

# Design and Fabrication



## Description

The Design & Fabrication career major will take a student to an advanced level of understanding in the field of manufacturing processes currently used in both automated and non-automated industries.

## 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): \$3.00 per hour; Adult Student (Out-of-District): \$6 per hour; and Adult Student (Out-of-State): \$9 per hour. Additional costs may include books, supplies, and miscellaneous fees.

## Financial Aid and Scholarships

Financial aid and scholarships are available for qualifying students.

## Program Details

Design and Fabrication Fundamentals	
Introduction to Machining	45
Introduction to CNC Milling	60
Introduction to CNC Turning	60
Job Planning, Benchwork and Layout	75
Measurement, Materials and Safety	75
Workforce Staging	30
CNC Milling Programming	60
Computer Aided Design and Machining	90
CNC Basics	30
<b>Total Hours</b>	<b>525</b>
<i>Estimated time to complete (Half Time)</i>	<i>1 year</i>
Design and Fabrication Advanced	
Introduction to Machining	45
Introduction to CNC Milling	60
Introduction to CNC Turning	60
Job Planning, Benchwork and Layout	75
Measurement, Materials and Safety	75
Workforce Staging	30
CNC Milling Programming	60
Computer Aided Design and Machining	90
CNC Basics	30
CNC Milling Setups and Operation	80

CNC Turning Programming	65
CNC Turning Setups and Operation	80
Drill Press	30
Grinding	30
Milling	120
Turning	120
<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>
Design and Fabrication Master	
Introduction to Machining	45
Introduction to CNC Milling	60
Introduction to CNC Turning	60
Job Planning, Benchwork and Layout	75
Measurement, Materials and Safety	75
Workforce Staging	30
CNC Milling Programming	60
Computer Aided Design and Machining	90
CNC Basics	30
CNC Milling Setups and Operation	80
CNC Turning Programming	65
CNC Turning Setups and Operation	80
Drill Press	30
Grinding	30
Milling	120
Turning	120
Advanced Computer Numerical Control Operations	90
Advanced Computer Numerical Control Programming	150
Advanced Computer Numerical Control Setup	120
Advanced Machine Tool Theory	75
Advanced Precision Measurement	45
Advanced Print Reading for Machining	45
<b>Total Hours</b>	<b>1575</b>
<i>Estimated time to complete (Full Time)</i>	<i>1.5 years</i>
<i>Estimated time to complete (Half Time)</i>	<i>3 years</i>

## Certifications and/or Credentials

CNC Milling: Operations; CNC Turning: Operations; CNC Machining Center Operation; Job Planning, Benchwork and Layout; Measurement, Materials and Safety; CNC Turning: Programming Setup & Operations; Drill Press Operator; Drill Press Skills 1; Grinding Skills 1; Manual Milling Skills 1; Lathe Operator. **Certifications may vary by Program and are subject to change without notice.**

## Student Organization: SkillsUSA

**Schedule:** Adults (Half Time) 8:00-11:00 AM or 12:30-3:30 PM; Adults (Full Time) 8:00-11:00 AM and 12:30-3:30 PM; High School Students 8:15-11:00 AM or 12:45-3:30 PM (students are encouraged to attend 8:00-8:15 AM or 12:30-12:45 PM for curriculum enrichment).

## Employment Options:

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.