

NX CAM Essentials

Learn to set up, generate, simulate and post-process CNC toolpaths for milling and drilling using Siemens NX CAM.

8

MODULES

33

TOPICS

COURSE OVERVIEW

This introductory course is designed to provide a solid foundation in Siemens NX CAM (Computer-Aided Manufacturing) software. Participants will learn how to set up, generate, simulate, and post-process toolpaths for CNC machining using NX. The course covers basic milling and drilling operations, essential CAM workflows, and industry-standard best practices, equipping learners with the skills needed to work on simple to moderately complex parts.

WHO THIS COURSE IS FOR

CNC Operators and Programmers

Manufacturing Engineers

Mechanical Engineering Students or Fresh Graduates

CAM Professionals transitioning to NX

PREREQUISITES

Participants should have the following:

- Basic understanding of machining and manufacturing processes
- Familiarity with CNC milling operations and terminology
- Basic knowledge of CAD software (preferably NX or equivalent)
- Computer literacy and ability to navigate 3D design interfaces

LEARNING OBJECTIVES

By the end of the course, students will be able to:

- Understand the core principles of NX CAM
- Create machining setups
- Generate and simulate toolpaths
- Produce post-processed NC code for CNC machines

8 Modules, 33 Topics

01

Introduction to NX CAM

Objective: Understand CAM fundamentals and Siemens NX environment.

TOPICS

What is CAM and its role in manufacturing? · Overview of Siemens NX CAD/CAM software · NX CAM capabilities and supported processes · User interface and navigation basics · **Workflow overview:** CAD → CAM → CNC

02

CAM Setup and Environment

Objective: Set up the machining environment within NX.

TOPICS

- Creating a CAM session from CAD models
- Machine configuration and machine coordinate system (MCS)
- Part geometry vs blank vs fixture definition
- Introduction to operation navigator and geometry group

03

Tools and Tool Libraries

Objective: Create and manage cutting tools and libraries.

TOPICS

- **Tool types:** End mill, face mill, drill, reamer, etc.
- Defining tool parameters (length, diameter, etc.)
- Managing tool libraries and tool holders
- Tool selection in operations

04

Milling Operations - Basics

Objective: Learn to apply basic milling operations.

TOPICS

Face Milling · Cavity Milling · Planar Milling · Profile/Contour Milling · Toolpath control and parameters

05

Drilling and Hole-Making Operations

Objective: Perform simple drilling operations in NX.

TOPICS

- Drilling, peck drilling, tapping, and boring
- Hole-making operation setup and sequencing
- Selecting holes manually and using hole features

06

Toolpath Generation & Editing

Objective: Generate, edit, and verify toolpaths.

TOPICS

- **Geometry selection methods:** part, drive, check
- Adjusting cutting parameters (depth of cut, stepover, etc.)
- Toolpath regeneration and modifications
- Using boundaries and avoidance regions

07

Toolpath Simulation and Verification

Objective: Simulate machining operations safely.

TOPICS

Material removal (cut region) simulation · Machine tool simulation basics · Collision and gouge checks · Toolpath visualization and verification

08

Post Processing and NC Code Generation

Objective: Generate G-code using post processors.

TOPICS

What is post processing? · Selecting and using post processors · Generating NC output (.nc or .tap files) · Editing and reviewing G-code

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Delivery by certified instructors and subject matter experts
- Hands-on exercises throughout the course
- Course completion certificate from Koenig

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Who We Are

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