Global Horizon
TRAINING CENTER

Training Course:
Enhanced Process Design and Simulation with Aspen HYSYS - EHY223

28 December 2025 - 1 January 2026
Istanbul (Turkey)
DoubleTree by Hilton Istanbul Esentepe

Training Course:
Enhanced Process Design and Simulation with Aspen HYSYS - EHY223

Training Course code: EN235104 From: 28 December 2025 - 1 January 2026 Venue: Istanbul (Turkey) - DoubleTree by Hilton Istanbul Esentepe Training Course Fees: 6500 Euro

Introduction

Welcome to the Enhanced Process Design and Simulation with Aspen HYSYS - EHY223 training program! Aspen HYSYS is a widely recognized process simulation software used in various industries to optimize and enhance process design and operations. This comprehensive course is designed to take your Aspen HYSYS skills to the next level and equip you with the knowledge and techniques needed to tackle complex process design challenges.

Whether you are a chemical engineer, process engineer, or a professional involved in process simulation and optimization, this training program will provide you with valuable insights into the advanced features and capabilities of Aspen HYSYS. Through a combination of theoretical concepts, practical exercises, and real-world case studies, you will gain hands-on experience in utilizing Aspen HYSYS to develop and optimize complex process designs.

Target Audience

This training program is ideal for individuals with a fundamental understanding of process engineering principles and prior experience using Aspen HYSYS. The target audience includes, but is not limited to:

- Chemical Engineers seeking to enhance their process design and simulation skills.
- Process Engineers are involved in process optimization and troubleshooting.
- Professionals working in chemical, petrochemical, oil and gas, and related industries.
- Graduates and postgraduates aiming to pursue careers in process engineering and simulation.

Objectives

Upon completion of the Enhanced Process Design and Simulation with Aspen HYSYS - EHY223 training program, participants will be able to:

- Utilize Aspen HYSYS Effectively: Navigate through the Aspen HYSYS interface, create and configure simulations, and understand the simulation workflow to efficiently build process models.
- Apply Advanced Thermodynamics: Employ various thermodynamic models and property packages for specific applications, handle complex phase equilibrium calculations, and work with electrolyte thermodynamics.
- Master Advanced Unit Operations: Design and optimize distillation columns, simulate chemical reactors with kinetics, analyze heat exchanger networks, and model compressors and turbines effectively.
- Optimize Process Design: Perform sensitivity analysis to optimize process performance, conduct heat, and material balance checks, and implement design specifications and constraints for better results.
- Enhance Process Simulation Techniques: Understand dynamic simulation and transient analysis, integrate Aspen HYSYS with Excel for custom calculations, and utilize Aspen HYSYS utilities to improve productivity.

- Troubleshoot and Resolve Challenges: Identify and resolve common issues encountered during simulations and apply best practices for efficient problem-solving.
- Undertake Aspen HYSYS Case Studies: Analyze real-world case studies to apply the concepts learned and gain practical experience in addressing complex process design scenarios.

Training program outline

Day 1: Introduction to Aspen HYSYS

1. Overview of Aspen HYSYS
    - Introduction to process simulation software
    - Key features and applications of Aspen HYSYS
2. Simulation Workflow
    - Understanding the steps involved in a typical simulation project.
    - Creating a new simulation case
    - Importing data from external sources P&IDs, Excel, etc.
3. User Interface Navigation
    - Tour of the Aspen HYSYS workspace
    - Customizing the layout and preferences
    - Working with process flowsheets and components
4. Configuring a New Simulation
    - Selecting thermodynamic models and property packages
    - Adding components to the simulation
    - Setting up unit operations and equipment

Day 2: Advanced Thermodynamics 5. Thermodynamic Models in Aspen HYSYS

- Review of commonly used thermodynamic models.
- Understanding when to use different models.
- Modifying and creating custom thermodynamic models

6. Property Packages for Specific Applications
    - Exploring specialized property packages e.g., electrolyte packages
    - Handling challenging applications and systems
7. Complex Phase Equilibrium Calculations
    - Dealing with multiple phases and phase splitting
    - Incorporating non-ideal behavior in simulations
8. Introduction to Electrolyte Thermodynamics
    - Modeling electrolyte systems using Aspen HYSYS
    - Simulating systems with dissolved salts and ions

Day 3: Advanced Unit Operations 9. Distillation Column Design and Optimization

- Modeling and simulating distillation columns

- Troubleshooting distillation issues and optimizing performance

10. Reactor Modeling and Kinetics
    - Simulating various types of chemical reactors
    - Incorporating reaction kinetics in simulations
11. Heat Exchanger Networks and Optimization
    - Designing and optimizing heat exchanger networks
    - Utilizing pinch analysis for energy-efficient designs
12. Compressor and Turbine Modeling
    - Modeling compressors and turbines in Aspen HYSYS
    - Evaluating performance and efficiency

Day 4: Process Optimization 13. Sensitivity Analysis for Process Optimization - Identifying critical parameters and their impact - Analyzing sensitivity to optimize process performance.

14. Heat and Material Balance Checks
    - Conducting heat and material balance calculations
    - Detecting and resolving inconsistencies in the simulation
15. Implementing Design Specifications and Constraints
    - Setting up constraints and design specifications
    - Handling process changes and modifications
16. Aspen HYSYS Case Studies
    - Analyzing real-world case studies to apply concepts learned.
    - Addressing challenges faced during the simulations.

Day 5: Enhanced Process Simulation Techniques

17. Dynamic Simulation and Transient Analysis

- Introduction to dynamic simulations in Aspen HYSYS

- Analyzing process behavior during transient conditions.

- Integrating Aspen HYSYS with Excel for Custom Calculations
    1. Leveraging Excel for custom calculations and data exchange
    2. Automating repetitive tasks with Excel integration
- Utilizing Aspen HYSYS Utilities
    1. Exploring Aspen HYSYS utilities for efficient workflow
    2. Tips and tricks for improving productivity.
- Troubleshooting and Common Challenges
    1. Identifying and resolving common issues in simulations
    2. Best practices for efficient problem-solving

Registration form on the Training Course: Enhanced Process Design and Simulation with Aspen HYSYS - EHY223

Training Course code: EN235104 From: 28 December 2025 - 1 January 2026 Venue: Istanbul (Turkey) - DoubleTree by Hilton Istanbul Esentepe Training Course Fees: 6500 Euro

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 3 Oudai street, Aldouki, Giza, Giza Governorate, Egypt.