



*Training Course:
Heat Exchangers Maintenance*

19 - 30 October 2025

Dubai (UAE)

Residence Inn by Marriott Sheikh Zayed Road, Dubai

Training Course: Heat Exchangers Maintenance

Training Course code: MI236149 From: 19 - 30 October 2025 Venue: Dubai (UAE) - Residence Inn by Marriott Sheikh Zayed Road, Dubai Training Course Fees: 7700 € Euro

Introduction

Heat exchangers are critical components in energy, oil & gas, chemical, and industrial processing systems. Their performance directly impacts thermal efficiency, safety, production uptime, and environmental compliance. This 12-day advanced training program, designed by Global Horizon Training Center, provides engineers, technicians, and maintenance supervisors with the essential knowledge and practical tools to maintain, troubleshoot, and optimize various types of heat exchangers. Participants will explore failure analysis, inspection techniques, fouling control, and modern technologies for predictive maintenance.

Objectives

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

- Understand the design and function of various types of heat exchangers.
- Perform preventive, predictive, and corrective maintenance activities.
- Identify and mitigate common failure modes such as fouling, corrosion, and leaks.
- Apply inspection, testing, and cleaning techniques effectively.
- Ensure safe operation and shutdown/start-up procedures.
- Optimize operational performance through monitoring and upgrades.
- Align maintenance practices with safety, energy efficiency, and environmental regulations.

Organizational Impact

- Improved heat exchanger availability and efficiency
- Reduced unplanned shutdowns and maintenance costs
- Enhanced workplace safety and regulatory compliance
- Better maintenance documentation and inspection traceability
- Skilled workforce for operating under energy-intensive conditions
- Reduced heat loss and energy consumption

Target Audience

- Maintenance Engineers and Technicians
- Mechanical Engineers and Reliability Engineers
- Plant Operations Supervisors
- Inspection and QA/QC Personnel
- Utilities and Energy Managers
- Oil & Gas, Petrochemical, and Power Generation Professionals

Training Program Outline

Day 1: Introduction to Heat Exchangers

- Types and classifications shell & tube, plate, finned, spiral, etc.
- Basic principles of heat transfer
- Key performance indicators efficiency, U-value, pressure drop
- Overview of maintenance responsibilities

Day 2: Shell and Tube Heat Exchangers

- Design features and flow configurations
- Tube bundle inspection and maintenance
- Common defects: scaling, tube thinning, erosion
- Case studies of failures and remedies

Day 3: Plate Heat Exchangers PHEs

- Construction and gasket systems
- Disassembly, inspection, and gasket replacement

- Cleaning procedures manual vs. chemical
- Leak detection techniques

Day 4: Heat Exchanger Fouling and Scaling

- Types of fouling biological, chemical, particulate
- Effects on performance and energy cost
- Cleaning strategies and schedules
- Use of antifoulants and additives

Day 5: Corrosion Mechanisms and Protection

- Corrosion types in heat exchangers pitting, galvanic, stress
- Material selection and compatibility
- Cathodic protection and coating systems
- Monitoring corrosion rates

Day 6: Inspection and Testing Techniques

- Visual inspection and borescope examination
- Non-destructive testing NDT: UT, eddy current, dye penetrant
- Hydrostatic and pneumatic pressure testing
- Leak detection tools and protocols

Day 7: Preventive and Predictive Maintenance Planning

- Developing PM programs based on operating conditions
- Reliability-centered maintenance RCM
- Vibration monitoring and thermal imaging
- Maintenance records and CMMS utilization

Day 8: Cleaning Techniques and Best Practices

- Chemical cleaning methods and compatibility

- Mechanical cleaning tools and procedures
- Safety precautions during cleaning
- Case study: cleaning turnaround planning

Day 9: Gasket and Seal Maintenance

- Types of gaskets and their applications
- Causes of gasket failure
- Replacement techniques and torque procedures
- Gasket material selection and compatibility

Day 10: Shutdown, Start-Up, and Commissioning

- Heat exchanger isolation and depressurization
- Safe handling during shutdown/start-up
- Pressure relief and venting systems
- Pre-commissioning checks and alignment

Day 11: Troubleshooting and Root Cause Analysis

- Diagnosing common failures low efficiency, leaks, pressure drops
- Fault trees and failure mode analysis FMEA
- Use of operational data and logs
- Real-world troubleshooting scenarios

Day 12: Energy Optimization, Safety & Environmental Compliance

- Energy recovery and exchanger upgrades
- Risk assessment and process safety standards
- Environmental considerations and emission control
- Review session and group action planning for maintenance improvement

Registration form on the Training Course: Heat Exchangers Maintenance

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Complete & Mail or fax to Global Horizon Training Center (GHTC) at the address given below

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Full Name (Mr / Ms / Dr / Eng):
Position:
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Address:
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Person Responsible for Training and Development

Full Name (Mr / Ms / Dr / Eng):
Position:
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Payment Method

- ☐ Please find enclosed a cheque made payable to Global Horizon
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