

Aspen Echos™ Study Guide

Study Guide for Certification



Prove your Credibility

An Aspen Echos Certified User possesses the essential knowledge and practical skills needed to set up surveys, import and manage data, and build and run seismic processing workflows. They have a strong understanding of Aspen Echos and can apply their knowledge to work with a variety of data types, including 2D, 3D, land and marine data, and are able to troubleshoot problems that they may encounter.



Exam Scope for Aspen Echos Seismic Data Processing (ACU-ECH101)

- ☐ Getting Started in Aspen Epos
- ☐ Getting Started with Aspen Echos
- ☐ Loading and Managing Seismic and Geometry
- ☐ Initial QC and Surface Consistent Processing
- ☐ Signal Enhancement, Trace Editing, and Noise Suppression
- ☐ First Break Picking, Statics and Floating Datum
- ☐ Velocity Analysis
- ☐ Residual Statics, Regularization, and Poststack Processing
- ☐ Imaging

Step 1: Take the Class:

- Seismic Data Processing using Aspen Echos (ECH101) – 5 Days

AspenTech offers a variety of training delivery methods:

- 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 guide contains 100% coverage of all objectives for the Aspen Echos certification exam and serves as both a study tool and an on-the job reference.

Step 3: Take the Exam: Aspen Echos Seismic Data Processing User Certification (ACU-ECH01)

The total time for this certification exam is 4 hours.

The passing score is 70%.

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SCOPE	TECHNICAL CONTENT	COMPETENCY OBJECTIVE
Getting Started in Aspen Epos	Launching the Session Manager, activating Applications and Utilities	Understand what the Session Manager is used for
		Explain what an Epos User is
		Recognize where to perform administrative tasks
		Identify the working software version
Getting Started using Aspen Echos	Survey Setup	Understand where seismic data is stored
		Identify where other Epos data is stored
		Manage disk space usage
		Describe the relationship between datums
		Understand how to define datums
		Recognize the importance of Epos initial survey design
		Understand how to troubleshoot problems in survey setup
	Launching and navigating Echos windows, displaying and QCing data	Understand what the main Echos windows are used for
		Understand which applications can be used to perform different workflows
		Recognize the types of data that are supported by different applications
		Understand how to display seismic data
		Recognize how to perform different types of trace analysis
		Identify when to use different trace analysis modules
	Building Interactive Job Flows	Recognize where Echos jobs are stored
		Understand how to use MKDATA in a workflow
		Identify when to use different pushbutton icons
		Explain the purpose of different pushbutton icons

		Explain how to use pushbuttons when designing job flows
		Understand how Smart Parameters are used
		Recognize how to stop and start interactive job flows
		Identify how to monitor jobs
		Understand how to troubleshoot problems
		Understand how to display 3D attributes
		Understand how to display 2D horizons
		Recognize how to troubleshoot problems
Loading and Managing Seismic and Geometry	Loading and Managing Seismic Data	Understand how to import seismic data
		Explain the purpose of different parameter list cards
		Recognize how to correctly define parameter list cards
		Manage disk space usage when importing data
		Explain how to combine datasets
		Understand how file merging works
		Recognize how customization formats are stored and used
	Loading and Handling Geometry Information	Understand the purpose of Spreadsheet Utility
		Recognize the different types of geometry information that are supported by Aspen Echos
		Understand how to QC geometry and create a CDP model
		Explain CDP grid definition conventions in Aspen Epos
		Identify the appropriate workflow for different geometry-related tasks
		Identify the appropriate module to use for geometry-related tasks
		Understand how to create offset and azimuth histograms

		Recognize what to use for geometry QC
		Understand what trace weights are used for
Initial QC and Surface Consistent Processing	Initial QC and Surface Consistent Processing	Understand how to perform initial QC tasks
		Identify the appropriate workflow for surface consistent amplitude balancing
		Understand how to QC a surface consistent amplitude balancing workflow
		Recognize the impact of different parameters on results
		Identify how to improve productivity and quality of results
Signal Enhancement, Trace Editing, and Noise Suppression	Signal Enhancement and Trace Editing	Understand how to perform trace editing
		Understand when to use different modules
		Identify what different utilities can be used for
	Noise Suppression	Understand which modules are designed to be used with land data
		Understand which modules are designed to be used with marine data
		Recognize which methods can be used to attenuate different types of noise
		Identify how to perform noise attenuation interactively
		Understand what SWAMI can be used for
		Understand how to suppress more than one type of noise
		Identify appropriate QC methods for different processing workflows
		Identify how to attenuate surface related multiples
		Recognize the impact of parameters on performance
First Break Picking, Statics and Floating	First Break Picking and Refraction Statics	Identify how to perform first break picking
		Explain how first break picking is performed in Aspen Epos

Datum		Identify how to QC first break picking
		Recognize how to compute refraction statics
		Understand how to apply refraction statics
	Datum Conventions, Elevation and Floating Datum Statics	Explain how datums are defined in Aspen Epos
		Understand key statics and floating datum conventions
		Understand how to map elevation values to the CDP model
		Recognize how to generate floating datum from elevation information
		Identify the appropriate method for calculating Floating Datum statics
Velocity Analysis	Velocity Analysis	Understand how to perform velocity analysis in Aspen Echos
		Recognize the impact of changing parameters
		Identify how to edit vertical functions
		Understand how to improve productivity
		Recognize how to QC velocity data
		Recognize and explain the impact of an incorrect velocity model
	Constrained Velocity Inversion	Explain what CVI does
		Understand when to use CVI
		Identify what is required as input for CVI Create Mode
		Recognize how CVI parameters are used
		Explain how to generate geologically sensible velocity models
		Understand the impact of inversion weights
Residual Statics, Regularization, and Poststack	Residual Statics	Recognize which residual statics solutions are available
		Identify which modules can be used for different data types

Processing		Explain how the RESSTAT module works
		Understand how to perform QC in a residual statics workflow
		Understand how to perform a tidal statics workflow
	Regularization, Poststack Processing	Understand how to perform trace interpolation
		Identify the appropriate module for different workflows
		Recognize how to perform channel amplitude regularization
		Understand how to build a trace regularization workflow
		Recognize the impact of parameter changes
		Understand how to perform Q estimation
		Explain how Q correction works in Aspen Epos
Imaging	Imaging	Identify which modules can be used for different types of imaging
		Identify the functions of different migration modules
		Understand what inputs are required to perform different types of migration
		Recognize how to perform residual velocity analysis