

Getting Started with Model States

Jennifer MacMillan

Manager- Learning Content Development
ASCENT

About the speaker

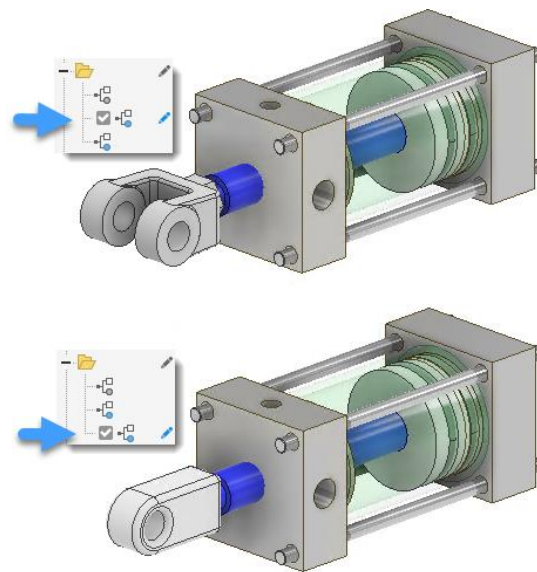
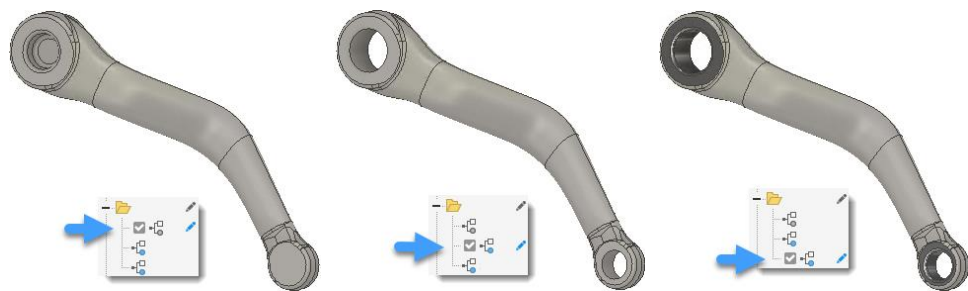
Jennifer MacMillan

For the past 25 years Jennifer has been teaching and developing CAD training material for both a synchronous and asynchronous learning environment. She is currently working with the Rand Worldwide company, ASCENT-Center for Technical Knowledge, where she develops and manages the training curriculum used by Autodesk Authorized Training Centers. She also has her Autodesk Certified Instructor ACI certification. Jennifer MacMillan holds a Mechanical Engineering degree from Dalhousie University, Nova Scotia, Canada.



Summary of Learning Objectives

- Understand the uses for Model States in your Inventor Designs
- Create Model States in Part and Assembly Designs
- Use Substitute Model States to simplify Assembly Designs
- Use Model States in Drawing and Presentation Files

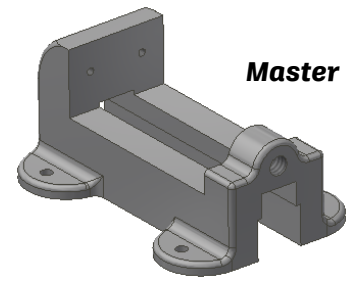


Objectives

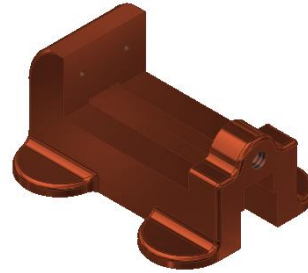
1. Understand the uses for Model States in your Inventor Designs
2. Create Model States in Part and Assembly Designs

Introduction to Model States

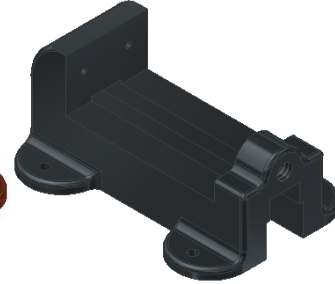
- Creating configurations of components in a design to represent various products.
- Documenting manufacturing stages.
- Simplifying the display of an assembly for design work.
- Improving retrieval times and performance in large assemblies.
- Used as a starting reference for model simplification.



