



*Training Course:  
Fundamentals of Chemical Engineering*

*6 - 17 September 2026  
Dubai (UAE)*

## Training Course: Fundamentals of Chemical Engineering

Training Course code: EN6027 From: 6 - 17 September 2026 Venue: Dubai (UAE) - Training Course Fees: 9240 € Euro

### Introduction

Chemical engineering is the discipline that bridges chemistry, physics, mathematics, and engineering to design and operate processes that convert raw materials into valuable products. A strong foundation in core principles is essential for safe, efficient, and economically viable industrial operations.

This program, designed by Global Horizon Training Center, provides a comprehensive 10-day training that equips participants with the essential concepts, analytical tools, and practical understanding required to work effectively in chemical and process industries.

### Course Objectives

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

- Understand core principles of chemical engineering
- Apply material and energy balances to process systems
- Analyze fluid flow, heat transfer, and mass transfer processes
- Identify and operate key process equipment
- Understand reaction engineering fundamentals
- Interpret PFDs and basic P&IDs
- Apply process control and safety principles
- Support efficient and safe plant operations

### Target Audience

This program is designed for:

- Chemical and Process Engineering Graduates
- Plant Operators and Technicians
- Maintenance and Operations Personnel
- Engineers transitioning into process industries
- Supervisors in industrial facilities
- Individuals seeking foundational chemical engineering knowledge

### Outline

#### Day 1: Introduction to Chemical Engineering

- Overview of chemical engineering disciplines
- Process industries and applications
- Role of chemical engineers
- Process flow diagrams PFDs
- Safety fundamentals

#### Day 2: Basic Chemistry and Thermodynamics

- Chemical reactions and stoichiometry
- Phases and properties of matter
- Thermodynamic systems and laws
- Energy and equilibrium concepts
- Industrial applications

#### Day 3: Material Balances

- Principles of mass balance
- Steady-state and unsteady-state systems
- Single and multiple unit systems
- Recycle and bypass streams
- Practical problem-solving

#### Day 4: Energy Balances

- Heat and energy balance principles
- Enthalpy and energy calculations
- Heat transfer basics
- Energy efficiency
- Applications in process systems

#### Day 5: Fluid Mechanics

- Fluid properties and behavior
- Flow regimes and Reynolds number
- Pressure drop and flow measurement
- Pumps and piping systems
- Industrial applications

#### Day 6: Heat Transfer

- Modes of heat transfer conduction, convection, radiation
- Heat exchangers and thermal systems
- Heat transfer coefficients
- Energy optimization
- Case examples

#### Day 7: Mass Transfer

- Diffusion and mass transfer principles
- Separation processes distillation, absorption

- Phase equilibrium basics
- Mass transfer equipment
- Industrial applications

#### Day 8: Reaction Engineering

- Types of chemical reactions
- Reactor design batch, CSTR, PFR
- Reaction kinetics
- Conversion and yield
- Process optimization

#### Day 9: Process Control and Instrumentation

- Process control fundamentals
- Sensors and measurement devices
- Control loops and PID basics
- Automation systems
- Troubleshooting basics

#### Day 10: Safety, Integration, and Case Studies

- Process safety management PSM
- Hazard identification HAZOP basics
- Environmental considerations
- Integration of process systems
- Case studies and practical applications

## Registration form on the Training Course: Fundamentals of Chemical Engineering

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

### Delegate Information

Full Name (Mr / Ms / Dr / Eng): .....  
 Position: .....  
 Telephone / Mobile: .....  
 Personal E-Mail: .....  
 Official E-Mail: .....

### Company Information

Company Name: .....  
 Address: .....  
 City / Country: .....

### Person Responsible for Training and Development

Full Name (Mr / Ms / Dr / Eng): .....  
 Position: .....  
 Telephone / Mobile: .....  
 Personal E-Mail: .....  
 Official E-Mail: .....

### Payment Method

- Please find enclosed a cheque made payable to Global Horizon
- Please invoice me
- Please invoice my company

### Easy Ways To Register

Telephone:  
+201095004484 to  
provisionally reserve your  
place.

Fax your completed  
registration  
form to: +20233379764

E-mail to us :  
info@gh4t.com  
or training@gh4t.com

Complete & return the  
booking form with cheque  
to: Global Horizon  
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