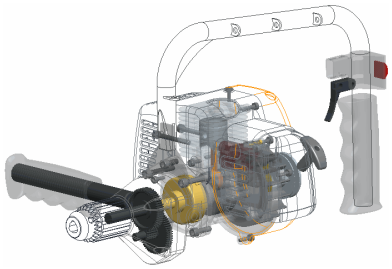
Advanced Assembly Design with Pro/ENGINEER Wildfire 5.0

Overview

Course Code	TRN-2234-T
Course Length	3 Days

In this course, you will learn how to use Pro/ENGINEER Wildfire 5.0 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, Layer States, and Combined Views
- Substituting Components using User Defined, Envelopes, and Simplified Reps
- Understanding Advanced Simplified Rep Functionality

- Creating and Using Assembly Structure and Skeletons
- Project

Prerequisites

- Fast Track to Pro/ENGINEER Wildfire 5.0

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, Layer States, and Combined Views

Day 3

Module	9	Substituting Components using User Defined, Envelopes, and Simplified Reps
Module	10	Understanding Advanced Simplified Rep Functionality
Module	11	Creating and Using Assembly Structure and Skeletons
Module	12	Project

Course Content

Module 1. Using Advanced Assembly Constraints

i. Constraining Components using Coordinate Systems
ii. Constraining Components using Tangency
iii. Constraining Components using Pnt on Line
iv. Constraining Components using Pnt on Surf
v. Constraining Components using Edge on Surf
vi. Constraining Components using Pnt on Pnt
vii. Constraining Components using Fix

Knowledge Check Questions

Module 2. Creating and Using Component Interfaces

i. Understanding Component Interfaces
ii. Using a Placing Component Interface
iii. Using a Receiving Component Interface
iv. Creating a Component Interface using Save as Interface
v. Auto Placing Components
vi. Copying and Pasting Components
vii. Repeating Component Placement

Knowledge Check Questions

Module 3. Creating and Using Flexible Components

i. Adding Flexibility to a Component
ii. Placing Flexible Components in an Assembly
iii. Adding Flexibility to Already Placed Components
iv. Using Flexible Parameters

Knowledge Check Questions

Module 4. Restructuring and Mirroring Assemblies

i. Restructuring Assemblies
ii. Creating Mirrored Assemblies
iii. Creating Mirrored Components
iv. Creating Mirrored Subassemblies

Knowledge Check Questions

Module 5. Using Assembly Features and Shrinkwrap

i. Understanding Assembly Features
ii. Understanding Assembly Feature Intersections
iii. Creating an Assembly Cut
iv. Creating Assembly Holes
v. Creating a Shrinkwrap Feature
vi. Creating a Shrinkwrap Model
vii. Summarizing Shrinkwrap Features and Models

Knowledge Check Questions

Module 6. Replacing Components in an Assembly

i. Understanding Component Replace
ii. Replacing Components using Family Table
iii. Replacing Components using Reference Model
iv. Replacing Components using By Copy
v. Replacing Unrelated Components
vi. Understanding Interchange Assemblies
vii. Replacing using a Functional Interchange Assembly

Knowledge Check Questions

Module 7. Understanding the Basics of Simplified Reps

i. Understanding Standard Simplified Reps
ii. Understanding Custom Simplified Reps
iii. Using Graphics Simplified Reps
iv. Using Geometry Simplified Reps
v. Excluding Components using Simplified Reps
vi. Defining Simplified Reps using the Component Chooser
vii. Creating a Default Envelope Simplified Rep
viii. Creating Part Simplified Reps
ix. Opening Simplified Reps

Knowledge Check Questions

Module 8. Creating Cross-Sections, Display Styles, Layer States, and Combined Views

i. Understanding Assembly Cross-Sections
ii. Creating Planar Assembly Cross-Sections
iii. Creating Offset Assembly Cross-Sections
iv. Creating Zone Assembly Cross-Sections
v. Creating Display Styles
vi. Creating Layer States in an Assembly
vii. Creating Combination Views

Knowledge Check Questions

Module 9. Substituting Components using User Defined, Envelopes, and Simplified Reps

i. Understanding Envelopes
ii. Creating and Using a Surface Subset Shrinkwrap Envelope
iii. Creating and Using a Faceted Shrinkwrap Envelope
iv. Creating and Using an All Solid Surfaces Shrinkwrap Envelope
v. Creating and Using a Create Features Envelope
vi. Creating and Using an Envelope Copied from an Existing Part
vii. Substituting Components using User Defined

viii. Substituting by Interchange and Family Table

Knowledge Check Questions

Module 10. Understanding Advanced Simplified Rep Functionality

i. Searching for Components for Simplified Reps
ii. Creating Simplified Reps by Size
iii. Creating Simplified Reps using Zones
iv. Creating Simplified Reps by Distance
v. Creating Simplified Reps using Exterior Components
vi. Defining Simplified Reps using Rules
vii. Using On-Demand Simplified Reps
viii. Creating External Simplified Reps

Knowledge Check Questions

Module 11. Creating and Using Assembly Structure and Skeletons

i. Understanding Skeletons
ii. Creating Assembly Structure
iii. Creating Skeletons for Space Claims
iv. Creating Skeletons for Placement References
v. Copying a Model to a Skeleton
vi. Creating Multiple Skeletons
vii. Sharing Skeleton Geometry
viii. Creating and Placing Models using Skeleton References
ix. Creating a Motion Skeleton
x. Sketching a Motion Skeleton
xi. Creating Bodies for a Motion Skeleton
xii. Assigning Connections for a Motion Skeleton
xiii. Creating Solid Models from a Motion Skeleton

Knowledge Check Questions

Module 12. Project

i. The Table Fan
ii. Skeleton Models
iii. The Shaft and Arm Parts
iv. Components to Assemblies
v. Editing the Design