



Curriculum Guide

NOTE: For a graphical depiction of the curriculum based on job role, please visit this page: http://www.ptc.com/services/edserv/learning/paths/ptc/proe_wf4.htm

Live Classroom Curriculum Guide

- Milling using Pro/ENGINEER Wildfire 4.0
 - Pro/ENGINEER Mechanica Simulation using Pro/ENGINEER Wildfire 4.0
 - Introduction to Pro/ENGINEER Wildfire 4.0
 - Pro/ENGINEER Wildfire 4.0 Update from Pro/ENGINEER Wildfire 3.0
 - Pro/ENGINEER Wildfire 4.0 Update from Pro/ENGINEER Wildfire 2.0
 - Detailing with Pro/ENGINEER Wildfire 4.0
 - Advanced Assembly Design with Pro/ENGINEER Wildfire 4.0
 - Advanced Modeling with Pro/ENGINEER Wildfire 4.0
 - Surfacing using Pro/ENGINEER Wildfire 4.0
 - Sheetmetal Design using Pro/ENGINEER Wildfire 4.0
 - Freeform Surfacing using Pro/ENGINEER Wildfire 4.0
 - Mold Design using Pro/ENGINEER Wildfire 4.0
 - Behavioral Modeling using Pro/ENGINEER Wildfire 4.0
 - Mechanism Design using Pro/ENGINEER Wildfire 4.0
 - Mechanism Simulation using Pro/ENGINEER Wildfire 4.0
 - Routed Systems Designer 8.0 for Pro/ENGINEER Wildfire 4.0
 - Cabling using Pro/ENGINEER Wildfire 4.0
-

- Piping using Pro/ENGINEER Wildfire 4.0

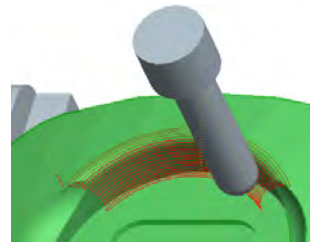
Milling using Pro/ENGINEER Wildfire 4.0

Overview

Course Code TRN-2166-T

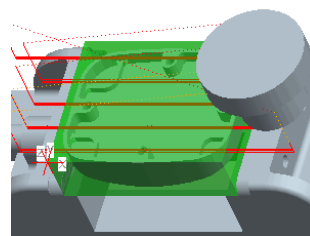
Course Length 5 Days

In this training course you will learn how to machine products using Pro/ENGINEER Wildfire 4.0 manufacturing tools. This course covers creating tool paths for 3 axis milling machines. During the course you will learn how to complete each phase of the manufacturing process. You will start by creating manufacturing models and configuring the manufacturing environment. This will include configuring tools, fixtures, and machining operations. You will then learn how to create milling sequences and holmaking sequences, and post-process cutter location (CL) data to create machine code. After completing the course, you will be able to create numerical control (NC) programs for milling machines and post-process cutter location (CL) data to create machine specific code.



Course Objectives

- Understanding the manufacturing process.
- Creating and configuring manufacturing models.
- Configuring the manufacturing environment.
- Creating and modifying milling sequences.
- Creating and modifying holmaking sequences.
- Using the process manager to create NC sequences.
- Post-processing cutter location (CL) data.



Prerequisites

- Introduction to Pro/ENGINEER Wildfire 4.0 – Fundamentals (Web Based Training) or equivalent experience.

Audience

- This course is intended for manufacturing engineers and NC machinists.

Agenda

Day 1

- Module 1 Introduction to Manufacturing
- Module 2 Creating Manufacturing Models
- Module 3 Configuring Operations
- Module 4 Using Reference Models
- Module 5 Using Workpiece Models
- Module 6 Creating and Using NC Model Assemblies
- Module 7 Creating and Configuring Workcells

Day 2

- Module 8 Creating and Configuring Tools
- Module 9 Using Template Manufacturing Models
- Module 10 Using Manufacturing Parameters
- Module 11 Creating Face Milling Sequences

Day 3

- Module 12 Creating Volume Milling Sequences
- Module 13 Creating Profile Milling Sequences
- Module 14 Creating Straight Cut Surface Milling Sequences
- Module 15 Creating From Surface Isolines Surface Milling Sequences

Day 4

- Module 16 Creating Cut Line Surface Milling Sequences
- Module 17 Advanced Surface Milling Options
- Module 18 Creating Roughing and Re-roughing Sequences
- Module 19 Creating Finishing Sequences

Day 5

- Module 20 Creating Trajectory Milling Sequences
 - Module 21 Creating Holemaking Sequences
-

Module 22 Using the Process Manager

Module 23 Creating and Post-Processing CL Data Files

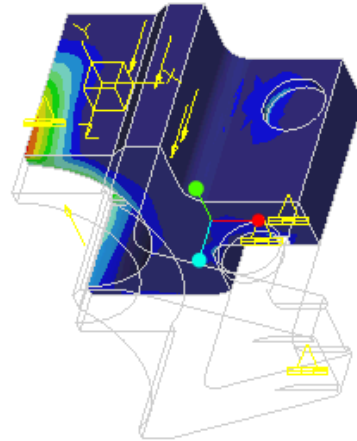
Pro/ENGINEER Mechanical Simulation using Pro/ENGINEER Wildfire 4.0

Overview

Course Code **TRN-2167-T**

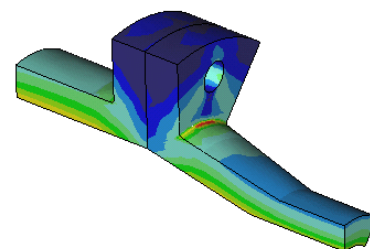
Course Length **5 Days**

This course is designed for new users who want to test, validate, and optimize product designs with the Pro/ENGINEER Wildfire 4.0 Mechanical module. Mechanical enables you to simulate structural and thermal loads on product designs. In this course, you will complete comprehensive, hands-on lab exercises that simulate realistic analysis and design optimization activities. You will also learn about advanced topics such as dynamic analyses, combined mechanical and thermal analyses, and Fatigue Studies. A module on Mechanical Best Practices is also included to help users avoid some of the more common problems that new users encounter. After completing the course, you will be able to run engineering analyses and optimizations on your product design models. At the end of each module, you will find a set of review questions to reinforce critical topics from that module. Your instructor will discuss these with the class. At the end of the course, you will find a course assessment in Pro/FICIENCY intended to evaluate your understanding of the course as a whole. After completing the course you will be well prepared to complete Pro/MECHANICA analyses on product design projects in Pro/ENGINEER Wildfire 4.0.



Course Objectives

- Learning the basic Pro/MECHANICA Analysis Process
- Theory and Mechanical Model Topics
- Exploring Results
- Materials and Material Properties
- Understanding and Using Pro/MECHANICA idealizations
- Understanding and Using Structural Loads
- Understanding and Using Structural Constraints
- Running Structural Analyses
- Running Thermal Analyses
- Convergence



- Analyzing Assemblies with Pro/MECHANICA
- Completing Design and Sensitivity Studies
- Running Optimization Studies
- Advanced Topics
- Analysis Best Practices
- Analysis Projects

Prerequisites

- Three months of Pro/ENGINEER Wildfire 4.0 experience

Audience

- This course is intended for design engineers and mechanical designers. People in related roles will also benefit from taking this course.
-

Agenda

Day 1

Module 1	The Pro/ENGINEER Mechanica 4.0 Process
Module 2	Theory and Mechanica Model Topics
Module 3	Results
Module 4	Materials and Material Properties

Day 2

Module 5	Idealizations
Module 6	Structural Loads
Module 7	Structural Constraints
Module 8	Structural Analysis I

Day 3

Module 9	Structural Analysis II
Module 10	Thermal Analysis
Module 11	Convergence
Module 12	Analyzing Assemblies I

Day 4

Module 13	Analyzing Assemblies II
Module 14	Design and Sensitivity Studies
Module 15	Optimization Studies
Module 16	Dynamic Analyses

Day 5

Module 17	Advanced Topics
Module 18	Analysis Best Practices
Module 19	Projects

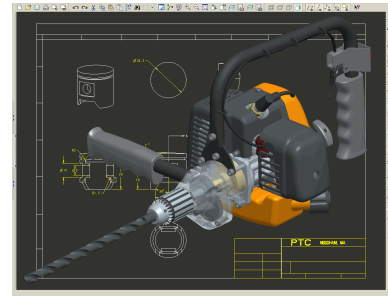
Introduction to Pro/ENGINEER Wildfire 4.0

Overview

Course Code TRN-2169-T

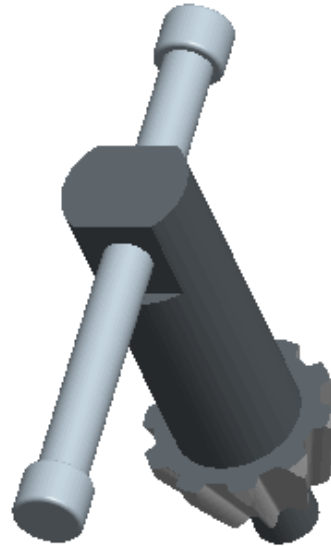
Course Length 5 Days

This course is designed for new users who want to become proficient with Pro/ENGINEER Wildfire 4.0 as quickly as possible. You will focus on learning core-modeling skills in this comprehensive, hands-on course. Topics include sketching, part modeling, assemblies, drawings, and basic model management techniques. The course also includes a comprehensive design project that enables you to practice your new skills by creating realistic parts, assemblies, and drawings. At the end of each module, you will find a set of review questions to reinforce critical topics from that module. Your instructor will discuss these with the class. At the end of the course, you will find a course assessment in Pro/FICIENCY intended to evaluate your understanding of the course as a whole. After completing the course you will be well prepared to work effectively on product design projects using Pro/ENGINEER Wildfire.



Course Objectives

- Learning the basic Pro/ENGINEER Design Process
- Understanding Pro/ENGINEER concepts
- Learning how to use the Pro/ENGINEER interface
- Selecting and editing items
- Sketching geometry and using tools
- Creating sketches for features
- Creating datum planes and datum axes
- Creating extrudes, revolves, and ribs
- Utilizing internal sketches and embedded datums
- Creating holes, drafts, and shells
- Creating sweeps and blends
- Creating rounds and chamfers
- Grouping, copying, and mirroring items
- Creating patterns
- Measuring and inspecting models
- Assembling with constraints
- Assembling with connections
- Exploding assemblies
- Creating drawing views
- Creating drawing details
- Using layers
- Investigating parent/child relationships
- Capturing and managing design intent
- Resolving failures and seeking help
- Comprehensive Design Project



Prerequisites

- None

Audience

- This course is intended for product designers, drafters, industrial/conceptual designers, and routed systems designers. People in related roles will also benefit from taking this course.
-

Agenda

Day 1

Module 1	Introduction to the Pro/ENGINEER Wildfire Basic Modeling Process
Module 2	Understanding Pro/ENGINEER Concepts
Module 3	Using the Pro/ENGINEER Interface
Module 4	Selecting and Editing
Module 5	Creating Sketcher Geometry

Day 2

Module 6	Using Sketcher Tools
Module 7	Creating Sketches for Features
Module 8	Creating Datum Features: Planes and Axes
Module 9	Creating Extrudes, Revolves, and Ribs
Module 10	Utilizing Internal Sketches and Embedded Datums
Module 11	Creating Sweeps and Blends

Day 3

Module 12	Creating Holes and Shells
Module 13	Creating Rounds and Chamfers
Module 14	Group, Copy, and Mirror Tools
Module 15	Creating Patterns
Module 16	Measuring and Inspecting Models

Day 4

Module 17	Assembling with Constraints
Module 18	Assembling with Connections
Module 19	Exploding Assemblies
Module 20	Creating Drawing Views
Module 21	Creating Drawing Details
Module 22	Using Layers

Day 5

Module 23 Investigating Parent/Child Relationships

Module 24 Capturing and Managing Design Intent

Module 25 Resolving Failures and Seeking Help

Module 26 Project

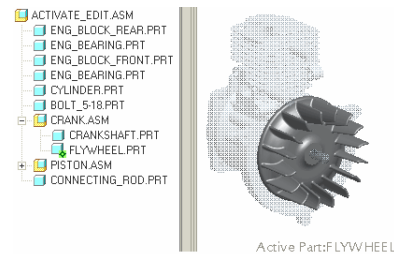
Pro/ENGINEER Wildfire 4.0 Update from Pro/ENGINEER Wildfire 3.0

Overview

Course Code **TRN-2171-T**

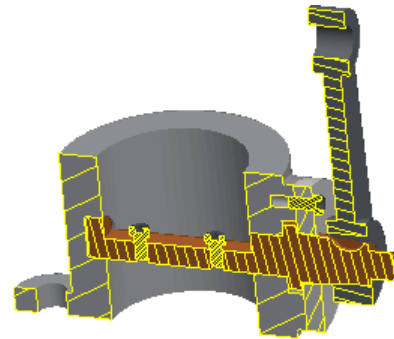
Course Length **1 Day**

In this course you will learn how to utilize many of the enhancements to core functionality in Pro/ENGINEER Wildfire 4.0. You will become familiar with enhancements to Part mode, including Draft, Swept Blends, UDFs and general interface enhancements. You will become familiar with the enhancements to Sketcher, such as referencing intent objects and replacing sketcher references. You will learn about new and enhanced Assembly capabilities such as the Global Reference Manager. You will review Drawing and Sheetmetal enhancements as well.



