

## Milling using Creo Parametric 3.0

### Overview

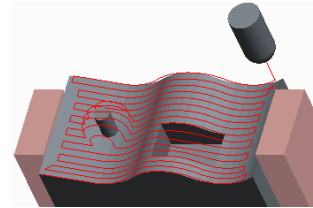
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Course Code TRN-4508-T

Course Length 5 Days

In this course, you will learn how to machine products using Creo Parametric manufacturing tools. This course covers creating tool paths for three 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, 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.

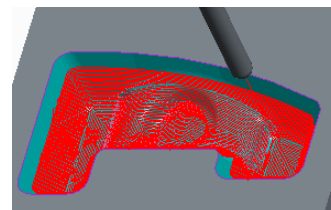
At the end of each module, you will complete a set of review questions to reinforce critical topics from that module. At the end of the course, you will complete a course assessment in Pro/FICIENCY intended to evaluate your understanding of the course as a whole.



### Course Objectives

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- Understand the manufacturing process
- Create and configure manufacturing models
- Configure the manufacturing environment
- Create and modify milling sequences
- Create and modify holmaking sequences
- Use the process manager to create NC sequences
- Post-process cutter location (CL) data



## Prerequisites

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- Introduction to Creo Parametric – Fundamentals (Web Based Training) or equivalent experience

## Audience

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- This course is intended for manufacturing engineers and NC machinists
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## Agenda

### Day 1

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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 a Work Center

### Day 2

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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

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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

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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

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Module	20	Creating Trajectory Milling Sequences
Module	21	Creating Holemaking Sequences
Module	22	Creating Engraving Sequences

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Module 23 Using the Process Manager

Module 24 Creating and Post-Processing CL Data Files

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## Course Content

### Module 1. Introduction to Manufacturing

- i. Manufacturing Process Overview

*Knowledge Check Questions*

### Module 2. Creating Manufacturing Models

- i. Creating Manufacturing Models

*Knowledge Check Questions*

### Module 3. Configuring Operations

- i. Configuring Operations

*Knowledge Check Questions*

### Module 4. Using Reference Models

- i. Using Reference Models

*Knowledge Check Questions*

### Module 5. Using Workpiece Models

- i. Using Workpiece Models

*Knowledge Check Questions*

### Module 6. Creating and Using NC Model Assemblies

- i. Creating and Using NC Model Assemblies

*Knowledge Check Questions*

### Module 7. Creating and Configuring a Work Center

- i. Creating and Configuring a Work Center

*Knowledge Check Questions*

### Module 8. Creating and Configuring Tools

- i. Understanding Milling Tools
- ii. Creating Standard Milling Tools
- iii. Creating Solid Model Milling Tools
- iv. Creating and Using Tool Cutting Data
- v. Retrieving Tool Data

*Knowledge Check Questions*

### Module 9. Using Template Manufacturing Models

- i. Using Template Manufacturing Models

*Knowledge Check Questions*

### Module 10. Using Manufacturing Parameters

- i. Understanding Manufacturing Parameter Concepts
- ii. Configuring Parameter Values
- iii. Using Site Parameter Files

*Knowledge Check Questions*

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**Module 11. Creating Face Milling Sequences**

- i. Basic Face Milling
- ii. Lateral Control Face Milling Parameters
- iii. Depth Control Face Milling Parameters
- iv. Entry and Exit Face Milling Parameters

*Knowledge Check Questions*

**Module 12. Creating Volume Milling Sequences**

- i. Basic Volume Milling
- ii. Volume Milling with Mill Windows
- iii. Scanning Volume Milling Parameters
- iv. Depth and Lateral Control Volume Milling Parameters
- v. Stock Allowance Volume Milling Parameters
- vi. Gathering Mill Volumes
- vii. Modifying Volume Milling Toolpaths

*Knowledge Check Questions*

**Module 13. Creating Profile Milling Sequences**

- i. Basic Profile Milling
- ii. Depth and Lateral Control Profile Milling Parameters
- iii. Lead In and Lead Out Motions

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**Module 14. Creating Straight Cut Surface Milling Sequences**

- i. Understanding Surface Milling
- ii. Straight Cut Surface Milling
- iii. Straight Cut Surface Milling Parameters
- iv. Creating Surface Milling Reference Geometry

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**Module 15. Creating From Surface Isolines Surface Milling Sequences**

- i. From Surface Isolines Surface Milling

*Knowledge Check Questions*

**Module 16. Creating Cut Line Surface Milling Sequences**

- i. Cut Line Surface Milling

*Knowledge Check Questions*

**Module 17. Advanced Surface Milling Options**

- i. Advanced Surface Milling Options

*Knowledge Check Questions*

**Module 18. Creating Roughing and Re-roughing Sequences**

- i. Basic Roughing and Re-roughing
  - ii. Roughing Scans and Entry and Exit Parameters
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- iii. Step Depth and Tolerance Control Roughing Parameters
- iv. Additional Scallop Height Control Roughing Parameters
- v. Roughing Corner Options

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**Module 19. Creating Finishing Sequences**

- i. Basic Finishing
- ii. Editing Finishing Parameters

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**Module 20. Creating Trajectory Milling Sequences**

- i. Understanding Trajectory Milling
- ii. Creating Sketched Milling Tools
- iii. Basic 2-Axis Trajectory Milling
- iv. 2-Axis Trajectory Milling Depth Control Parameters
- v. 2-Axis Trajectory Milling - Cutting Slices Parameters
- vi. Basic 3-Axis Trajectory Milling
- vii. 3-Axis Trajectory Milling Multi-Step and Multi-Pass Parameters

*Knowledge Check Questions*

**Module 21. Creating Holemaking Sequences**

- i. Understanding Holemaking
- ii. Basic Drilling
- iii. Editing Drilling Toolpaths
- iv. Creating and Using Drill Groups

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**Module 22. Creating Engraving Sequences**

- i. Engraving on Flat and Complex Surfaces

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**Module 23. Using the Process Manager**

- i. Using Process Manager Tools
- ii. Editing Process Items
- iii. Creating New Items in the Process Manager
- iv. Creating and Using Manufacturing Templates

*Knowledge Check Questions*

**Module 24. Creating and Post-Processing CL Data Files**

- i. Creating and Post-Processing CL Data Files

*Knowledge Check Questions*

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