Autodesk Inventor: Advanced Part Modeling

Course Length: 2 Days

Autodesk Inventor: Advanced Part Modeling is the second in a series of training courses on the Autodesk® Inventor® software. The goal of this course is to build on the skills acquired in the Autodesk Inventor: Introduction to Solid Modeling training course by taking users to a higher level of productivity when designing part models using the Autodesk Inventor software.

In this course, the user considers various approaches to part design. Specific advanced part modeling techniques covered include bending and unwrapping model geometry, multi-body design, advanced lofts, advanced sweeps, coils, generative shape design, surface modeling, and freeform modeling. Material aimed at increasing efficiency includes iFeatures for frequently used design elements, model states and iParts for similar designs, and how to work with imported data. The course also covers some miscellaneous drawing tools, such as custom sketched symbols, working with title blocks and borders, and documenting iParts.

Topics Covered

- Advanced model appearance options
- 2D and 3D sketching techniques
- Multi-body part modeling
- Advanced geometry creation tools (bend part, unwrap, work features, area lofts, sweeps, and coils)
- Generative shape design using Shape Generator
- Creating and editing basic surfaces
- Model states
- iFeatures and iParts
- Importing data from other CAD systems and making edits
- Working with AutoCAD DWG files
- Analysis tools

Course description shown for Autodesk Inventor 2022. Topics, curriculum, and/or prerequisites may change depending on software version.

- Emboss and Decal features
- Advanced Drawing tools (iPart tables, surfaces in drawing views, and custom sketched symbols)
- Surface Repair Environment

Prerequisites

The material assumes a mastery of Autodesk Inventor basics, as taught in Autodesk Inventor: Introduction to Solid Modeling. Users should know how to create and edit parts, use work features, create and annotate drawing views, etc. The use of Microsoft Excel is required for this course.

Learning Guide Contents

Chapter 1: Model Appearance

- 1.1 Model Appearance: Visual Display Options
- 1.2 Model Appearance: Lighting
- 1.3 Model Appearance: Color and Texture

Chapter 2: Advanced Sketching and Modeling Tools

- 2.1 Splines
- 2.2 3D Sketch Creation Tools
- 2.3 Bending a Part
- 2.4 Unwrapping a Part

Chapter 3: Multi-Body Part Modeling

- 3.1 Multi-Body Part Modeling

Chapter 4: Advanced Work Features

- 4.1 Grounded Work Points
- 4.2 User Coordinate Systems

Chapter 5: Advanced Lofts, Sweeps, and Coils

- 5.1 Area Lofts
- 5.2 Advanced Sweeps
- 5.3 Coils

Course description shown for Autodesk Inventor 2022. Topics, curriculum, and/or prerequisites may change depending on software version.

Chapter 6: Generative Shape Design

- 6.1 Shape Generator

Chapter 7: Introduction to Surfacing

- 7.1 Introduction to Surfaces
- 7.2 Basic Surfaces
- 7.3 Patch Surfaces
- 7.4 Ruled Surfaces
- 7.5 Stitch Surfaces
- 7.6 Sculpting with Surfaces
- 7.7 Thickening Solids and Offsetting Surfaces
- 7.8 Surfaces in Drawing Views

Chapter 8: Additional Surfacing Options

- 8.1 Extend and Trim Surfaces
- 8.2 Replace Face with a Surface
- 8.3 Delete Faces
- 8.4 Copy Surfaces

Chapter 9: Part Model States

- 9.1 Part Model States
- 9.2 Opening Parts Using Model States
- 9.3 Using Model States in Drawings

Chapter 10: Copying Between Parts (iFeatures)

- 10.1 Creating iFeatures
- 10.2 Inserting iFeatures
- 10.3 iFeatures vs. Copy Feature
- 10.4 Table-Driven iFeatures
- 10.5 Editing iFeatures

Course description shown for Autodesk Inventor 2022. Topics, curriculum, and/or prerequisites may change depending on software version.

Chapter 11: iParts

- 11.1 iPart Creation
- 11.2 iPart Placement
- 11.3 Editing an iPart Factory
- 11.4 Creating iFeatures from a Table-Driven iPart
- 11.5 Tables for Factory Members

Chapter 12: Introduction to Freeform Modeling

- 12.1 Creating Freeform Geometry
- 12.2 Editing Freeform Geometry

Chapter 13: Importing and Editing CAD Data

- 13.1 Importing CAD Data (AnyCAD)
- 13.2 Exporting Geometry
- 13.3 Editing the Base Solid
- 13.4 Direct Edit
- 13.5 Attaching Point Cloud Data

Chapter 14: Working with AutoCAD Data

- 14.1 Opening AutoCAD Files
- 14.2 DWG File Underlays

Chapter 15: Analyzing a Model

- 15.1 Analysis Types
- 15.2 Analysis Procedures

Appendix A: Creating Emboss and Decal Features

- A.1 Emboss Features
- A.2 Decal Features

Appendix B: Custom Sketched Symbols

- B.1 Create Sketched Symbols
- B.2 Place Sketched Symbols
- B.3 AutoCAD Blocks

Course description shown for Autodesk Inventor 2022. Topics, curriculum, and/or prerequisites may change depending on software version.

Appendix C: CAD Management

- C.1 Title Block and Border Customization
- C.2 Style Library Manager

Appendix D: Working with Imported Surfaces

- D.1 Importing Surfaces
- D.2 Repairing Imported Surfaces

Course description shown for Autodesk Inventor 2022. Topics, curriculum, and/or prerequisites may change depending on software version.

Cancellation Policy

The following cancellation policy shall apply to all training engagements, LIVE Online, Consulting Services and Dedicated/Custom Training:

- Company reserves the right to reschedule or cancel the date, time and location of its class at any time. In the event that a Training Class is cancelled by Company, Customer is entitled to a full refund. Company shall not be responsible for any other loss incurred by Customer as a result of a cancellation or reschedule.
- For Customer cancellations when written notice is received (i) at least ten (10) business days in advance of the class, the Customer is entitled to a full refund of its payment or reschedule enrollment, (ii) less than ten (10) business days, Customer shall not be entitled to a refund, but shall receive a class credit to be used within three (3) months of the date of the original class.
- Student substitutions are acceptable with at least two (2) days prior notice to the class, provided substitution meets course prerequisites and is approved by Company's Training Coordinator (trainingcoordinator@rand.com)
- For all Training orders, cancellation notices must be submitted to trainingcoordinator@rand.com. Company is not responsible for any error in the delivery of the email notice. In the event of any reschedule of Consulting Services and/or Dedicated/Custom Training by Customer, Company will invoice Customer for all non-cancellable travel expenses.

To request more information or to see training locations, visit www.imaginit.com/contact-us.

Course description shown for Autodesk Inventor 2022. Topics, curriculum, and/or prerequisites may change depending on software version.