

Introduction to Creo Elements/Direct 19.0 Modeling

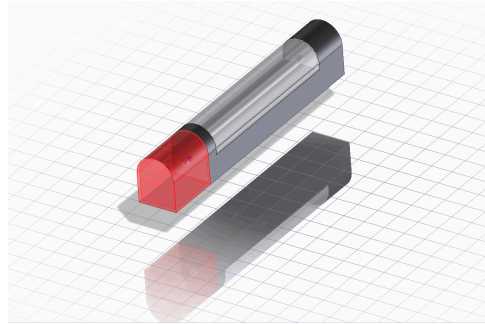
Overview

Course Code TRN-4531-T

Course Length 3 Day

In this course, you will learn the basics about 3-D design using Creo Elements/Direct Modeling. You will learn about Creo Elements/Direct's explicit approach to 3-D design and the basics of working with workplanes and 2-D. Using the intuitive interface, you will learn how to build and modify parts and assemblies. You will also be instructed on tips and best practices. After completing this course, you will have an understanding of the explicit modeling approach of Creo Elements/Direct Modeling, and be able to design functional and manufacturable products using this tool.

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

- Understand the explicit modeling approach of Creo Elements/Direct Modeling
- Create workplanes by various methods
- Create and modify 2-D using 2D CoPilot
- Create parts from 2-D using Machine commands
- Modify parts with Blends, Chamfers, face modifications, and face booleans
- Create and modify assemblies
- Customize the user interface

Prerequisites

- Must be able to interpret engineering drawings, and have an understanding of drafting concepts
- Must have experience in the development of 2-D design using a CAD system
- Prior use of another 3-D CAD system is helpful, but not required

Audience

- This course is intended for designers, mechanical engineers, industrial engineers, illustrators, and tooling designers. People in related roles will also benefit from taking this course.
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Agenda

Day 1

Module 1 Introducing Modeling

Day 2

Module 2 Introduction to Workplane, 2-D, and Machine

Module 3 Modify 3D

Day 3

Module 4 Parts and Assembly

Module 5 User Interface Customizations

Course Content

Module 1. Introducing Modeling

- i. Working With Files
- ii. Working in 3-D CAD
- iii. Using Mouse Navigation
- iv. Introducing Fluent UI
- v. Using the Status Bar
- vi. Introducing the Ribbon
- vii. Using the Ribbon
- viii. Using the Quick Access Toolbar
- ix. Introducing Mini Toolbars
- x. Using the Mini Toolbar
- xi. Using Options with the Mini Toolbar
- xii. Using the Recent Commands Toolbar
- xiii. Working With Dialog Boxes
- xiv. Working with Explicit Modeling
- xv. Building a Part
- xvi. Modifying a Part Using Machine Operations
- xvii. Modifying a Part Using Modify 3D Operations
- xviii. Working with Explicit Assembly
- xix. Building an Assembly - Step 1
- xx. Building an Assembly - Step 2
- xxi. Building an Assembly - Step 3
- xxii. Building an Assembly - Step 4
- xxiii. Introducing Configurations
- xxiv. Creo Elements/Direct Modeling Process

Knowledge Check Questions

Module 2. Introduction to Workplane, 2-D, and Machine

- i. Introducing Workplane
 - ii. Creating a Default Workplane
 - iii. Creating a Workplane on the Face
 - iv. Creating a Workplane on an Axis
 - v. Creating a Workplane by Point Direction
 - vi. Introducing 2-D
 - vii. Using 2D CoPilot
 - viii. Using Construction Geometry
 - ix. Using Real Geometry
 - x. Modifying 2D
 - xi. Using Move/Stretch for 2-D
 - xii. Extended 2D CoPilot
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- xiii. Introducing Sketch with Pictures
- xiv. Importing Pictures
- xv. Sketching with Pictures
- xvi. Introducing Relative Measurements
- xvii. Using Relative Measurements
- xviii. Using Options with 2-D
- xix. Using Geometry for Machine
- xx. Using 3D CoPilot
- xxi. Pulling for Machine - Step 1
- xxii. Pulling for Machine - Step 2
- xxiii. Creating Ribs
- xxiv. Using Punch and Stamp
- xxv. Using Machine Unite and Subtract
- xxvi. Pulling for Machine - Step 3
- xxvii. Creating a Model
- xxviii. Creating and Modifying a Model

Knowledge Check Questions

Module 3. Modify 3D

- i. Introducing Modification
 - ii. Introducing the Selection Tool
 - iii. Using Selection Shortcuts
 - iv. Selecting by Viewport
 - v. Selecting by Geometry
 - vi. Introducing Blending
 - vii. Using Blending Options - Step 1
 - viii. Using Blending Options - Step 2
 - ix. Modifying Blends
 - x. Recognizing Blends
 - xi. Creating Chamfers
 - xii. Modifying Chamfers
 - xiii. Recognizing Chamfers
 - xiv. Creating a Model with Blends
 - xv. Moving Faces - Step 1
 - xvi. Moving Faces - Step 2
 - xvii. Modifying with Pull
 - xviii. Modifying with Move and Pull
 - xix. Introducing Stretch
 - xx. Stretching Faces
 - xxi. Stretching Edge
 - xxii. Changing Radius
 - xxiii. Cutting Faces
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- xxiv. Copying Faces
- xxv. Pasting Faces
- xxvi. Tapering Faces
- xxvii. Offsetting Faces
- xxviii. Introducing Align Faces
- xxix. Aligning Faces to Face
- xxx. Aligning Faces to Edge
- xxxi. Creating Hole Features
- xxxii. Applying Thread Features

Knowledge Check Questions

Module 4. Parts and Assembly

- i. Introducing Assembly
- ii. Introducing Assembly Structure
- iii. Positioning Parts - Step 1
- iv. Positioning Parts - Step 2
- v. Creating Exploded Configurations
- vi. Sharing Parts
- vii. Copying Parts
- viii. Creating Multiple Parts
- ix. Creating Parts in Place
- x. Importing and Loading Files
- xi. Understanding Instance and Contents Data of Parts
- xii. Understanding Sharing and Copying
- xiii. Understanding Instance and Contents Data of Assembly
- xiv. Mirroring Parts
- xv. Performing Clash Analysis
- xvi. Performing Part Check
- xvii. Performing Draft Analysis

Knowledge Check Questions

Module 5. User Interface Customizations

- i. Introducing User Customization
- ii. Introducing Startup Settings
- iii. Introducing UI Settings
- iv. Introducing the User Customization Directory
- v. Modifying the Preselection Menu
- vi. Using Shortcuts
- vii. Customizing the Mini Toolbars
- viii. Customizing Ribbon

Knowledge Check Questions
