

# CAM EXPRESS

- > NX Manufacturing Fundamentals
- > Turning Manufacturing Process
- > Fixed & Multi - axis Milling
- > Post Building Techniques

## > Manufacturing Fundamentals

### GENERAL INFORMATION

Software / Version: NX 12.0

Language: Material English/ Course Spanish

User Level: Intermediate to Advanced

Training Center duration: 3 Days

Prerequisites: NX CAD Fundamental Processes

The Manufacturing Fundamentals course is designed to expedite the student learning experience in the generation of tool paths for 2 and 3-axis milling and drilling applications. As with each course developed and taught by Siemens PLM Software professionals, this class reinforces Siemens PLM's intimate knowledge of software's developments and instructs the students based on the underlying principles incorporated within the NX product suite.

### PRIMARY COURSE TOPICS

- > Introduction and Overview
- > Part analysis for manufacturing
- > User Interface
- > Operation Navigator
- > Machine Coordinate System
- > Tooling
- > Visualization/Verification
- > Post Processing/Shop Documentation
- > Planar/Cavity Milling
- > Drilling
- > Fixed Contour Area Milling
- > Face Milling
- > Text Engraving.

## > Turning Manufacturing Process

### GENERAL INFORMATION

Software / Version: NX 12.0

Language: Material English/ Course Spanish

User Level: Intermediate to Advanced

Training Center duration: 1 Days

Prerequisites: CAM Manufacturing Fundamentals

Turning Manufacturing Process is the core turning class designed to convey concepts, functionality, and application of the turning module. Turning Manufacturing Process is taught from the perspective of an NC/CNC programming session and emphasizes programming concepts and techniques which take advantage of the latest developments in turning equipment and technology.

### PRIMARY COURSE TOPICS

- > Defining part and blank geometry
- > Retrieving and creating tools
- > Facing operations
- > Tool Path Verification
- > Common options
- > Centerline operations
- > Roughing operations – OD
- > Roughing operations – ID
- > Finish operations OD and ID
- > Grooving
- > Teach mode
- > Threading operations
- > Using Multiple Spindles
- > Mill-turn
- > Merging lathes
- > Vertical turret lathe

## > Fixed-axis & Multi-axis Milling

### GENERAL INFORMATION

Software / Version: NX 12.0

Language: Material English/ Course Spanish

User Level: Intermediate to Advanced

Training Center duration: 2 Days

Prerequisites: CAM Manufacturing Fundamentals

The Fixed-axis and Multi-axis Milling course is designed for NC/CNC programmers who machine simple or complex parts with fixed and variable tool capabilities. Students will learn how to create fixed and variable axis tool paths. You will also be introduced to NX workflows for machining contoured parts, high-speed machining methods, milling holes and threads, milling turbine blade type parts, and on machine probing.

### PRIMARY COURSE TOPICS

- > Overview
- > Plunge Milling
- > Z-Level Milling
- > High-speed Machining
- > Fixed-axis Contour Milling
- > Introduction to 4 and 5-axis Machining
- > 5-axis Z-Level
- > Sequential Mill basics
- > Sequential Mill advanced
- > Variable axis Contour Milling
- > Profiling walls with a variable tool axis
- > Non Cutting Moves
- > Wave Geometry Linker in Manufacturing
- > Turbomachinery Milling
- > Refixturing and the In Process Workpiece
- > Hole Milling and Thread Milling
- > Generic Motion and Probing operations

## > Post Building Techniques

### GENERAL INFORMATION

Software / Version: NX 12.0

Language :Material English/ Course Spanish

User Level: Beginner to Intermediate

Training Center duration: 3 Days

Prerequisites: CAM Manufacturing Fundamentals

The Post Building Techniques acquaints you with tools and techniques that are used for building custom, machine tool specific post processors using the Post Builder tool. Methods are shown for customization and modification of the definition and event handler files that are used by NX Post.

### PRIMARY COURSE TOPICS

- > NX Post - postprocessor
- > Building a postprocessor with the post builder
- > Units-only subposts
- > Post Builder for wire EDM applications
- > Post Builder for 4-axis and 5-axis mills
- > Post Builder for lathe applications
- > Create mill-turn postprocessors
- > Tcl Basics for Post Builder
- > Custom commands
- > User-defined events and user-defined cycles
- > Virtual NC Controller
- > Postprocessing with a Siemens controller
- > Create a macro with Post Builder
- > A Guide to best practices of building a postprocessor