Autodesk Inventor Introduction to Solid Modeling

Course Length: 5 days

The Autodesk Inventor Introduction to Solid Modeling training course provides you with an understanding of the parametric design philosophy through a hands-on, practice-intensive curriculum. You will learn the key skills and knowledge needed to design models using Autodesk Inventor, starting with conceptual sketching, through to solid modeling, assembly design, and drawing production.

Topics Covered

- Understanding the Autodesk® Inventor® software interface
- Creating, constraining, and dimensioning 2D sketches
- Creating and editing the solid base 3D feature from a sketch
- Creating and editing secondary solid features that are sketched and placed
- Creating equations and working with parameters
- Manipulating the display of the model
- Resolving feature failures
- Duplicating geometry in the model
- Placing and constraining/connecting parts in assemblies
- Manipulating the display of components in an assembly
- Duplicating components in an assembly
- Obtaining model measurements and property information
- Creating Presentation files (Exploded views and Animations)
- Modifying and analyzing the components in an assembly
- Simulating motion in an assembly
- Creating parts and features in assemblies
- Creating and editing an assembly Bill of Materials
- Working with projects
- Creating and annotating drawings and views
- Customizing the Autodesk Inventor environment

Prerequisites

As an introductory training course, Autodesk Inventor Introduction to Solid Modeling does not assume prior knowledge of any 3D modeling or CAD software. Students do need to be experienced with the Windows operating system and a background in drafting of 3D parts is recommended.

Course description shown for Autodesk Inventor 2018. Topics, curriculum, and/or prerequisites may change depending on software version.
Training Guide Contents – Part 1

Chapter 1: Introduction to Autodesk Inventor
- 1.1 Introduction
- 1.2 Autodesk Inventor Fundamentals
- 1.3 Getting Started
- 1.4 Autodesk Inventor Interface
- 1.5 Model Manipulation

Chapter 2: Creating the Base Feature
- 2.1 Creating a New Part File
- 2.2 Sketched Base Features
- 2.3 Editing Sketched Features

Chapter 3: Additional Sketching Tools
- 3.1 Additional Entity Types
- 3.2 Basic Editing Tools
- 3.3 Additional Constraint Tools
- 3.4 Additional Dimension Tools

Chapter 4: Advanced Sketch Editing Tools
- 4.1 Advanced Editing Tools
- 4.2 Rectangular Sketch Patterns
- 4.3 Circular Sketch Patterns
- 4.4 Sketch Preferences

Chapter 5: Sketched Secondary Features
- 5.1 Sketched Secondary Features
- 5.2 Using Existing Geometry

Chapter 6: Creating Pick and Place Features
- 6.1 Edge Chamfer
- 6.2 Constant Fillets
- 6.3 Variable Fillets
- 6.4 Face Fillets
- 6.5 Full Round Fillets
- 6.6 Straight Holes
- 6.7 Threads
- 6.8 Editing Pick and Place Features
- 6.9 Creation Sequence

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Chapter 7: Work Features

▪ 7.1 Work Planes
▪ 7.2 Work Axes
▪ 7.3 Work Points

Chapter 8: Equations

▪ 8.1 Equations
▪ 8.2 Parameters

Chapter 9: Additional Features

▪ 9.1 Face Draft
▪ 9.2 Splitting a Face or Part
▪ 9.3 Shells
▪ 9.4 Ribs

Chapter 10: Model and Display Manipulation

▪ 10.1 Reordering Features
▪ 10.2 Inserting Features
▪ 10.3 Suppressing Features
▪ 10.4 Section Views
▪ 10.5 Design Views

Chapter 11: Fixing Problems

▪ 11.1 Sketch Failure
▪ 11.2 Feature Failure

Chapter 12: Sweep Features

▪ 12.1 Sweep Features

Chapter 13: Loft Features

▪ 13.1 Rail and Center Line Lofts
▪ 13.2 Advanced Loft Options

Chapter 14: Duplication Tools

▪ 14.1 Rectangular Feature Patterns
▪ 14.2 Circular Feature Patterns
▪ 14.3 Sketched Driven Patterns
▪ 14.4 Mirror Parts or Features
▪ 14.5 Manipulate Patterns and Mirror Features

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Chapter 15: Feature Relationships
- 15.1 Establishing Relationships
- 15.2 Controlling Relationships
- 15.3 Investigating Relationships
- 15.4 Changing Relationships

Appendix A: Sketching Options
- A.1 Sketch Geometry Creation Options
- A.2 Sketch Editing Options
- A.3 Sketch Constraint Options
- A.4 Dimension Type Options

Appendix B: Primitive Base Features
- B.1 Primitive Base Features

Appendix C: Additional Practices I

Training Guide Contents – Part 2

Chapter 16: Assembly Environment
- 16.1 Assembling Components Using Constraints
- 16.2 Assemble Mini-Toolbar
- 16.3 Content Center
- 16.4 Assembly Browser
- 16.5 Saving Files

Chapter 17: Joint Connections
- 17.1 Assembling Components Using Joints

Chapter 18: Manipulating Assembly Display
- 18.1 Moving and Rotating Assembly Components
- 18.2 Suppressing Constraints
- 18.3 Component Display
- 18.4 Selection Options in Assemblies

Chapter 19: Model Information
- 19.1 Measurement Tools
- 19.2 Model Properties

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Chapter 20: Presentation Files

- 20.1 Creating Presentations
- 20.2 Storyboards
- 20.3 Snapshot Views
- 20.4 Publishing a Presentation File

Chapter 21: Assembly Tools

- 21.1 Replacing Components
- 21.2 Duplicating Components
- 21.3 Restructuring Components
- 21.4 Driving Constraints
- 21.5 Contact Solver
- 21.6 Interference
- 21.7 Error Recovery

Chapter 22: Assembly Parts and Features

- 22.1 Assembly Parts
- 22.2 Assembly Features

Chapter 23: Assembly Bill of Materials

- 23.1 Create Virtual Components
- 23.2 Create Bill of Materials

Chapter 24: Working With Projects

- 24.1 Project Files
- 24.2 Resolving Links

Chapter 25: Drawing Basics

- 25.1 Creating a New Drawing
- 25.2 Base and Projected Views
- 25.3 Additional Drawing Views
- 25.4 Manipulating Views

Chapter 26: Detailing Drawings

- 26.1 Dimensions
- 26.2 Drawing Sheets
- 26.3 Parts List
- 26.4 Balloons
- 26.5 Styles and Standards
- 26.6 Hatching

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Chapter 27: Drawing Annotations

- 27.1 Text
- 27.2 Symbols
- 27.3 Hole and Thread Notes
- 27.4 Chamfer Notes
- 27.5 Center Marks and Center Lines
- 27.6 Hole Tables
- 27.7 Revision Tables and Tags

Chapter 28: Customizing Autodesk Inventor

- 28.1 Application Options
- 28.2 Document Settings
- 28.3 File Properties
- 28.4 Changing Part Units
- 28.5 Command Customization

Appendix D: Effective Modeling

- D.1 Design Considerations
- D.2 Modeling Tips and Techniques
- D.3 Model Investigation

Appendix E: Additional Practices II

Appendix F: Autodesk Inventor Certification Exam Objectives
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.

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