

Abaqus/CAE: Geometry Import and Meshing

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Day 1

- Overview of Abaqus/CAE
- Lecture 1 Geometry Import and Repair
- Demonstration 1 Geometry Import and Repair: Lens Model
- Demonstration 2 Geometry Import, Diagnostics, and Defeaturing
- Workshop 1 Geometry Import and Repair: Machine Part
- Workshop 2 Geometry Repair: Piston Model
- Workshop 3 Creating a Shell From a Thin Solid
- Lecture 2 Meshing and Partitioning
- Demonstration 3 Virtual Topology: Piston Model
- Demonstration 4 Virtual Topology: U-Joint Model
- Workshop 4 Virtual Topology: Bracket Model

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Day 2

- Lecture 3 More Meshing and Partitioning
- Demonstration 5 Partitioning and Mixed Meshing
- Demonstration 6 Sweep Meshing Techniques
- Workshop 5 Hex Meshing Intersecting Pipes
- Workshop 6 Hex Meshing a Cardan Joint
- Workshop 7 Additional Geometry Repair and Meshing Exercises

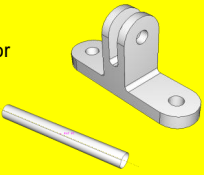
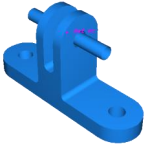
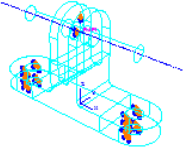
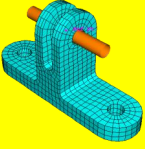
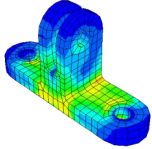
- Lecture 4 Bottom-Up Meshing
- Demonstration 7 Bottom-Up Meshing
- Workshop 8 Bottom-Up Meshing



Overview of Abaqus/CAE



Overview of Abaqus/CAE

Part	Property	Assembly
<ul style="list-style-type: none"> •Create the part geometry (and regions for sections, if necessary) 	<ul style="list-style-type: none"> •Define materials •Define additional part regions •Define and assign sections to parts or regions 	<ul style="list-style-type: none"> •Position parts for initial configuration. 
Step	Interaction	Load
<ul style="list-style-type: none"> •Define analysis steps and output requests 	<ul style="list-style-type: none"> •Define contact and other interactions on regions or named sets, and assign them to steps in the analysis history 	<ul style="list-style-type: none"> •Apply loads, BCs, and ICs to regions or named sets; and assign them to steps in the analysis history 
Mesh	Job	Visualization
<ul style="list-style-type: none"> •Split assembly into meshable regions and mesh 	<ul style="list-style-type: none"> •Submit, manage, and monitor analysis jobs 	<ul style="list-style-type: none"> •Examine results 

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Revision Status

Lecture 1	5/11	Updated for 6.11
Lecture 2	5/11	Updated for 6.11
Lecture 3	5/11	Updated for 6.11
Lecture 4	5/11	Updated for 6.11
Demonstration 1	5/11	Updated for 6.11
Demonstration 2	5/11	Updated for 6.11
Demonstration 3	5/11	Updated for 6.11
Demonstration 4	5/11	Updated for 6.11
Demonstration 5	5/11	Updated for 6.11
Demonstration 6	5/11	Updated for 6.11
Demonstration 7	5/11	Updated for 6.11
Workshop 1	5/11	Updated for 6.11
Workshop 2	5/11	Updated for 6.11
Workshop 3	5/11	Updated for 6.11
Workshop 4	5/11	Updated for 6.11
Workshop 5	5/11	Updated for 6.11
Workshop 6	5/11	Updated for 6.11
Workshop 7	5/11	Updated for 6.11
Workshop 8	5/11	Updated for 6.11



Geometry Import and Repair

Lecture 1

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L1.2

Overview

- Introduction
- Geometry Import
- CAD Associative Import
- CAD Standalone Import
- Neutral Geometry Formats
- Geometry Repair
- Query and Diagnostics Tools
- Geometry Import Flowchart
- Example
- Shell Midsurface Creation (Optional)
- Demonstrations
- Workshops

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Meshing and Partitioning

Lecture 2

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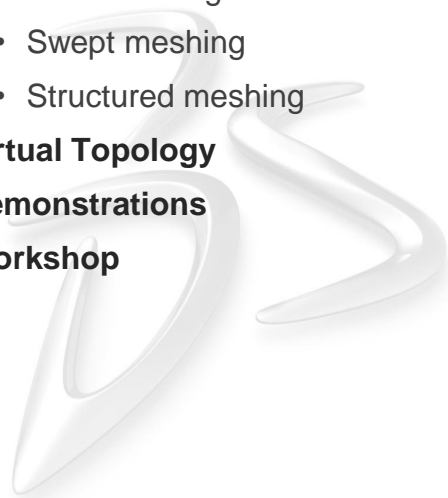
 SIMULIA

L2.2

Overview

- Introduction
- Dependent and Independent Part Instances
- Orphan Meshes and Mesh Editing
- Mesh Generation Techniques
 - Free meshing
 - Swept meshing
 - Structured meshing
- Virtual Topology
- Demonstrations
- Workshop

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More Meshing and Partitioning

Lecture 3

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L3.2

Overview

- Enabling Various Meshing Techniques
- Controlling Mesh Density and Gradation
- Methods of Gaining More Control over the Mesh
- Creating and Merging Meshable Regions
- Hex Meshing Revolved Regions
- Mesh Stack Direction
- Parametric Modeling
- Assigning Element Types
- Verifying Mesh Quality
- Mass and Mesh Queries
- Demonstrations
- Workshops

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Bottom-Up Meshing

Lecture 4

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L4.2

Overview

- Introduction
- Basic Features
- Example
- Summary
- Demonstration
- Workshop

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