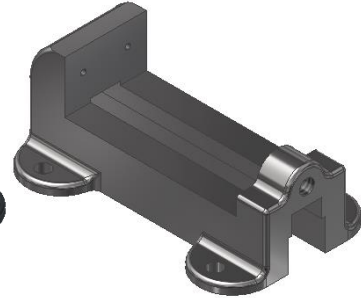
Master Model State



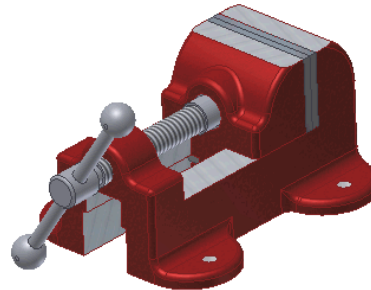
**Vise-extrashort
Model State**



**Vise-short
Model State**



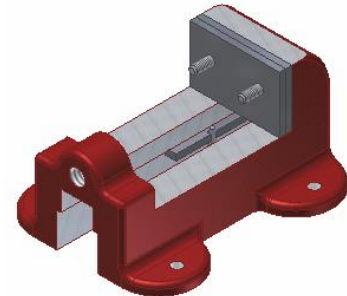
**Vise-long
Model State**



Master Model State



Model State 1



Model State 2

Introduction to Model States

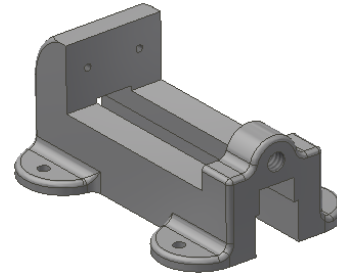
Tips

- Level of Detail no longer exist AND Model States are an alternative to iPart/iAssembly.
 - iPart/iAssembly are still available in Inventor 2022.
 - Model State and iPart/iAssembly functionality are mutually exclusive.
 - Model State functionality is enabled by default in new 2022 files.
- If you are opening previously created files, consider the following:
 - If **no** iParts/iAssemblies exist, model states are enabled AND LOD reps are converted to model states.
 - If iParts/iAssemblies exist, model states are disabled AND LOD reps are converted to design views.
- Converting an iPart/iAssembly table to model states is manual.
- Vault Professional integration must include Items.

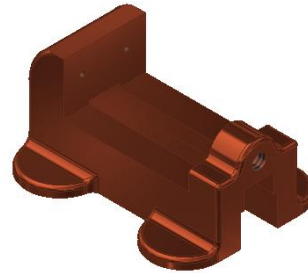
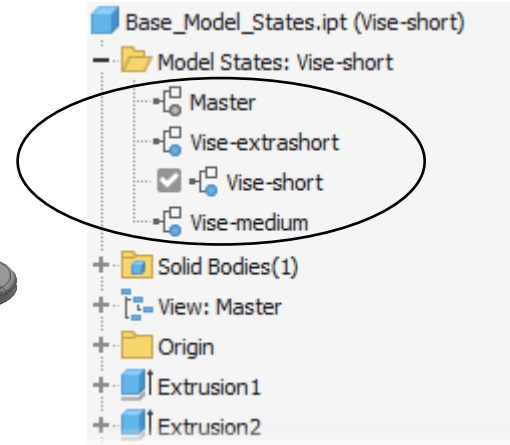
Creating Model States

- To create Model States, you modify the following configurable attributes:
 - Suppress/unsuppress part or assembly features.
 - Suppress/unsuppress components.
 - Modify the iProperties.
 - Modify parameter values.
 - Modify constraint offsets (assemblies).
 - Assign materials (parts).

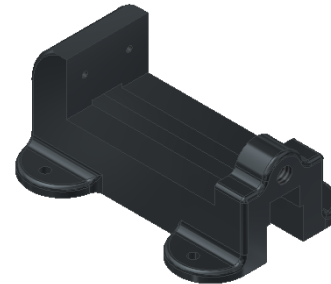
- Rename the model state.



