MERCURY

Aspen HYSYS Learning Course

11 - 15 Aug 2025
Rome (Italy)

Aspen HYSYS Learning Course

Ref.: 15682_320517 **Date:** 11 - 15 Aug 2025 **Location:** Rome (Italy) **Fees:** 5500 **Euro**

Introduction:

The Aspen HYSYS Learning Course is a five-day program that provides participants with in-depth knowledge and practical skills in using Aspen HYSYS, a leading process simulation software widely used in the oil and gas industry, petrochemical plants, and chemical engineering sectors.

This Aspen HYSYS Learning course will guide participants through the core functionalities of Aspen HYSYS, covering essential topics such as process modeling, simulation, optimization, and troubleshooting.

In this Aspen HYSYS Learning program, attendees will have a solid foundation in Aspen HYSYS, enabling them to confidently apply this powerful tool in real-world scenarios to enhance process efficiency, safety, and profitability.

Targeted Groups:

- Process Engineers.
- Chemical Engineers.
- Petroleum Engineers.
- Plant Operators.
- Simulation Specialists.
- Process Design Engineers.
- Technical Managers.
- Project Engineers in the Oil & Gas Industry.
- Refinery Engineers.
- Professionals involved in process optimization and safety management.

Course Objectives:

At the end of this course, the participants will be able to:

- Develop proficiency in Aspen HYSYS interface navigation.
- Understand and apply process simulation principles.
- Build and simulate complex process models.
- Perform dynamic simulations for process control.
- Optimize process design and operations.
- Conduct equipment sizing and performance analysis.
- Integrate heat exchange systems effectively.
- Analyze and troubleshoot process issues.
- Enhance safety through rigorous process simulation.
- Generate detailed simulation reports and data analysis.

Targeted Competencies:

- Process Simulation.
- Dynamic Modeling.
- Process Optimization.
- Heat Integration.
- Equipment Sizing and Design.
- Troubleshooting Techniques.
- Safety and Risk Analysis.
- Data Analysis and Reporting.
- Energy Efficiency Enhancement.
- Technical Problem-Solving Skills.

Course Content:

Unit 1: Propane Refrigeration Loop:

- Construct flowsheets by adding and connecting operations.
- Manipulate the graphic interface to clarify process representation.
- Understand forward and backward information propagation.
- Transform simulation cases into templates.
- Workshop: Building and analyzing a propane refrigeration loop simulation.

Unit 2: Refrigerated Gas Plant:

- Install and converge heat exchangers.
- Utilize logical operations such as Adjust and Balance.
- Workshop: Modeling a simplified version of a refrigerated gas plant.

Unit 3: NGL Fractionation Train:

- Model distillation columns with the Column Input Expert.
- Tailor column specifications to process constraints.
- Assess utility requirements with the Process Utility Manager.
- Workshop: Modeling an NGL recovery plant with two distillation columns.

Unit 4: Oil Characterization and HP Separation:

- Intro to Oil Characterization in Aspen HYSYS.
- Implement the Aspen HYSYS Spreadsheet and Case Study functionalities.
- Workshop: Characterize crude oil and study the GOR variation with pressure using the spreadsheet operation.

Unit 5: Gas Gathering System:

- Simulate a gas gathering system using the steady-state capabilities of Aspen HYSYS.
- Workshop: Utilizing the pipe segment and Hydraulics subflowsheet for modeling a piping network.

Unit 6: Two-Stage Compression:

- Intro to the use of recycling operations within simulations.
- Recognize appropriate locations for recycling.
- Apply performance curves to rotating equipment.
- Workshop: Implementing a two-stage compression flowsheet with active compressor curves.

Unit 7: Natural Gas Dehydration with TEG:

- Review methods to saturate hydrocarbon streams.
- Discuss hydrate formation and inhibition techniques.
- Model a TEG dehydration unit.
- Workshop: Investigating the impact of methanol injection on hydrate formation using a TEG dehydration model.

Unit 8: Rating Heat Exchangers:

- Explore heat transfer calculations in Aspen HYSYS.
- Configure shell and tube heat exchangers to employ Rating models.
- Integrate EDR calculations into flowsheets.
- Workshop: Assessing if heat exchangers meet process requirements using Rating models and EDR within Aspen HYSYS.

Unit 9: Troubleshooting / Best Practices:

- Highlight best practices for product integration and automation.
- Investigate simulation issues and troubleshoot them.
- Identify suitable thermodynamic models.
- Learn about tips for debugging simulations and columns.
- Workshop: Troubleshooting Aspen HYSYS cases and identifying common issues.

Unit 10: Reporting in Aspen HYSYS:

- Create custom reports using the Report Manager.
- Access and use Excel utilities for simulation data extraction.
- Employ the Aspen Simulation Workbook to integrate models with Excel.
- Workshop: Generating custom reports using Report Manager, Excel utilities, and Aspen Simulation Workbook.

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Registration form on the :
Aspen HYSYS Learning Course

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