

SOLIDWORKS PLASTICS

Pre-Requisites: SOLIDWORKS Essentials and a fundamental knowledge of plastic materials, plastic part design, and/or injection mold design.

Daily Schedule: 8:30 a.m. - 4:30 p.m.

Length: 3 Days

The SOLIDWORKS Plastics course teaches you how to use specialized simulation software tools to predict how melted plastic flows during the injection molding process. Predicting how the plastic will flow enables you to predict manufacturing defects such as weld lines, air traps, short shots, and sink marks. By predicting these defects, you can change the part or mold geometry, the processing conditions, or the plastic material itself to eliminate or minimize them, saving energy, material, time, and money.

The SOLIDWORKS Plastics course covers all the features and functions of both SOLIDWORKS Plastics Professional (for mold designers) and SOLIDWORKS Plastics Premium (for production).

Lesson 1: Basic Flow Analysis

- » Basic Flow Analysis
- » Stages in the Process
- » Element Types
- » Meshing
- » The Plastics Manager Tree
- » Material
- » Injection Location
- » Running a Flow Analysis
- » Flow Results

Lesson 2: Detecting A Short Shot

- » Detecting Short Shots
- » Stages in the Process
- » Fill Settings
- » Flow Front Central Temperature
- » Design Changes
- » Simulation After Design Changes

Lesson 3: Automation Tools

- » Automation Tools
- » Stages in the Process
- » Duplicate Study
- » Copying Settings
- » Batch Manager
- » Summary and Report

Lesson 4: Injection Locations and Sink Marks

- » Injection Locations and Sink Marks
- » Stages in the Process
- » Injection Location Rules
- » Sink Marks

Lesson 5: Materials

- » Material Properties
- » Stages in the Process
- » User-defined Database Material
- » Resin Properties
- » Temperature Properties
- » Heat Transfer Properties
- » Viscosity
- » PVT Data
- » Mechanical Properties

Lesson 6: Mesh Manipulation

- » Mesh Manipulation
- » Stages in the Process
- » Local Refinement of Mesh
- » Element Issues
- » Mesh Editing
- » Leader Lines
- » Solid Mesh
- » Solid Mesh Types



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Lesson 7: Detecting Air Traps

- » Detecting Air Traps
- » Stages in the Process
- » Air Traps
- » Venting

Lesson 8: Gate Blush

- » Gate Blush
- » Stages in the Process
- » Runner Elements
- » Gate Blush

Lesson 9: Packing and Cooling Times

- » Packing and Cooling
- » Stages in the Process
- » Flow/Pack Switch
- » Pack Stage
- » Pack Analysis
- » Pack Results
- » X-Y Plot
- » Cooling Times

Lesson 10: Reducing Cooling Times

- » Reducing Cooling Time
- » Stages in the Process
- » Multiple Injection Locations

Lesson 11: Multiple Cavity Molds

- » Multiple Cavity Molds
- » Stages in the Process
- » Mold Layouts
- » Channel Design
- » Runner Channel Design
- » Runner Wizard Channel Design
- » Family Mold Layout

Lesson 12: Symmetry Analysis

- » Symmetry Analysis
- » Stages in the Process
- » Case Study 1
- » Case Study 2
- » Symmetry Face

Lesson 13: Valve Gates and Hot Runners

- » Valve Gates and Hot Runners
- » Stages in the Process
- » Hot Runners
- » Valve Gates

Lesson 14: Reaction Injection Molding

- » Reaction Injection Molding
- » Stages in the Process

Lesson 15: Using Inserts

- » Using Inserts
- » Stages in the Process
- » Cavities and Inserts
- » Materials for Inserts

Lesson 16: Multi Shot Mold

- » Milti Shot Mold
- » Stages in the Process

Lesson 17: Gas Assistance Molding

- » Using Inserts
- » Stages in the Process
- » Gass Assist



These courses are taught from the official course curriculum from SOLIDWORKS Corporation, with additional information from Graphics Systems instructors.

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Lesson 18: Cooling Analysis

- » Cooling Analysis
- » Stages in the Process
- » Cooling
- » Cooling Channels and Mold Bodies
- » Coolant
- » Mold
- » Cool Settings
- » Cooling Simulations
- » Cool Analysis
- » Cool Results
- » Baffle
- » Bubbler

Lesson 19: Warpage Analysis

- » Warpage Analysis
- » Stages in the Process
- » Shrinkage
- » Warpage
- » Warp Settings
- » Warp Results
- » Reducing and Fixing Warped Parts

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