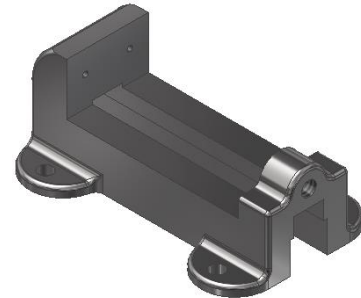
Master Model State



**Vise-extrashort
Model State**



**Vise-short
Model State**



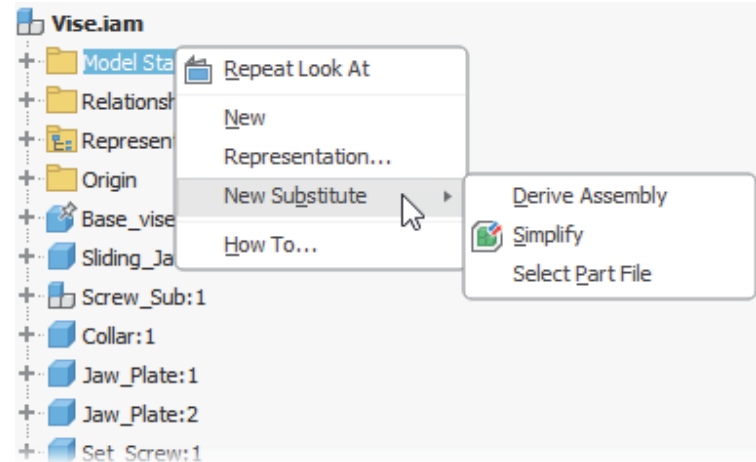
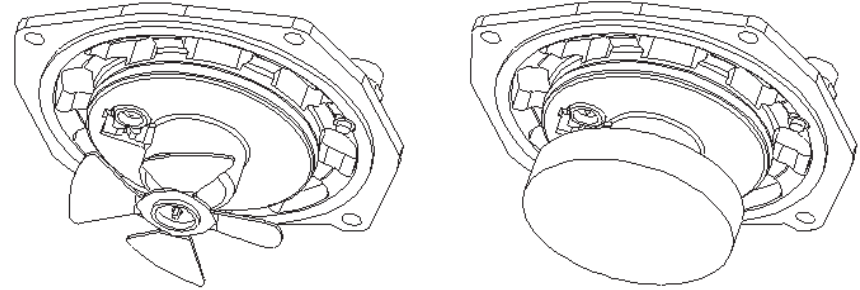
**Vise-long
Model State**

Objectives

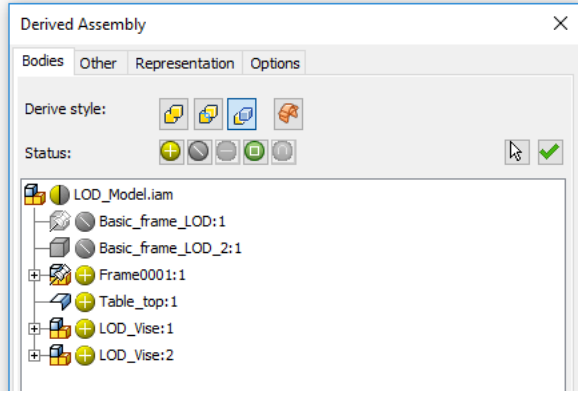
1. Understand the uses for Model States in your Inventor Designs
2. Create Model States in Part and Assembly Designs
3. Use Substitute Model States to simplify Assembly Designs

Substitute Model States

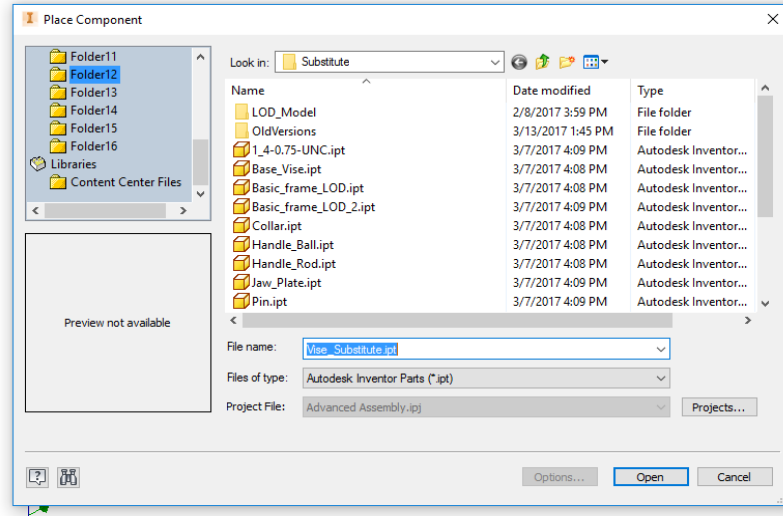
- Replace a complex component for a simpler one that represents it.
- The substitute contains all BOM information that is normally associated with the assembly, as well as the physical information.
- General Steps
 1. Open the assembly.
 2. (Optional) Create a Model State.
 3. Create a new substitute model state.
 - **Derive Assembly**
 - **Simplify**
 - **Select Part File**



