

# ProtoTek Engineering Training Classes

<p><b>Mastercam 3 Day Beginner/Essentials Class</b> (8am - 4pm) Held once a month at ProtoTek training center</p> <p><b>Who this class is for:</b> This is ideal training for someone who is looking to get started with Mastercam. This is also a great class for someone who has been away from Mastercam for a while or using an older version and is looking to get back up to speed.</p> <p><b>Description:</b> You will learn about the Mastercam interface and the basic functions of how to get around in software. These topics include geometry and solid model creation, creating tools, drilling holes, 2D toolpaths, material and tool libraries etc.</p> <p><b>Prerequisites:</b> Basic computer skills.</p>	<p><b>Mastercam Customized Training Day</b> Held at ProtoTek training center. Available upon request.</p> <p><b>Who this class is for:</b> Anyone looking to get one on one training on a topic of their choice. This can be a company specific project or any Mastercam functionality that would like to learn more about.</p> <p><b>Description:</b> This is an opportunity to have training on whatever topic you choose.</p> <p><b>Prerequisites:</b> To be determined by topics being covered.</p>
<p><b>Class #1:</b> <b>Focus Series: Mastercam Solids</b></p> <p><b>3 ½ Hour class held every other month</b></p> <p><b>Who this class is for:</b> Anyone interested in learning more about Mastercam Solids. The ability to create and manipulate solid model geometry is now part of every seat of Mastercam.</p> <p><b>Description:</b> This class will focus on working with the Mastercam's Solids and Model Prep functionality. This Focus Series class will have students creating a solid model off of a 2D dxf file, using Mastercam's Model Prep functions like Push-Pull and Modify Solid Features to manipulate imported models, as well as creating fixtures for parts with multiple setups, etc.</p> <p><b>Prerequisites:</b> Completion of the 3 day "Mastercam Beginner/Essentials Mill and Design" class or equivalent.</p>	<p><b>Class #2:</b> <b>Focus Series: Dynamic Milling 2D/3D</b></p> <p><b>3 ½ Hour class held every other month</b></p> <p><b>Who this class is for:</b> Mastercam programmers who want to utilize Mastercam's proprietary Dynamic motion to reduce run time and increase tool life on 2D and 3D geometry.</p> <p><b>Description:</b> This class will focus on how to create all of the toolpaths that utilize Mastercam's Dynamic Motion technology. This Focus Series class will have students create 2D Dynamic Mill, 2D Dynamic RestMill, Dynamic Peel Mill, Dynamic Contour, 3D Dynamic OptiRough, and 3D Dynamic OptiRest toolpaths. Students will learn about the different chaining options and parameter settings that are unique to the Dynamic Milling toolpaths.</p> <p><b>Prerequisites:</b> Completion of the 3 day "Mastercam Beginner/Essentials Mill and Design" class or equivalent.</p>

**Class #3:****Focus Series: 2 Axis Lathe****3 ½ Hour class held every other month****Who this class is for:**

Mastercam programmers who want to program turning toolpaths for horizontal turning centers. This class does not cover “C Axis” or “Live Tooling” toolpath creation, we will have a separate “Focus Series” class that covers this functionality.

**Description:**

This class will focus on how to create Facing, Roughing, Finishing, grooving, and cutoff toolpaths for a horizontal turning center. Students will also learn proper job setup and tool creation procedures as they move from importing a file to posting code.

**Prerequisites:**

Completion of the 3 day “Mastercam Beginner/Essentials Mill and Design” class or equivalent.

**Class #3b:****Optional add on for class #5 – (2 Axis Lathe)****Focus Series: \_**

C and Y Axis Live Tooling

3 ½ Hour class held every other month

**Who this class is for:**

Mastercam programmers who want to program live tooling using C and Y Axis in their horizontal turning centers.

**Description:**

This class will focus on how to create Face Contour, Cross Contour, C-Axis Contour, Face Drill, Cross Drill, and C-axis Drill toolpaths for a horizontal turning center.

**Prerequisites:**

Completion of the Focus Series: 2 Axis Lathe class.