Course Objectives

- Describe and utilize Part enhancements.
- Describe and utilize Sketcher enhancements.
- Describe and utilize Assembly enhancements.
- Describe and utilize Drawing enhancements.
- Describe and utilize Sheetmetal enhancements.



Prerequisites

- Completion of T1827-350 Pro/ENGINEER Wildfire 3.0 Update from Pro/ENGINEER Wildfire 2.0 or equivalent experience.

Audience

- This course is intended for people who have already upgraded to Pro/ENGINEER Wildfire 3.0.

Agenda

Day 1

Module	1	Part Enhancements
Module	2	Advanced Part Enhancements
Module	3	Sketcher Enhancements
Module	4	Assembly Enhancements
Module	5	Drawing Enhancements
Module	6	Sheetmetal Enhancements

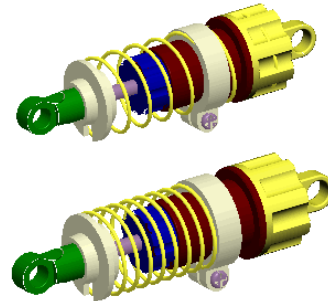
Pro/ENGINEER Wildfire 4.0 Update from Pro/ENGINEER Wildfire 2.0

Overview

Course Code TRN-2172-T

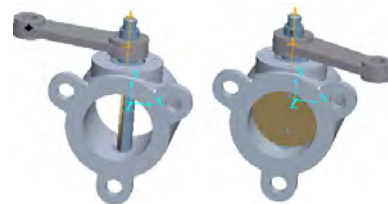
Course Length 2 Days

In this course, you will learn how to utilize many of the enhancements to core functionality in Pro/ENGINEER Wildfire 4.0. This course is intended as an update directly from Pro/ENGINEER Wildfire 2.0 to Pro/ENGINEER Wildfire 4.0, so some of the enhancements covered in this course were introduced in the Pro/ENGINEER Wildfire 3.0 release. You will become familiar with enhancements to Part mode, including embedded datum creation, and warp and partial shell features. You will learn new methods for creating features such as swept blends, and new methods for placing user defined features. You review new capabilities for feature manipulation, such as enhanced patterning capabilities. You will become familiar with the enhancements to Sketcher, such as how to copy and paste items in sketcher and how to insert predefined shapes such as polygons and common engineering sections, such as I-beams. You will also learn how to reference intent objects and replace sketcher references. You will learn about new and enhanced Assembly capabilities such as the Global Reference Manager and the new user interface for assembling components. You will use new drawing functionality, including how to create shaded drawing views. You will also learn about sheetmetal enhancements including how to create multiple walls in a single operation.



Course Objectives

- Describe and utilize Part enhancements.
- Describe and utilize Sketcher enhancements.
- Describe and utilize Assembly enhancements.
- Describe and utilize Drawing enhancements.
- Describe and utilize Sheetmetal enhancements.



Prerequisites

- Completion of T1707-340 Pro/ENGINEER Wildfire 2.0 Update or equivalent experience.

Audience

- This course is intended for people who have already upgraded to Pro/ENGINEER Wildfire 2.0, and who are moving directly to Pro/ENGINEER Wildfire 4.0.

Agenda

Day 1

Module 1 Part Enhancements

Module 2 Part Feature Duplication Enhancements

Module 3 Sketcher Enhancements

Day 2

Module 4 Assembly Component Enhancements

Module 5 Advanced Assembly Enhancements

Module 6 Drawing Enhancements

Module 7 Sheetmetal Enhancements

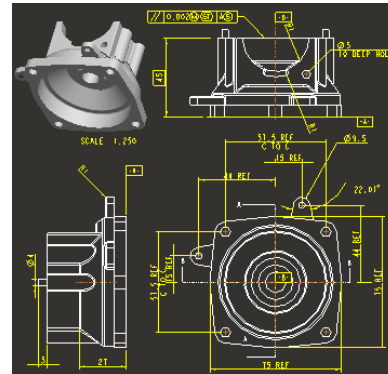
Detailing with Pro/ENGINEER Wildfire 4.0

Overview

Course Code **TRN-2173-T**

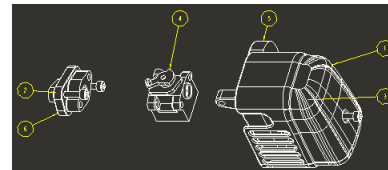
Course Length **3 Days**

Detailing with Pro/ENGINEER Wildfire 4.0 is a comprehensive training course that teaches you how to quickly create detailed drawings using information captured within 3-D design models. In this course, you learn how to create drawings, how to detail drawings, and how to take advantage of the parametric and associative nature of Pro/ENGINEER Wildfire 4.0 when configuring drawings. After completing this course, you will be able to create production drawings suitable for manufacturing.



Course Objectives

- Understand the drawing development process.
- Create new drawings using formats and drawing templates.
- Create different types of views in drawings.
- Create dimensions and notes.
- Control display options using layers.
- Apply dimensional and geometric tolerances in drawings.
- Add draft geometry and symbols to drawings.
- Use layers in drawings to control the display of views and detail items.
- Create drawing tables and a bill of materials.
- Create drawing formats.
- Configure the drawing environment.
- Manage large drawings.



Prerequisites

- Introduction to Pro/ENGINEER Wildfire 4.0.

Audience

- This course is intended for mechanical designers, design engineers, and related roles.

Agenda

Day 1

Module 1 Introduction to Drawings

Module 2 Creating New Drawings

Module 3 Creating Drawing Views

Day 2

Module 4 Adding Model Details to Drawings

Module 5 Adding Notes to Drawings

Module 6 Adding Tolerance Information

Module 7 Adding Draft Geometry and Symbols

Day 3

Module 8 Using Layers in Drawings

Module 9 Creating and Using Tables in Drawings

Module 10 Using Report Information in Drawings

Module 11 Creating Drawing Formats

Module 12 Configuring the Drawing Environment

Module 13 Managing Large Drawings

Advanced Assembly Design with Pro/ENGINEER Wildfire 4.0

Overview

Course Code TRN-2174-T

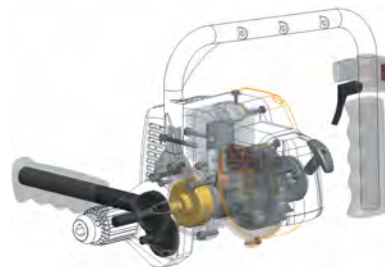
Course Length 3 Days

In this course, you will learn how to use Pro/ENGINEER Wildfire 4.0 to create and manage complex assemblies. You will learn how to use advanced assembly tools that enable you to add and maintain design, increase your efficiency, and increase system performance when working with large assemblies. In addition, you will learn the basics of using and creating predefined assembly structures and skeletons, both valuable tools typically used in a top-down design process. The course also includes an assembly design project that enables you to practice your new skills by performing various design tasks in an assembly model. At the end of each module, you will complete a set of review questions to reinforce critical topics from that module. Your instructor will discuss these with the class. At the end of the course, you will find a course assessment in Pro/FICIENCY intended to evaluate your understanding of the course as a whole.



Course Objectives

- Using Advanced Assembly Constraints
- Creating and Using Component Interfaces
- Creating and Using Flexible Components
- Restructuring and Mirroring Assemblies
- Using Assembly Features and Shrinkwrap
- Replacing Components in an Assembly
- Understanding the Basics of Simplified Reps
- Creating Cross-Sections, Display Styles, and Combined Views
- Substituting Components By Rep, Envelope, and Model
- Understanding Advanced Simplified Rep Functionality
- Creating and Using Assembly Structure and Skeletons
- Project



Prerequisites

- Fast Track to Pro/ENGINEER Wildfire 4.0

Audience

- Design engineers, mechanical designers, and related roles.
-

Agenda

Day 1

- | | | |
|--------|---|---|
| Module | 1 | Using Advanced Assembly Constraints |
| Module | 2 | Creating and Using Component Interfaces |
| Module | 3 | Creating and Using Flexible Components |
| Module | 4 | Restructuring and Mirroring Assemblies |

Day 2

- | | | |
|--------|---|---|
| Module | 5 | Using Assembly Features and Shrinkwrap |
| Module | 6 | Replacing Components in an Assembly |
| Module | 7 | Understanding the Basics of Simplified Reps |
| Module | 8 | Creating Cross-Sections, Display Styles, and Combined Views |

Day 3

- | | | |
|--------|----|---|
| Module | 9 | Substituting Components By Rep, Envelope, and Model |
| Module | 10 | Understanding Advanced Simplified Rep Functionality |
| Module | 11 | Creating and Using Assembly Structure and Skeletons |
| Module | 12 | Project |
-

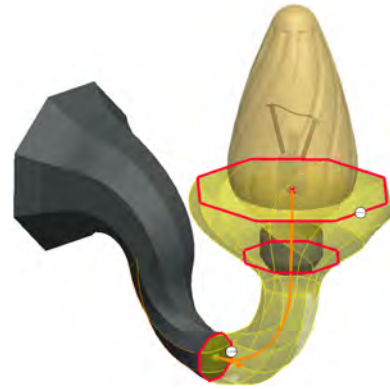
Advanced Modeling with Pro/ENGINEER Wildfire 4.0

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

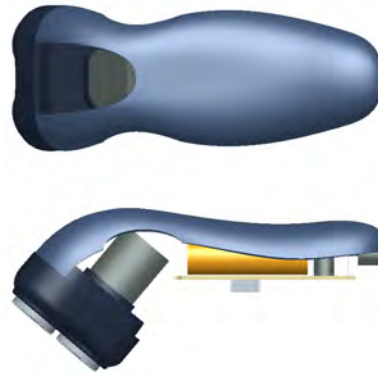
Surfacing using Pro/ENGINEER Wildfire 4.0

Overview

Course Code TRN-2176-T

Course Length 3 Days

The Surface Modeling with Pro/ENGINEER Wildfire 4.0 training course teaches you how to use surface modeling in Pro/ENGINEER Wildfire 4.0 to create models with shapes that are too complex for solid features. In this course, you will learn how to use various techniques to create complex surfaces with tangent and curvature continuities. You will also learn how to manipulate surfaces using editing tools, and analyze surfaces for quality and desired characteristics. In addition you will learn how to create solid features using the surfaces as references. 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 create complex shaped models using surfaces in Pro/ENGINEER Wildfire 4.0.



Course Objectives

- Describe surface modeling and its terminology
 - Learn advanced selection techniques
 - Create advanced datum features
 - Use advanced sketching techniques
 - Learn basic surfacing tools
 - Create various boundary surfaces
 - Create variable section sweep surfaces
 - Create helical sweep surfaces
 - Create swept blend surfaces
 - Utilize surface analysis tools
 - Extend and trim surfaces
 - Manipulate surfaces
 - Create and edit solid models using surface quilts
 - Utilize the master model technique
-

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, industrial designers, and related roles. The topics in this course are also available as Web-based training courses.
-

Agenda

Day 1

Module 1 Surface Modeling Overview

Module 2 Advanced Selection

Module 3 Advanced Datum Features

Module 4 Advanced Sketching

Module 5 Basic Surfacing Tools

Module 6 Boundary Blend Surfaces

Day 2

Module 7 Additional Boundary Surfaces

Module 8 Variable Section Sweeps

Module 9 Helical Sweeps

Module 10 Swept Blends

Module 11 Analyzing Surface Curvature

Module 12 Additional Surface Analysis Tools

Day 3

Module 13 Extending and Trimming Surfaces

Module 14 Manipulating Surfaces

Module 15 Creating and Editing Solids using Quilts

Module 16 Master Model Technique

Module 17 Project

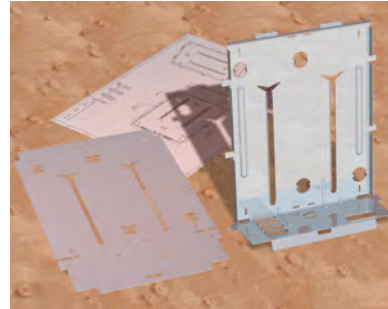
Sheetmetal Design using Pro/ENGINEER Wildfire 4.0

Overview

Course Code TRN-2177-T

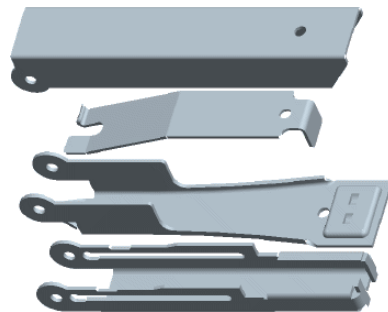
Course Length 2 Days

Sheetmetal Design using Pro/ENGINEER Wildfire 4.0 is a comprehensive training course that teaches you how to create sheetmetal parts in Pro/ENGINEER. The course builds upon the basic lessons you learned in Introduction to Pro/ENGINEER Wildfire 4.0 and serves as the second stage of learning. In this course, you will learn how to design sheetmetal parts and assemblies, including sheetmetal production drawings. All the functions needed to create sheetmetal parts, drawings, and assemblies are covered. Upon completion of this course, you will be able to create sheetmetal design models, create the flat state of the model, and document both in production drawings. At the end of each day, you use the Pro/FICIENCY skills assessments to reinforce your understanding of the course topics.



