



ME166

Rotating Equipment: Start-up, Operation, Maintenance & Troubleshooting

Course Introduction:

This course will introduce delegates to different types of pumps, compressors, turbines and associated equipment, such as bearings, seals, filters, separators, etc. The focus in the course will be on the start-up and operation of these machines and their optimal maintenance, diagnostics and troubleshooting techniques.

Likewise, efficient and trouble-free operation of pumps, compressors and turbines will be discussed in depth along with their ability to control the main operational parameters and will include emphasis on physical principles and clear technical reasoning.

The course will feature:

- Principles of pump, compressor and turbine start up and operation
- Best practices for maintenance and repair
- Measurement and control of performance of these machines
- Inspection and diagnosing the root cause of problems
- Troubleshooting techniques for operational problems of pumps, compressors and turbines

Course Objectives:

Upon successful completion of this course, the delegates will be able to:

- Understand different types of pumps, compressors and turbines.
- Operate pumps, compressors and turbines close to the design efficiency.
- Monitor pump compressor and turbine reliability and availability and cost effectiveness
- Select the best operation and maintenance strategy
- Troubleshoot pump, compressor and turbine problems

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International Centre For Training & Development

Who Should Attend?

This course is designed to benefit all levels of technical personnel in the oil and gas industry as well as in chemical and process industries but will greatly benefit technical personnel in charge of production, maintenance and operation engineers, operators, supervisors and engineering managers.

Course Outline:

Day 1:

Compression Principles

- Principles of Compression
- Ranges of Application
- Centrifugal Compressors
- Reciprocating Compressors

- Rotary Compressors
- Workshop: Examples and Solutions

Day 2:

Compressors: Elements and Technical Characteristics

- Centrifugal Compressors
- Axial Compressors
- Compressor Packages
- Reciprocating Compressors
- Rotary Compressors
- Workshop: Examples and Solutions

Day 3:

Pumps: Elements and Technical Characteristics

- Types of Fluids and Range of Application
- Centrifugal pumps:
- Axial Pumps
- Reciprocating Pumps
- Rotary Pumps
- Workshop: Examples and Solutions

Day 4:

Start up and Operation of Compressors and Pumps

- Centrifugal and Axial Compressors
- Reciprocating and Rotary Compressors
- Centrifugal and Axial Pumps
- Reciprocating and Rotary Pumps
- Workshop: Examples and Solutions

Day 5:

Maintenance and Troubleshooting of Rotating Equipment

- Centrifugal and Axial Compressors
- Reciprocating and Rotary Compressors
- Centrifugal and Axial Pumps
- Reciprocating and Rotary Pumps
- Course Summary and Review

Course Certificate:

International Center for Training & Development (ICTD) will award an internationally recognized certificate(s) for each delegate on completion of training.

Course Methodology:

A variety of methodologies will be used during the course that includes:

- (30%) Based on Case Studies
- (30%) Techniques
- (30%) Role Play
- (10%) Concepts
- Pre-test and Post-test
- Variety of Learning Methods
- Lectures
- Case Studies and Self Questionnaires
- Group Work
- Discussion
- Presentation

Course Fees:

To be advised as per course locations. This rate includes participant's manual, Hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Timings:

Daily Course Timings:

08:00 - 08:20	Morning Coffee / Tea
08:20 - 10:00	First Session
10:00 - 10:20	Coffee / Tea / Snacks
10:20 - 12:20	Second Session
12:20 - 13:30	Lunch Break & Prayer Break
13:30 - 15:00	Last Session