



## Description

The 3D – CNC Machining program will provide the student a comprehensive level of understanding of the industrial machining processes that are currently used in the manufacture of the following, but not limited to; aerospace, medical, automotive, petroleum, telecommunications, electronics and Gunsmithing products.

The student will gain knowledge and proficiency in DFM (Design of Manufacture) processes using SolidWorks and AutoDesk Fusion 360 CAD/CAM software. In addition, the student will be required to setup automated machine tools including the use of various tooling and fixtures that are used extensively in industry.

Basic knowledge of materials, machine tools and metrology methods will be incorporated in their studies to determine optimum speeds and feeds necessary to make parts that are repeatable and reproducible. Students completing this course can easily acquire 4 or more nationally recognized credentials specific to metalworking.

## Application

Applicants must complete a Southern Tech Application for Admission. Additional information and applications are available at the Southern Tech campus and online at [www.sotech.edu](http://www.sotech.edu). Enrollment for this career major is open to partnering High Schools (juniors/seniors) and Adults.

## Tuition

High School Student: Free. Adult Student (in-district): \$2.50 per hour; Adult Student (Out-of-District): \$5 per hour; and Adult Student (Out-of-State): \$7.50 per hour. Additional costs may include books, supplies, and miscellaneous fees.

## Financial Aid and Scholarships

Financial aid and scholarships are available for qualifying students.

## Student Organization

SkillsUSA

## Schedule

Adults (Half Time) 8:00-11:00 AM or 12:45-3:45 PM

Adults (Full Time) 8:00-11:00 AM and 12:45-3:45 PM

High School Students: 8:00-11:00 AM or 12:45-3:45 PM

## Program Details

### 3D-CNC Machining Fundamentals

Course	Hours
NIMS Measurement, Materials and Safety	120
NIMS Job Planning, Benchwork and Layout	120
NIMS Basic CNC Milling Operator	120
NIMS Basic CNC Turning Operator	120
Workforce Staging I	45
<b>Total Hours</b>	<b>525</b>
<i>Estimated time to complete (Half Time)</i>	<i>1 year</i>

### 3D-CNC Machining Advanced

Course	Hours
NIMS Measurement, Materials and Safety	120
NIMS Job Planning, Benchwork and Layout	120
NIMS Basic CNC Milling Operator	120
NIMS Basic CNC Turning Operator	120
Workforce Staging I	45
NIMS CNC Milling Programming, Setups and Operations	120
NIMS CNC Turning Programming, Setups and Operations	120
NIMS Manual Mills and Drill Presses	120
NIMS Manual Lathes and Grinders	120
Workforce Staging II	45
<b>Total Hours</b>	<b>1050</b>
<i>Estimated time to complete (Full Time)</i>	<i>1 year</i>
<i>Estimated time to complete (Half Time)</i>	<i>2 years</i>

## Targeted Certifications and/or Credentials

National Institute for Metalworking Skills (NIMS) Computer Numerically Controlled (CNC) Milling: Operations

- NIMS CNC Turning: Operations
- NIMS CNC Milling: Operations
- NIMS Job Planning, Benchwork and Layout
- NIMS Measurement, Materials and Safety
- NIMS CNC Milling: Programming Setup & Operations
- NIMS CNC Turning: Programming Setup & Operations
- NIMS Drill Press Skills 1
- NIMS Grinding Skills 1
- NIMS Manual Milling Skills 1
- CNC Machining Center Operation
- Drill Press Operator
- Lathe Operator

***Certifications may vary by Program and are subject to change without notice.***

## Employment Options

*The following list is associated with the approved SOC (Standard Occupational Classification) for this program and does not necessarily represent immediate opportunities; additional training may be required for some options listed.*

CAD CAM Programmer, CNC Machine Operator, CNC Machining Center Operator, CNC Machinist, CNC Operator, CNC Programmer, Machine Shop Lead Man, Machining Manager, Process Engineer, Programmer –  
Approximate Pay Potential: \$16-38/Hour.