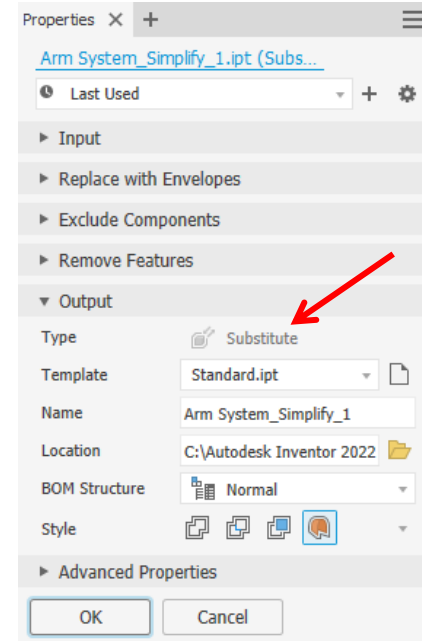
Substitute Model States



Derive Assembly



Select Part File



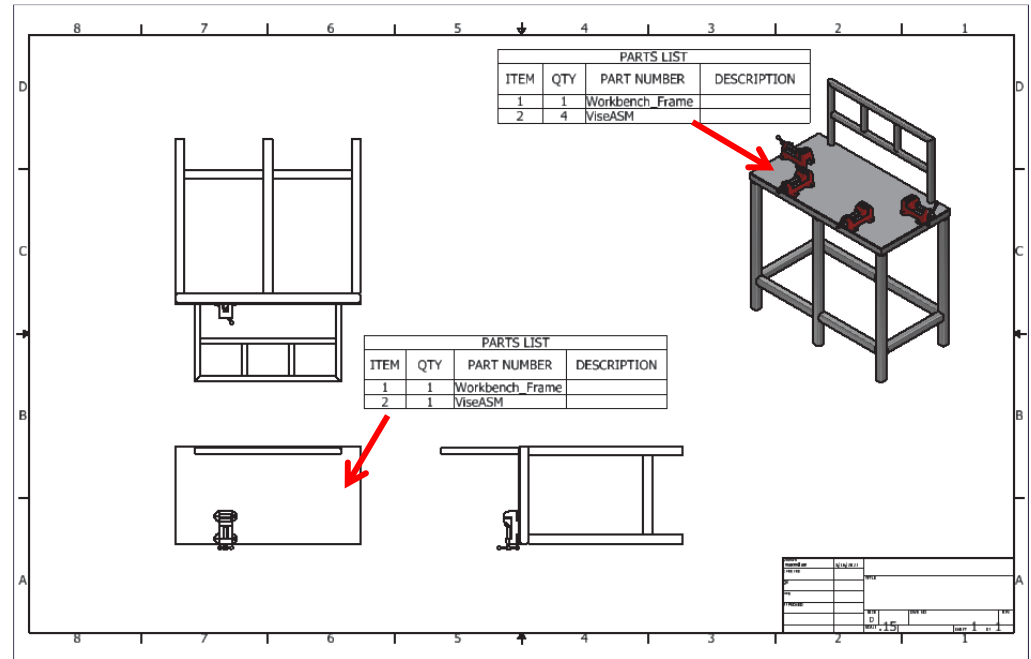
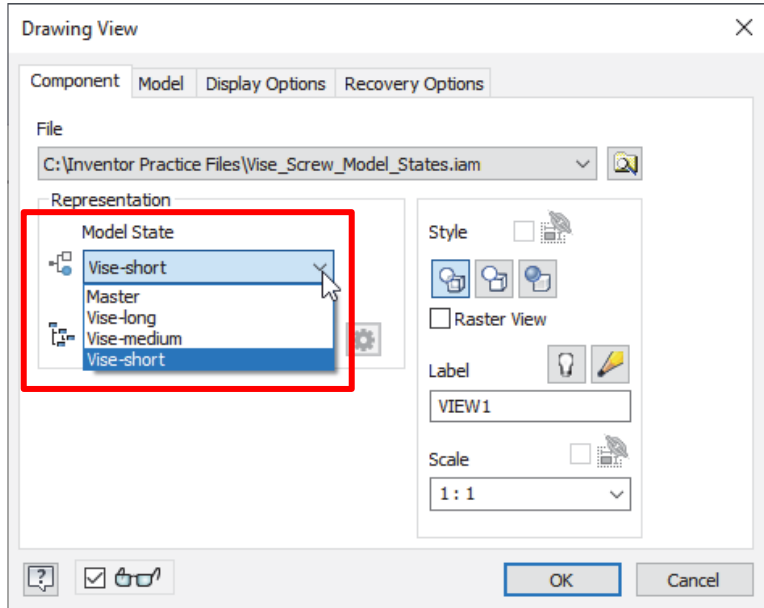
Simplify

