SOLIDWORKS Plastics

OVERVIEW

CLASSROOM LENGTH: 2 days / **INSTRUCTOR-LED ONLINE LENGTH:** 4 days

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

DESCRIPTION: This course teaches you how to use specialized simulation software tools to predict the cool, flow, pack, and warp phases of the injection molding process. This course covers all the features and functions of SOLIDWORKS Plastics Professional, SOLIDWORKS Plastics Premium, and SOLIDWORKS Plastics Advanced.

LESSON 1:
BASIC FLOW ANALYSIS
- Stages in the Process
- Injection Process
- Element Types
- Boundary Conditions
- Injection Location
- Create Mesh
- The PlasticsManager Tree
- Material
- Running A Flow Analysis
- Batch Manager
- Flow Results

LESSON 2:
DETECTING A SHORT SHOT
- Stages in the Process
- Fill Settings
- Flow Front Central Temperature
- Configurations

LESSON 3:
AUTOMATION TOOLS
- Stages in the Process
- Duplicate Study
- Copying Settings
- Batch Manager

LESSON 4:
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
- Resin Properties
- Temperature Properties
- Heat Transfer Properties
- Viscosity
- PVT Sata
- Mechanical Properties

LESSON 6:
MESH MANIPULATION
- Stages in the Process
- Local Mesh Refinement
- Edit/Review Mesh
- Element Issues
- Leader Lines
- Edit Study
- Solid Mesh
- Solid Mesh Size

LESSON 7:
DETECTING AIR TRAPS
- Air Traps
- Venting

LESSON 8:
GATE BLUSH
- Runner Elements
- Shear Stress
- Reducing Gate Blush

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LESSON 9:
PACKING AND COOLING TIMES
- Flow/Pack Switch
- Pack Analysis
- Pack Results
- X-Y Plot
- Clipping Plane Mode
- Isosurface Mode
- Cooling Times

LESSON 10:
MULTIPLE CAVITY MOLDS
- Mold Layouts
- Runner System
- Runner Channel Design
- Clamping Force
- Runner Wizard Channel Design
- Family Mold Layout
- Using Runner-Balancing

LESSON 11:
SYMMETRY ANALYSIS
- Case Study1: Runner Design
- Symmetrical Runner
- Case Study2: Symmetry Face
- Symmetry Face
- Exercise 13: Half Symmetry

LESSON 12:
VALVE GATES AND HOT RUNNERS
- Hot Runners
- Valve Gates
- Control Valve

LESSON 13:
REACTION INJECTION MOLDING
- Reaction Injection Molding

LESSON 14:
USING INSERTS
- Cavities and Inserts
- Materials for Inserts

LESSON 15:
MULTI SHOT MOLD
- Multi Shot Mold
- Domain Order

LESSON 16:
GAS ASSISTANCE MOLDING
- Gas Assist
- Material Selection

LESSON 17:
COOLING ANALYSIS
- Cooling Channels and Mold Bodies
- Baffle
- Bubbler
- Cooling Simulations
- Coolant
- Mold
- Cool Settings
- Cool Analysis
- Cool Results

LESSON 18:
WARPAGE ANALYSIS
- Shrinkage
- Warpage
- Warp Settings
- Warp Results
- Reducing and Fixing Warped Parts

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