

# Piping using Creo Parametric 3.0

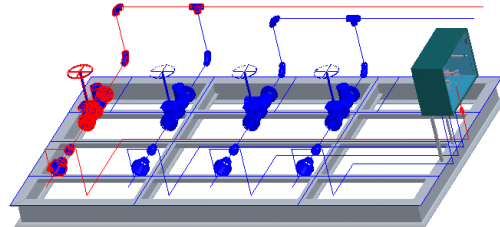
## Overview

Course Code TRN-4516-T

Course Length 3 Days

In this course, you will learn how to manually create (non-specification-driven) mechanical piping designs using Creo Parametric 3.0. This includes learning how to configure pipelines, route pipelines, and insert pipe fittings such as valves and reducers. You will also learn how to create specification-driven industrial piping designs using Creo Parametric 3.0. This includes learning how to use schematic diagrams created with Creo Schematics to drive 3-D industrial piping designs created within Creo Parametric 3.0. Finally, you learn how to document piping designs by creating drawings that include BOM tables, pipe bend tables, and engineering information, as well as how to export ISOGEN format files for creating pipeline, spool, and systems isometric drawings.

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



## Course Objectives

- Understand the manual piping design process
- Understand the specification-driven piping design process
- Create piping assembly structures
- Configure and route pipelines
- Move and modify pipelines
- Create pipe solids and fabricate pipes
- Configure and insert fittings
- Create piping report information
- Create piping drawings
- Configure a piping specification database
- Configure project specific data files
- Create specification-driven pipelines
- Create schematic driven pipelines

## Prerequisites

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- Introduction to Creo Parametric 3.0 or equivalent experience

## Audience

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- This course is intended for engineers who are involved in the 3-D routing of mechanical piping systems and industrial piping systems. People in related roles will also benefit from taking this course.
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## Agenda

### Day 1

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Module	1	Introduction to Piping
Module	2	Creating Piping Assembly Structures
Module	3	Configuring and Routing Pipelines
Module	4	Moving and Modifying Pipelines
Module	5	Configuring and Inserting Fittings

### Day 2

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Module	6	Creating Solid Pipeline Models
Module	7	Gathering Piping Information
Module	8	Creating Piping Drawings
Module	9	Specification Database Overview
Module	10	Setting Up Specification Databases – Piping
Module	11	Setting Up Specification Databases – Fittings

### Day 3

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Module	12	General Master Catalog Files
Module	13	Configuring Project-Specific Data Files
Module	14	Specification-Driven Routing and Inserting Fittings
Module	15	Using Creo Schematics Process and Instrumentation Diagrams Data
Module	16	Schematic Driven Pipeline Modeling
Module	17	Using ISOGEN PCF Data

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## Course Content

### Module 1. Introduction to Piping

- i. Understanding Piping Design Methods
- ii. Manual Piping Development Process
- iii. Specification-Driven Piping Development Process
- iv. Understanding Piping Terminology
- v. Understanding 2-D Schematic Piping Designs

*Knowledge Check Questions*

### Module 2. Creating Piping Assembly Structures

- i. Planning Piping Assembly Structures
- ii. Piping Assembly Structure: Sub-Assembly
- iii. Piping Assembly Structure: No Sub-Assembly
- iv. Piping Assembly Structure – Sub-Assemblies at Top Level
- v. Understanding Piping Large Assembly Management Tools
- vi. Creating and Configuring Piping Skeletons
- vii. Sharing Routing Geometry
- viii. Assembling Piping Components Using Component Interfaces

*Knowledge Check Questions*

### Module 3. Configuring and Routing Pipelines

- i. Understanding Pipeline Routing
- ii. Configuring Non-Specification-Driven Pipelines
- iii. Routing Pipelines
- iv. Routing Flexible Hoses

*Knowledge Check Questions*

### Module 4. Moving and Modifying Pipelines

- i. Adding Points and Moving Pipe Segments
- ii. Modifying Pipeline Routing

*Knowledge Check Questions*

### Module 5. Configuring and Inserting Fittings

- i. Understanding Fittings
- ii. Creating Fittings
- iii. Inserting Fittings

*Knowledge Check Questions*

### Module 6. Creating Solid Pipeline Models

- i. Creating Solid Pipes
- ii. Extracting Models

*Knowledge Check Questions*

### Module 7. Gathering Piping Information

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- i. Using Piping Reporting Tools

*Knowledge Check Questions*

**Module 8. Creating Piping Drawings**

- i. Creating Piping Drawings
- ii. Displaying Piping Report Parameters

*Knowledge Check Questions*

**Module 9. Specification Database Overview**

- i. Understanding the Piping Specification Database
- ii. Master Catalog Directory and File Structure – Pipes
- iii. Master Catalog Directory and File Structure – Fittings

*Knowledge Check Questions*

**Module 10. Setting Up Specification Databases – Piping**

- i. Piping Master Catalog Directory File
- ii. Pipe Design Master Catalog Files
- iii. Pipe Manufacture Directory File
- iv. Pipe Manufacture Master Catalog Files
- v. Bend Machine Master Catalog Files

*Knowledge Check Questions*

**Module 11. Setting Up Specification Databases – Fittings**

- i. Fitting Master Catalog Files
- ii. Mapping Catalog Data to Fittings
- iii. Understanding Fitting Libraries and Fitting Models
- iv. Configuring Specification-Driven Fittings
- v. Bolt Nut Master Catalog Files

*Knowledge Check Questions*

**Module 12. General Master Catalog Files**

- i. Piping Material File
- ii. End Compatibility File
- iii. Insulation File
- iv. Combined Size Code File
- v. Units System File

*Knowledge Check Questions*

**Module 13. Configuring Project-Specific Data Files**

- i. Configuring Auto-Selection Files
- ii. Configuring Specification Directory Files
- iii. Insulation Directory Files
- iv. Fitting Category Map Files
- v. Configuring Piping Config.pro Options

*Knowledge Check Questions*

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**Module 14. Specification-Driven Routing and Inserting Fittings**

- i. Specification-Driven Pipeline Routing
- ii. Specification-Driven Fitting Insertion
- iii. Design Rules
- iv. Routing Continuous Fittings
- v. Non-Break Fittings

*Knowledge Check Questions*

**Module 15. Using Creo Schematics Process and Instrumentation Diagrams Data**

- i. Process and Instrumentation Diagrams Overview
- ii. Creo Schematics Concepts and Terminology
- iii. Investigating Process and Instrumentation Diagrams
- iv. Exporting Design Information

*Knowledge Check Questions*

**Module 16. Schematic Driven Pipeline Modeling**

- i. Designating Schematic Information
- ii. Routing Pipelines Using Schematic Information
- iii. Inserting Fittings Using Schematic Information
- iv. Schematic Consistency Check Report
- v. Updating Piping Designs from Creo Schematics

*Knowledge Check Questions*

**Module 17. Using ISOGEN PCF Data**

- i. Creating ISOGEN PCF Data

*Knowledge Check Questions*

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