Course Objectives

- The Sheetmetal Design Process
- Sheetmetal Model Creation, Conversion, and Display
- Methods of Developed Length Calculation
- Primary Wall Features
- Secondary Wall Features
- Partial Walls
- Bend Relief
- Unbend and Bend Back Features
- Sheetmetal Bend Features
- Flat Patterns
- Sheetmetal Cuts
- Forms
- Notch and Punch Features
- Sheetmetal Environment Setup
- Sheetmetal Design Information Tools
- Sheetmetal Design Rules
- Detailing Sheetmetal Designs
- Sheetmetal Design Project



Prerequisites

- Successful completion of T2169 - Introduction to Pro/ENGINEER Wildfire 4.0 or equivalent experience.

Audience

- This course is intended for design engineers, mechanical designers, and industrial designers. People in related roles can also benefit from taking this course.
-

Agenda

Day 1

- | | | |
|--------|---|---|
| Module | 1 | Introduction to the Pro/ENGINEER Wildfire Sheetmetal Design Process |
| Module | 2 | Sheetmetal Model Fundamentals |
| Module | 3 | Creating Primary Sheetmetal Wall Features |
| Module | 4 | Creating Sheetmetal Secondary Wall Features |

Day 2

- | | | |
|--------|---|--|
| Module | 5 | Modifying Sheetmetal Models |
| Module | 6 | Sheetmetal Bends and Setting Up the Sheetmetal Environment |
| Module | 7 | Special Sheetmetal Tools |
| Module | 8 | Detailing Sheetmetal Designs |
| Module | 9 | Design Project |
-

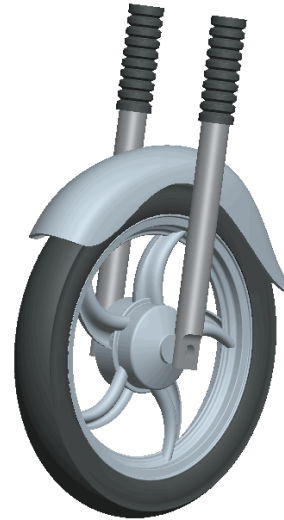
Freeform Surfacing using Pro/ENGINEER Wildfire 4.0

Overview

Course Code **TRN-2178-T**

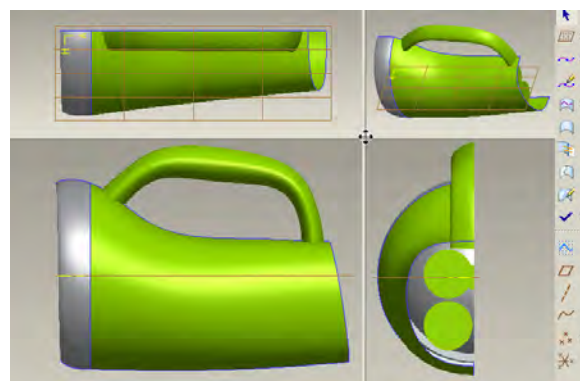
Course Length **2 Day**

In Pro/ENGINEER Wildfire 4.0 you can create freeform surface models using the interactive surface design extension (ISDX) modeling environment, often called Freeform Surfacing or Style surfacing. The Style tool is a spline-based freeform modeler that enables you to combine the parametric feature-based modeling approach with the unconstrained freeform surface modeling approach. This gives you the flexibility to design complex-shaped products in a single modeling environment. In this course, you learn how to use the Style tool to create and manipulate freeform curves, freeform surfaces, freeform surface details, and advanced freeform surface models. You also learn how to integrate style features with other parametric features in design models. After completing this course, you will be well prepared to design complex-shaped freeform surface models in Pro/ENGINEER Wildfire 4.0. At the end of each module, you will complete a set of review questions to reinforce critical topics from that module. Your instructor will discuss these with the class. At the end of the course, you will find a course assessment in Pro/FICIENCY intended to evaluate your understanding of the course as a whole.



Course Objectives

- Introduction to the Freeform Surface Modeling Process
- Understanding Freeform Surface Modeling Concepts
- Creating Initial Freeform Curves
- Developing Freeform Surface Models
- Advanced Tools and Techniques for Defining Freeform Shapes
- Creating Smooth Freeform Surface Models
- Integrating Style and Parametric Features
- Techniques for Creating Common Detailed Shapes



- Creating Complex, High Quality Freeform Models

Prerequisites

- Fast Track to Pro/ENGINEER Wildfire 4.0

Audience

- Design engineers, mechanical designers, who have a need to create styled surface geometry.
-

Agenda

Day 1

- | | | |
|--------|---|---|
| Module | 1 | Introduction to the Freeform Surface Modeling Process |
| Module | 2 | Understanding Freeform Surface Modeling Concepts |
| Module | 3 | Creating Initial Freeform Curves |
| Module | 4 | Developing Freeform Surface Models |

Day 2

- | | | |
|--------|---|--|
| Module | 5 | Advanced Tools and Techniques for Defining Freeform Shapes |
| Module | 6 | Creating Smooth Freeform Surface Models |
| Module | 7 | Integrating Style and Parametric Features |
| Module | 8 | Techniques for Creating Common Detailed Shapes |
| Module | 9 | Creating Complex, High Quality Freeform Models |
-

Mold Design using Pro/ENGINEER Wildfire 4.0

Overview

Course Code TRN-2179-T

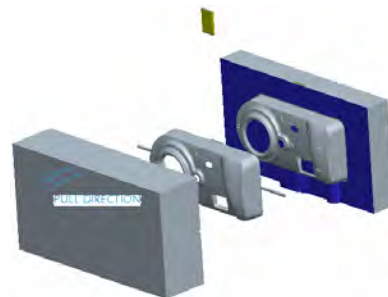
Course Length 2 Days

Pro/MOLDESIGN provides the tools to create a mold model from start to finish by using the mold design process within Pro/ENGINEER Wildfire 4.0. 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 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. Pro/FICIENCY assessments are provided for you to assess your understanding of the course materials. The assessment results 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 the course, you will have a better understanding of the mold design process and how to create molded products by using the mold design process.



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.
- Learn how to fill and open the mold.



Prerequisites

- Introduction to Pro/ENGINEER Wildfire 4.0
- Basic understanding of industry standard Mold design terminology and processes.
- Knowledge of Pro/ENGINEER surfacing techniques a plus.

Audience

- This course is intended for designers, machinists, and manufacturing engineers. The topics in this course are also available as a Web-based training course.

Agenda

Day 1

Module 1	Introduction to the Pro/ENGINEER 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 Line and Parting Surface Creation
Module 9	Splitting Mold Volumes
Module 10	Mold Component Extraction
Module 11	Mold Features Creation
Module 12	Filling and Opening the Mold

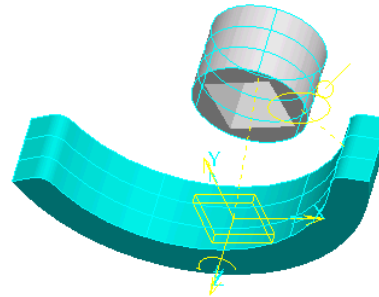
Behavioral Modeling using Pro/ENGINEER Wildfire 4.0

Overview

Course Code **TRN-2180-T**

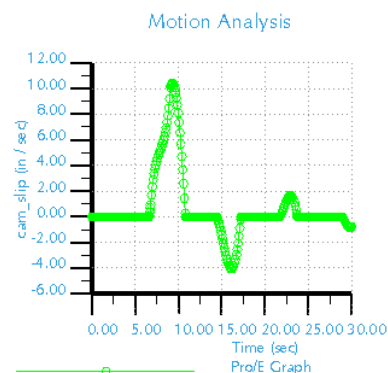
Course Length **1Day**

This course is designed for experienced users who want to add additional features that enable you to meet or exceed the design specifications of your products. In this course, you will focus on learning advanced analysis skills unrelated to structural or thermal analysis in this comprehensive, hands-on course. You will learn how to analyze your models and create analysis features that can enforce your design intent. You will also learn how to create sensitivity and feasibility studies that aid you in determining how to reach your design goals. Furthermore, you learn how to create optimization design studies that enable you to configure the dimensions and parameters that Pro/ENGINEER can change in order to meet your design specifications. After completing this course, you will be prepared to work on critical component designs using Pro/ENGINEER Wildfire Behavioral Modeling. At the end of each module, you will find a set of review questions to reinforce critical topics from that module. Your instructor will discuss these with the class. At the end of the course, you will find a course assessment in Pro/FICIENCY intended to evaluate your understanding of the course as a whole.



Course Objectives

- Applying the Behavioral Modeling process and concepts to your designs
- Creating measurement analysis features
- Creating relation, motion, Mechanica, and MS Excel analysis features
- Creating user-defined analysis features
- Conducting sensitivity analyses
- Conducting feasibility and optimization studies
- Design Project



Prerequisites

- Introduction to Pro/ENGINEER Wildfire 3.0 or equivalent experience.
- Additionally, experience with MS Excel, Mechanica, Mechanism Design, and Mechanism Dynamics would be useful but not required.

Audience

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

Agenda

Day 1

Module 1	Introduction to the Behavioral Modeling Process
Module 2	Creating Measurement Features on Pro/ENGINEER Models
Module 3	Creating Model Property Features on Pro/ENGINEER Models
Module 4	Creating Analysis Features on Pro/ENGINEER Models
Module 5	Creating User-Defined Analysis Features on Pro/ENGINEER Models
Module 6	Conducting Design Studies and Optimizing Models
Module 7	Project

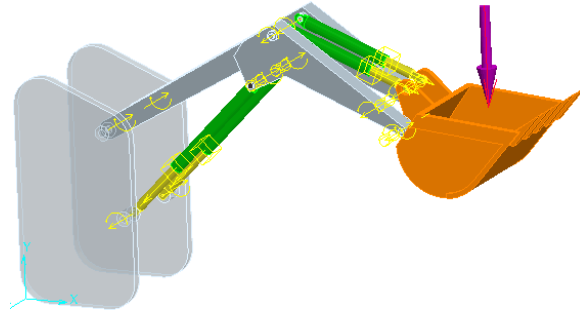
Mechanism Design using Pro/ENGINEER Wildfire 4.0

Overview

Course Code TRN-T2181-T

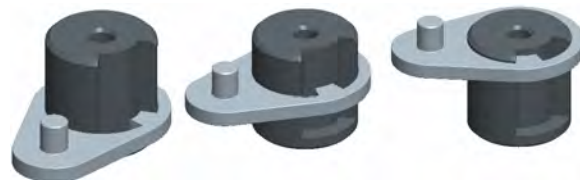
Course Length 1 Day

Mechanism Design using Pro/ENGINEER Wildfire 4.0 is designed for experienced users who want to add motion to their models by creating mechanism connections and servo motors. In Pro/ENGINEER Wildfire 4.0 you can add motion to your models using the standard mechanism functionality, often referred to as the Mechanism Design Extension or MDX. In this course, you will learn about creating mechanism connections, configuring the mechanism model, creating a kinematic analysis, and evaluating results. These topics will enable you to simulate the range of motion between components in your moving assemblies, create gear connections that simulate the gear ratios, create cam connections that enable Pro/ENGINEER parts to "push" other parts they come into contact with, and check for collisions between moving components. After completing this course, you will be prepared to work on mechanism designs using Pro/ENGINEER Wildfire Mechanism Design. 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.



Course Objectives

- Introduction to the Mechanism Design Process
- Creating Mechanism Connections
- Configuring Motion and Analysis
- Evaluating Analysis Results



Prerequisites

- Introduction to Pro/ENGINEER Wildfire 4.0

Audience

- Design engineers, mechanical designers, who have a need to add and evaluate the motion of their assemblies.
-

Agenda

Day 1

Module	1	Introduction to the Mechanism Design Process
Module	2	Creating Mechanism Connections
Module	3	Configuring Motion and Analysis
Module	4	Evaluating Analysis Results

Mechanism Simulation using Pro/ENGINEER Wildfire 4.0

Overview

Course Code TRN-2182-T

Course Length 1 Day

This course is designed for experienced users who want to add motion to their products and analyze dynamic reactions of moving components. In this course, you will focus on learning advanced modeling and analysis skills in this comprehensive, hands-on course. Topics include developing the 3-D model, analyzing the mechanism model, and evaluating results. These topics will enable you to measure dynamic reactions of components, measure the force required to keep a mechanism balanced, and determine the resting state of a mechanism. After completing this course, you will be prepared to work on mechanism designs using Pro/ENGINEER Wildfire Mechanism Dynamics Option. At the end of each module, you will complete a skills assessment. The questions are used to help reinforce your understanding of the module topics and form the basis for review of any topics, if necessary.



