

Training Course Data Sheet	
EHY101 Aspen HYSYS: Process Modeling	Course Number: EHY101
	Duration: 3 days
	CEUs Awarded: 2.1
	Level: Introductory

<p>Former Course Title/Number</p> <ul style="list-style-type: none"> This course was previously known as Process Modeling Using Aspen HYSYS®, EA1031 <p>Objectives</p> <ul style="list-style-type: none"> Learn to build, navigate and optimize process simulations using Aspen HYSYS Learn the efficient use of different HYSYS functions to build steady state process simulations <p>Course Benefits</p> <ul style="list-style-type: none"> Discover how the key features of Aspen HYSYS allow rapid flowsheet construction and its intuitive, bi-directional calculations Use the Workbook and Process Flow Diagram (PFD) interfaces for quick and effective modeling Customize the Workbook to track additional stream and operating parameters Investigate how templates and subflowsheets can streamline and organize simulation efforts Explore different means of reporting results, including the use of Microsoft Excel VB macros Preliminary Cost Estimation using Aspen Process Economic Analyzer from the Aspen HYSYS Environment Introduction to Aspen Simulation Workbook Evaluate the performance of existing equipment with the Rating function Improve the convergence performance of a simulation; troubleshoot common problems 	<p>Who Should Attend</p> <ul style="list-style-type: none"> 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 <p>Approach</p> <ul style="list-style-type: none"> Instruction on basic topics Experienced instructor will select an appropriate order in which to present the modules Discussion about the general approach and the key elements for successful simulations Instructor-guided demonstrations of features Hands-on workshops using examples from the natural gas processing industry Detailed course notes <p>Prerequisites</p> <ul style="list-style-type: none"> A background in chemical engineering or industrial chemistry <p>Suggested Subsequent Courses</p> <ul style="list-style-type: none"> EHY121 Aspen HYSYS: Using Aspen Simulation Workbook EHY201 Aspen HYSYS: Process Modeling Additional Topics
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EHY101 Aspen HYSYS: Process Modeling Course Agenda

Module: Getting Started

- Define a fluid package – property package
- Select components, including hypotheticals
- Install streams and attach stream utilities
- Customize the Workbook

Module: Propane Refrigeration Loop

- Add operations to build a flowsheet and use the interface to manipulate flowsheets
- Understand forward-backward information
- Convert simulation cases to templates

Module: Refrigerated Gas Plant

- Install and converge heat exchangers
- Use logical operations: Adjust and Balance
- Use the Case Study tool to perform case studies on your simulation

Module: NGL Fractionation Train

- Install columns by modeling a de-methanizer, de-ethanizer, and de-propanizer column train

Module: Oil Characterization

- Oil Characterization using boiling point assay data and the Aspen HYSYS Oil Manager
- Use of the Aspen HYSYS Spreadsheet to perform calculations

Module: Gas Gathering System

- Use the pipe segment to model pipelines

Module: Two-Stage Compression

- Use the Recycle operation in Aspen HYSYS
- Choose suitable tear locations for recycles

Module: Compressor and Pump Curves

- Specify and attach single and multiple head and efficiency curves to compressors and pumps
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Module: Natural Gas Dehydration with TEG

- Model a typical TEG dehydration unit
- Determine water dewpoint for a gas
- Estimate Process Capital Costs using Aspen Economic Evaluation Tool

Module: Rating Heat Exchangers

- Use the Dynamic Rating method (by providing heat exchanger geometry) to determine if an existing heat exchanger will meet process specifications

Module: CO2 Capture with MEA

- Define a fluid package in Aspen HYSYS using Aspen Properties
- Simulate electrolyte systems using Electrolyte NRTL

Module: Troubleshooting

- Recognize, interpret, and troubleshoot common problem areas in Aspen HYSYS
- Learn tips and tricks to ensure column convergence

Module: Acid Gas Sweetening with DEA

- Simulate amine towers; supply tray dimensions
- Discuss efficiencies for amine towers
- Use the Set operation and the Spreadsheet

Module: Reporting in Aspen HYSYS and Aspen Simulation Workbook

- Customize reports using the Report Manager
 - Use XML to create an input data summary
 - Run an Excel utilities to view workbook data
 - Use Aspen Simulation Workbook to deploy models in Microsoft Excel
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