



SolidWorks Mold Design

Pre-Requisites:

- SolidWorks Essentials
- SolidWorks Advanced Part Modeling

Daily Schedule: Begin at 8:30 a.m., End at 4:30 p.m., 1 hour lunch

Length: 2 Days

Description: This class teaches basic mold making in SolidWorks. Topics include draft analysis, working with imported parts, parting line generation, parting surfaces, shut-offs, and interlocks.

This course is taught from the official course curriculum from SolidWorks Corporation, with additional information from Graphics Systems instructors.

Introduction

About This Course

Lesson 1: Core and Cavity

- Core and Cavity Mold Design
- SolidWorks Mold Tools
- Problematic File Translations
- Mold Analysis Tools
- Analyzing Draft on a Model
- Draft Analysis Colors
- Adding Draft
- Scale the Part to Allow for Shrinkage
- Determine the Parting Lines
- Manual Selection Of Parting Lines
- Automation
- Modeling the Parting Surfaces
- Smoothing the Parting Surface
- Surface Bodies
- Interlocking the Mold Tooling
- Creating the Mold Tooling

Lesson 2: Multiple Parting Directions

- Multiple Parting Directions
- Trapped Molding Areas
- Side Cores
- Lifters
- Core Pins
- Case Study: Electrode Design

Lesson 2: Multiple Parting Directions (Continued)

- Electrode Clearances
- Keeping the Sharp Edges

Lesson 3: Importing and Repairing Geometry

- Beyond the Basics
- Importing Data
- 3D Model Types
- Geometry vs. Topology
- What is a Solid?
- Creating Solids from Surfaces
- Decomposing a Solid into Surfaces
- Surface Types
- Terminology
- File Translators
- Modeling Systems
- File Translation
- Why Do Imports Fail?
- Diagnosis and Repair
- Checking Solid Bodies
- Making Copies of Faces
- Repairing Gaps
- Repairing Faces

Lesson 4: Parting Lines and Shut-Off Surfaces

- Parting Lines and Shut-Off Surfaces
- Draft Analysis Options
- Parting Line
- Core and Cavity Surfaces
- Shut-Off Surfaces
- Parting Surface
- Tooling Split
- Seeing Inside the Mold
- Undercut Analysis
- Cores
- Ejector Pins

Lesson 5: Repairs and Surfaces

- Creating New Drafted Faces
- Interlock Surfaces





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Lesson 6: Using Surfaces

- Surfaces in Mold Making
- Creating Surface Bodies from Faces
- Organizing Surfaces
- Review
- Manual Shut-off Surface
- Side Cores
- Partial Parting Lines

Lesson 7: Reusable Data

- Reusing Data
- Library Features
- Smart Components
- 3D ContentCentral
- Design Library
- Task Pane
- Library Features
- Smart Components

Lesson 8: Alternate Methods for Mold Design

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

Lesson 9: Making a Complete Mold

- Developing a Plan
- Modeling Repairs
- Mold Split Folders
- Runners and Gates
- Side Cores
- Ejector Pins
- Core Pins
- Creating Individual Parts
- Moldbase
- Organizing the Assembly
- Ejector Pins
- Cooling the Mold
- Making the Drawing
- Making Changes
- Completing the Process