Course Objectives

- Understanding the mechanism dynamics option.
- Applying force motors, springs, and dampers to assemblies.
- Applying forces, torques, and gravity to assemblies.
- Creating dynamic analyses.
- Creating force balance analyses.
- Creating static analyses.
- Measuring forces, velocities, accelerations, and other reactions.
- Evaluating results.



Prerequisites

- Introduction to Pro/ENGINEER Wildfire 4.0
- Mechanism Design using Pro/ENGINEER Wildfire 4.0

Audience

- Design engineers and mechanical designers who have a need to add and evaluate the motion of their assemblies.
-

Agenda

Day 1

Module	1	Introduction to the Mechanism Design Process
Module	2	Adding Dynamic Entities to a Mechanism
Module	3	Analyzing the Mechanism Model
Module	4	Evaluating Analysis Results
Module	5	Project

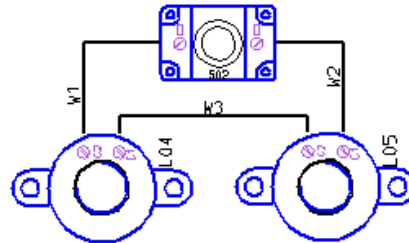
Routed Systems Designer 8.0 for Pro/ENGINEER Wildfire 4.0

Overview

Course Code TRN-2185-T

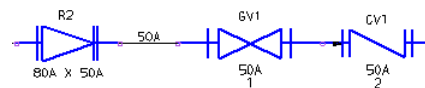
Course Length 3 Days

In this course, you will learn how to use Routed Systems Designer (RSD) to create schematic diagrams for both electrical harness and piping designs. You will learn how to administer the RSD working environment, and how to configure the catalog library. You will learn how to create functional block diagrams and block interconnect diagrams. You will learn how to create electrical circuit diagrams, and wiring diagrams, including wire interconnect diagrams. You will also learn how to create process and instrumentation design (P&ID) diagrams for piping systems. Finally, you will learn how to use wiring diagrams and P&ID diagrams to configure 3-D harness designs and industrial piping designs created within Pro/ENGINEER Wildfire 4.0. At the end of each module, you will complete Pro/FICIENCY skills assessment questions. These questions are used to help reinforce your understanding of the course topics and form the basis for review sessions.



Course Objectives

- Understanding the 2-D schematic design processes for electrical harness designs and piping designs.
- Configuring the RSD working environment.
- Creating and configuring the catalog library.
- Creating functional block diagrams, (including block interconnect diagrams).
- Creating circuit diagrams.
- Creating wiring diagrams, (including wire interconnect diagrams).
- Creating process and instrumentation design diagrams.
- Communicating diagram information to Pro/ENGINEER Wildfire.



Prerequisites

- None

Audience

- This course is intended for engineers, involved in the schematic 2-D layout of either electrical diagrams or piping diagrams.
-

Agenda

Day 1

Module 1	Introduction to Routed Systems Designer
Module 2	Configuring the Working Environment
Module 3	Configuring Designs and Diagram Sheets
Module 4	Configuring Catalog Properties
Module 5	Creating Design Templates and Template Sheets
Module 6	Using RSD Tools

Day 2

Module 7	Creating Catalog Artifacts
Module 8	Creating and Configuring a Central Catalog
Module 9	Reviewing Designs
Module 10	Instancing and Manipulating Objects
Module 11	Creating Block Diagrams

Day 3

Module 12	Creating Circuit Diagrams
Module 13	Creating Wiring Diagrams
Module 14	Creating Interconnect Diagrams
Module 15	Creating P&ID Diagrams
Module 16	Using Schematic Design Data in Pro/ENGINEER Harness and Piping Designs
Module 17	Using Pro/Diagram Information

Cabling using Pro/ENGINEER Wildfire 4.0

Course Code	TRN-2186-T
Course Length	3 Days

Overview

In this course, you will learn how to create 3-D electrical harnesses using Pro/ENGINEER Wildfire 4.0. This includes using schematic diagrams created with Routed Systems Designer 8.0 to pass information into 3-D harness designs created within Pro/ENGINEER Wildfire 4.0.

You will also learn how to route electrical harnesses, create flattened harnesses for manufacturing, and document harness designs by creating flattened harness drawings that include customized BOM tables and wire list information.

At the end of each module, you will complete on-line learning assessments that reinforce your understanding of the course topics. There is also a wrap-up assessment at the end of the course.

After successfully completing the course, you will be able to create 3-D electrical harnesses and associated manufacturing deliverables using Pro/ENGINEER Wildfire 4.0.

It is strongly recommended that cabling engineers attend this course and the *Creating 2-D Schematics with RSD 8.0* course. This will enable a full understanding of the complete process and an understanding of how the configuration of deliverables from RSD such as wiring diagrams provide essential input for creating electrical harness assemblies in Pro/ENGINEER Wildfire 4.0.

Prerequisites

- Introduction to Pro/ENGINEER Wildfire 4.0.
- *Creating Schematics using RSD 8.0 (Recommended)*

Audience

This course is intended for engineers, involved in the 3-D routing of electrical cabling and wire harnesses, and related roles. The topics in this course are also available as Web-based training courses.

Topics

- Diagram and Harness Development Process Overview
 - Creating Wiring Diagrams in Routed Systems Designer (RSD)
 - Transferring RSD Information into Harness Designs
 - Creating Electrical Harness Assembly Structures
 - Routing Wires and Cables in Harness Designs
 - Creating Flat Harnesses for Manufacturing
 - Creating Harness Drawings
-

Agenda

Day 1

Module 1	Diagram and Harness Development Process Overview
Module 2	Creating Wiring Diagrams in RSD
Module 3	Creating Harness Assembly Structures

Day 2

Module 4	Establishing Logical References
Module 5	Creating Networks
Module 6	Routing Wires and Cables

Day 3

Module 7	Modifying Wire and Cable Routings
Module 8	Creating Flat Harnesses
Module 9	Documenting Harness Designs

Piping using Pro/ENGINEER Wildfire 4.0

Course Code	TRN-2187-T
Course Length	3 Days

Overview

In this course, you will learn how to create specification driven industrial piping designs using Pro/ENGINEER Wildfire 4.0. This includes learning how to use schematic diagrams created with Routed Systems Designer 8.0 to drive 3-D industrial piping designs created within Pro/ENGINEER Wildfire. You will also learn how to create non-specification driven mechanical piping designs using Pro/ENGINEER Wildfire.

You will learn how to document piping designs by creating drawings that include BOM tables, pipe bend tables, and engineering information. You will also learn how to export ISOGEN format files for creating pipeline, spool and systems isometric drawings.

At the end of each day, you will complete on-line learning assessments that reinforce your understanding of the course topics. These assessments also serve as the basis for daily instructor-led review discussions.

After successfully completing the course, you will be able to create both specification driven and non-specification driven 3-D piping designs and associated manufacturing deliverables using Pro/ENGINEER Wildfire.

It is strongly recommended that piping engineers attend this course and the *Creating 2-D Schematics with Routed Systems Designer 8.0* course to gain a full understanding of the complete process and understand how the configuration of deliverables from RSD such as P&ID diagrams provide essential input for piping assemblies in Pro/ENGINEER Wildfire.

Prerequisites

- Introduction to Pro/ENGINEER Wildfire 4.0.
- *Creating Schematics using RSD 8.0 (Recommended)*

Audience

This course is intended for engineers, involved in the 3-D routing of industrial piping systems and mechanical piping systems. The topics in this course are also available as Web-based training courses.

Topics

- 2-D schematic piping design process overview using RSD
 - Piping 3-D design overview
 - Creating non-specification driven mechanical 3-D piping designs
 - Configuring and inserting fittings
 - Setting up for specification driven 3-D piping designs
 - Creating specification driven industrial 3-D piping designs
 - Creating P&ID Diagrams
 - Creating schematic driven industrial 3-D piping designs
-

- Modifying piping designs
 - Creating piping drawings
 - Outputting isometric information (ISOGEN)
-

Agenda

Day 1

Module 1	Introduction to Piping
Module 2	Configuring and Routing Pipelines
Module 3	Creating Piping Assembly Structures
Module 4	Configuring and Inserting Fittings

Day 2

Module 5	Setting Up Specification Databases: Piping
Module 6	Setting Up Specification Databases: Fittings
Module 7	Configuring Project Specific Data Files
Module 8	Specification-Driven Routing and Inserting Fittings

Day 3

Module 9	Creating Process and Instrumentation Diagrams in RSD
Module 10	Schematic Driven Pipeline Modeling
Module 11	Updating Piping Designs
Module 12	Creating Piping Drawings and Exporting ISOGEN Data

Web Based Curriculum Guide

- Milling using Pro/ENGINEER Wildfire 4.0
 - Pro/ENGINEER Mechanica Simulation using Pro/ENGINEER Wildfire 4.0
 - Introduction to Pro/ENGINEER Wildfire 4.0 - Fundamentals
 - Introduction to Pro/ENGINEER Wildfire 4.0 - Productivity Tools
 - Pro/ENGINEER Wildfire 4.0 Update from Pro/ENGINEER Wildfire 3.0
 - Pro/ENGINEER Wildfire 4.0 Update from Pro/ENGINEER Wildfire 2.0
 - Detailing with Pro/ENGINEER Wildfire 4.0
 - Advanced Assembly Design with Pro/ENGINEER Wildfire 4.0
 - Advanced Modeling with Pro/ENGINEER Wildfire 4.0
 - Surfacing using Pro/ENGINEER Wildfire 4.0
 - Sheetmetal Design using Pro/ENGINEER Wildfire 4.0
 - Freeform Surfacing using Pro/ENGINEER Wildfire 4.0
 - Mold Design using Pro/ENGINEER Wildfire 4.0
 - Behavioral Modeling using Pro/ENGINEER Wildfire 4.0
 - Mechanism Design using Pro/ENGINEER Wildfire 4.0
 - Mechanism Simulation using Pro/ENGINEER Wildfire 4.0
 - Electrical Schematic Design using Routed Systems Designer 8.0
-

- Piping Schematic Design using Routed Systems Designer 8.0
 - Routed Systems Designer 8.0 for Pro/ENGINEER Wildfire 4.0
 - Cabling using Pro/ENGINEER Wildfire 4.0
 - Piping using Pro/ENGINEER Wildfire 4.0
 - Creating 3-D Drawings using Pro/ENGINEER Wildfire 4.0
 - Manikin using Pro/ENGINEER Wildfire 4.0
-

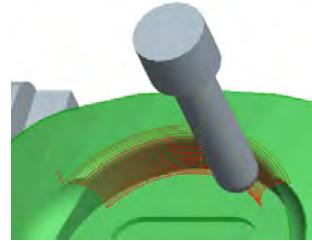
Milling using Pro/ENGINEER Wildfire 4.0

Overview

Course Code SAB-CEK2703

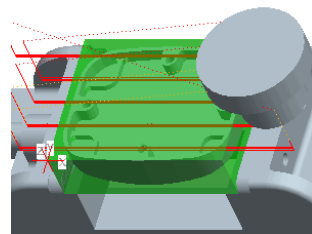
Course Length 40 Hours

In this training course you will learn how to machine products using Pro/ENGINEER Wildfire 4.0 manufacturing tools. This course covers creating tool paths for 3 axis milling machines. During the course you will learn how to complete each phase of the manufacturing process. You will start by creating manufacturing models and configuring the manufacturing environment. This will include configuring tools, fixtures, and machining operations. You will then learn how to create milling sequences and holmaking sequences, and post-process cutter location (CL) data to create machine code. After completing the course, you will be able to create numerical control (NC) programs for milling machines and post-process cutter location (CL) data to create machine specific code.



Course Objectives

- Understanding the manufacturing process.
- Creating and configuring manufacturing models.
- Configuring the manufacturing environment.
- Creating and modifying milling sequences.
- Creating and modifying holmaking sequences.
- Using the process manager to create NC sequences.
- Post-processing cutter location (CL) data.



Prerequisites

- Introduction to Pro/ENGINEER Wildfire 4.0 – Fundamentals (Web Based Training) or equivalent experience.

