

TRAINING TITLE

ROTATING EQUIPMENT FOR OPERATION

Training Duration

5 days

Training Venue and Dates

Ref. No. ME092	ROTATING EQUIPMENT FOR OPERATION	5	10-14 Feb. 2025	\$5,750	Dubai, UAE
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In any of the 4 or 5-star hotels. The exact venue will be informed later.

Training Fees

- **\$5,750 per participant for Public Training includes Materials/Handouts, tea/coffee breaks, refreshments & Lunch**

Training Certificate

Define Management Consultants Certificate of course completion will be issued to all attendees.

TRAINING DESCRIPTION

Rotating equipments are essential part of any plants. Pumps, compressors, air or gas compressors, gas turbines, steam turbines, and expanders are found in big numbers and operators must be familiar with their operation and reasons of failures to avoid plant shutdown and increases these machines available time. This of course will affect greatly the productivity and profitability of the plant.

This course is designed to provide Operators a deep understanding of the rotating equipment exists in their plants. Operators will learn about the components and construction of these types of equipment in addition to the associated auxiliary systems. The performance and the method of operation of such equipment will be explained in details in order to have a trouble free operation of the plant equipment. Limit of operation, control systems of these machines must be very known by the operator. Alarm systems and shutdown tripping systems will also be discussed thoroughly in the course.

TRAINING OBJECTIVES

By end of course participants will be able to understand

- Understand the Fundamentals of Rotating Equipment:
- Familiarity with Equipment Specifications:
- Safe Operating Practices:

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- Start-up and Shutdown Procedures:
- Monitoring and Maintenance:
- Troubleshooting and Diagnostics:
- Performance Optimization:
- Environmental Considerations and Compliance:
- Effective Communication and Reporting:

WHO SHOULD ATTEND?

- Mechanical Engineers
- Maintenance Technicians
- Industrial Engineers
- Process Engineers
- Electrical Engineers
- Operations Managers
- Equipment Technicians
- Reliability Engineers
- Maintenance Supervisors

TRAINING METHODOLOGY

A highly interactive combination of lectures and discussion sessions will be managed to maximize the amount and quality of information and knowledge transfer. The sessions will start by raising the most relevant questions and motivating everybody to find the right answers. 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.

Very useful Course Materials will be given.

- 30% Lectures
- 30% Workshops and work presentation
- 20% Group Work & Practical Exercises
- 20% Videos & General Discussions

COURSE PROGRAM

Day 1

Principles of Rotating Equipment

Method of Energy Transfer

Pump Applications

Turbine Application

Machines Efficiency

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Shaft Seals Systems
Balancing Systems
Bearing and Lubrication Systems
Performance Curves and Limits of operation
Failure Reasons

Day 2

Pumps

Dynamic and PD Pumps
Applications
Performance Curves
Operating range
NPSH required and Cavitation
Interaction with Piping System and actual operating Point
Parallel Operation
Troubleshooting and Failure analysis

Day 3

Gas and Air Compressors

Centrifugal and Axial-flow Compressors
Reciprocating compressors
Rotary PD Compressors
Performance Curves
Limits of operation
Surge and Stoning Limits
Unti-surge Systems
Reasons of Failures

Day 4

Steam Turbines

Steam Generators (Boilers)
Steam Quality
Steam Traps
Steam Turbine Condensers
Steam Turbines, Impulse and Reaction Types
Steam turbine Operation Method
Steam Turbine Over Speed Control
Alarm and Tripping Systems

Day 5

Gas Turbines

Axial-Flow Compressors

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Burners

Gas Turbine Section

Maximum Operating Temperature Limit

Gas Turbine Operation Method

Gas Turbine Control Systems

Gas Turbine Fuel System

Gas Turbine Operation Sequence

Alarm and Tripping systems

NOTE:

Pre-& Post Tests will be conducted.

Case Studies, Group Exercises, Group Discussions, Last Day reviews, and assessments will be carried out.



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