Objectives

1. Understand the uses for Model States in your Inventor Designs
2. Create Model States in Part and Assembly Designs
3. Use Substitute Model States to simplify Assembly Designs
4. Use Model States in Drawing and Presentation Files

Using Model States in Drawings

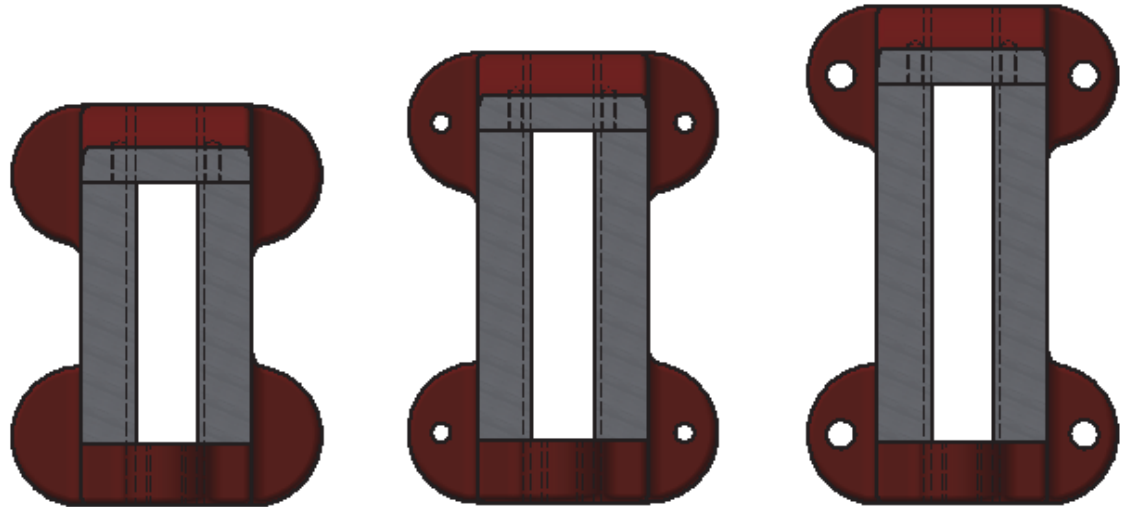
- A model state can be selected when creating base views.
- Parts lists reflect the model state of the parent view.



Using Model States in Drawings

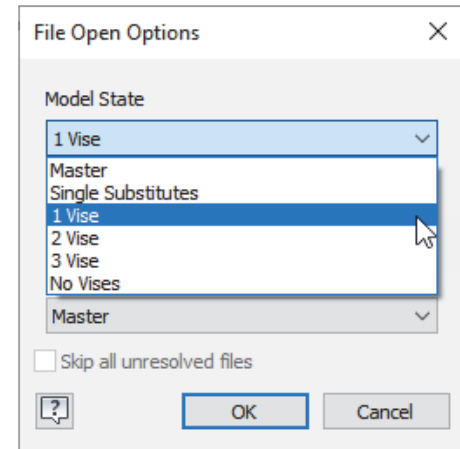
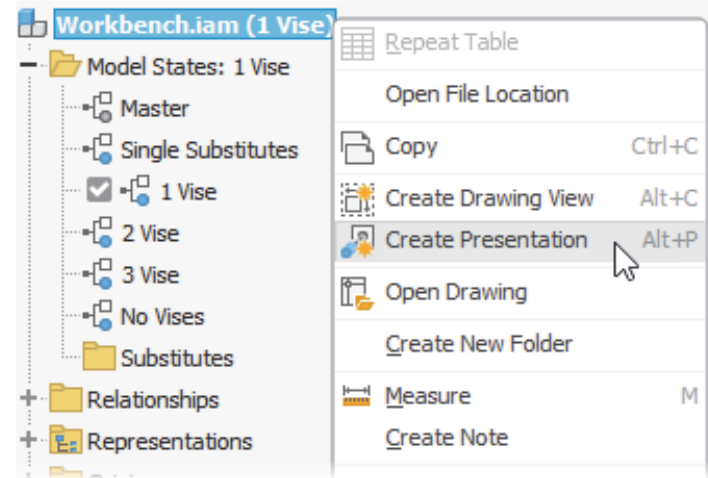
- General tables can be used to show model state configurations.

