Two-Axis CNC Lathe Programming

This three-day course teaches students the two-axis CNC lathe programming functions.

I. Computer Numerical Control
   · Identify Major Components of CNC
   · Describe Motion in Terms of X and Z Axis
   · Identify Basic Capabilities of CNC Lathe
   · Machine Reference Points
   · CNC Control Keyboard Functions

II. Preparing for Programming
   · Identify Required Operations
   · Methods of Holding a Workpiece
   · Tool Selection Factors
   · Safety Practices
   · Establish an Origin Point
   · Programming Alarms

III. Programming Configurations
   · Preparatory (G Code) Functions and Selections
   · M-S and T Codes
   · Miscellaneous Codes
   · Dimensional Configuration

IV. Absolute and Incremental Positioning
   · Identify X and Z Axis Dimensions of Cartesian Coordinate System
   · Describe Absolute Positioning and Incremental Positioning
   · Program Rapid Traverse Movements in the Absolute and Incremental Systems

V. Cutter Radius Compensation
   · Enter Compensation Data Into the Control
   · Write a G41 Statement to Establish Cutter Compensation to the Left of Part
   · Write a G42 Statement to Establish Cutter Compensation to the Right of Part
   · Write a G40 Statement to Terminate Compensation

VI. Tooling
   · Identification System for Throwaway Inserts
   · Tool Nose Radius Compensation
   · Tool Offset Compensation
   · Tool Length Compensation
   · Tool Geometry Offset
   · Tool Wear Offset

VII. Diameter and Radius Programming
   · Spindle Functions
   · Tool Functions
   · Miscellaneous Functions