



SOLIDWORKS MOLD DESIGN

Who should attend:

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

Prerequisites:

Attended SOLIDWORKS Essentials Course

Attended Advance Part Modeling 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 Mold Design course teaches you how to quickly generate the tooling for any given part and separate it into core and cavity components (or punch and die for Tool and Die applications). This knowledge is very valuable for most mechanical designers, especially designers of molds, embossing dies, nests, and welding/checking fixtures. You will also learn to use analysis tools for developing optimal parting lines, troubleshooting draft and undercut issues, plus importing and repairing third party geometry.

Objective

At the end of this program participants are expected to:

- Create mold assemblies derived from your part designs
- Automate the production of the mold to save you design time
- Incorporate lifters, side cores and core pins in your mold design
- Design Electrodes for your molds

IME CADCAM TRAINING CENTRE SDN BHD

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MOLD DESIGN

Key Topics

Day 1

Course Outline:

Lesson 1: Surface Concepts and Imported Geometry

- Importing Data
- 3D Model Types
- Solids vs Surfaces
- Terminology
- File translators
- Why Do Imports Fail?
- Diagnosis and Repair
- Repairing and Editing Imported Geometry
- Checking Solid Bodies
- Making Copies of Faces
- Import Diagnostics
- Repairing Gaps
- Repairing Faces

Lesson 2: Core and Cavity

- Core and Cavity Mold Design
- A Simple Two Plate Mold Design
- SolidWorks Mold Tools
- Mold Analysis Tools
- Analyzing Draft on a Model
- Draft Analysis Colors
- Scale the Part to Allow for Shrinkage
- Establish the Parting Lines
- Manual Selection of Parting Lines
- Automation
- Modeling the Parting Surfaces
- Smoothing the Parting Surface
- Surface Bodies
- Interlocking the Mold Tooling
- Creating Mold Tooling

Lesson 3: Side Cores and EDM Design

- Multiple Parting Directions
- Trapped Molding Areas
- Side Cores
- Feature Freeze
- Lifters
- Core Pins
- Case Study: Electrode Design
- Electrode Clearances
- Keeping the Sharp Edges

Lesson 4: Advanced Parting Lines, Shut-Off Surfaces, and Cores

- Parting Lines and Shut-Off Surfaces
- Case Study: Mixer Base
- Draft Analysis Options
- Parting Line Options
- Core and Cavity Surfaces
- Shut-Off Surfaces
- Parting Surfaces
- Tooling Split
- Seeing Inside the Mold
- Case Study: Splitting a Part

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Key Topics

Day 2

Lesson 5: Using Surfaces for Model Prep and Interlocks

- Surfaces in Mold Making
- Case Study: Cordless Drill Bezel
- Creating New Drafted Faces
- Interlock Surfaces

Lesson 6: Using Surfaces for Mold Design Features

- Surfaces in Mold Making
- Case Study: Router Bottom
- The Mixer
- Case Study: Mixer Upper Half
- Case Study: Mixer Rear Housing
- Mold Split Folders

Lesson 7: Alternative Methods for Mold Design

- Alternate Methods for Mold Design
- Using Combine and Split
- Creating a Cavity
- Case Study: Cavity
- Using Surfaces
- Techniques for Mold Tooling
- Using the Up To Surface Method
- Using the Split Method
- Manually Creating Shut-off Surfaces

Day 3

Lesson 8: Reusable Data

- Reusing Data
- Task Pane
- SolidWorks Resources
- Design Library
- File Explorer
- Case Study: 3D Content Central
- Library Features
- Case Study: Create A Library Feature
- Configurations in Library Features
- Case Study: Water Line
- Smart Components

Lesson 9: Completing the Mold Base

- Case Study: Mold Base
- Organizing the Assembly
- Modifying the Lifters
- Ejector Pins
- Cooling the Mold
- Making the Drawing
- Making Changes
- Completing the Process

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