Two-Axis CNC Lathe Programming

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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