing
- ✓ Predictive Maintenance Techniques

- ✓ Environmental Considerations and Regulations
- ✓ Future Trends in Rotating Equipment

COURSE CERTIFICATE

TRAINIT ACADEMY will award an internationally recognized certificate(s) for each delegate on completion of training.

COURSE FEES

£5,500 per Delegate. This rate includes participant's manual, Hand-Outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

COURSE METHODOLOGY

The training course will be highly participatory and the course leader will present, guide and facilitate learning, using a range of methods including formal presentation, discussions, sector-specific case studies and exercises. Above all, the course leader will make extensive use of real-life case examples in which he has been personally involved. You will also be encouraged to raise your own questions and to share in the development of the right answers using your own analysis and experiences. Tests of multiple-choice type will be made available on daily basis to examine the effectiveness of delivering the course.

- 30% Lectures
- 30% Workshops and work presentation

- 20% Case studies & Practical Exercises
- 10% Role Play
- 10% Videos, Software or Simulators (as applicable) & General Discussions