

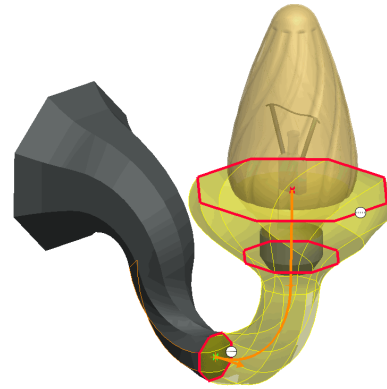
Advanced Modeling with Pro/ENGINEER Wildfire 4.0

Overview

Course Code TRN-2175-T

Course Length 3 Days

The Advanced Part Modeling with Pro/ENGINEER Wildfire 4.0 training course teaches you how to use advanced part modeling techniques in Pro/ENGINEER Wildfire 4.0 to improve your product designs. In this course, you will learn how to create and modify design models using advanced sketching techniques and feature creation tools. You will also learn how to reuse existing design geometry when creating new design models. Pro/FICIENCY assessments will be provided in order for you to assess your understanding of the course materials. The assessment results will also identify the class topics that require further review. At the end of the class, you will either take an assessment via your PTC University account, or your instructor will provide training on how to do this after the class. After completing this course, you will be well prepared to work efficiently with complex product designs using Pro/ENGINEER Wildfire 4.0.



Course Objectives

- Learn advanced selection techniques
- Create advanced datum features
- Use advanced sketching techniques
- Create advanced holes
- Create drafts
- Create advanced shells
- Create advanced rounds and chamfers
- Use relations and parameters
- Create advanced blends
- Create variable section sweeps
- Create helical sweeps
- Create swept blends
- Learn advanced layer techniques
- Learn how to use different advanced reference management techniques
- Create family tables
- Reuse features
- Learn advanced copy techniques

- Create advanced patterns

Prerequisites

- Introduction to Pro/ENGINEER Wildfire 4.0
- Pro/ENGINEER Wildfire 4.0 Update from Pro/ENGINEER Wildfire 3.0.

Audience

- This course is intended for mechanical designers, design engineers and related roles. The topics in this course are also available as Web-based training courses.

Agenda

Day 1

Module	1	Advanced Selection
Module	2	Advanced Datum Features
Module	3	Advanced Sketching
Module	4	Advanced Hole Creation
Module	5	Drafts
Module	6	Advanced Shells
Module	7	Advanced Rounds and Chamfers

Day 2

Module	8	Relations and Parameters
Module	9	Advanced Blends
Module	10	Variable Section Sweeps
Module	11	Helical Sweeps
Module	12	Swept Blends

Day 3

Module	13	Advanced Layers
Module	14	Advanced Reference Management
Module	15	Family Tables
Module	16	Reusing Features
Module	17	Advanced Copy
Module	18	Advanced Patterns

Course Content

Module 1. Advanced Selection

- i. Advanced Chain Selection
- ii. Advanced Surface Selection

Knowledge Check Questions

Module 2. Advanced Datum Features

- i. Creating Datum Graphs
- ii. Creating Datum Coordinate Systems
- iii. Creating Points On or Offset from Entities
- iv. Creating Points at Intersections
- v. Creating Points using an Offset Coordinate System
- vi. Creating Sketched Points
- vii. Creating Curves Through a Point or Vertex
- viii. Creating a Curve Through a Point Array
- ix. Creating a Curve From File
- x. Creating a Curve from a Cross-Section
- xi. Creating a Curve From Equation
- xii. Creating Composite Curves
- xiii. Creating a Curve from Curve Intersections
- xiv. Creating a Curve at Surface Intersection
- xv. Projecting and Wrapping Curves
- xvi. Trimming Curves
- xvii. Creating Offset Curves

Knowledge Check Questions

Module 3. Advanced Sketching

- i. Using Sketched Curves
- ii. Sketching Ellipses
- iii. Sketching Elliptical Fillets
- iv. Sketching Splines
- v. Modifying Splines – Basic Operations
- vi. Modifying Splines – Advanced Operations
- vii. Importing and Exporting Spline Points
- viii. Sketching Conics
- ix. Sketching Text
- x. Analyzing Sketcher Convert Options
- xi. Analyzing Sketcher Dimension Options
- xii. Sketcher Diagnostic Tools

Knowledge Check Questions

Module 4. Advanced Hole Creation

- i. Creating Standard Holes
- ii. Creating Sketched Holes
- iii. Creating On Point Holes

Knowledge Check Questions

Module 5. Drafts

- i. Creating Draft Features
- ii. Creating Basic Split Drafts
- iii. Analyzing Draft Hinges and Pull Direction
- iv. Drafting Intent Surfaces
- v. Creating Drafts with Multiple Angles
- vi. Using the Extend Intersect Surfaces Draft Option
- vii. Creating Drafts Split at Sketch
- viii. Creating Drafts Split at Curve
- ix. Create Drafts Split at Surface

