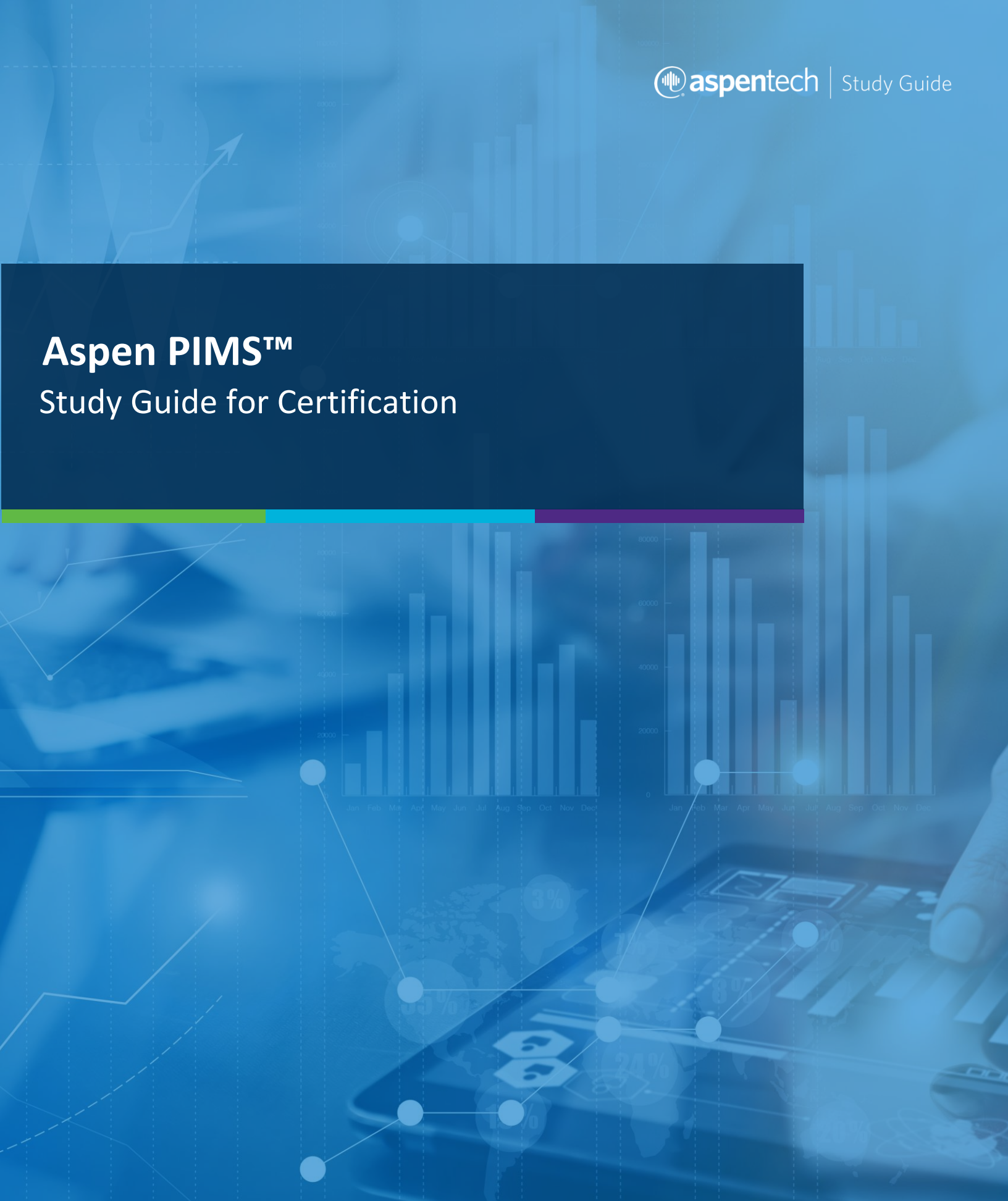
aspentech | Study Guide

# Aspen PIMS™

## Study Guide for Certification



**Aspen Knowledge™** | Learn. Apply. Succeed.

## Exam Scope for Aspen PIMS

- ☐ Introduction
- ☐ Settings
- ☐ Help
- ☐ Model Building
- ☐ Crude Modeling
- ☐ Results Analysis

## Grading

| Grade | Weight |
|---|---|
| Multiple choice questions | 40% |
| Lab task | 60% |
| Total | 100% |

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## Prove Your Credibility

An Aspen Certified user demonstrate skills required to run planning models, modifying model structure, and troubleshooting.


## Practice

AspenTech training is highly recommended though not required.

This guide contains 100% coverage of all objectives for the certification exam. You can use it as both a study tool and an on-the job reference

(read pages 2-6).

## Get Certified

In-person and remote testing are available. Please make sure that you select the correct Location/Time Zone.