Audience

- This course is intended for manufacturing engineers and NC machinists.
-

Table of Contents

Module 1	Introduction to Manufacturing
Module 2	Creating Manufacturing Models
Module 3	Configuring Operations
Module 4	Using Reference Models
Module 5	Using Workpiece Models
Module 6	Creating and Using NC Model Assemblies
Module 7	Creating and Configuring Workcells
Module 8	Creating and Configuring Tools
Module 9	Using Template Manufacturing Models
Module 10	Using Manufacturing Parameters
Module 11	Creating Face Milling Sequences
Module 12	Creating Volume Milling Sequences
Module 13	Creating Profile Milling Sequences
Module 14	Creating Straight Cut Surface Milling Sequences
Module 15	Creating From Surface Isolines Surface Milling Sequences
Module 16	Creating Cut Line Surface Milling Sequences
Module 17	Advanced Surface Milling Options
Module 18	Creating Roughing and Re-roughing Sequences
Module 19	Creating Finishing Sequences
Module 20	Creating Trajectory Milling Sequences
Module 21	Creating Holemaking Sequences
Module 22	Using the Process Manager
Module 23	Creating and Post-Processing CL Data Files

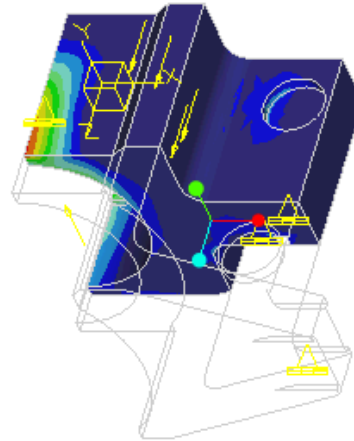
Pro/ENGINEER Mechanical Simulation using Pro/ENGINEER Wildfire 4.0

Overview

Course Code SAB-CEK2706

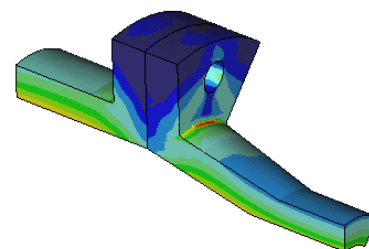
Course Length 40 Hours

This course is designed for new users who want to test, validate, and optimize product designs with the Pro/ENGINEER Wildfire 4.0 Mechanical module. Mechanical enables you to simulate structural and thermal loads on product designs. In this course, you will complete comprehensive, hands-on lab exercises that simulate realistic analysis and design optimization activities. You will also learn about advanced topics such as dynamic analyses, combined mechanical and thermal analyses, and Fatigue Studies. A module on Mechanical Best Practices is also included to help users avoid some of the more common problems that new users encounter. After completing the course, you will be able to run engineering analyses and optimizations on your product design models. At the end of each module, you will find a set of review questions to reinforce critical topics from that module. Your instructor will discuss these with the class. At the end of the course, you will find a course assessment in Pro/FICIENCY intended to evaluate your understanding of the course as a whole. After completing the course you will be well prepared to complete Pro/MECHANICA analyses on product design projects in Pro/ENGINEER Wildfire 4.0.



Course Objectives

- Learning the basic Pro/MECHANICA Analysis Process
- Theory and Mechanical Model Topics
- Exploring Results
- Materials and Material Properties
- Understanding and Using Pro/MECHANICA idealizations
- Understanding and Using Structural Loads
- Understanding and Using Structural Constraints
- Running Structural Analyses
- Running Thermal Analyses
- Convergence



- Analyzing Assemblies with Pro/MECHANICA
- Completing Design and Sensitivity Studies
- Running Optimization Studies
- Advanced Topics
- Analysis Best Practices
- Analysis Projects

Prerequisites

- Three months of Pro/ENGINEER Wildfire 4.0 experience

Audience

- This course is intended for design engineers and mechanical designers. People in related roles will also benefit from taking this course.
-

Table of Contents

Module 1	The Pro/ENGINEER Mechanica 4.0 Process
Module 2	Theory and Mechanica Model Topics
Module 3	Results
Module 4	Materials and Material Properties
Module 5	Idealizations
Module 6	Structural Loads
Module 7	Structural Constraints
Module 8	Structural Analysis I
Module 9	Structural Analysis II
Module 10	Thermal Analysis
Module 11	Convergence
Module 12	Analyzing Assemblies I
Module 13	Analyzing Assemblies II
Module 14	Design and Sensitivity Studies
Module 15	Optimization Studies
Module 16	Dynamic Analyses
Module 17	Advanced Topics
Module 18	Analysis Best Practices
Module 19	Projects

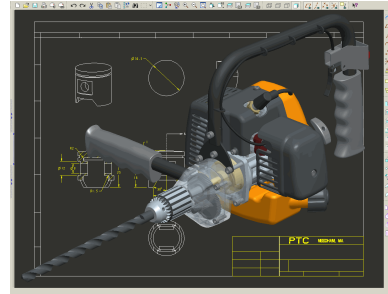
Introduction to Pro/ENGINEER Wildfire 4.0 - Fundamentals

Overview

Course Code SAB-CEK2701

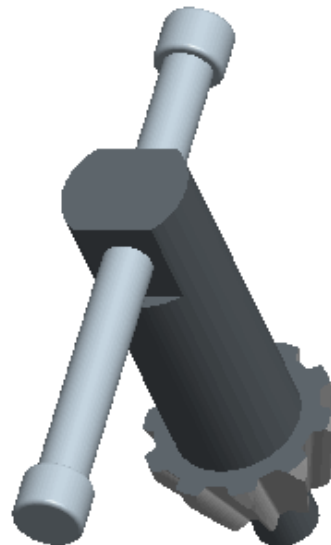
Course Length 20 Hours

This course is designed for new users who want to become proficient with Pro/ENGINEER Wildfire 4.0 as quickly as possible. You will focus on learning core-modeling skills in this comprehensive, hands-on course. Topics include understanding the interface and basic Pro/ENGINEER concepts, selecting and editing, sketching and sketcher tools, and basic feature creation. After completing the course you will be well prepared to work effectively on product design projects using Pro/ENGINEER Wildfire



Course Objectives

- Learning the basic Pro/ENGINEER Design Process
- Understanding Pro/ENGINEER concepts
- Learning how to use the Pro/ENGINEER interface
- Selecting and editing items
- Sketching geometry and using tools
- Creating sketches for features
- Creating datum planes and datum axes
- Creating extrudes, revolves, and ribs
- Utilizing internal sketches and embedded datums
- Creating holes, drafts, and shells
- Creating sweeps and blends
- Creating rounds and chamfers



Prerequisites

- None

Audience

- This course is intended for product designers, drafters, industrial/conceptual designers, and routed systems designers. People in related roles will also benefit from taking this course.

Table of Contents

Module 1	Introduction to the Pro/ENGINEER Wildfire Basic Modeling Process
Module 2	Understanding Pro/ENGINEER Concepts
Module 3	INTRO - Using the Pro/ENGINEER Interface
Module 4	Selecting and Editing
Module 5	Creating Sketcher Geometry
Module 6	Using Sketcher Tools
Module 7	Creating Sketches for Features
Module 8	Creating Datum Features: Planes and Axes
Module 9	Creating Extrudes, Revolves, and Ribs
Module 10	Utilizing Internal Sketches and Embedded Datums
Module 11	Creating Sweeps and Blends
Module 12	Creating Holes and Shells
Module 13	Creating Rounds and Chamfers

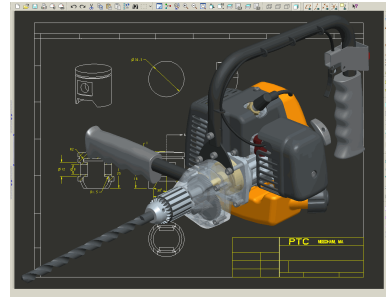
Introduction to Pro/ENGINEER Wildfire 4.0 - Productivity Tools

Overview

Course Code SAB-CEK2702

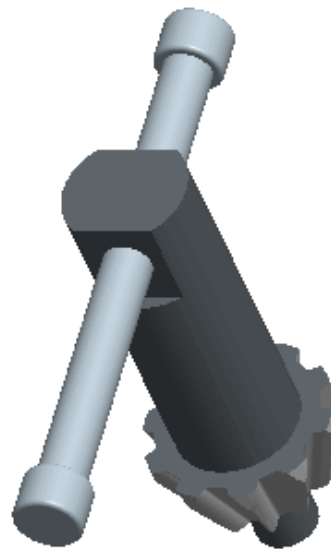
Course Length 20 Hours

This course is designed for existing Pro/ENGINEER Wildfire 4.0 users who want to increase their productivity. You will focus on learning advanced modeling skills in this comprehensive, hands-on course. Topics include patterning; measuring and inspecting models; group, copy, and mirror tools; assembly creation; explode states and offset line creation; drawing creation; using layers; investigating parent/child relationships; capturing design intent; and resolving failures and seeking help. The course also includes a comprehensive design project that enables you to practice your new skills by creating realistic parts, assemblies, and drawings. After completing the course you will be well prepared to work effectively on product design projects using Pro/ENGINEER Wildfire.



Course Objectives

- Grouping, copying, and mirroring items
- Creating patterns
- Measuring and inspecting models
- Assembling with constraints
- Assembling with connections
- Exploding assemblies
- Creating drawing views
- Creating drawing details
- Using layers
- Investigating parent/child relationships
- Capturing and managing design intent
- Resolving failures and seeking help
- Comprehensive Design Project



Prerequisites

- None

Audience

- This course is intended for product designers, drafters, industrial/conceptual designers, and routed systems designers. People in related roles will also benefit from taking this course.

Table of Contents

Module 1	Group, Copy, and Mirror Tools
Module 2	Creating Patterns
Module 3	Measuring and Inspecting Models
Module 4	Assembling with Constraints
Module 5	Assembling with Connections
Module 6	Exploding Assemblies
Module 7	Creating Drawing Views
Module 8	Creating Drawing Details
Module 9	Using Layers
Module 10	Investigating Parent/Child Relationships
Module 11	Capturing and Managing Design Intent
Module 12	Resolving Failures and Seeking Help
Module 13	Project

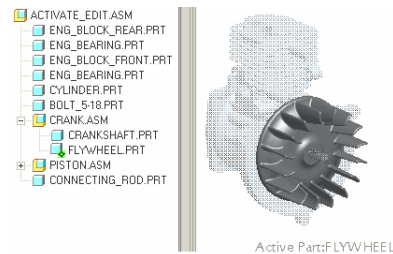
Pro/ENGINEER Wildfire 4.0 Update from Pro/ENGINEER Wildfire 3.0

Overview

Course Code TRN-WBT2171-S

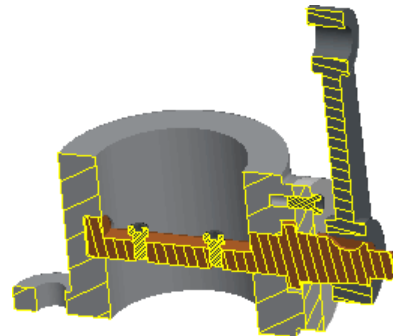
Course Length 8 Hours

In this course you will learn how to utilize many of the enhancements to core functionality in Pro/ENGINEER Wildfire 4.0. You will become familiar with enhancements to Part mode, including Draft, Swept Blends, UDFs and general interface enhancements. You will become familiar with the enhancements to Sketcher, such as referencing intent objects and replacing sketcher references. You will learn about new and enhanced Assembly capabilities such as the Global Reference Manager. You will review Drawing and Sheetmetal enhancements as well.



Course Objectives

- Describe and utilize Part enhancements.
- Describe and utilize Sketcher enhancements.
- Describe and utilize Assembly enhancements.
- Describe and utilize Drawing enhancements.
- Describe and utilize Sheetmetal enhancements.



Prerequisites

- Completion of T1827-350 Pro/ENGINEER Wildfire 3.0 Update from Pro/ENGINEER Wildfire 2.0 or equivalent experience.

Audience

- This course is intended for people who have already upgraded to Pro/ENGINEER Wildfire 3.0.

Table of Contents

Module	1	Part Enhancements
Module	2	Advanced Part Enhancements
Module	3	Sketcher Enhancements
Module	4	Assembly Enhancements
Module	5	Drawing Enhancements
Module	6	Sheetmetal Enhancements

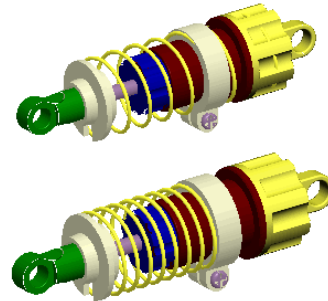
Pro/ENGINEER Wildfire 4.0 Update from Pro/ENGINEER Wildfire 2.0

Overview

Course Code TRN-WBT2172-S

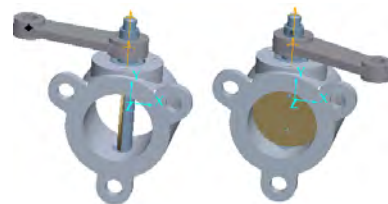
Course Length 16 Hours

In this course, you will learn how to utilize many of the enhancements to core functionality in Pro/ENGINEER Wildfire 4.0. This course is intended as an update directly from Pro/ENGINEER Wildfire 2.0 to Pro/ENGINEER Wildfire 4.0, so some of the enhancements covered in this course were introduced in the Pro/ENGINEER Wildfire 3.0 release. You will become familiar with enhancements to Part mode, including embedded datum creation, and warp and partial shell features. You will learn new methods for creating features such as swept blends, and new methods for placing user defined features. You review new capabilities for feature manipulation, such as enhanced patterning capabilities. You will become familiar with the enhancements to Sketcher, such as how to copy and paste items in sketcher and how to insert predefined shapes such as polygons and common engineering sections, such as I-beams. You will also learn how to reference intent objects and replace sketcher references. You will learn about new and enhanced Assembly capabilities such as the Global Reference Manager and the new user interface for assembling components. You will use new drawing functionality, including how to create shaded drawing views. You will also learn about sheetmetal enhancements including how to create multiple walls in a single operation.



