

Course Overview

Shell & Tube Heat Exchangers Design, Performance & Operation & Troubleshooting

Training Venue and Dates

Shell & Tube Heat Exchangers	5	07-11 February	\$3,300	Abu Dhabi
Shell & Tube Heat Exchangers	5	05-09 December	\$3,300	Abu Dhabi

In any of the 5 star hotel. Exact venue will be informed soon.

Training Fees

- 3300\$ per participant for Public Training including Course Materials/Handouts, Tea/Coffee, Refreshments & International Buffet Lunch
- Training will be held at any 5 Star Hotels

Training Certificate

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

Who should attend?

Engineers and managers responsible for Selection, Ordering, Installation, Operation, Inspection, Troubleshooting and Maintenance of Shell & Tube heat exchangers in power generation; petrochemical industries and refineries; refrigeration and air conditioning; heat recovery, cogeneration

Training Description

Heat exchangers are vital in many engineering applications such as Process Engineering (Refineries, Petrochemical, Food, etc.), Pharmaceutical, Pulp, Metal Forming, Water Heating and Steam Generation, Power plants, Desalination Plants, Electronic Devices, Air Conditioning, and many other applications. Shell and Tube Heat Exchangers constitute the work horse of Process, Power Generation and Desalination Industries. They are compact (large heat transfer area-to-volume ratio) and versatile and suit high pressure and low

pressure applications as well as harsh process environment and support operation with high pressure differential between process streams. This course is devoted to Shell & Tube heat exchangers and covers different aspects: Types, Construction Features, Thermal Design, Selection, Operation, Vibration, Fouling and Corrosion, Troubleshooting, and Maintenance. These topics are covered in depth and supplemented by videos on practical considerations of shell and tube heat exchangers. Also, where appropriate, simple examples and exercises will also accompany the material presented.

COURSE OBJECTIVES

Upon completion of the course the participants will be able to:

1. Understand different types of heat exchangers, their selection and simple methods of design.
2. Understand the construction features of Shell-and-Tube heat exchangers and TEMA standards.
3. Able to quickly evaluate the size and main parameters of Shell-and-Tube heat exchangers to meet the process requirements.
4. Understand the thermal design aspects of Shell-and-Tube heat exchangers for single and multi-phase flow duties (condensation and evaporation/boiling)
5. Appreciate the significance of vibration, corrosion and fouling and their effects on Shell-and-Tube heat exchangers performance and methods of their control.
6. Be able to diagnose the general symptoms of Shell-and-Tube heat exchangers ailments, troubleshoot and have good background in maintenance aspects of the exchangers.

Course Outline

- ◆ Introduction to Heat Exchangers
- ◆ Fundamentals of Heat Transfer Calculations
- ◆ Heat exchangers design improvement estimation tips
- ◆ General Overview of Heat Transfer and Heat Exchangers: Applications in Different Industries; Types, Selection Criteria, and Simple Thermal Design Aspects
- ◆ Construction Features of Shell & Tube Heat Exchangers: Basic Components, TEMA Standard Configurations, Selection Criteria
- ◆ Heat exchangers in Air conditioning and refrigeration applications.
- ◆ Efficient shell and tube heat exchangers
- ◆ Thermal Design Considerations: Preliminary Design, Detailed Design Aspects, Multi-phase Process Applications: Condensers and Evaporators (Types, Selection and Design Aspects).

- ◆ **Vibration, Corrosion and Fouling of Shell & Tube heat exchangers and control**
- ◆ **Storage, Installation, Diagnostics, Troubleshooting and Maintenance**
- ◆ **Case Studies**