After passing the exam you will receive an email to post your certificate and digital badge on social media, which is a cross-industry recognition of technical skills you may share on LinkedIn, as well as in your email signature. View the instructions on how to post your credentials on LinkedIn profile.

| SCOPE | TECHNICAL CONTENT | COMPETENCY OBJECTIVE |
|---|---|---|
| Introduction | What is PIMS | **Identify** the applications of PIMS for operations planning and capital investment analysis |
| | | **Explain** the objective of PIMS |
| | | **Identify** products in the petroleum supply chain<br>software family |
| | Review of LP Concept | **Explain** LP concepts of rows and columns |
| | | **Formulate** LP equations |
| | PIMS interface | **Explain** a typical PIMS work flow |
| | | **Identify** the main information found in PIMS Help |
| | | **List** the necessary steps to generate a solution report, case comparison and validation report |
| | Data Tables and Formats | **Identify** meaning of input data table content |
| | | **Recognize** table format conventions |
| | | **Add**, **Merge, Suppress and Unsuppress** Excel tables to the PIMS table tree |
| | Review Economic Concepts | **Recognize** the components of objective function |
| | | **Explain** marginal value |
| | | **Calculate** breakeven value of new crude oil/products |
| | | **Summarize** the impact of the assumed price on a break-even value analysis |
| | | **Explain** the limitations of marginal values |

| SCOPE | TECHNICAL CONTENT | COMPETENCY OBJECTIVE |
|---|---|---|
| Settings | General | **Recognize** if a model is weight-based or volume-based |
| | | **Set** the maximum number of passes allowed (DR) or maximum iterations (AO) |
| | | **Find** the default units of measure for the model |
| | | **Identify** the default VTW settings and units of measure |
| Help | Help | **Explain** how to get detailed information about an error or warning |
| | | **Find** detailed explanation of any table on the model tree |
| | | **Recognize** where KnowledgeBase articles can be accessed |
| | | **Identify** various means of requesting support |
| Model building | Naming Conventions | **Recognize** formatting of matrix columns and rows |
| | | **Define** the meaning of E, L, and G rows |
| | Supply & Demand Tables | **Format** T. BUY/SELL |
| | | **Explain** the difference between Tables BUY/SELL and Tables UTILBUY/UTILSEL |
| | | **Configure** tiered-pricing for purchase and sales |
| | | **Explain** the functionality difference between the GROUPS column in BUY/SELL and Table GROUPS |
| | Product Blending | **Recognize** the default product blending basis |
| | | **Calculate** blend product properties |
| | | **Define** weight-based properties |

| SCOPE | TECHNICAL CONTENT | COMPETENCY OBJECTIVE |
|---|---|---|
| Model Building | Product Blending | **Explain** tables required to define a blend, its components and its specifications |
| | Troubleshooting | **Evaluate** PIMS solution and **identify** problems |
| | | **Define** possible causes of the problem |
| | | **Name** and **Use** the most important Aspen PIMS troubleshooting tools |
| | Process Sub-models | **List** and **recognize** different sub-model types |
| | | **Define** feedstock, yields, utilities and unit parameters in the sub-model structure |
| | | **Build** discrete yield sub-model from scratch |
| | | **Translate** a plant constraint into a sub-model equation |
| | Base Delta Sub-models | **Explain** the application of base-delta sub-model type |
| | | **Interpret** the structure of base-delta sub-model – label parts of sub-model |
| | | **Illustrate** the ways of freeing the delta vector and **explain** the purpose of it |
| | | **Identify** the property values that result in “base” yields |
| | Pooling and Recursion | **Create** a recursed pool |
| | | **Summarize** pooling and recursion data tables |
| | | **Compare** DR and AO pooling solution and initialization techniques |
| | | **Explain** what 999 (+ and -) means in PIMS structure |

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|---|---|---|
| Model Building | Miscellaneous Tables | **Identify** the functionality of table ROWS |
| | | **Identify** the functionality of table GROUPS |
| | | **Identify** the functionality of the USER model branch |
| | Parameter Rows for Reporting | **Identify** the types of parameter rows |
| | | **Formulate** each type of parameter row |
| | | **Explain** the benefit of using parameter rows |
| Crude Modeling | Crude Distillation Configuration | **List** tables required to define a crude unit |
| | | **Explain** significance of pooling segregation in table CRDCUTS |
| | | **Identify** impact of ESTxxx entries in table CRDDISTL |
| | | **Recognize** cut types in table CRDCUTS |
| | | **Explain** how worksheets of assay information are mapped to specific crude units |
| | | **Explain** how PIMS formulates the crude unit capacities |
| | Assay Management | **Recognize** the steps of the Setup Wizard |
| | | **Execute** a spot crude evaluation |
| | | **List** the capabilities of Assay Management |

| SCOPE | TECHNICAL CONTENT | COMPETENCY OBJECTIVE |
|---|---|---|
| Results Analysis | Case Stacking | **Create** a case |
| | | **Identify** the use of case stacking keywords – EMPTY, MODIFIES |
| | | **Explain** how to modify table content in T. CASE |
| | Reports | **Configure** the desired reports for a run |
| | | **Explain** the formats that are available for reports and how to change formats |
| | | **Define** the content of the full solution report vs the case comparison report |

**About Aspen Technology**

Aspen Technology (AspenTech) is a leading software supplier for optimizing asset performance. Our products thrive in complex, industrial environments where it is critical to optimize the asset design, operation and maintenance lifecycle. AspenTech uniquely combines decades of process modeling expertise with machine learning. Our purpose-built software platform automates knowledge work and builds sustainable competitive advantage by delivering high returns over the entire asset lifecycle. As a result, companies in capital-intensive industries can maximize uptime and push the limits of performance, running their assets safer, greener, longer and faster. Visit AspenTech.com to find out more.