Course Objectives

- Describe and utilize Part enhancements.
- Describe and utilize Sketcher enhancements.
- Describe and utilize Assembly enhancements.
- Describe and utilize Drawing enhancements.
- Describe and utilize Sheetmetal enhancements.



Prerequisites

- Completion of T1707-340 Pro/ENGINEER Wildfire 2.0 Update or equivalent experience.

Audience

- This course is intended for people who have already upgraded to Pro/ENGINEER Wildfire 2.0, and who are moving directly to Pro/ENGINEER Wildfire 4.0.
-

Table of Contents

Module 1	Part Enhancements
Module 2	Part Feature Duplication Enhancements
Module 3	Sketcher Enhancements
Module 4	Assembly Component Enhancements
Module 5	Advanced Assembly Enhancements
Module 6	Drawing Enhancements
Module 7	Sheetmetal Enhancements

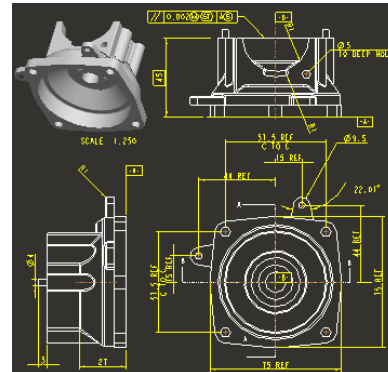
Detailing with Pro/ENGINEER Wildfire 4.0

Overview

Course Code **SAB-CEK2710**

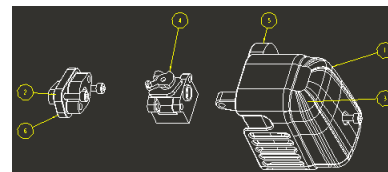
Course Length **24 Hours**

Detailing with Pro/ENGINEER Wildfire 4.0 is a comprehensive training course that teaches you how to quickly create detailed drawings using information captured within 3-D design models. In this course, you learn how to create drawings, how to detail drawings, and how to take advantage of the parametric and associative nature of Pro/ENGINEER Wildfire 4.0 when configuring drawings. After completing this course, you will be able to create production drawings suitable for manufacturing.



Course Objectives

- Understand the drawing development process.
- Create new drawings using formats and drawing templates.
- Create different types of views in drawings.
- Create dimensions and notes.
- Control display options using layers.
- Apply dimensional and geometric tolerances in drawings.
- Add draft geometry and symbols to drawings.
- Use layers in drawings to control the display of views and detail items.
- Create drawing tables and a bill of materials.
- Create drawing formats.
- Configure the drawing environment.
- Manage large drawings.



Prerequisites

- Introduction to Pro/ENGINEER Wildfire 4.0.

Audience

- This course is intended for mechanical designers, design engineers, and related roles.

Table of Contents

Module 1	Introduction to Drawings
Module 2	Creating New Drawings
Module 3	Creating Drawing Views
Module 4	Adding Model Details to Drawings
Module 5	Adding Notes to Drawings
Module 6	Adding Tolerance Information
Module 7	Adding Draft Geometry and Symbols
Module 8	Using Layers in Drawings
Module 9	Creating and Using Tables in Drawings
Module 10	Using Report Information in Drawings
Module 11	Creating Drawing Formats
Module 12	Configuring the Drawing Environment
Module 13	Managing Large Drawings

Advanced Assembly Design with Pro/ENGINEER Wildfire 4.0

Overview

Course Code SAB-CEK2711

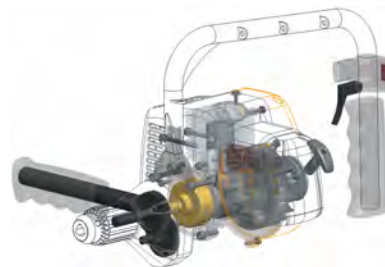
Course Length 24 Hours

In this course, you will learn how to use Pro/ENGINEER Wildfire 4.0 to create and manage complex assemblies. You will learn how to use advanced assembly tools that enable you to add and maintain design, increase your efficiency, and increase system performance when working with large assemblies. In addition, you will learn the basics of using and creating predefined assembly structures and skeletons, both valuable tools typically used in a top-down design process. The course also includes an assembly design project that enables you to practice your new skills by performing various design tasks in an assembly model. At the end of each module, you will complete a set of review questions to reinforce critical topics from that module. Your instructor will discuss these with the class. At the end of the course, you will find a course assessment in Pro/FICIENCY intended to evaluate your understanding of the course as a whole.



Course Objectives

- Using Advanced Assembly Constraints
- Creating and Using Component Interfaces
- Creating and Using Flexible Components
- Restructuring and Mirroring Assemblies
- Using Assembly Features and Shrinkwrap
- Replacing Components in an Assembly
- Understanding the Basics of Simplified Reps
- Creating Cross-Sections, Display Styles, and Combined Views
- Substituting Components By Rep, Envelope, and Model
- Understanding Advanced Simplified Rep Functionality
- Creating and Using Assembly Structure and Skeletons
- Project



Prerequisites

- Fast Track to Pro/ENGINEER Wildfire 4.0

Audience

- Design engineers, mechanical designers, and related roles.
-

Table of Contents

Module 1	Using Advanced Assembly Constraints
Module 2	Creating and Using Component Interfaces
Module 3	Creating and Using Flexible Components
Module 4	Restructuring and Mirroring Assemblies
Module 5	Using Assembly Features and Shrinkwrap
Module 6	Replacing Components in an Assembly
Module 7	Understanding the Basics of Simplified Reps
Module 8	Creating Cross-Sections, Display Styles, and Combined Views
Module 9	Substituting Components By Rep, Envelope, and Model
Module 10	Understanding Advanced Simplified Rep Functionality
Module 11	Creating and Using Assembly Structure and Skeletons
Module 12	Project

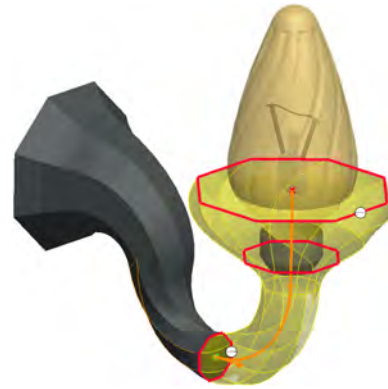
Advanced Modeling with Pro/ENGINEER Wildfire 4.0

Overview

Course Code SAB-CEK-2712

Course Length 24 Hours

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.

Table of Contents

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

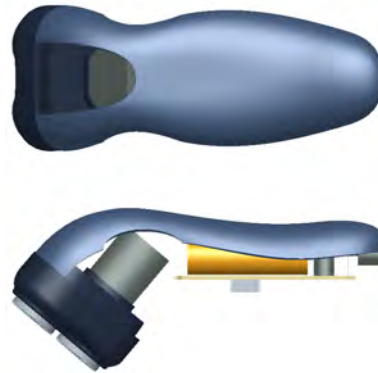
Surfacing using Pro/ENGINEER Wildfire 4.0

Overview

Course Code SAB-CEK2713

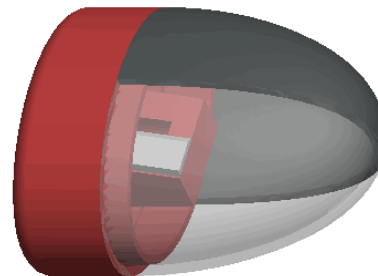
Course Length 24 Hours

The Surface Modeling with Pro/ENGINEER Wildfire 4.0 training course teaches you how to use surface modeling in Pro/ENGINEER Wildfire 4.0 to create models with shapes that are too complex for solid features. In this course, you will learn how to use various techniques to create complex surfaces with tangent and curvature continuities. You will also learn how to manipulate surfaces using editing tools, and analyze surfaces for quality and desired characteristics. In addition you will learn how to create solid features using the surfaces as references. 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 create complex shaped models using surfaces in Pro/ENGINEER Wildfire 4.0.



Course Objectives

- Describe surface modeling and its terminology
- Learn advanced selection techniques
- Create advanced datum features
- Use advanced sketching techniques
- Learn basic surfacing tools
- Create various boundary surfaces
- Create variable section sweep surfaces
- Create helical sweep surfaces
- Create swept blend surfaces
- Utilize surface analysis tools
- Extend and trim surfaces
- Manipulate surfaces
- Create and edit solid models using surface quilts
- Utilize the master model technique



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, industrial designers, and related roles. The topics in this course are also available as Web-based training courses.
-

Table of Contents

Module 1	Surface Modeling Overview
Module 2	Advanced Selection
Module 3	Advanced Datum Features
Module 4	Advanced Sketching
Module 5	Basic Surfacing Tools
Module 6	Boundary Blend Surfaces
Module 7	Additional Boundary Surfaces
Module 8	Variable Section Sweeps
Module 9	Helical Sweeps
Module 10	Swept Blends
Module 11	Analyzing Surface Curvature
Module 12	Additional Surface Analysis Tools
Module 13	Extending and Trimming Surfaces
Module 14	Manipulating Surfaces
Module 15	Creating and Editing Solids using Quilts
Module 16	Master Model Technique
Module 17	Project

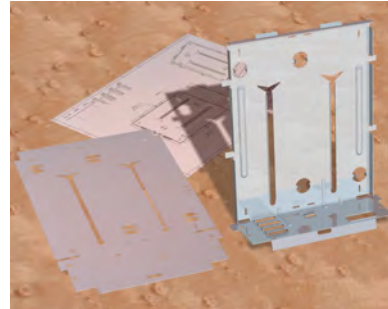
Sheetmetal Design using Pro/ENGINEER Wildfire 4.0

Overview

Course Code SAB-CEK2793

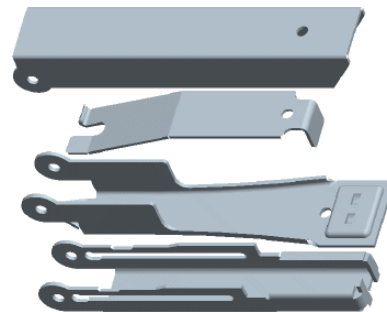
Course Length 16 Hours

Sheetmetal Design using Pro/ENGINEER Wildfire 4.0 is a comprehensive training course that teaches you how to create sheetmetal parts in Pro/ENGINEER. The course builds upon the basic lessons you learned in Introduction to Pro/ENGINEER Wildfire 4.0 and serves as the second stage of learning. In this course, you will learn how to design sheetmetal parts and assemblies, including sheetmetal production drawings. All the functions needed to create sheetmetal parts, drawings, and assemblies are covered. Upon completion of this course, you will be able to create sheetmetal design models, create the flat state of the model, and document both in production drawings. At the end of each day, you use the Pro/FICIENCY skills assessments to reinforce your understanding of the course topics.



Course Objectives

- The Sheetmetal Design Process
- Sheetmetal Model Creation, Conversion, and Display
- Methods of Developed Length Calculation
- Primary Wall Features
- Secondary Wall Features
- Partial Walls
- Bend Relief
- Unbend and Bend Back Features
- Sheetmetal Bend Features
- Flat Patterns
- Sheetmetal Cuts
- Forms
- Notch and Punch Features
- Sheetmetal Environment Setup
- Sheetmetal Design Information Tools
- Sheetmetal Design Rules
- Detailing Sheetmetal Designs
- Sheetmetal Design Project



Prerequisites

- Successful completion of T2169 - Introduction to Pro/ENGINEER Wildfire 4.0 or equivalent experience.

Audience

- This course is intended for design engineers, mechanical designers, and industrial designers. People in related roles can also benefit from taking this course.
-

Table of Contents

Module	1	Introduction to the Pro/ENGINEER Wildfire Sheetmetal Design Process
Module	2	Sheetmetal Model Fundamentals
Module	3	Creating Primary Sheetmetal Wall Features
Module	4	Creating Sheetmetal Secondary Wall Features
Module	5	Modifying Sheetmetal Models
Module	6	Sheetmetal Bends and Setting Up the Sheetmetal Environment
Module	7	Special Sheetmetal Tools
Module	8	Detailing Sheetmetal Designs
Module	9	Design Project

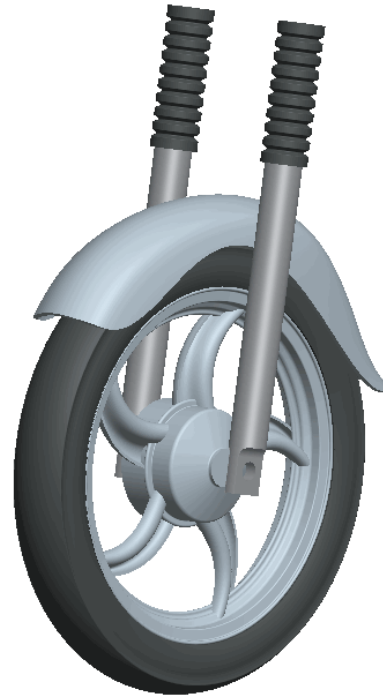
Freeform Surfacing using Pro/ENGINEER Wildfire 4.0

Overview

Course Code SAB-CEK2794

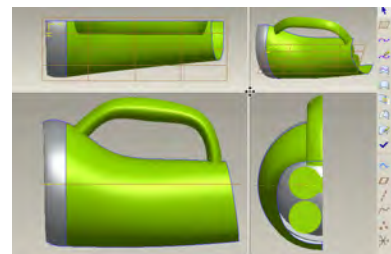
Course Length 16 Hours

In Pro/ENGINEER Wildfire 4.0 you can create freeform surface models using the interactive surface design extension (ISDX) modeling environment, often called Freeform Surfacing or Style surfacing. The Style tool is a spline-based freeform modeler that enables you to combine the parametric feature-based modeling approach with the unconstrained freeform surface modeling approach. This gives you the flexibility to design complex-shaped products in a single modeling environment. In this course, you learn how to use the Style tool to create and manipulate freeform curves, freeform surfaces, freeform surface details, and advanced freeform surface models. You also learn how to integrate style features with other parametric features in design models. After completing this course, you will be well prepared to design complex-shaped freeform surface models in Pro/ENGINEER Wildfire 4.0. At the end of each module, you will complete a set of review questions to reinforce critical topics from that module. Your instructor will discuss these with the class. At the end of the course, you will find a course assessment in Pro/FICIENCY intended to evaluate your understanding of the course as a whole.



