Global Horizon
TRAINING CENTER

Training Course:
Advanced Process Modeling and Simulation with Aspen HYSYS - EHY121

1 - 5 September 2025
Kuala Lumpur (Malaysia)
Royale Chulan Kuala Lumpur

Training Course:
Advanced Process Modeling and Simulation with Aspen HYSYS - EHY121

Training Course code: EN235102 From: 1 - 5 September 2025 Venue: Kuala Lumpur (Malaysia) - Royale Chulan Kuala Lumpur Training Course Fees: 6500 Euro

Introduction

Welcome to the Advanced Process Modeling and Simulation with Aspen HYSYS - EHY121 training program! This comprehensive course is designed to take your Aspen HYSYS skills to the next level and equip you with advanced process modeling and simulation techniques. Aspen HYSYS is a powerful and widely used process simulation software that plays a crucial role in optimizing process designs and operational performance across various industries. In this training, we will delve into the intricacies of Aspen HYSYS, enabling you to model, simulate, and optimize complex processes with confidence.

Target Audience

The Advanced Process Modeling and Simulation with Aspen HYSYS - EHY121 training program is tailored for professionals and engineers who already possess a foundational understanding of Aspen HYSYS or have completed the Aspen HYSYS Fundamentals course EHY101. The training program caters to the following audience:

- Chemical Engineers seeking to enhance their process modeling and simulation skills.
- Process Engineers aiming to optimize and improve their existing processes.
- Simulation Engineers interested in mastering Aspen HYSYS for more advanced applications.
- Researchers and Academics are involved in process optimization and complex system analysis.
- Professionals working in industries such as petrochemicals, oil and gas, pharmaceuticals, and more.

Objectives

By the end of this training program, participants will:

1. Master Advanced Aspen HYSYS Features: Gain proficiency in using advanced components, unit operations, and thermodynamic models available in Aspen HYSYS for tackling complex engineering scenarios.
2. Design and Optimize Heat Exchangers: Acquire the knowledge and skills to design, rate, troubleshoot, and optimize various types of heat exchangers, including shell-and-tube and air-cooled heat exchangers.
3. Model Complex Reactors: Understand complex reaction kinetics, model multiple and catalytic reactions, and optimize reactor designs to achieve desired product yields and process efficiency.
4. Explore Dynamic Simulation and Control: Learn the importance of dynamic simulations, build dynamic models for process units, and implement control systems in Aspen HYSYS for stable and efficient operations.
5. Conduct Process Optimization: Discover different optimization techniques available in Aspen HYSYS and apply them to maximize process efficiency and resource utilization.
6. Perform Sensitivity Analysis and Parameter Estimation: Analyze the impact of varying parameters on

process performance and estimate unknown model parameters using sensitivity analysis.
7. Explore Advanced Process Modeling: Explore the modeling of complex processes, such as LNG and refinery units, to handle industry-specific challenges effectively.

Training program outline

Day 1: Introduction to Advanced Process Modeling

- Recap of Aspen HYSYS Fundamentals
- Advanced components and unit operations in Aspen HYSYS
- Advanced thermodynamics: using non-ideal models and custom thermodynamic packages.

Day 2: Advanced Heat Exchanger Modeling

- Shell-and-tube heat exchangers: design, rating, and troubleshooting
- Air-cooled heat exchangers and double-pipe exchangers
- Heat exchanger optimization techniques

Day 3: Advanced Reactor Modeling

- Complex reaction kinetics and rate expressions
- Multiple reactions and catalytic reactions
- Reactor design and optimization

Day 4: Dynamic Simulation and Control

- Dynamic simulations: introduction and importance
- Dynamic modeling of process units
- Control system design and tuning in Aspen HYSYS

Day 5: Optimization and Advanced Topics

- Process optimization techniques
- Sensitivity analysis and parameter estimation
- Advanced topics: modeling of complex processes e.g., LNG, refinery units

Registration form on the Training Course: Advanced Process Modeling and Simulation with Aspen HYSYS - EHY121

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- ☐ Please find enclosed a cheque made payable to Global Horizon
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