

aractech

Global Learning for Operational Leaders



OIL AND GAS

Chemical Process and Refining Technology

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Course content

Why Attend

This Chemical Process and Refining Technology training course delves into the intricacies of chemical process engineering within refinery operations. Participants will explore the transformation of crude oil into valuable end products such as gasoline, diesel, and jet fuel.

By focusing on the technological advancements in distillation, cracking, reforming, and hydroprocessing, the course emphasizes the balance between maximizing yield, ensuring operational safety, and adhering to environmental regulations. The participants will also gain knowledge on how to integrate advanced processes to optimize refinery efficiency while reducing carbon footprints.

Course Methodology

Course Objectives

- Develop a profound understanding of chemical processes in modern refining
- Explore various refining technologies and their role in product enhancement
- Learn to address environmental challenges and safety issues in refinery operations
- Enhance capabilities in applying cutting-edge technologies for yield optimization and process efficiency
- Understand the integration of refining with petrochemical production for added value

Target Audience

- This training course is suitable to a wide range of professionals but will greatly benefit:
 - Chemical Engineers
 - Process Engineers
 - Refinery Operators and Technicians

Course outline

Detailed course outline

Day-by-day outline for Chemical Process and Refining Technology.

Day 1 - Fundamentals of Refining and Chemical Processes

- Introduction to refinery operations: key units and process flow diagrams
- Core chemical reactions: cracking, hydroprocessing, reforming, and coking
- Fundamental refining technologies: thermal cracking, catalytic cracking, and distillation processes

Day 2 - Advanced Distillation and Separation Technologies

- Atmospheric and vacuum distillation: design and operation
- Detailed exploration of separation processes: fractionation, strippers, and absorption
- Introduction to new separation technologies: molecular distillation and membrane separation

Day 3 - Catalytic Processes and Hydroprocessing Technologies

- Principles of catalysis and catalyst behavior in refining
- Hydroprocessing fundamentals: hydrotreating and hydrocracking processes
- Catalytic reforming and its effect on enhancing octane number and yield

Day 4 - Refinery-Petrochemical Integration and By-Product Management

- Integration between refinery and petrochemical units for maximized productivity
- Handling refinery by-products: sulfur recovery, hydrogen production, and LPG separation
- Economic, logistical, and technological challenges in integrated operations

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Day 5 - Environmental, Health, and Safety Challenges in Refining

- Key environmental regulations and their impact on refining operations
- Process safety management: risk assessment, hazard identification, and incident prevention
- Sustainable refining practices: carbon capture, emission reduction, and waste minimization strategies

Seminar dates

Available seminar dates

Live dates and pricing for Chemical Process and Refining Technology generated from the course details page.

Date	Location	Format	Fee
18 - 22 May 2026	Frankfurt	Classroom	€2,275
22 - 26 June 2026	Barcelona	Classroom	€2,695
13 - 17 July 2026	Frankfurt	Classroom	€2,275
17 - 21 August 2026	Rome	Classroom	€2,975
21 - 25 September 2026	Kuala Lumpur	Classroom	€1,575
19 - 23 October 2026	London	Classroom	€2,940
2 - 6 November 2026	Rome	Classroom	€2,975

Live online option

Online delivery is available at €1,250.