



## Pumps, Compressors & Turbines Selection, Operation and Maintenance

Date	Venues	(\$)Fees	Book your seat
17 Mar -21 Mar 2024	Cairo	2900	<a href="#">Register Now</a>

### Introduction

A complete understanding of construction details and functioning of pumps, compressors and turbines is a prerequisite for successful operation of plant and piping system. This is especially important nowadays when various models of this equipment still create in everyday operation various problems: mechanical, hydraulic, etc.

This training seminar will feature the importance of proper operation and maintenance of rotating machinery such as pumps, compressors and turbines of various designs and applications, which are encountered throughout chemical and process industries, including oil refineries, gas production facilities, power generation and other fields of engineering. The seminar is intended to familiarize engineers, technicians and operators with the guidelines and best practices employed in utilizing this equipment, including installation, operation, maintenance and repair. The emphasis in the seminar will be on physical understanding of the problems in operation and the best way of troubleshooting them.

#### The training seminar will feature:

- Principles of selection of right pump, compressor and turbine for the given application
- Practical issues related to trouble-free functioning of pumps, compressors and turbines
- Explanation of complex flow situations in pumps, compressors and turbines
- Guidelines for installation, operation, maintenance and troubleshooting
- Maintenance and repair economic issues: cost and benefit analysis

### Objectives

#### By the end of this training seminar, participants will be able to:

- Understand technical features of pumps, compressors and turbines
- Select optimal type and size of equipment for a given industrial application
- Use methods of estimating the degree of deterioration and inefficiency of equipment
- Apply best practices and techniques of pinpointing the root cause of problems
- Choose the most efficient remedies and troubleshooting techniques in operation

### Training Methodology

The training seminar will be conducted along workshop principles with formal lectures and interactive worked examples included in several workshops. Presented also will be several illustrative and instructive videos. The emphasis in the seminar will be on the explanation of all technical points and providing answers to problems that are encountered in everyday industrial practice related to installation, operation and maintenance, as well as repair and alterations of pipeline systems.

Each learning point will be reinforced with practical examples. There will be ample opportunities for active discussion

and sharing professional experiences and exchange that will help solidify the gained knowledge. All seminar materials will be provided.

## **Who Should Attend?**

This training seminar 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:

- Chemical, Process and Mechanical Engineers
- Product Engineers and Technologists
- Operation, technical service and maintenance professionals
- Engineers, Consultants and Sales professionals
- Technical professionals responsible for interdisciplinary energy projects

## **SEMINAR OUTLINE**

### **DAY 1**

#### **Centrifugal Pumps**

- Overview of various types of pumps based on design and application
- World standards and codes related to pump design
- Main elements of centrifugal pump construction
- Design of pump-suction piping
- Selection and sizing of centrifugal pump
- Solving problems in operation

### **DAY 2**

#### **Positive Displacement Pumps**

- Positive displacement pumps: reciprocating and rotary
- Pump requirements for chemical, process and oil industry, power generation
- Pumps for special applications
- Guidelines for pump installation and operation
- Pump inspection, control and performance testing
- Maintenance and troubleshooting of pumps

### **DAY 3**

#### **Centrifugal Compressors**

- Overview of the main features of various types of compressors
- Classification of compressors based on design and application
- World standards and codes related to compressor design
- Main elements of centrifugal compressor construction
- Analysis of centrifugal compressor efficiency
- Guidelines for trouble-free centrifugal compressor operation

### **DAY 4**

#### **Positive Displacement Compressors**

- Positive displacement compressors: Reciprocating and Rotary
- Basic criteria for selecting the optimum cost-effective compressor
- Compressor loadings and speeds; noise control and protection
- Compressors for special applications
- Guidelines for compressor installation and operation
- Compressor inspection, maintenance, control, performance testing and troubleshooting

## DAY 5

### Industrial Gas Turbines

- Main elements and technical characteristics of gas turbine design
- Radial and Axial-flow gas turbines
- Combustor performance - types of fuels, combustion and pollution control
- Gas turbine deterioration - corrosion and erosion prevention
- Mechanical vibrations - monitoring, measurements, diagnostics and analysis
- Installation , operation, maintenance and troubleshooting of gas turbines



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