Course Objectives

- Introduction to the Freeform Surface Modeling Process
- Understanding Freeform Surface Modeling Concepts
- Creating Initial Freeform Curves
- Developing Freeform Surface Models
- Advanced Tools and Techniques for Defining Freeform Shapes
- Creating Smooth Freeform Surface Models
- Integrating Style and Parametric Features
- Techniques for Creating Common Detailed Shapes



- Creating Complex, High Quality Freeform Models

Prerequisites

- Fast Track to Pro/ENGINEER Wildfire 4.0

Audience

- Design engineers, mechanical designers, who have a need to create styled surface geometry.
-

Table of Contents

Module 1	Introduction to the Freeform Surface Modeling Process
Module 2	Understanding Freeform Surface Modeling Concepts
Module 3	Creating Initial Freeform Curves
Module 4	Developing Freeform Surface Models
Module 5	Advanced Tools and Techniques for Defining Freeform Shapes
Module 6	Creating Smooth Freeform Surface Models
Module 7	Integrating Style and Parametric Features
Module 8	Techniques for Creating Common Detailed Shapes
Module 9	Creating Complex, High Quality Freeform Models

Mold Design using Pro/ENGINEER Wildfire 4.0

Overview

Course Code **SAB-CEK2795**

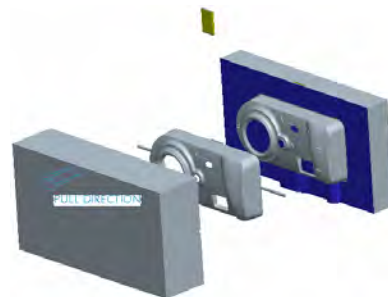
Course Length **16 Hours**

Pro/MOLDESIGN provides the tools to create a mold model from start to finish by using the mold design process within Pro/ENGINEER Wildfire 4.0. 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 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. Pro/FICIENCY assessments are provided for you to assess your understanding of the course materials. The assessment results 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 the course, you will have a better understanding of the mold design process and how to create molded products by using the mold design process.



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.
- Learn how to fill and open the mold.



Prerequisites

- Introduction to Pro/ENGINEER Wildfire 4.0
- Basic understanding of industry standard Mold design terminology and processes.
- Knowledge of Pro/ENGINEER surfacing techniques a plus.

Audience

- This course is intended for designers, machinists, and manufacturing engineers. The topics in this course are also available as a Web-based training course.

Table of Contents

Module 1	Introduction to the Pro/ENGINEER 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
Module 8	Parting Line and Parting Surface Creation
Module 9	Splitting Mold Volumes
Module 10	Mold Component Extraction
Module 11	Mold Features Creation
Module 12	Filling and Opening the Mold

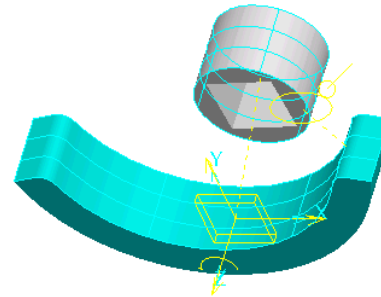
Behavioral Modeling using Pro/ENGINEER Wildfire 4.0

Overview

Course Code **SAB-CEK2796**

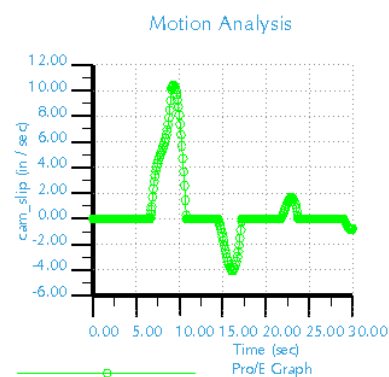
Course Length **8 Hours**

This course is designed for experienced users who want to add additional features that enable you to meet or exceed the design specifications of your products. In this course, you will focus on learning advanced analysis skills unrelated to structural or thermal analysis in this comprehensive, hands-on course. You will learn how to analyze your models and create analysis features that can enforce your design intent. You will also learn how to create sensitivity and feasibility studies that aid you in determining how to reach your design goals. Furthermore, you learn how to create optimization design studies that enable you to configure the dimensions and parameters that Pro/ENGINEER can change in order to meet your design specifications. After completing this course, you will be prepared to work on critical component designs using Pro/ENGINEER Wildfire Behavioral Modeling. At the end of each module, you will find a set of review questions to reinforce critical topics from that module. Your instructor will discuss these with the class. At the end of the course, you will find a course assessment in Pro/FICIENCY intended to evaluate your understanding of the course as a whole.



Course Objectives

- Applying the Behavioral Modeling process and concepts to your designs
- Creating measurement analysis features
- Creating relation, motion, Mechanica, and MS Excel analysis features
- Creating user-defined analysis features
- Conducting sensitivity analyses
- Conducting feasibility and optimization studies
- Design Project



Prerequisites

- Introduction to Pro/ENGINEER Wildfire 3.0 or equivalent experience.
- Additionally, experience with MS Excel, Mechanica, Mechanism Design, and Mechanism Dynamics would be useful but not required.

Audience

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

Table of Contents

Module	1	Introduction to the Behavioral Modeling Process
Module	2	Creating Measurement Features on Pro/ENGINEER Models
Module	3	Creating Model Property Features on Pro/ENGINEER Models
Module	4	Creating Analysis Features on Pro/ENGINEER Models
Module	5	Creating User-Defined Analysis Features on Pro/ENGINEER Models
Module	6	Conducting Design Studies and Optimizing Models
Module	7	Project

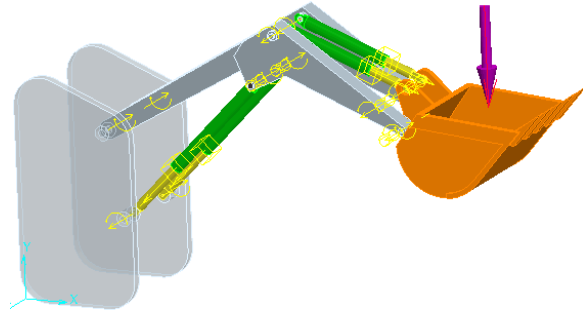
Mechanism Design using Pro/ENGINEER Wildfire 4.0

Overview

Course Code SAB-CEK2797

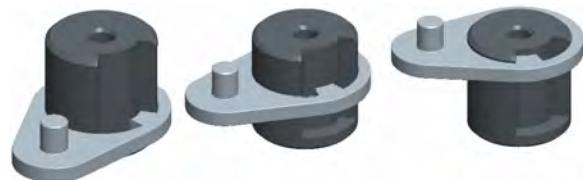
Course Length 8 Hours

Mechanism Design using Pro/ENGINEER Wildfire 4.0 is designed for experienced users who want to add motion to their models by creating mechanism connections and servo motors. In Pro/ENGINEER Wildfire 4.0 you can add motion to your models using the standard mechanism functionality, often referred to as the Mechanism Design Extension or MDX. In this course, you will learn about creating mechanism connections, configuring the mechanism model, creating a kinematic analysis, and evaluating results. These topics will enable you to simulate the range of motion between components in your moving assemblies, create gear connections that simulate the gear ratios, create cam connections that enable Pro/ENGINEER parts to "push" other parts they come into contact with, and check for collisions between moving components. After completing this course, you will be prepared to work on mechanism designs using Pro/ENGINEER Wildfire Mechanism Design. 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.



Course Objectives

- Introduction to the Mechanism Design Process
- Creating Mechanism Connections
- Configuring Motion and Analysis
- Evaluating Analysis Results



Prerequisites

- Introduction to Pro/ENGINEER Wildfire 4.0

Audience

- Design engineers, mechanical designers, who have a need to add and evaluate the motion of their assemblies.
-

Table of Contents

Module 1 Introduction to the Mechanism Design Process

Module 2 Creating Mechanism Connections

Module 3 Configuring Motion and Analysis

Module 4 Evaluating Analysis Results

Mechanism Simulation using Pro/ENGINEER Wildfire 4.0

Overview

Course Code SAB-CEK2798

Course Length 8 Hours

This course is designed for experienced users who want to add motion to their products and analyze dynamic reactions of moving components. In this course, you will focus on learning advanced modeling and analysis skills in this comprehensive, hands-on course. Topics include developing the 3-D model, analyzing the mechanism model, and evaluating results. These topics will enable you to measure dynamic reactions of components, measure the force required to keep a mechanism balanced, and determine the resting state of a mechanism. After completing this course, you will be prepared to work on mechanism designs using Pro/ENGINEER Wildfire Mechanism Dynamics Option. At the end of each module, you will complete a skills assessment. The questions are used to help reinforce your understanding of the module topics and form the basis for review of any topics, if necessary.



Course Objectives

- Understanding the mechanism dynamics option.
- Applying force motors, springs, and dampers to assemblies.
- Applying forces, torques, and gravity to assemblies.
- Creating dynamic analyses.
- Creating force balance analyses.
- Creating static analyses.
- Measuring forces, velocities, accelerations, and other reactions.
- Evaluating results.



Prerequisites

- Introduction to Pro/ENGINEER Wildfire 4.0
- Mechanism Design using Pro/ENGINEER Wildfire 4.0

Audience

- Design engineers and mechanical designers who have a need to add and evaluate the motion of their assemblies.
-

Table of Contents

Module	1	Introduction to the Mechanism Design Process
Module	2	Adding Dynamic Entities to a Mechanism
Module	3	Analyzing the Mechanism Model
Module	4	Evaluating Analysis Results
Module	5	Project

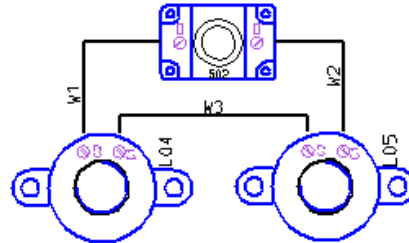
Electrical Schematic Design using Routed Systems Designer 8.0

Overview

Course Code SAB-CEK2801

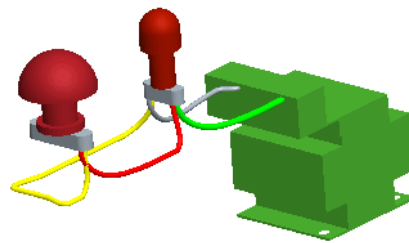
Course Length 12 Hours

In this course you will learn how to use Routed Systems Designer (RSD) to create schematic diagrams for electrical harness designs. You will learn how to configure the RSD working environment. You will learn how to create electrical circuit diagrams, and wiring diagrams. You will learn how to create block interconnect diagrams and wiring interconnect diagrams. You will also learn how to use wiring diagrams to configure 3-D harness designs created within Pro/ENGINEER Wildfire 4.0.



Course Objectives

- Understanding the 2-D schematic design process for electrical harness designs.
- Configuring the RSD working environment.
- Creating circuit diagrams.
- Creating wiring diagrams.
- Creating interconnect diagrams, (block and wiring).
- Communicating diagram information to Pro/ENGINEER Wildfire.



Prerequisites

- None

Audience

- This course is intended for engineers, involved in the schematic 2-D layout of electrical diagrams.

