Autodesk Fusion 360: Introduction to Parametric Modeling

Course Length: 3 days

The Autodesk Fusion 360 training course provides you with an understanding of the parametric design philosophy using the Autodesk® Fusion 360® software. Through a hands-on, practice-intensive curriculum, you will learn the key skills and knowledge required to design models using the Autodesk Fusion 360 software. This course will also assist you in preparing for the Autodesk Fusion 360 Certified User exam.

Topics Covered

- Understanding the Autodesk Fusion 360 interface
- Creating, constraining, and dimensioning 2D sketches
- Creating and editing solid 3D features
- Creating and using construction features
- Creating equations and working with parameters
- Manipulating the feature history of a design
- Duplicating geometry in a design
- Placing and constraining/connecting components in a single design file
- Defining motion in a multi-component design
- Creating components and features in a multi-component design
- Creating and editing T-spline geometry
- Documenting a design in drawings
- Defining structural constraints and loads for static analysis

Prerequisites

As an introductory course, no prior knowledge of any 3D modeling or CAD software is required. However, 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 Fusion 360 2.0.6516. Topics, curriculum, and/or prerequisites may change depending on software version.

Training Guide Contents

Chapter 1: Introduction to Autodesk Fusion 360

- 1.1 Autodesk Fusion 360 Fundamentals
- 1.2 Getting Started
- 1.3 The Autodesk Fusion 360 Interface
- 1.4 Design Navigation & Display

Chapter 2: Creating the First Feature with Quick Shapes

- 2.1 Design Units and Origin
- 2.2 Quick Shape Creation

Chapter 3: Creating Sketched Geometry

- 3.1 Introduction to the Sketching Workflow
- 3.2 Sketch Entities
- 3.3 Dimensioning
- 3.4 Sketch Constraints
- 3.5 Extruding a Sketch
- 3.6 Revolving a Sketch

Chapter 4: Additional Sketching Tools

- 4.1 Additional Entity Types
- 4.2 Editing Tools
- 4.3 Additional Dimension Tools
- 4.4 Moving and Copying
- 4.5 Rectangular Sketch Patterns
- 4.6 Circular Sketch Patterns

Chapter 5: Sketched Secondary Features

- 5.1 Sketched Secondary Features
- 5.2 Using Existing Geometry

Chapter 6: Pick and Place Features

- 6.1 Fillets
- 6.2 Chamfers
- 6.3 Holes
- 6.4 Editing Pick and Place Features

Chapter 7: Construction Features

- 7.1 Construction Planes
- 7.2 Construction Axes
- 7.3 Construction Points

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Chapter 8: Equations and Parameters

- 8.1 Equations
- 8.2 Parameters

Chapter 9: Additional Features and Operations

- 9.1 Draft
- 9.2 Shell
- 9.3 Rib
- 9.4 Split Face
- 9.5 Scale
- 9.6 Thread
- 9.7 Press Pull

Chapter 10: Design and Display Manipulation

- 10.1 Reordering Features
- 10.2 Inserting Features
- 10.3 Suppressing Features
- 10.4 Measure & Section Analysis
- 10.5 Direct Modeling

Chapter 11: Single Path Sweeps

- 11.1 Sweeps

Chapter 12: Loft Features

- 12.1 Lofts

Chapter 13: Feature Duplication Tools

- 13.1 Mirroring Geometry
- 13.2 Patterning Features

Chapter 14: Distributed Design

- 14.1 Assembly Design Methods
- 14.2 Distributed Design
- 14.3 Joint Origins
- 14.4 Assigning Joints

Chapter 15: Component Design Tools

- 15.1 Rigid Groups
- 15.2 Interference Detection
- 15.3 Miscellaneous Joint Tools

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Chapter 16: Multi-Body Design

- 16.1 Multi-Body Design
- 16.2 Multi-Body Design Tools
- 16.3 Components
- 16.4 As-Built Joints

Chapter 17: T-Spline Geometry

- 17.1 Introduction to the Form Contextual Environment
- 17.2 Surface Quick Shapes
- 17.3 Creating Sketched T-Spline Surfaces
- 17.4 Creating Faces & Filling Holes

Chapter 18: Editing T-Spline Geometry

- 18.1 Editing Form Geometry
- 18.2 Deleting Entities
- 18.3 Working with Edges
- 18.4 Working with Faces
- 18.5 Working with Points
- 18.6 Controlling Symmetry
- 18.7 Thickening Geometry

Chapter 19: Drawing Basics

- 19.1 Creating a New Drawing
- 19.2 Additional Drawing Views
- 19.3 Exploded Views
- 19.4 Manipulating Drawings

Chapter 20: Detailing Drawings

- 20.1 Dimensions
- 20.2 Other Annotations
- 20.3 Parts List and Balloons
- 20.4 Annotation and Dimension Settings
- 20.5 Drawing Output

Chapter 21: Static Analysis Using the Simulation Environment

- 21.1 Introduction to the Simulation Environment
- 21.2 Setting up a Structural Static Analysis
- 21.3 Setting up the Mesh
- 21.4 Solving a Design Study
- 21.5 Visualizing the Results

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Appendix A: Outputting for 3D Printing

- A.1 Generating a .STL File

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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