

# **BASIC CNC MACHINE TOOL MAINTENANCE COURSE**

**Course Length:** 36 Hours

## **Course**

**Description:** Basic CNC machine tool maintenance course covering control diagnostics, basic electrical troubleshooting, pneumatic and hydraulic systems, and basic machine troubleshooting.

## **Course**

**Objective:** Upon completion of this course, the student will be able to read electrical schematics and identify machine components, look at machine diagnostics to determine the status of switches, relays, and other machine signals, troubleshoot minor electrical problems, and develop troubleshooting skills to aid in diagnoses of problems in CNC machine tools.

## **Areas**

- Covered:**
1. Machine Electrical Schematics
    - A. Electrical Diagrams
    - B. Ladder Diagrams
  2. Machine Diagnostics
    - A. Common Diagnostic Systems
    - B. Binary Numbering Systems
    - C. Hexadecimal Numbering Systems
  3. Troubleshooting Tools
    - A. Digital Multimeter
    - B. Analog Multimeter
  4. Electrical Components
    - A. Switches
    - B. Relays & Contactors
    - C. Solenoid Valves
  5. Troubleshooting
    - A. Hydraulic Systems
    - B. Pneumatic Systems
    - C. Electrical Systems