TABLE				
Member	Material	Length	Mounting Holes	Mounting Holes Size
Master	Cast Steel	184.15 mm	Compute	8 mm
Vise-short	Cast Steel	164.15 mm	Suppress	
Vise-medium	Stainless Steel	184.15 mm	Compute	8 mm
Vise-long	Steel, Carbon	204.15 mm	Compute	12 mm



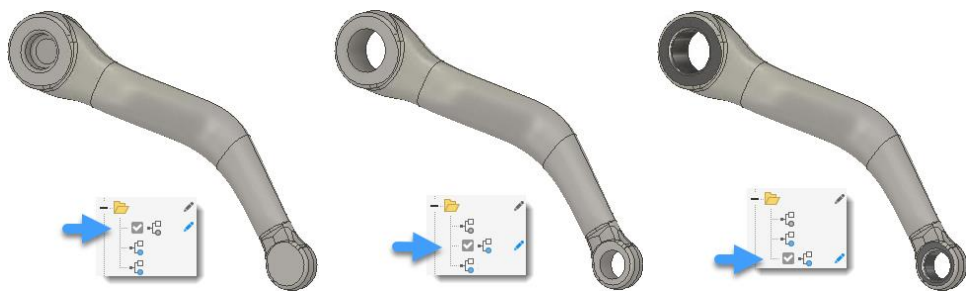
Using Model States in Presentations

- You can create a presentation from the Model browser using the default template and the active model state.
- You can create a presentation using the New option; enables you to select a template and the model state to be used.
 - In the Insert dialog box, click **Options** to select a model state.
- New scenes can use different model states.

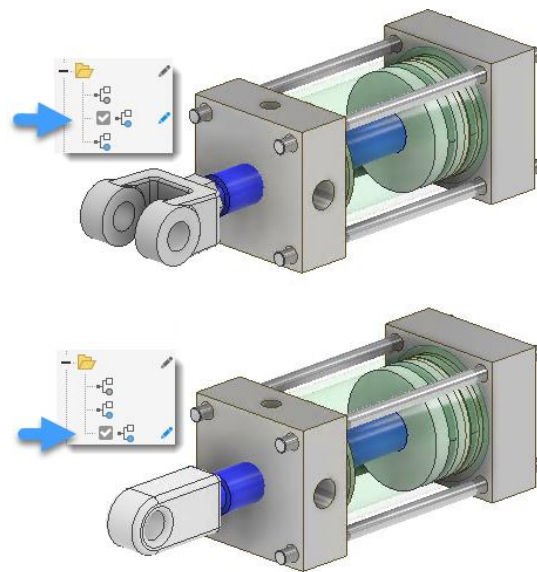


Summary of Learning Objectives

- Understand the uses for Model States in your Inventor Designs
- Create Model States in Part and Assembly Designs
- Use Substitute Model States to simplify Assembly Designs
- Use Model States in Drawing and Presentation Files



Three sequential views of a curved arm part, demonstrating the use of Model States. Each view shows a different configuration of the part, with a blue arrow pointing to a Model States palette icon.



THANK YOU!

Don't forget to "Like" my class!

 jmacmillan@rand.com

 [@ASCENT_CTK](https://twitter.com/ASCENT_CTK)

 ASCENTed.com (Blog)



The background features a dark, almost black, space with several large, metallic, angular shapes that resemble parts of a mechanical assembly or a modern architectural structure. These shapes are rendered with soft highlights and shadows, giving them a three-dimensional, polished appearance. The central focus is the text 'AUTODESK UNIVERSITY' in a clean, white, sans-serif font.

AUTODESK UNIVERSITY

Autodesk and the Autodesk logo are registered trademarks or trademarks of Autodesk, Inc., and/or its subsidiaries and/or affiliates in the USA and/or other countries. All other brand names, product names, or trademarks belong to their respective holders. Autodesk reserves the right to alter product and services offerings, and specifications and pricing at any time without notice, and is not responsible for typographical or graphical errors that may appear in this document.

© 2021 Autodesk. All rights reserved.