Knowledge Check Questions

Module 6. Advanced Shells

- i. Analyzing Shell References and Thickness Options
- ii. Excluding Surfaces from Shells
- iii. Extending Shell Surfaces
- iv. Analyzing Shell Corner Options

Knowledge Check Questions

Module 7. Advanced Rounds and Chamfers

- i. Analyzing Advanced Chamfer Dimensioning Schemes
- ii. Analyzing Chamfer Creation Methods
- iii. Analyzing Additional Chamfer Types
- iv. Creating Corner Chamfers
- v. Analyzing Round Profile
- vi. Analyzing Round Creation Methods
- vii. Creating Rounds Through Curve
- viii. Creating Variable Radius Rounds
- ix. Auto Round
- x. Creating Rounds and Chamfers by Reference
- xi. Analyzing References and Pieces
- xii. Using Intent Edges for Rounds and Chamfers
- xiii. Using Chamfer Transitions
- xiv. Using Round Transitions

Knowledge Check Questions

Module 8. Relations and Parameters

- i. Understanding Relation Theory
 - ii. Understanding Relation Types
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- iii. Understanding Basic Relation Operators and Functions
- iv. Understanding Advanced Relation Operators and Functions
- v. Exact Relation
- vi. Creating Parameters
- vii. Understanding Advanced Parameter Options
- viii. Creating Relations
- ix. Creating Relations for Patterns
- x. Creating Section Relations
- xi. Using the Evalgraph Function
- xii. Using Simultaneous Equations

Knowledge Check Questions

Module 9. Advanced Blends

- i. Understanding Rotational and General Blend Theory
- ii. Creating a Rotational Blend Protrusion or Cut
- iii. Analyzing Rotational Blend Attributes
- iv. Creating a General Blend Protrusion or Cut
- v. Analyzing General Blend Attributes
- vi. Defining Rotational and General Blend Tangency
- vii. Selecting Sections for Rotational and General Blends

Knowledge Check Questions

Module 10. Variable Section Sweeps

- i. Understanding Variable Section Sweep Theory
- ii. Creating Variable Section Sweeps using a Constant Section
- iii. Creating Variable Section Sweeps Normal to Trajectory
- iv. Creating Variable Section Sweeps using Constant Normal Direction
- v. Creating Variable Section Sweeps Normal to Projection
- vi. Analyzing Horizontal and Vertical Control in a Variable Section Sweep
- vii. Creating Variable Section Sweeps Utilizing Multiple Trajectories
- viii. Creating Variable Section Sweeps with Tangent Trajectories
- ix. Analyzing Variable Section Sweep Trajectory Options and Rules
- x. Using Trajpar with Solid Features
- xi. Using Trajpar and Datum Graphs with Solid Features

Knowledge Check Questions

Module 11. Helical Sweeps

- i. Understanding Helical Sweeps Theory
- ii. Creating Helical Sweeps for Springs
- iii. Creating Helical Sweeps for Threads
- iv. Analyzing Helical Sweep Profile and Pitch Variations

Knowledge Check Questions

Module 12. Swept Blends

- i. Understanding Swept Blend Theory
- ii. Creating Swept Blends by Selecting Sections
- iii. Creating Swept Blends by Sketching Sections
- iv. Analyzing Swept Blend Section Options
- v. Analyzing Swept Blend Section Plane Control
- vi. Analyzing Horizontal and Vertical Control in a Swept Blend
- vii. Analyzing Swept Blend Tangency
- viii. Analyzing Swept Blend Options
- ix. Analyzing Swept Blend Rules

Knowledge Check Questions

Module 13. Advanced Layers

- i. Understanding Layers
- ii. Creating and Managing Layers
- iii. Creating Layer Rules
- iv. Creating Layers in Assemblies

Knowledge Check Questions

Module 14. Advanced Reference Management

- i. Editing Feature References
- ii. Replacing Feature References
- iii. Replacing Sketcher References
- iv. Replacing Sketcher Geometry

Knowledge Check Questions

Module 15. Family Tables

- i. Understanding Family Table Theory
- ii. Creating a Family Table
- iii. Patternizing Family Table Instances
- iv. Creating a Multi-Level Family Table
- v. Editing Family Table Members

Knowledge Check Questions

Module 16. Reusing Features

- i. Creating UDFs
- ii. Placing UDFs
- iii. Creating Inheritance Features
- iv. Using External Merge to Add Material
- v. Using External Merge to Remove Material

Knowledge Check Questions

Module 17. Advanced Copy

- i. Configuring Independency
- ii. Analyzing Advanced Reference Configuration

- iii. Copying Features Fully Dependent with Options to Vary

Knowledge Check Questions

Module 18. Advanced Patterns

- i. Creating Dimension Patterns in One Direction
- ii. Creating Dimension Patterns in Two Directions
- iii. Creating Rotational Dimension Patterns
- iv. Unpatterning Group Patterns
- v. Understanding Pattern Regeneration Options
- vi. Creating Fill Patterns
- vii. Specifying Fill Pattern Settings
- viii. Creating Curve Patterns
- ix. Creating Pattern Tables
- x. Applying Pattern Tables

Knowledge Check Questions
