

SOLIDWORKS Mold Making Professional (CSWP-MM) Certification Prep Course

Target Audience

This course is designed for SOLIDWORKS users who want to become Certified SOLIDWORKS Professional Advanced in Mold Making CSWPA-MM. It is suitable for users who have basic knowledge of SOLIDWORKS and want to develop advanced mold design skills and achieve the CSWPA Mold Making certification.

Course Outcomes

- Understand mold design workflows and SOLIDWORKS Mold Tools
- Apply parting lines, shut-off surfaces, and tooling split effectively
- Create core and cavity using professional mold design techniques
- Analyze draft, undercuts, and mold feasibility
- Work with surface modeling and imported geometry for mold design
- Prepare for and successfully pass the CSWP-MM Certification exam

Course Objectives

- Develop structured knowledge of mold design tools and workflows
- Build proficiency in part preparation and mold creation techniques
- Enable learners to work with surface modeling and imported geometry
- Introduce advanced mold tools such as tooling split and core-cavity design
- Reinforce learning through exercises aligned with certification requirements
- Prepare participants comprehensively for the CSWP-MM certification exam

Course Outline

The course comprises **40-hours** of theory and labs and is divided into **11** different chapters. Each chapter will be followed by hands-on lab exercises to reinforce learning and gauge understanding of the topics covered.

Table of Contents

Chapter 1. Introduction to SOLIDWORKS

- Installing SOLIDWORKS
- Getting Started with SOLIDWORKS
- Invoking the Part Modeling Environment
- Invoking the Assembly Environment
- Invoking the Drawing Environment
- Identifying SOLIDWORKS Documents
- Customizing the Command Manager
- Working with Mouse Gestures
- Saving Documents
- Opening Existing Documents

Chapter 2. Sketching for Mold Design

- Drawing a Line
- Drawing a Rectangle
- Drawing a Circle
- Drawing an Arc
- Drawing a Spline
- Convert Entities
- Trim
- Offset
- Sketch Relations
- Smart Dimension
- Fully Defined Sketch

Chapter 3. Part Modeling for Mold Design

- Extrude
- Revolve
- Sweep
- Loft
- Fillet
- Chamfer
- Shell
- Draft
- Rib
- Hole Wizard
- Linear Pattern
- Circular Pattern
- Mirror
- Multi-body Parts
- Mass Properties

Chapter 4. Mold Design Basics

- Mold Design Process
- Draft Analysis
- Undercut Detection
- Parting Direction
- Core and Cavity Concept
- Core and Cavity Mold Design
- Steps in the Mold Design Process
- SOLIDWORKS Mold Tools
- Mold Analysis Tools

Chapter 5. Parting Lines and Shut-off Surfaces

- Parting Line Creation
- Shut-off Surfaces

- Parting Surfaces
- Surface Creation for Mold
- Parting Lines Options
- Manual Parting Lines
- Shut-off Surface Patch Types
- Manual Shut-off Surfaces
- Creating the Parting Surface
- Parting Surfaces Options
- Smoothing the Parting Surface

Chapter 6. Tooling Split

- Tooling Split Property Manager
- Core Creation
- Cavity Creation
- Core and Cavity Separation
- Creating the Mold Tooling
- Tooling Split
- Interlocking the Mold Tooling
- Creating Interlock Surfaces

Chapter 7. Mold Components and Assembly

- Mold Base
- Guide Pins
- Ejector Pins
- Mold Assembly Creation
- Creating Part and Assembly Files
- Completing the Mold
- Organizing the Assembly
- Assembly Structure Editing

Chapter 8. Advanced Mold Tools and Surfacing

- Move Face
- Delete Face
- Replace Face
- Surface Knit
- Surface Trim
- Surface Extend
- Interference Detection
- Mass Properties
- Surfaces in Mold Design
- Surface Models
- Solid Models
- Extruded Surface
- Planar Surface

- Trim Surface
- Untrim Surface
- Knit Surface
- Creating Solids from Surfaces
- Thicken
- Delete Face
- Offset Surface
- Extend Surface

Chapter 9. Part Preparation

- Draft Analysis
- Undercut Detection
- Parting Direction Selection
- Parting Line Creation

Chapter 10. Mold Creation

- Shut-off Surfaces
- Parting Surfaces
- Tooling Split
- Core Creation
- Cavity Creation

Chapter 11. Mold Assembly and Evaluation

- Mold Base Creation
- Interference Detection
- Mass Properties Calculation
- Mold Assembly Evaluation