

Advanced Part Modeling

Length: 3 days

Prerequisite: SOLIDWORKS Essentials

Description: Advanced Part Modeling teaches you how to use multi-body solids, sweeping and lofting features, and the more advanced shaping capabilities of SOLIDWORKS.

Course Syllabus

Introduction

- About This Course
- Using this Book
- Windows
- Use of Color
- More SOLIDWORKS Training Resources

Lesson 1: Multibody Design Techniques

- Multibody Parts
- Hide/Show Tree Items
- Multibody Design Techniques
- Case Study: Multibody Design
- Solid Bodies Folder
- Local Operations
- Feature Scope
- Patterning Bodies
- Tool Body Technique
- Combining Bodies
- Case Study: Protective Screen
- Intersect with Solid Bodies
- Case Study: Bowl
- Indent Feature
- Case Study: Indent
- Deleting Solid Bodies

Lesson 2: Saving Solid Bodies

- Multibody Part vs. Assembly
- Saving Bodies Functions
- Case Study: Clamp
- Insert into New Part
- Save Bodies
- Case Study: Boat Cleat
- Modeling for Rapid Tooling
- Splitting a Part into Multiple Bodies

- Case Study: Handle
- Automating an Assembly
- Case Study: Using Split Part with Legacy Data

Lesson 3: Sketching with Splines

- Curves in Sketches
- Using Sketch Pictures
- Case Study Guitar Body
- Splines
- Adding Spline Relations
- Changing the Shape of a Spline
- Fully Defining Splines
- Evaluating Splines
- Case Study: Two Point Spline
- Analyzing Solid Geometry
- Style Spline
- Case Study: Watering Can Handle
- Fit Spline
- Case Study: Coffee Cup

Lesson 4: Introduction to Sweeping

- Sweeping
- Case Study: Faux Raised Panel Door
- Sweep with Guide Curves
- Case Study: Bottle Body
- The SelectionManager
- Case Study: Hanger Bracket

Lesson 5: 3D Sketching and Curve Features

- Curve Features
- Case Study: Spring
- Sweeping Along a 3D Path
- 3D Sketching
- Helix Curve





- Creating a 3D Curve from Orthogonal Views
- Projected Curve Feature
- Combining Curves
- Smoothing Transitions

Lesson 6: Threads and Library Feature Parts

- Bottle Features
- Case Study: Modeling Threads
- Saving a Library Feature Part
- Performance Considerations
- Case Study: Adding the Label Outline
- Creating the Sweep Path
- Sweeping Along Model Edges

Lesson 7: Advanced Sweeping

- Sweep Options
- Additional Sweep Settings
- Profile Orientation
- Case Study: Keep Normal Constant
- Intersection Curve Feature
- Visualizing Sweep Sections
- Case Study: Controlling Twist
- Case Study: Controlling Twist with Guide Curves
- Case Study: Align with End Faces
- Solid Profile
- Case Study: Drill Bit

Lesson 8: Introduction to Loft and Boundary Features

- Comparing Complex Features
- How Lofting and Boundary Work
- Case Study: Defroster Vent
- Loft Feature
- Boundary Feature
- Case Study: Lofted Merge
- Case Study: Reusing Sketches
- Copying a Sketch
- Modify Sketch
- Derived Sketches
- Boundary Preview Options
Sketch Block and Library Feature Profiles

Lesson 9: Advanced Loft and Boundary Features

- Additional Curves in Loft and Boundary

- Centerline Lofting
- Case Study: Heat Shield
- Loft Preview Options
- Adding Sketch Segments
- Cleaning Up a Model
- Deleting Faces
Evaluating Edges
- Face Fillets
- Case Study: Hook
- Curve Influence

Lesson 10: Advanced Filletting and Other Features

- Fillet Settings
- Fillet Parameters
- Constant Size Fillets
- Delete Face: Delete and Fill
- Fillet Options
- Variable Size Fillets
- Face Fillets
- FilletXpert
- Other Advanced Features
- Wrap Feature
- Deform Feature
- Direct Editing





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