



SOLIDWORKS ADVANCE PART MODELING

Who should attend:

**Application Engineer
R&D Engineer
Product Designer or
Engineer
Industrial Engineer**

Prerequisites:

Attended SOLIDWORKS
Essentials Course

Basic understanding of
part design and drafting

Mechanical Design
Experience

Duration:

3 Days

Methodology:

Practical hands-on with
using computers,
lecturing, discussions
and case studies

Introduction

The Advanced Part Modeling course is for SOLIDWORKS users who need to create complex parts or just want to become more productive. You will learn how to use Boolean operations in multibody parts in order to save time, build master models for parametrically driving whole projects from a unique location, reverse-engineer complex models using just a couple of pictures, and master along the way the most advanced solid features including sweeps, lofts, boundaries, and everything there is to know about fillets.

Objective

At the end of this program participants are expected to:

- Create complex freeform parts associated with the consumer product design
- Create multibody parts and split them to create assemblies
- Use advanced features to generate custom solid model part designs

IME CADCAM TRAINING CENTRE SDN BHD

PJ: 22A, Jln. PJS 1/46, Tmn. Petaling Utama, 46000 PJ, Selangor, Malaysia.
Tel: +603-7783 6866 | Fax: +603-7781 1185

PG: 68, Jln. Perai Jaya 4, Bandar Perai Jaya, 13700 Pulau Pinang, Malaysia.
Tel: +604-399 5571 | Fax: +604-399 5572

JB: No. 25-01, Jalan Bestari 8/2, Taman Nusa Bestari, 79150, Iskandar Puteri, Johor.
Tel: +607- 238 7978 | Fax: +607-238 2162

training@cadcam.com.my | www.cadcam.com.my



ADVANCE PART MODELING

Key Topics

Day 1

Lesson 1: Multibody Design Techniques

- Multibody Parts
- Hide/Show Tree Items
- Multibody Design Techniques
- Case Study: Multibody Design
- Contour Selection
- Solid Bodies Folder
- Local Operations
- Feature Scope
- Patterning Bodes
- Tool Body Technique
- Combining Bodies
- Case Study: Common Combine Type
- Intersect with Solid Bodies
- Indent Feature
- Deleting Solid Bodies

Lesson 2: Saving Solid Bodies

- Multibody Part vs Assembly
- Saving Bodies Functions
- Using Cut to Create Multiple Bodies
- Insert into New Part
- Saving Bodies
- Modeling for Rapid Tooling
- Splitting a Part into Multiple Bodies
- Automating an Assembly
- Using Split Part with Legacy Data

Lesson 3: Sketching with Splines

- Curves in Sketches
- Splines
- Changing the Shape of a Spline
- Two Point Splines
- Analyzing Solid Geometry
- Surface Curvature Combs
- Case Study: Tracing with Splines
- Style Spline
- Case Study: Watering Can Handle
- Fit Spline
- Case Study: Coffee Cup

IME CADCAM TRAINING CENTRE SDN BHD

PJ: 22A, Jln. PJS 1/46, Tmn. Petaling Utama, 46000 PJ, Selangor, Malaysia.
Tel: +603-7783 6866 | Fax: +603-7781 1185

PG: 68, Jln. Perai Jaya 4, Bandar Perai Jaya, 13700 Pulau Pinang, Malaysia.
Tel: +604-399 5571 | Fax: +604-399 5572

JB: No. 25-01, Jalan Bestari 8/2, Taman Nusa Bestari, 79150, Iskandar Puteri, Johor.
Tel: +607- 238 7978 | Fax: +607-238 2162

training@cadcam.com.my | www.cadcam.com.my



ADVANCE PART MODELING

Key Topics

Day 2

Lesson 4: Introduction to Sweeping

- Sweeping
- Case Study : Faux Raised Panel Door
- Sweep with Guide Curves
- Case Study : Bottle Body
- Pierce Relation
- Sweep with Guide Curves
- Multi-thickness Shell
- The Selection Manager
- Case Study: Hanger Bracket

Lesson 5: 3D Sketching and Curve Features

- Curve Features
- Case Study : Modeling a Spring
- Sweeping Along a 3D Path
- 3D Sketching
- Helix Curve
- Creating a 3D Curve from Orthogonal Views
- Combining Curves
- Smoothing Transitions

Lesson 6: Threads and Library Feature Parts

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

Lesson 7: Advanced Sweeping

- Sweep Options
- Additional Sweep Settings
- Profile Orientation
- Intersection Curve Feature
- Visualizing Sweep Sections
- Align with End Faces
- Solid Sweep

IME CADCAM TRAINING CENTRE SDN BHD

PJ: 22A, Jln. PJS 1/46, Tmn. Petaling Utama, 46000 PJ, Selangor, Malaysia.
Tel: +603-7783 6866 | Fax: +603-7781 1185

PG: 68, Jln. Perai Jaya 4, Bandar Perai Jaya, 13700 Pulau Pinang, Malaysia.
Tel: +604-399 5571 | Fax: +604-399 5572

JB: No. 25-01, Jalan Bestari 8/2, Taman Nusa Bestari, 79150, Iskandar Puteri, Johor.
Tel: +607- 238 7978 | Fax: +607-238 2162

training@cadcam.com.my | www.cadcam.com.my



ADVANCE PART MODELING

Key Topics

Day 3

Lesson 8: Introduction to Boundary Feature and Lofting

Comparing Complex Features

- How Lofting and Boundary Work
- Case Study: Loft vs Boundary
- Loft Feature
- Boundary Feature
- Case Study: Merging with Loft and Boundary
- Case Study: Using Derived and Copied Sketches
- Copying Sketch
- Modify Sketch
- Derived Sketches
- Boundary Preview Options
- Sketch Block and Library Feature Profiles

Lesson 9: Introduction to Boundary Feature and Lofting

- Additional Curves in Loft and Boundary
- Case Study: Centerline Lofting
- Loft Preview Option
- Adding Sketch Segments
- Cleaning Up a Model
- Deleting Faces
- Evaluating Edges
- Face Fillets
- Case Study: Lofting with Guide Curves
- Curve Influence
- Hook Using Boundary

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 Features
- Deform Feature
- Direct Editing

IME CADCAM TRAINING CENTRE SDN BHD

PJ: 22A, Jln. PJS 1/46, Tmn. Petaling Utama, 46000 PJ, Selangor, Malaysia.
Tel: +603-7783 6866 | Fax: +603-7781 1185

PG: 68, Jln. Perai Jaya 4, Bandar Perai Jaya, 13700 Pulau Pinang, Malaysia.
Tel: +604-399 5571 | Fax: +604-399 5572

JB: No. 25-01, Jalan Bestari 8/2, Taman Nusa Bestari, 79150, Iskandar Puteri, Johor.
Tel: +607- 238 7978 | Fax: +607-238 2162

training@cadcam.com.my | www.cadcam.com.my