**Class #4:****Focus Series: Model Orientation and WCS****3 ½ Hour class held every other month****Who this class is for:**

Mastercam programmers who want to utilize “Dynamic Transform”, “Work Coordinate Systems”, and the “Plane Manager”

**Description:**

This class will focus on model orientation and work coordinate systems. This Focus Series class is structured around how to implement multiple Work Coordinate Systems to quickly and easily program multiple setups on a vertical machining center. Students will start the class by learning how to simplify the process of importing a model and orientating the model correctly for machining using “Dynamic Transform”.

**Prerequisites:**

Completion of the 3 day “Mastercam Beginner/Essentials Mill and Design” class or equivalent.

**Class #5:****Focus Series: 4 Axis VMC****3 ½ Hour class held every other month****Who this class is for:**

Mastercam programmers who want to program a 4 axis VMC for indexing and rotary cutting.

**Description:**

This class will focus on creating 4 axis indexing and axis substitution toolpaths on a vertical machining center. This Focus Series class covers plane creation and using the “Plane Manager” to work with planes to effectively program 4 axis indexing toolpaths. Students will also learn how to utilize “axis substitution” to create toolpaths that machine while rotating.

**Prerequisites:**

Completion of the “Focus Series: Model Orientation and WCS”

**Class #6:****Focus Series: Surface Machining****8am to 4pm - held every other month****Who this class is for:**

Mastercam programmers who want to program 3D surfacing toolpaths.

**Description:**

This class will focus on how to create 3d Optirough, Waterline, Raster, Hybrid, Pencil, Blend, Horizontal, Scallop, Project, and Flowline toolpaths.

**Prerequisites:**

Completion of the 3 day "Mastercam Beginner/Essentials Mill and Design" class or equivalent.

**Completion of the Focus Series:**

Dynamic Milling 2D/3D class.

**Class #7:****Focus Series: Mill Tool Management****8:00 am – 11:30 am - held every other month****Who is this class for:**

Anyone who wants to utilize Mastercam Tool Libraries to save time, increase accuracy, and improve consistency in programming.

**Description:**

This class will focus on creating and managing Mastercam Tool Libraries to improve their processes. Students will use the Integrated and Stand Alone Tool Managers to create/edit standard and custom tools, holders, and assemblies. Students will also use data/models from tool mfg's and from the Machining Cloud.

**Prerequisites:**

Completion of the 3 day "Mastercam Beginner/Essentials Mill and Design" class or equivalent.

**Class #8:****Focus Series: Wire EDM****8:00 am – 11:30 am - held every other month****Who this class is for:**

Mastercam programmers who want to program paths for Wire EDM machines.

**Description:**

This class will focus on how to create Contour/No Core/ 4 Axis Wire paths using Mastercam Wire.

**Prerequisites:**

Completion of the 3 day "Mastercam Beginner/Essentials Mill and Design" class or equivalent.

**Class #9:****Focus Series: Efficient Programming****3 ½ Hours - held every other month****Who this class is for:**

Mastercam programmers who want to learn tips and trick to help speed up programming.

**Description:**

This class will focus on efficient methods to handle repetitive tasks in Mastercam. Students will work with Viewsheets, template files, Importing/exporting operations, Prototek's Strategy Manager, Feature Based Machining, Pro Drill, and using 3d Optirough for 2d part roughing.

**Prerequisites:**

Completion of the 3 day "Mastercam Beginner/Essentials Mill and Design" class or equivalent.

**Class #10:****Focus Series: Multiaxis Essentials**

**2-day class held every other month**

**Who this class is for:**

Mastercam programmers who want to program a 5 axis Mill for indexing and full 5 axis cutting.

**Description:**

This class will focus on creating 5 axis indexing and Multiaxis toolpaths on a vertical machining center. This Focus Series class covers 3 + 2 indexing and several Multiaxis toolpaths including Swarf Milling, Curve, Drill, Deburr, and the Unified Multiaxis Toolpath. Students will also learn about various lead in/out, tool axis control, and collision control options.

**Prerequisites:**

Completion of the 3 day "Mastercam 3 Day Beginner/Essentials Training" class or equivalent.  
Completion of the "Focus Series: Model Orientation and WCS"