Table of Contents

Module 1	Introduction to Routed Systems Designer
Module 2	Configuring the Working Environment
Module 3	Configuring Designs and Diagram Sheets
Module 4	Using RSD Tools
Module 5	Reviewing Designs
Module 6	Instancing and Manipulating Objects
Module 7	Creating Circuit Diagrams
Module 8	Creating Wiring Diagrams
Module 9	Creating Interconnect Diagrams
Module 10	Using Schematic Design Data in Pro/ENGINEER Harness and Piping Designs
Module 11	Using Pro/Diagram Information

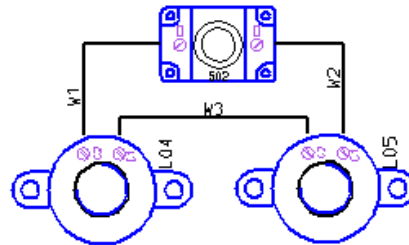
Piping Schematic Design using Routed Systems Designer 8.0

Overview

Course Code SAB-CEK2894

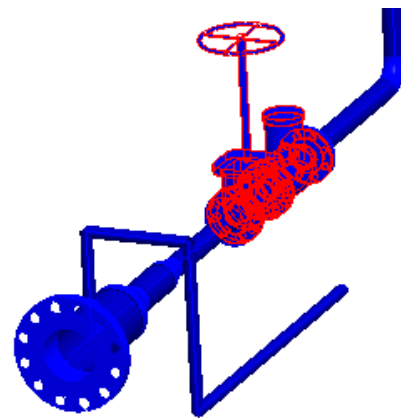
Course Length 12 Hours

In this course you will learn how to use Routed Systems Designer (RSD) to create schematic diagrams for piping designs. You will learn how to configure the RSD working environment. You will learn how to create functional block diagrams for piping systems. You will learn how to create process and instrumentation design (P&ID) diagrams for piping systems. You will also learn how to use P&ID diagrams to configure industrial piping designs created within Pro/ENGINEER Wildfire 4.0.



Course Objectives

- Understanding the 2-D schematic design process for piping designs.
- Configuring the RSD working environment.
- Creating functional block diagrams for piping systems.
- Creating process and instrumentation design (P&ID) diagrams for piping systems.
- Communicating diagram information to Pro/ENGINEER Wildfire.



Prerequisites

- None

Audience

- This course is intended for engineers, involved in the schematic 2-D layout of piping designs.

Table of Contents

Module	1	Introduction to Routed Systems Designer
Module	2	Configuring the Working Environment
Module	3	Configuring Designs and Diagram Sheets
Module	4	Using RSD Tools
Module	5	Reviewing Designs
Module	6	Instancing and Manipulating Objects
Module	7	Creating Block Diagrams
Module	8	Creating P&ID Diagrams
Module	9	Using Schematic Design Data in Pro/ENGINEER Harness and Piping Designs

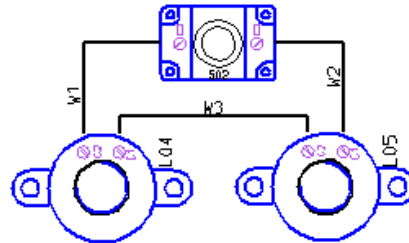
Routed Systems Designer 8.0 for Pro/ENGINEER Wildfire 4.0

Overview

Course Code **SAB-CEK2896**

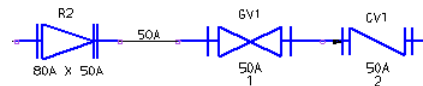
Course Length **24 Hours**

In this course you will learn how to use Routed Systems Designer (RSD) to create schematic diagrams for both electrical harness and piping designs. You will learn how to administer the RSD working environment, and how to configure the catalog library. You will learn how to create functional block diagrams and block interconnect diagrams. You will learn how to create electrical circuit diagrams, and wiring diagrams, including wire interconnect diagrams. You will also learn how to create process and instrumentation design (P&ID) diagrams for piping systems. Finally, you will learn how to use wiring diagrams and P&ID diagrams to configure 3-D harness designs and industrial piping designs created within Pro/ENGINEER Wildfire 4.0.



Course Objectives

- Understanding the 2-D schematic design processes for electrical harness designs and piping designs.
- Configuring the RSD working environment.
- Creating and configuring the catalog library.
- Creating functional block diagrams, (including block interconnect diagrams).
- Creating circuit diagrams.
- Creating wiring diagrams, (including wire interconnect diagrams).
- Creating process and instrumentation design diagrams.
- Communicating diagram information to Pro/ENGINEER Wildfire.



Prerequisites

- None

Audience

- This course is intended for engineers, involved in the schematic 2-D layout of either electrical diagrams or piping diagrams.
-

Table of Contents

Module 1	Introduction to Routed Systems Designer
Module 2	Configuring the Working Environment
Module 3	Configuring Designs and Diagram Sheets
Module 4	Configuring Catalog Properties
Module 5	Creating Design Templates and Template Sheets
Module 6	Using RSD Tools
Module 7	Creating Catalog Artifacts
Module 8	Creating and Configuring a Central Catalog
Module 9	Reviewing Designs
Module 10	Instancing and Manipulating Objects
Module 11	Creating Block Diagrams
Module 12	Creating Circuit Diagrams
Module 13	Creating Wiring Diagrams
Module 14	Creating Interconnect Diagrams
Module 15	Creating P&ID Diagrams
Module 16	Using Schematic Design Data in Pro/ENGINEER Harness and Piping Designs
Module 17	Using Pro/Diagram Information

Cabling using Pro/ENGINEER Wildfire 4.0

Course Code	SAB-CEKT2802
Course Length	24 Hours

Overview

In this course, you will learn how to create 3-D electrical harnesses using Pro/ENGINEER Wildfire 4.0. This includes using schematic diagrams created with Routed Systems Designer 8.0 to pass information into 3-D harness designs created within Pro/ENGINEER Wildfire 4.0.

You will also learn how to route electrical harnesses, create flattened harnesses for manufacturing, and document harness designs by creating flattened harness drawings that include customized BOM tables and wire list information.

At the end of each module, you will complete on-line learning assessments that reinforce your understanding of the course topics. There is also a wrap-up assessment at the end of the course.

After successfully completing the course, you will be able to create 3-D electrical harnesses and associated manufacturing deliverables using Pro/ENGINEER Wildfire 4.0.

It is strongly recommended that cabling engineers attend this course and the *Routed Systems Designer 8.0 for Pro/ENGINEER Wildfire 4.0* course. This will enable a full understanding of the complete process and an understanding of how the configuration of deliverables from RSD such as wiring diagrams provide essential input for creating electrical harness assemblies in Pro/ENGINEER Wildfire 4.0.

Prerequisites

- Introduction to Pro/ENGINEER Wildfire 4.0.
- *Routed Systems Designer 8.0 for Pro/ENGINEER Wildfire 4.0. (Recommended)*

Audience

This course is intended for engineers, involved in the 3-D routing of electrical cabling and wire harnesses, and related roles. The topics in this course are also available as Web-based training courses.

Topics

- Diagram and Harness Development Process Overview
 - Creating Wiring Diagrams in Routed Systems Designer (RSD)
 - Transferring RSD Information into Harness Designs
 - Creating Electrical Harness Assembly Structures
 - Routing Wires and Cables in Harness Designs
 - Creating Flat Harnesses for Manufacturing
 - Creating Harness Drawings
-

Table of Contents

Module 1	Diagram and Harness Development Process Overview
Module 2	Creating Wiring Diagrams in RSD
Module 3	Creating Harness Assembly Structures
Module 4	Establishing Logical References
Module 5	Creating Networks
Module 6	Routing Wires and Cables
Module 7	Modifying Wire and Cable Routings
Module 8	Creating Flat Harnesses
Module 9	Documenting Harness Designs

Piping using Pro/ENGINEER Wildfire 4.0

Course Code	SAB-CEK2803
Course Length	24 Hours

Overview

In this course, you will learn how to create specification driven industrial piping designs using Pro/ENGINEER Wildfire 4.0. This includes learning how to use schematic diagrams created with Routed Systems Designer 8.0 to drive 3-D industrial piping designs created within Pro/ENGINEER Wildfire. You will also learn how to create non-specification driven mechanical piping designs using Pro/ENGINEER Wildfire.

You will learn how to document piping designs by creating drawings that include BOM tables, pipe bend tables, and engineering information. You will also learn how to export ISOGEN format files for creating pipeline, spool and systems isometric drawings.

At the end of each day, you will complete on-line learning assessments that reinforce your understanding of the course topics. These assessments also serve as the basis for daily instructor-led review discussions.

After successfully completing the course, you will be able to create both specification driven and non-specification driven 3-D piping designs and associated manufacturing deliverables using Pro/ENGINEER Wildfire.

It is strongly recommended that piping engineers attend this course and the *Creating 2-D Schematics with Routed Systems Designer 8.0* course to gain a full understanding of the complete process and understand how the configuration of deliverables from RSD such as P&ID diagrams provide essential input for piping assemblies in Pro/ENGINEER Wildfire.

Prerequisites

- Introduction to Pro/ENGINEER Wildfire 4.0.
- *Creating Schematics using RSD 8.0 (Recommended)*

Audience

This course is intended for engineers, involved in the 3-D routing of industrial piping systems and mechanical piping systems. The topics in this course are also available as Web-based training courses.

Topics

- 2-D schematic piping design process overview using RSD
 - Piping 3-D design overview
 - Creating non-specification driven mechanical 3-D piping designs
 - Configuring and inserting fittings
 - Setting up for specification driven 3-D piping designs
 - Creating specification driven industrial 3-D piping designs
 - Creating P&ID Diagrams
 - Creating schematic driven industrial 3-D piping designs
-

- Modifying piping designs
 - Creating piping drawings
 - Outputting isometric information (ISOGEN)
-

Table of Contents

Module 1	Introduction to Piping
Module 2	Configuring and Routing Pipelines
Module 3	Creating Piping Assembly Structures
Module 4	Configuring and Inserting Fittings
Module 5	Setting Up Specification Databases: Piping
Module 6	Setting Up Specification Databases: Fittings
Module 7	Configuring Project Specific Data Files
Module 8	Specification-Driven Routing and Inserting Fittings
Module 9	Creating Process and Instrumentation Diagrams in RSD
Module 10	Schematic Driven Pipeline Modeling
Module 11	Updating Piping Designs
Module 12	Creating Piping Drawings and Exporting ISOGEN Data

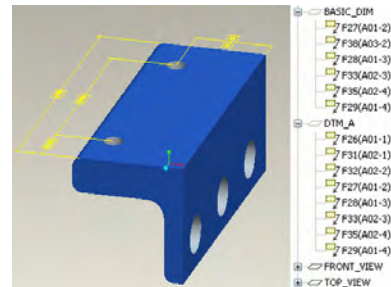
Creating 3-D Drawings using Pro/ENGINEER Wildfire 4.0

Overview

Course Code **SAB-CEK2871**

Course Length **4 Hours**

Creating 3-D Drawings using Pro/ENGINEER Wildfire 4.0 is a half day Web-based course that teaches you how to create Pro/ENGINEER models with embedded information like dimensions, notes, surface finishes, and Geometric Dimensioning and Tolerancing (GD&T). In this course, you will learn how to use the 3-D drawings for planning the downstream process map, layouts, and tools at an early stage of the product development cycle. At the end of the session, you will be able to create 3-D drawings compliant to the ASME Y14.41 standard, manage the information added, as well as display and use this information in traditional 2-D drawings if needed. After completing this course, you will be well prepared to create 3-D drawings using Pro/ENGINEER Wildfire 4.0. At the end of each module, you will complete a skills assessment. The questions are used to help reinforce your understanding of the module topics and form the basis for review of any topics, if necessary.



Course Objectives

- Understand the difference between 3-D drawings and traditional 2-D drawings.
- Describe Digital Product Definition.
- Create 3-D drawings using Annotation features.
- Use annotation features to add notes, dimensions, geometric tolerances, surface finish, and manufacturing information.
- Clean up and manage the annotations on the model.
- Create 3-D drawing views using combined view states.
- Create 2-D drawings using Annotation elements.



Prerequisites

- Introduction to Pro/ENGINEER Wildfire 4.0.

Audience

- This course is intended for mechanical designers, design engineers, and related roles.
-

Table of Contents

Module 1 Introduction to the 3-D Drawing Process

Module 2 Creating Annotations

Module 3 Organizing Annotations

Manikin using Pro/ENGINEER Wildfire 4.0

Overview

Course Code SAB-CEK-2872

Course Length 4 Hours

This course is designed for Pro/ENGINEER users who want to become proficient with the new Manikin extension as quickly as possible. Pro/ENGINEER Manikin represents a new human modeling solution specifically for the needs of product designers, providing anthropometry support to all Pro/ENGINEER users. Manikin provides human-centric information (such as reach envelopes, vision cones, and range of motion) directly embedded into the user's design environment tools. In this course, you will focus on learning core-modeling skills. Topics include inserting manikins into an environment, manipulating manikins, applying constraints between the manikin and its environment, understanding default behavior, capturing manikin postures, and validating the design environment from an ergonomics/human factors standpoint. After completing the course you will be well prepared to validate your product design environments using Pro/ENGINEER Manikin.



Course Objectives

- Insert manikins into an environment and perform basic manipulation.
- Apply constraints to the inserted manikin.
- Understand manikin operations and perform advanced manipulation that includes manikin/environment interaction.
- Validate the design environment.



Prerequisites

- Introduction to Pro/ENGINEER Wildfire 4.0

Audience

- This course is intended for product designers, industrial/conceptual designers, design/manufacturing engineers, and ergonomists/human factors experts. People in related roles will also benefit from taking this course.
-

Table of Contents

Module 1	Manikin Setup and Basic Manipulation
Module 2	Constraints
Module 3	Manikin Operations and Advanced Manipulation
Module 4	Validating the Design Environment
