



## Course Description

The Mastercam X4 Maintenance class is designed to help you understand the new features in X4. As they were designed to be used. There is not testing or grades available for this class.

## Course Objectives

Upon completion, you will be able to;

### Feature chain

- Quickly select similar wireframe features based on
- Identical
- Shape match
- Attribute Matching

### Bump nesting

- Enhances existing nesting functionality
- Delete, Move ,Copy, Mirror, and Rotate Geometry
- Drag geometry with tool offset
- Nest against edges

### Toolpath refinement

- Filter randomizes points
- Optimizes finish

### Setup sheet

- Customizable templates
- Setting customer/programmer information
- Custom images
- Sheet per operation
- Detailed Tool List

### Dynamic Planes

- Use the graphical gnomon to move the Origin  
Hot Spots
  - Ball
  - Stem
  - Arrowheads
  - Label
- Linear snapping  
2D 3D snap locations



## **Dynamic Transform**

- Use the graphical gnomon to move the part
- Move on Axis
- Move origin
- Rotate

## **2D High Speed Toolpath**

- Stay ahead of the competition using 2D High Speed Toolpaths
- Removes material with sweeping motion
- Toolpath based on material removal not offset geometry
- Respects pocket boundaries
- Finishes off outside boundary
- Consistent engagement
- Smooth material removal

## **Peel Mill**

- Needs two open contours
- High speed loop toolpath
- Micro lift
- Consistent Chip load
- Smooth material removal

## **Blend Mill**

- Requires two entities for chain
- Consistent floor finish
- Consistent Chip load
- Smooth material removal

## **Area Mill**

- Tool motion control on multiple entries
- Entry is a roughing motion
- Helical and ramp contour entry

## **Rest Mill**

- Removes leftover material from previous operations
- Control on Stepmover



## **Dynamic Mill Helical Entry**

- Geometry controlled Entry
- Entry has an effect on tool motion

## **Dynamic Mill Profile Entry**

- Chain geometry for entry control
- Entry motion has an effect on tool motion

## **Dynamic Mill Custom with slot width entry**

- Chain geometry to control the entry
- Entry has an effect on tool motion
- Toolpath on entry is offset

## **Materials**

- The Mastercam Maintenance course also requires:
- High speed internet connection
- Computer that meets the [Mastercam System Requirements](#)
- Mastercam Demo/Home Learning Version, which you can download at Mastercam U.

## **Cost**

- Free

## **Course Policies**

This course is designed for one student but allows the lectures to be viewed by others. The Certificate of Completion will be stored at Mastercam University under your unique student ID number. It remains available for you to use as proof of work completed and grades received.