

MAINTENANCE AND ENGINEERING | COURSE BROCHURE

Heat Exchanger Design and Maintenance

5 days | Classroom training | English

SMART HORIZON

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Course content

Why attend

Heat exchangers are central to energy efficiency in process plants and utilities. This course covers heat exchanger types and design basics, thermal performance, fouling and its costs, cleaning methods, inspection and testing, tube failures and repairs, and monitoring performance to schedule maintenance.

Fouled or failing exchangers waste energy and limit production. You will learn to operate and maintain them for best performance.

Professional Problems This Course Is Designed to Solve

• Difficulty translating subject knowledge into practical workplace decisions.
• Inconsistent approaches to the activities covered in the course outline.
• Lack of a structured plan for applying and reviewing new skills.

Course methodology

Performance calculations, failure case studies, cleaning method comparisons and maintenance planning.

Course objectives

By the end of this course, participants will be able to:
• Explain heat exchanger types and selection
• Understand thermal design and performance basics
• Assess fouling and its costs
• Select cleaning methods
• Inspect, test and repair exchangers
• Monitor performance to plan maintenance

Target audience

This course is suitable for:
• Process and mechanical engineers
• Maintenance engineers
• Plant operators
• Energy engineers
• Inspectors



Course content

Target competencies

Participants will develop competencies in:

- Thermal performance analysis
- Fouling management
- Inspection
- Repair techniques
- Performance monitoring

Course outline

Day 1: Heat Exchanger Types

09:00–10:08	Shell and tube
10:08–11:00	Plate and air-cooled
11:00–11:30	**Coffee break**
11:30–11:45	Plate and air-cooled (continued)
11:45–12:53	Selection
12:53–14:00	Exercise

Day 2: Thermal Performance

09:00–10:08	Heat transfer basics
10:08–11:00	LMTD and effectiveness
11:00–11:30	**Coffee break**
11:30–11:45	LMTD and effectiveness (continued)
11:45–12:53	Performance calculations
12:53–14:00	Exercise

Day 3: Fouling

09:00–10:08	Fouling mechanisms
10:08–11:00	Costs
11:00–11:30	**Coffee break**



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11:30–11:45	Costs (continued)
11:45–12:53	Mitigation
12:53–14:00	Case study

Day 4: Maintenance

09:00–10:08	Cleaning methods
10:08–11:00	Inspection and testing
11:00–11:30	**Coffee break**
11:30–11:45	Inspection and testing (continued)
11:45–12:53	Tube failures and plugging
12:53–14:00	Workshop

Day 5: Monitoring

09:00–10:08	Performance monitoring
10:08–11:00	Maintenance scheduling
11:00–11:30	**Coffee break**
11:30–11:45	Maintenance scheduling (continued)
11:45–12:53	Improvement
12:53–14:00	Action plan

The timings provided are estimates and may vary depending on the number of participants and the discussions taking place during the sessions. They are indicative only and do not constitute a binding commitment.



Course content

Dates, venues and fees

Current published course plans. Fees are per participant in EUR, excluding unconfirmed taxes.

Venue	Start date	End date	Fee (EUR)
Dubai Confirmed dates	16 Nov 2026	20 Nov 2026	**€6,300.-**
Online Confirmed dates	16 Nov 2026	20 Nov 2026	**€1,250.-**
London Confirmed dates	7 Dec 2026	11 Dec 2026	**€4,900.-**
Online Confirmed dates	7 Dec 2026	11 Dec 2026	**€1,250.-**
Barcelona Confirmed dates	4 Jan 2027	8 Jan 2027	**€5,680.-**
Online Confirmed dates	4 Jan 2027	8 Jan 2027	**€1,250.-**
Rome Confirmed dates	25 Jan 2027	29 Jan 2027	**€4,900.-**
Online Confirmed dates	25 Jan 2027	29 Jan 2027	**€1,250.-**
Dubai Confirmed dates	15 Feb 2027	19 Feb 2027	**€6,300.-**



