

Aspen HYSYS® Study Guide

Study Guide for Master User Certification



Prove your Credibility

An **Aspen Certified Master User in Aspen HYSYS** demonstrates comprehensive understanding and mastery of the product’s features. Additionally, they can build complex models in both steady-state and dynamic simulation modes, including Upstream and Midstream applications, and interpret results and resolve simulation issues with minimal guidance. For the lab section of the exam, dynamic applications and column models will be required; however, you will be able to choose between upstream and safety application and refining application.



Exam Scope

- Upstream Application
- Refining Application
- Safety Analysis
- Dynamics Simulation
- Column Modeling

Grading

Grade	Weight
Multiple choice questions	36%
Lab Task	64%
Total	100%

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Step 1: Take the Classes:

- [Aspen HYSYS Dynamics: Introduction to Dynamic Modeling](#)
- [Refinery Process Modeling using Aspen HYSYS and Aspen HYSYS Petroleum Refining](#)

AspenTech offers a variety of delivery methods in which you can take training.

- Register for [public training](#) (face to face or virtual)
- Register for [private training](#) (face to face or virtual)
- Subscribe to [eLearning](#) (on-demand)

Step 2: Review Scope and Objectives

This **study guide** covers **all the objectives** for the Aspen HYSYS Master User Certification exam and serves as both a study tool and an on-the-job reference.

Step 3: Take the Exam: **Aspen HYSYS Master User Certification (ACMU-HYSYS01)**

The total time for the certification exam is four hours. The passing score is 70%.

SCOPE	TECHNICAL CONTENT	COMPETENCY OBJECTIVES
Dynamic Simulation	General	<p>Understand the basics of dynamic simulation</p> <p>Recognize dynamics details for better performance</p>
	Dynamics modeling development	<p>Master the techniques required for dynamic modeling development</p> <p>Set up control schemes and monitor key parameters</p> <p>Develop scenarios with Event Scheduler and CEM</p> <p>Familiarize Columns dynamic modeling conversion</p> <p>Understand Pipeline and Hydraulics dynamic modeling</p>
	Compressors in dynamics	<p>Know how to do Surge Analysis in dynamic modeling</p> <p>Recognize how to model multiple Compressor types (Screw / Reciprocator)</p>
Petroleum Refining	Assay Characterization	<p>Illustrate the available forms for Heavy Oil Characterization</p> <p>Customize property characterization methods for better fit</p>
	Refinery Models	<p>Learn Petroleum Refining unit operations features and workflow</p> <p>Build and calibrate FCC/HCR/CCR refinery reactors</p> <p>Integrate the refinery reactor templates with unit operations in main flowsheet</p>
	MB reactor	<p>Recognize the capabilities of MB reactor</p>
Activated Integration	Economic Evaluation	<p>Perform preliminary economic cost estimation</p>
	Energy Analysis	<p>Understand the features of Energy Analysis</p> <p>Recognize how to explore and implement design changes, then optimize energy efficiency</p> <p>Know how to implement new utility types in energy analysis</p>
	EDR	<p>Integrate exchangers except Shell and Tube with EDR for rigorous modeling</p>
	Flarenet	<p>Identify the options of transferring PSVs from HYSYS to Flarenet</p>
	Aspen Simulation Workbook	<p>Know how to integrate HYSYS with ASW</p>
	Greenhouse Gas Emissions	<p>Understand CO2 equivalent calculation and carbon tax calculation and settings</p>
Steady State	Optimization and Data Fit	<p>Understand the configuration and features of Data Fit</p>

	Compressor Surge Analysis	Understand the settings, features and know how to apply into simulation
	Correlation Manager	Utilize Correlation Manager to get non-standard correlations
	Separator Carryover	Familiarize basics of three carryover options and explore the available results Perform carryover calculation to minimize data discrepancy from reality
	EO Modeling	Understand the basics of EO modeling
	Property Package Customization	Configure Tabular Props to better fit experimental data Customize property methods within Options of fluid packages
	Hydraulics	Conduct flow regime analysis and choke flow
	Equipment Design	Utilize Equipment design for line and vessel sizing
	Register Extension	Identify the workflow of extension development and implementation
Safety Analysis	Blowdown	Understand Pipeline blowdown analysis Understand Stagger blowdown
Sustainability	Alkaline electrolysis	Configure electrolyzer and explore the results