Training Title

OPERATION OF FIRED HEATERS, AIR COOLERS, HEAT EXCHANGERS, PUMPS, COMPRESSORS, PRESSURE VESSELS & VALVES

Training Duration

5 days

Training Venue and Dates

ME111	Operation of Fired Heaters, Air Coolers, Heat Exchangers, Pumps, Compressors, Pressure Vessels & Valves	5	13 - 17 Jan 2025	$5,500	Dubai, UAE

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.

COURSE DESCRIPTION

Designed as a comprehensive five-day course, this intensive program aims to equip participants with knowledge and skills in operating process equipment and troubleshooting.

It presents a valuable opportunity for individuals to become acquainted with practical techniques and effective criteria.

including helpful shortcuts, for designing and resolving issues related to process equipment commonly employed in gas processing and petrochemical plants.

COURSE OBJECTIVE

After completing this course the participants will have:

- **Calculate, evaluate and compile process data for the specification, design, selection and operation of process equipment**
- **Possess enhanced skills and knowledge in process engineering, including design methods, criteria, calculation procedures and short-cut techniques**
- **Perform the evaluation, diagnostic monitoring and troubleshooting of existing process equipment, including de-bottlenecking and revamping methods**
- **Evaluate technical proposals and prepare to scope cost estimates**

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- **Prepare comprehensive process specification documents for bid packages**

WHO SHOULD ATTEND

This course is intended for those who are involved with process engineering, instrumentation & control including process engineers, mechanical & equipment engineers, project engineers and maintenance engineers, operators and technician.

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 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.
All presentations are made in excellent colorful power point. Very useful Course Materials will be given.

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

COURSE OUTLINE

Day – 1

Introduction:

- Course overview
- Gas processing overview
- Process equipment categories
- Mechanical and safety aspects

PROCESS CONTROL AND INSTRUMENTATION:

- Instrumentation types and selection
- Control valves sizing and selection
- Pressure relief devices and systems

PIPING:

- Fluid flow principles
- Pressure loss categories
- Pipe properties
- Sizing methods and criteria
- Two-phase flow

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Day – 2

CONVENTIONAL SEPARATORS:

- Types and functions
- Sizing criteria and method
- Design considerations and internals
- Process operating problems

PUMPS:

- Categories and types
- Performance characteristics
- Control systems
- Design criteria and parameters
- Pump selection guidelines
- Process operation troubleshooting

Day – 3

COMPRESSORS:

- Categories and types
- Compression process
- Characteristics and terminologies
- Design Criteria and parameters
- Compressor control methods
- Selection guidelines
- Drivers
- Process operation problems/troubleshooting

FIRED HEATERS:

- Heater types
- Process applications
- Selection guidelines
- Process operating problems

Day – 4

HEAT EXCHANGERS:

- Heat exchanger types
- Process applications
- Heat transfer terms and equations
- Design criteria and parameters
- Fouling considerations
- Reboilers
- Calculation methods
- Selection guidelines
- Process operation problems/troubleshooting

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AIR COOLERS:

- Air cooler types
- Design and operating considerations
- Process operating problems/troubleshooting

Day – 5

Pressure Safety Valves as per Construction

- Dead-weight
- Lever-type
- Spring

Pressure Safety Valves as per Operation and Their Maintenance

- Pneumatic
- Solenoid
- Steam

FRACTIONATION COLUMNS:

- Fractionator types
- Process design methods
- Trays vs packing
- Operating parameters
- Process operating problems/troubleshooting

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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