



*Training Course:  
Mastering Aspen HYSYS - EHY101: Advanced  
Training for Process Simulation and Optimization*

*9 - 13 February 2025*

*Cairo (Egypt)*

*Holiday Inn & Suites Cairo Maadi, an IHG Hotel*

## Training Course: Mastering Aspen HYSYS - EHY101: Advanced Training for Process Simulation and Optimization

Training Course code: EN235101 From: 9 - 13 February 2025 Venue: Cairo (Egypt) - Holiday Inn & Suites Cairo Maadi, an IHG Hotel Training Course Fees: 3900 € Euro

### Introduction

Welcome to the Mastering Aspen HYSYS - EHY101: Advanced Training for Process Simulation and Optimization! This comprehensive training program is designed to provide participants with the knowledge and skills required to become proficient in utilizing Aspen HYSYS, one of the industry's leading process simulation and optimization software. Whether you are a seasoned process engineer seeking to enhance your expertise or a graduate looking to enter the field with a competitive advantage, this program will equip you with advanced tools and techniques to excel in process engineering and optimization.

### Target Audience

This training program is tailored for professionals, engineers, researchers, and graduate students working in or aspiring to work in the fields of process engineering, chemical engineering, petroleum engineering, and related disciplines. The course caters to individuals who already possess a foundational understanding of Aspen HYSYS or similar process simulation software and are eager to explore its advanced capabilities to tackle complex engineering challenges.

### Objectives

- **Gain Proficiency in Advanced Aspen HYSYS Features:** Participants will familiarize themselves with the advanced features and functionalities of Aspen HYSYS, enabling them to build sophisticated process models and address real-world engineering scenarios.
- **Optimize Process Designs and Operations:** Through hands-on exercises and case studies, participants will learn how to optimize various unit operations, heat exchanger networks, distillation columns, and other processes to achieve desired performance metrics like energy efficiency, product purity, and production yield.
- **Understand Dynamic Process Simulation:** Participants will explore dynamic simulation techniques, incorporating control strategies into their models to analyze and optimize process dynamics, transient behaviors, and response to disturbances.
- **Analyze and Troubleshoot Simulation Problems:** Participants will develop the skills to identify and troubleshoot convergence issues, validating and refining their process models for accurate simulations and reliable results.
- **Explore Plant-Wide Simulation:** Participants will learn to integrate multiple process units within Aspen HYSYS to create comprehensive plant-wide simulations, gaining insights into overall process interactions and system behavior.

### Training program outline

## Day 1: Aspen HYSYS Fundamentals and Advanced Thermodynamics

### Session 1:

- Introduction to the Mastering Aspen HYSYS - EHY101 course.
- Recap of Aspen HYSYS basics and user interface.
- Overview of advanced features and applications.

### Session 2:

- Advanced thermodynamics in Aspen HYSYS.
- Working with complex components and property packages.
- Troubleshooting convergence issues in simulations.

### Session 3:

- Dynamic simulation and transient analysis.
- Incorporating control strategies in process models.
- Case study: Dynamic simulation of a distillation column.

## Day 2: Process Optimization and Sensitivity Analysis

### Session 4:

- Introduction to process optimization.
- Setting up optimization problems in Aspen HYSYS.
- Sensitivity analysis and parameter estimation.

### Session 5:

- Optimizing heat exchanger networks and utility systems.
- Multi-objective optimization techniques.
- Case study: Optimizing a heat exchanger network for energy efficiency.

### Session 6:

- Optimizing distillation and separation processes.
- Minimizing energy consumption and maximizing product purity.
- Case study: Optimizing a complex distillation system.

## Day 3: Advanced Unit Operations and Plant-Wide Simulation

### Session 7:

- Advanced reactor modeling and simulation.
- Catalytic and non-catalytic reactions.

- Case study: Simulation of a catalytic reactor.

Session 8:

- Advanced separator modeling and troubleshooting.
- Modeling of three-phase separators and knockout drums.
- Case study: Simulation of a three-phase separator.

Session 9:

- Introduction to plant-wide simulation.
- Integrating multiple process units in Aspen HYSYS.
- Case study: Simulation of a complete process plant.

#### Day 4: Real-World Applications and Best Practices

Session 10:

- Optimization in Aspen HYSYS V11 and the latest updates.
- Best practices for efficient process modeling and optimization.
- Case study: Real-world process optimization project.

Session 11:

- Integration with other software and tools.
- Aspen Plus integration for specialized unit operations.
- Case study: Combining Aspen HYSYS and Aspen Plus for a complex process.

#### Day 5

Session 12:

- Review of course material and Q&A session.
- Feedback and evaluation of the training program.
- Wrap-up and conclusion of the Mastering Aspen HYSYS - EHY101 training program.
- Distribution of certificates.

## Registration form on the Training Course: Mastering Aspen HYSYS - EHY101: Advanced Training for Process Simulation and Optimization

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

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### Person Responsible for Training and Development

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- Please find enclosed a cheque made payable to Global Horizon
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