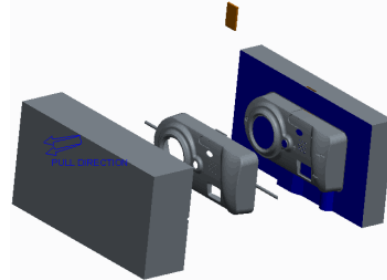




Mold Design using Creo Parametric 3.0

Overview

Course Code	TRN-4517-T
Course Length	2 Days



The Mold application provides the tools necessary to create a mold model from start to finish using the mold design process within Creo Parametric 3.0. In this course, you will learn how to create, modify, and analyze mold components and assemblies. Any changes made to the design model automatically propagate to the mold components and assemblies. You will also learn how to create final extract components that reflect the geometry of the design model, along with shrinkage considerations, adequate drafting, mold features, and cooling systems. After completing this course, you will have a better understanding of the mold design process and how to create molded products using the mold design process.

At the end of each module, you will complete a set of review questions to reinforce critical topics from that module. At the end of the course, you will complete a course assessment in Pro/FICIENCY intended to evaluate your understanding of the course as a whole.

Course Objectives

- Learn the basic mold process
- Prepare design models for the mold process
- Analyze design models to ensure their readiness for molding
- Create mold models
- Apply shrinkage to the reference model
- Create and assemble workpieces into the mold model
- Create mold volumes
- Create parting lines and parting surfaces
- Split mold volumes
- Extract mold components
- Create mold features
- Fill and open a mold

Prerequisites

- Introduction to Creo Parametric 3.0
- Basic understanding of mold design terminology and processes
- Knowledge of Creo Parametric surfacing techniques is a plus

Audience

- This course is intended for designers, machinists, and manufacturing engineers. People in related roles will also benefit from taking this course.
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Agenda

Day 1

Module	1	Introduction to the Creo Parametric Basic Mold Process
Module	2	Design Model Preparation
Module	3	Design Model Analysis
Module	4	Mold Models
Module	5	Shrinkage
Module	6	Workpieces
Module	7	Mold Volume Creation

Day 2

Module	8	Parting Lines
Module	9	Skirt Surfaces
Module	10	Parting Surface Creation
Module	11	Splitting Mold Volumes
Module	12	Mold Component Extraction
Module	13	Mold Features Creation
Module	14	Filling and Opening the Mold

Course Content

Module 1. Introduction to the Creo Parametric Basic Mold Process

- i. Creo Parametric Basic Mold Process

Knowledge Check Questions

Module 2. Design Model Preparation

- i. Understanding Mold Theory
- ii. Preparing Design Models for the Mold Process
- iii. Creating Profile Rib Features
- iv. Creating Drafts Split at Sketch
- v. Creating Drafts Split at Curve
- vi. Creating Drafts Split at Surface

Knowledge Check Questions

Module 3. Design Model Analysis

- i. Analyzing Design Models Theory
- ii. Performing a Draft Check
- iii. Performing a Section Thickness Check
- iv. Performing a Thickness Check

Knowledge Check Questions

Module 4. Mold Models

- i. Creating New Mold Models
- ii. Analyzing Model Accuracy
- iii. Locating the Reference Model
- iv. Assembling the Reference Model
- v. Creating the Reference Model
- vi. Redefining the Reference Model
- vii. Analyzing Reference Model Orientation
- viii. Analyzing Mold Cavity Layout
- ix. Analyzing Variable Mold Cavity Layout
- x. Analyzing Mold Cavity Layout Orientation
- xi. Calculating Projected Area

Knowledge Check Questions

Module 5. Shrinkage

- i. Understanding Shrinkage
- ii. Applying Shrinkage by Scale
- iii. Applying Shrinkage by Dimension

Knowledge Check Questions

Module 6. Workpieces

- i. Creating Display Styles
 - ii. Creating a Workpiece Automatically
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- iii. Creating a Custom Automatic Workpiece
- iv. Creating and Assembling a Workpiece Manually
- v. Reclassifying and Removing Mold Model Components

Knowledge Check Questions

Module 7. Mold Volume Creation

- i. Surfacing Terms
- ii. Understanding Mold Volumes
- iii. Sketching Mold Volumes
- iv. Creating Sliders using Boundary Quilts
- v. Sketching Slider Mold Volumes
- vi. Creating a Reference Part Cutout
- vii. Sketching Lifter Mold Volumes
- viii. Replacing Surfaces and Trimming to Geometry
- ix. Sketching Insert Mold Volumes

Knowledge Check Questions

Module 8. Parting Lines

- i. Understanding Parting Lines
- ii. Creating an Automatic Parting Line Using Silhouette Curves
- iii. Analyzing Silhouette Curve Options: Slides
- iv. Analyzing Silhouette Curve Options: Loop Selection

Knowledge Check Questions

Module 9. Skirt Surfaces

- i. Understanding Parting Surfaces
- ii. Creating a Skirt Surface
- iii. Analyzing Skirt Surface Options: Extend Curves
- iv. Analyzing Skirt Surface Options: Tangent Conditions
- v. Analyzing Skirt Surface Options: Extension Directions
- vi. Analyzing Skirt Surface Options: ShutOff Extension

Knowledge Check Questions

Module 10. Parting Surface Creation

- i. Analyzing Surface Editing and Manipulation Tools
- ii. Merging Surfaces
- iii. Creating a Shadow Surface
- iv. Creating a Parting Surface Manually
- v. Creating Saddle Shutoff Surfaces
- vi. Creating Fill Surfaces
- vii. Extending Curves
- viii. Filling Loops
- ix. Creating Shut Offs

Knowledge Check Questions

Module 11. Splitting Mold Volumes

- i. Splitting the Workpiece
- ii. Splitting Mold Volumes
- iii. Splitting Volumes using Multiple Parting Surfaces
- iv. Blanking and Unblanking Mold Items
- v. Analyzing Split Classification

Knowledge Check Questions

Module 12. Mold Component Extraction

- i. Extracting Mold Components from Volumes
- ii. Applying Start Models to Mold Components

Knowledge Check Questions

Module 13. Mold Features Creation

- i. Creating Waterline Circuits
- ii. Analyzing Waterline End Conditions
- iii. Performing a Waterlines Check
- iv. Understanding Mold Analysis Settings
- v. Creating Sprues and Runners
- vi. Creating Ejector Pin Clearance Holes
- vii. Creating UDFs
- viii. Placing UDFs

Knowledge Check Questions

Module 14. Filling and Opening the Mold

- i. Creating a Molding
- ii. Opening the Mold
- iii. Draft Checking a Mold Opening Step
- iv. Interference Checking a Mold Opening Step
- v. Viewing Mold Information

Knowledge Check Questions
