

SIMULIA EXERCISE HUB: PRACTICE. APPLY. PROGRESS.

Meshing & Partitioning– Complete Sequence– Complete Sequence

Duration: up 220 min

Discipline: Structures

Level of Difficulty: **Advanced**

Product: Structural Scenario Creation / Mechanical Scenario Creation

Role This exercise is intended for Structural Mechanics Engineer, Structural Performance Engineer, Additive Manufacturing Analysis Engineer, Durability Performance Engineer, Durability and Mechanics Engineer, Structural and Durability Engineer

Workshop Overview: Explore advanced meshing strategies through hands-on demonstrations and workshops. Each activity introduces practical techniques—from geometry partitioning to sweep and hex meshing—designed to improve mesh quality in complex simulation scenarios.

Where to Find This Exercise? This hands-on activity is part of Abaqus/CAE: Meshing & Partitioning ;

1- Go on : [Edu Space](#)

2- Open lesson 3 Meshing & Partitioning

3- Go to slide 74

Keywords: Meshing, Partitioning, Sweep, Hex-dominant, Tetrahedral

Step Type	Title	Description	Duration
Demonstration	Importing and Editing an Orphan Mesh	Learn to use orphan mesh editing tools to modify tetrahedral meshes.	10 min
Demonstration	Virtual Topology: Piston Model	Apply virtual topology to clean and optimize the piston model's mesh.	20 min
Demonstration	Virtual Topology: U-Joint Model	Use virtual topology to improve the mesh quality of a U-Joint with tetrahedral elements.	20 min
Workshop	Importing, Editing, and Extracting Geometry from a Mesh	Create hybrid meshes and extract geometry using Abaqus/CAE's mesh editing tools.	30 min
Workshop	Virtual Topology: Bracket Model	Apply both manual and automatic virtual topology to optimize a bracket's tetrahedral mesh.	45 min

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