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.

Topics covered in this course are:

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 Filleting 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