

**Training Title**

**PETROCHEMICAL PROCESS PLANT EQUIPMENT INSTALLATION SIZING, SELECTION, OPERATION, MAINTENANCE & TROUBLESHOOTING**

**Training Duration**

**5 days**

**Training Venue and Dates**

<b>REF PE054</b>	<b>Petrochemical Process Plant Equipment Sizing, Selection, Operation, Maintenance &amp; Troubleshooting</b>	<b>5</b>	<b>01-05 September 2025</b>	<b>\$5,500</b>	<b>Dubai, UAE</b>
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In any of the 4 or 5-star hotels. The exact venue will be informed once finalized.

**Training Fees**

- \$5,500 per participant for Public Training includes Materials/Handouts, tea/coffee breaks, refreshments & Lunch.

**Training Certificate**

Define Management Consultancy & Training Certificate of course completion will be issued to all attendees.

**TRAINING INTRODUCTION & DESCRIPTION**

The petrochemical industry is one of the expanding industries all over the world due to its high profits and quick turnover. It needs huge investments to fulfill its requirements which are mainly sophisticated equipment like thermal equipment (boilers, heat exchangers, fired gas heaters...), rotating equipment (pumps, turbines, gas compressors, air blowers.....), catalytic chemical reactors and gas reformers. The course presents the major types of this equipment and highlights their recent technological aspects for installation, operation, maintenance & troubleshooting.

The seminar covers how this equipment operates and provides guidelines and rules that must be followed for a successful operation. Their basic design, operating characteristics, specification, selection criteria, installation and commissioning requirements, advanced fault detection techniques, critical components as well as all their maintenance and troubleshooting methods are covered in detail. This seminar also covers advanced maintenance techniques such as “Used Oil Analysis”, and “Vibration Analysis” in detail.

**TRAINING OBJECTIVES**

- To provide a comprehensive understanding of the various types of centrifugal and positive displacement pumps, compressors, valves, actuators, and bearings. Participants will be able to specify, select, commission and maintain this equipment

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for their applications.

- To describe the benefits of advanced maintenance techniques such as “Used Oil Analysis”, and “Vibration Analysis”.
- To achieve reduced capital, operating and maintenance costs along with increase in efficiency.
- To lay out the major types of process plant equipment
- To enable attendees to grasp the advanced information in basic design issues for major equipment.
- To present the main requirements for installation concerning each type of equipment
- To illustrate the importance of good operability for each type of equipment
- To clarify the vital role of different types of maintenance regimes in successful and continuous production operation
- To present examples of troubleshooting through some case studies

### WHO SHOULD ATTEND?

Engineers of any discipline, managers, technician, technologists, and other technical personnel.

### COURSE OUTLINE

#### DAILY OUTLINE

- Pumps
- Centrifugal pump mechanical seals
- Positive displacement pumps
- Diaphragm pumps
- Pump selection
- Pumping system calculations
- Compressors
- Centrifugal and axial compressors
- Compressor auxiliaries, off-design performance, stall and surge
- Intelligent (smart) transmitters
- Advantages of Intelligent Instrumentation
- Stand-alone controllers
- Field Vue digital valve controller type dvc5000 series
- Field Vue instruments
- Control valve cavitation
- Actuators, positioners and accessories
- Frequently asked questions
- Bearings
- Used oil analysis.
- Vibration analysis, predictive maintenance and diagnostic testing

Thermal Equipment

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- Package boilers
- Waste heat boilers
- Fired gas heaters.
- Heat exchangers
  - Basic design of different types
  - Installation requirements
  - Safe operation
  - Maintenance and Inspection
  - Troubleshooting (case study)

### Rotating Equipment

- Pumps
- Turbines
- Gas Compressors
- Air Blowers
  - Basic fundamentals and characteristics of each type
  - Installation requirements
  - Monitoring equipment condition through vibration analysis, bearing temperature & lubricating oil analysis.
  - Applying predictive maintenance regime
  - Troubleshooting (case study)

### Catalytic Chemical Reactors

- Shift Converters
- Synthesis Gas Reactors
  - Basic design issues
  - Installation requirements
  - Internals & catalyst beds assembly
  - Material selection
  - Inspection applications
  - Troubleshooting (case study)

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### Gas Reformers

- Fired box/tube reformer.
- Cylindrical vessel reformer
  - Basic design issues
  - Installation requirements
  - Material selection
  - Lining systems& material selection
  - Maintenance & inspection applications
  - Troubleshooting

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**NOTE:**

**Pre & Post Tests will be conducted.**

**Case Studies, Group Exercises, Group Discussions, Last Day Review & Assessments will be carried out.**



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