MERCURY

Aspen HYSYS

16 - 27 Jun 2024
Istanbul (Turkey)

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Aspen HYSYS

Ref.: 15240_269876 **Date:** 16 - 27 Jun 2024 **Location:** Istanbul (Turkey) **Fees:** 9000 **Euro**

Introduction:

The training course of Aspen HYSYS: Process Modeling MBA, is prepared for those who have a background in chemical/process engineering, the oil/gas industry, or petroleum refining, and Basics of and handling the Aspen HYSYS Steady-state simulation.

Targeted Groups:

- Process Engineers with Process simulation experience.
- New engineering graduates/technologists who will be using Aspen HYSYS in their daily work.
- Process engineers doing process design and optimization projects and studies.
- Plant engineers checking plant performance under different operating conditions.
- R&D engineers and researchers using Aspen HYSYS for process synthesis.

Course Objectives:

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

- Learn to build, navigate, and optimize process simulations using Aspen HYSYS.
- Learn efficient use of different HYSYS functions to build advanced steady-state process simulations.
- Leverage the intuitive solving capabilities and other key features of Aspen HYSYS that allow for rapid Flowsheet construction.
- Use the Workbook and Flowsheet interfaces for quick and effective modeling.
- Discover how multi-flow sheet integration can streamline and organize simulation efforts.
- Improve the convergence characteristics of columns and flow sheets; troubleshoot common problems.
- Discover how multi-flowsheet integration can streamline and organize simulation efforts
- Explore different means of reporting results, including the use of Microsoft Excel VB macros
- Evaluate the performance of existing equipment by leveraging the rating capabilities of Aspen HYSYS
- Improve the convergence characteristics of columns and flowsheets; troubleshoot common problems
- Perform Case studies to determine the optimum operating point for a process
- Understand the pipeline hydraulics calculations used to assess the sizing requirements for a gas gathering system

Course Content:

Unit 1: Propane Refrigeration Loop:

- Add and connect operations to construct a simple flowsheet.
- Use the graphic interface to manipulate flowsheet objects and provide a clearer representation of the process.
- Understand how to process information has propagated both forwards and backward.

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- Convert simulation cases to templates.
- Workshop: Build and analyze a propane refrigeration loop simulation.

Unit 2: Refrigerated Gas Plant:

- Install and converge heat exchangers.
- Use logical operations: Adjust and Balance.
- Workshop: Model a simplified version of a refrigerated gas plant.

Unit 3: NGL Fractionation Train:

- Model distillation columns with the assistance of the Column Input Expert.
- Manipulate column specifications to better represent process constraints.
- Evaluate utility requirements using the Process Utility Manager.
- Workshop: Model a two-column natural gas liquid NGL recovery plant.

Unit 4: Oil Characterization and HP Separation:

- Introduce Oil Characterization in Aspen HYSYS.
- Use the Aspen HYSYS Spreadsheet and Case Study functionality.
- Workshop: Use the Oil Environment to characterize a crude assay and then employ the Case Study and Spreadsheet operation to determine how the Gas Oil Ratio GOR varies with pressure.

Unit 5: Gas Gathering System:

- Simulate a gas gathering system located on varied terrain using the steady-state capabilities of Aspen HYSYS.
- Workshop: Use the pipe segment and the Hydraulics subflowsheet to model a piping network in Aspen HYSYS.

Unit 6: Two-Stage Compression:

- Introduce the use of the recycling operation.
- Recognize suitable recycling locations.
- Implement performance curves for rotating equipment.
- Workshop: Utilize the recycle operation to build a two-stage compression flowsheet; define and activate compressor curves.

Unit 7: Natural Gas Dehydration with TEG:

- Review the recommended methods to saturate single-phase and two-phase hydrocarbon streams.
- Discuss the implications of hydrate formation and the different means available to avoid hydrate problems.
- Model a typical TEG dehydration unit.
- Workshop: Model a typical TEG dehydration unit and determine water dew point for the dry gas; use the hydrate utility to investigate the effects of methanol injection on hydrate inhibition.

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Unit 8: Rating Heat Exchangers:

- Review heat transfer calculation models in Aspen HYSYS.
- Configure a shell and tube heat exchanger to use a built-in Rating model.
- Integrate rigorous Exchanger Design and Rating EDR calculations into an Aspen HYSYS flowsheet.
- Workshop: Use a Rating model to determine if an existing heat exchanger will meet process specifications; design and rate a heat exchanger using the EDR interface inside Aspen HYSYS.

Unit 9: Troubleshooting / Best Practices:

- Introduce best practices for product integration and automation.
- Investigate the reasons why a simulation may produce poor results, consistency errors, etc.
- Identify appropriate thermodynamic models for common processes.
- Use suggested tips to debug simulations and columns.
- Workshop: Troubleshoot existing Aspen HYSYS cases; recognize common problem areas in an Aspen HYSYS case.

Unit 10: Reporting in Aspen HYSYS:

- Create a variety of customized reports using newly added functionality in the Report Manager.
- Access free Excel utilities designed to extract simulation data.
- Use Aspen Simulation Workbook to deploy models in Microsoft Excel.
- Workshop: Use the Report Manager, Excel utilities, and Aspen Simulation Workbook to obtain custom reports.

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Registration form on the : Aspen HYSYS

code: 15240 **From:** 16 - 27 Jun 2024 **Venue:** Istanbul (Turkey) **Fees:** 9000 **Euro**

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