Course content

Dates, venues and fees (continued)

Venue	Start date	End date	Fee (EUR)
Online Confirmed dates	15 Feb 2027	19 Feb 2027	**€1,250.–**
Rome Confirmed dates	8 Mar 2027	12 Mar 2027	**€4,900.–**
Online Confirmed dates	8 Mar 2027	12 Mar 2027	**€1,250.–**
Vienna Confirmed dates	29 Mar 2027	2 Apr 2027	**€5,880.–**
Online Confirmed dates	29 Mar 2027	2 Apr 2027	**€1,250.–**
London Confirmed dates	12 Apr 2027	16 Apr 2027	**€4,900.–**
Online Confirmed dates	12 Apr 2027	16 Apr 2027	**€1,250.–**
Paris Confirmed dates	3 May 2027	7 May 2027	**€5,720.–**
Online Confirmed dates	3 May 2027	7 May 2027	**€1,250.–**



Course content

Dates, venues and fees (continued)

Venue	Start date	End date	Fee (EUR)
Cape Town Confirmed dates	24 May 2027	28 May 2027	**€3,780.–**
Online Confirmed dates	24 May 2027	28 May 2027	**€1,250.–**
Istanbul Confirmed dates	14 Jun 2027	18 Jun 2027	**€5,300.–**
Online Confirmed dates	14 Jun 2027	18 Jun 2027	**€1,250.–**
Cape Town Confirmed dates	5 Jul 2027	9 Jul 2027	**€3,780.–**
Online Confirmed dates	5 Jul 2027	9 Jul 2027	**€1,250.–**
Frankfurt Confirmed dates	19 Jul 2027	23 Jul 2027	**€5,300.–**
Online Confirmed dates	19 Jul 2027	23 Jul 2027	**€1,250.–**
Barcelona Confirmed dates	9 Aug 2027	13 Aug 2027	**€5,680.–**



Course content

Dates, venues and fees (continued)

Venue	Start date	End date	Fee (EUR)
Online Confirmed dates	9 Aug 2027	13 Aug 2027	**€1,250.-**
Kuala Lumpur Confirmed dates	30 Aug 2027	3 Sept 2027	**€2,900.-**
Online Confirmed dates	30 Aug 2027	3 Sept 2027	**€1,250.-**
Rome Confirmed dates	20 Sept 2027	24 Sept 2027	**€4,900.-**
Online Confirmed dates	20 Sept 2027	24 Sept 2027	**€1,250.-**
Cape Town Confirmed dates	11 Oct 2027	15 Oct 2027	**€3,780.-**
Online Confirmed dates	11 Oct 2027	15 Oct 2027	**€1,250.-**
Dubai Confirmed dates	25 Oct 2027	29 Oct 2027	**€6,300.-**
Online Confirmed dates	25 Oct 2027	29 Oct 2027	**€1,250.-**



Course content

Dates, venues and fees (continued)

Venue	Start date	End date	Fee (EUR)
Vienna Confirmed dates	15 Nov 2027	19 Nov 2027	**€5,880.-**
Online Confirmed dates	15 Nov 2027	19 Nov 2027	**€1,250.-**
Amsterdam Confirmed dates	6 Dec 2027	10 Dec 2027	**€5,080.-**
Online Confirmed dates	6 Dec 2027	10 Dec 2027	**€1,250.-**

Plan your next step

Dates, availability, exact venue, taxes, inclusions and payment terms require written confirmation. This brochure is not a quotation, registration, booking confirmation or visa invitation. Participants receive a Smart Horizon certificate of attendance; programmes are not externally accredited and do not award a professional qualification or designation. Confirm arrangements before booking travel.

For group or in-house training, contact our learning team to discuss your objectives and delivery arrangements.

Contact Smart Horizon

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View the latest course details online