

# BASIC OPERATION COMPUTERIZED NUMERICAL CONTROL (CNC) CERTIFICATE OF ACHIEVEMENT

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This certificate is designed to prepare students for entry-level employment in Computer Aided Manufacturing (CAM) programming, set up, and operation of Computer numerical control (CNC) machine tools.

Code	Title	Units
<b>Required Courses</b>		
MACH 090	Mechanical Print Reading	3
MACH 025	General Machine Shop	3
MACH 072	Computer Aided Design and Manufacturing Programming I	3
MACH 073	Computer Aided Design and Manufacturing Programming II	3
MACH 070	Computer Numerical Control Programming (CNC) I	3
MACH 074	Computer Numerical Control (CNC) Machining Setup and Operation	3
<b>Total Units</b>		<b>18</b>

*Students working for certificates must have a basic knowledge of arithmetic, reading and writing in order to learn and work in the occupations they select.*

*This is a Gainful Employment Program*

## Program Learning Outcomes

At the completion of this program, students will be able to:

- Accurately hold tolerances to a given print within a 1/64th for fractions and within .001" for NIMS decimals
- Program a part print utilizing the Cartesian coordinate systems
- Download files from computer disks to machine control
- Generate a part model in SolidWorks from a detailed dimensioned illustration or a mechanical drawing
- Demonstrate basic procedures for the set-up and operation of lathes, milling machines, drill presses, saws, and grinders