



# MANUFACTURING ENGINEERING TECHNOLOGY

Associate of Applied Degree

MILFORD CAMPUS

[www.southeast.edu/ManufacturingTech](http://www.southeast.edu/ManufacturingTech)



*Do you have an analytical mind and good math skills? This program prepares students for careers in product design, operations management, lean manufacturing engineering, product research and development, quality control and assurance, and tooling design.*



*"Enrolling in the Manufacturing Engineering Technology program at Southeast Community College was the best decision that I could have made. Not only was I taught the curriculum needed for today's industry standards, I also was taught by instructors who were exposed to these practices. I also gained hands-on experience working with equipment used in the industry, which gave me an edge when applying for jobs.*

*As an automation engineer, I wear many different hats. My position at Geist Manufacturing requires me to be knowledgeable in different fields such as*

*PLC Programming, Engineering/Drafting, Machining, Electrical Engineering, and also how the manufacturing process works. The best feature of this program is that whether you understand engineering mechanics or are just entering the field, the instructors start you off with the basics and build on that. I would recommend this program to anyone who wants hands-on learning in the world of engineering."*

*Dylon Grantski; Automation Engineering Specialist at Geist Manufacturing*

## Types of jobs available:

- Product Designer
- Robot Programmer
- Engineering Technician
- Automation Engineer
- Machine Designer
- CNC Programmer
- Product Research and Development Specialist
- Direct Manufacturing Support Specialist
- Quality Control and Assurance Specialist
- Lean Manufacturing Engineer
- Production Engineer Tech
- Tooling Design and Development Specialist

SCC has an active student chapter, S218, of the Society of Manufacturing Engineers, which helps students create contacts with local industries and potential employers.

## Graduate Earnings

Recent graduates report an average starting wage of \$20.60 per hour.

## For more information contact:

Elaine Vavra, Program Chair  
402-761-8210, 800-933-7223 ext. 8210  
evavra@southeast.edu

or the College Admissions Office  
Milford 402-761-8243, 800-933-7223 ext. 8243



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# How Stuff Works

## You'll Learn How 3-D Plastic Extrusion Printing Works

**1** A 3-D model is created on a computer using computer-aided design software. Nearly any structurally sound object can be printed. Mechanical parts, artificial limbs, architectural models, and toys are just a few.



**2** The 3-D model is sent to the printer, where it is sliced into hundreds of layers as fine as .010-inch thick, one-fifth the thickness of a dime.

**3** The printer builds the 3-D models from the bottom up, one layer at a time, with tough, durable acrylonitrile butadiene styrene plastic. ABS plastic is heated to a semi-liquid state (500°F) and deposited in thin layers by a patented extrusion head. Catalyst software automatically determines when and where to deposit ABS or support material throughout the build process. The process can take as little as a few minutes to as long as several hours.



**4** Once the object is finished, the part is allowed to cool, and the support material is removed. Models can be sanded, painted, tapped, and drilled and then assembled just like an actual working part of assembly.

## A.A.S. Degree Requirements:

Course #	Course title	Credit hrs
MFGT1125	Materials of Industry	5.0
MFGT1144	Engineering Drawing & Design I	6.0
MACH1241	Machinery's Handbook	5.0
MFGT1250	Engineering Drawing & Design II	3.5
MFGT1333	Fluid Power for Manufacturing	4.0
MFGT1350	AutoCAD for Manufacturing	3.0
MFGT1354	Die Design	5.0
MFGT1362	Lean Facilities Planning	3.0
MFGT1380	Manufacturing Engineering Processes Using Math Concepts	2.5
MFGT1413	Electrical Fundamentals	4.0
MFGT1421	Manufacturing Processes I	5.0
MFGT1429	CNC for Automation	3.5
MFGT1456	Manufacturing Processes II	4.0
MFGT1458	Electrical Concepts for Manufacturing	1.5
MFGT2549	Quality Assurance & SPC	5.0
MFGT2559	Geometric Dimensioning & Tolerancing	3.5
MFGT2566	Tooling Design	5.0
MFGT2620	Programmable Logic Controllers in Work Cell Design	3.0
MFGT2625	Robotics & Industrial Automation I	2.5
MFGT2630	Robotics & Industrial Automation II	2.5
MFGT2635	Plastics: Design & Engineering	5.0
MFGT2643	Engineering Statics & Strengths of Materials	5.0
MFGT2668	Product & Machine Design	3.5
MFGT2670	Autodesk Inventor	5.0
MFGT2672	Mechanisms	3.5
MFGT2680	Solid Works	3.0
		<b>101.5 hours</b>

