



Computer Aided Manufacturing using NX CAM

Course Curriculum (Duration: 40 Hrs.)

Prerequisites: Students attending this course should be familiar with Engineering Drawing, Machine Drawing, Limits, Fits and Tolerances.

Chapter 1: CAM Manufacturing Fundamentals

- 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

Chapter 2: CAM Turning Manufacturing Process

- 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

Chapter 3: CAM Fixed-axis and Multi-axis Milling

- 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

Chapter 4: CAM Post Building Techniques

- 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

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