## General Education Requirements:

Contact your program advisor to select general education courses from each category which will meet your program's graduation requirements. See the General Education pages online for a complete list.

(One class from each area below)

Oral Communications	4.5
SPCH1110 Public Speaking	
Written Communications	4.5
ENGL1110 Business Communications	
Mathematics	4.5
MATH1050 Thinking Mathematically (or higher)	
(Prerequisite for MFGT1333, 1413, 2549, & 1380)	
Science	4.5
PHYS1017 Technical Physics or	
PHYS1150 Descriptive Physics (Prereq. for MFGT2566, 2668)	
Computer Technology	4.5
BSAD1010 Microsoft Applications I (Prerequisite for MFGT2670)	
22.5 hours	

**To complete the A.A.S. degree, students also are required to take:**

ACFS2020 Career Development	2.5
2.5 hours	

Students wishing to take advanced level or alternate courses to meet the College's General Education Requirements should contact their program advisor to ensure that the course/s meet the program requirements.

### Estimated Expenses

To determine overall costs, students should plan a budget that includes room, meals, clothing, laundry, medical care, recreation and entertainment, transportation, insurance, etc.

Nebraska Resident tuition rate is \$65.50 per credit hour. Out-of-state tuition rate is \$79.50 per credit hour. Student fee is \$2 per credit hour. Graduation fee is \$25.

Housing is available at Beatrice and Milford campuses only. Tuition, books and fees are dependent upon classes taken each quarter.

### FIRST QUARTER

Tuition And Fees	\$1,553
Books	575
Tools	95
<b>Total</b>	<b>\$2,223</b>

### SECOND QUARTER

Tuition And Fees	\$1,283
Books	860
<b>Total</b>	<b>\$2,143</b>

### THIRD QUARTER

Tuition And Fees	\$1,485
Books	435
Tools	130
<b>Total</b>	<b>\$2,050</b>

### FOURTH QUARTER

Tuition And Fees	\$1,283
Books	550
<b>Total</b>	<b>\$1,833</b>

### FIFTH QUARTER

Tuition And Fees	\$1,688
Books	800
<b>Total</b>	<b>\$2,488</b>

### SIXTH QUARTER

Tuition And Fees	\$1,249
Books	680
<b>Total</b>	<b>\$1,929</b>

<b>Total Estimate For Program</b>	<b>\$12,666</b>
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## Basic Tools for Program

\* May be purchased at the Campus Store. A 10 percent discount will be given if the following items are purchased as a complete set.

* .3 mm Lead - H degree (1 tube)	* Conversion Factors
* .3 mm Mechanical Pencil	* Sharp EL-506X Scientific Calculator
* .5 mm Lead - F degree (1 tube)	* Flash Drive Memory Stick (4 GB minimum)
* .5 mm Mechanical Pencil	* Safety Glasses - Must meet Z87 specs. (Not included in kit)
* .7 mm Lead - F degree (1 tube)	* 12" Inch Ruler - Mechanical Flat Scale
* .7 mm Mechanical Pencil	
* Drawing Pencil - 9H degree, "PRISMACOLOR"	** Steel Rule; 6 inch flexible Caliper; 6 inch dial or digital (This tool needs to be purchased prior to entering the 4th quarter of study. See instructor for tool options and pricing.)
* Kit Bag 12" x 16" w/Mesh Webbing	
* Drafting Dots 500/roll	
* Tri-Angle Eraser	
* Sandpaper Lead Pointer	
* Bow Compass w/Beam	
* Friction Divider	
* Expandable Folder w/Flap & Rubber Band Closure	