

## In preparation

### Suggested High School Coursework

Machine shop  
Metalworking  
Drafting  
Math

### Interests

Solve practical problems.  
Work with your hands.  
Work with machines.  
Like routines and procedures.

### Helpful skills

Strong reading and communication skills.  
Quick, accurate math skills.  
Creative, independent thinker.  
Precise, accurate, reliable, punctual, and responsible.



## Employment Opportunities

Tool & Die Technology graduates are prepared to work in a wide variety of areas for local manufacturers, including tool rooms, CNC areas, in quality control, and tool and machine design. Graduates may also choose to work for a specialty tool and die shop producing dies and molds for a large variety of production machines. General Machinist graduates can immediately seek employment in an area machine shop or manufacturing facility producing a wide variety of machine parts.

### Employers of past graduates:

- Advanced Component Technologies
- American Tool & Engineering
- Camcar-Extron
- Curries Company
- Eaton Corporation
- Fastenal
- Fleetguard, Inc.
- FRC Components
- Gilbertson Tool & Die
- Hawkeye Mold
- IMI Cornelius, Inc.
- Deere & Company
- Kawasaki Motors Corp.
- Maytag Corporation
- Metalcraft, Inc.
- MSI Moldbuilders
- Pella Corporation
- Plas-Tech Tooling
- Precision Manufacturing, Inc.
- Snap-on Tools Company, LLC
- Stellar Industries, Inc.
- Winnebago Industries, Inc.



## INDUSTRIAL TECHNOLOGY

# Tool & Die Technology General Machinist

Murphy Manufacturing  
Technology Center



1-888-GO NIACC  
[www.niacc.edu](http://www.niacc.edu)

# General Machinist

General Machinist is a two-semester diploma program designed to provide in-depth study and considerable hands-on skills in the machine processing of a variety of metals. This one-year program provides the foundation for the Associate in Applied Science degree program, Tool & Die Technology.

Students become proficient in the operation of manual mills, lathes, grinders, drills, and saws as they complete increasingly complex projects while holding tight tolerances. Various pieces of precision measuring equipment (optical comparator, coordinate measuring machine, etc.) are used to check quality. Additional work in blueprint reading, heat-treating, and computer numerical controlled (CNC) machining is required to complete the General Machinist Program.

Upon satisfactory completion of this program, students are awarded a NIACC diploma. Graduates have the option to continue into the A.A.S. Tool & Die Technology Program or immediately begin employment.

# Curriculum

## First Term (Fall)

BCA 119	Computer Orientation.....	1 s.h.
ENG 701	Communications I .....	3 s.h.
MAT 770	Applied Math .....	2 s.h.
MAT 771	Applied Math II .....	2 s.h.
MFG 120	Machine Trade Print Reading I .....	1 s.h.
MFG 245	Machine Theory & Operations I .....	9 s.h.
		18 s.h.

## Second Term (Spring)

MFG 130	Machine Trade Print Reading II .....	1 s.h.
MFG 248	Machine Theory & Operations II .....	7 s.h.
MFG 302	CNC Fundamentals .....	3 s.h.
PHY 702	Career Physics.....	4 s.h.
		15 s.h.

## Third Term (Summer)

MFG 108	Computer Aided Drafting (CAD) .....	2 s.h.
MFG 110	3D Modeling .....	2 s.h.
MFG 380	EDM Fundamentals .....	2 s.h.
MFG 423	Jig & Fixtures .....	5 s.h.
MFG 500	Statistical Process Control (SPC) .....	1 s.h.
		12 s.h.

## Fourth Term (Fall)

BUS 161	Human Relations .....	3 s.h.
MFG 320	Computer Aided Manufacturing (CAM)..	3 s.h.
MFG 408	Basic Die Making .....	8 s.h.
SDV 135	Job Seeking Skills.....	1 s.h.
WEL 334	Trade & Industry Welding .....	2 s.h.
		17 s.h.

## Fifth Term (Spring)

ENG 702	Communications II .....	3 s.h.
MFG 312	Advanced CNC .....	2 s.h.
MFG 459	Injection Mold Making .....	9 s.h.
MFG 460	Plastic Materials.....	1 s.h.
		15 s.h.

**Total Program Hours**

**77 s.h.**



# Tool & Die Technology

Tool & Die Technology is a five-semester degree program which is a continuation of the General Machinist Diploma Program. The Tool & Die Technology Program builds upon the previous studies with an in-depth study of high-precision industrial dies and die components, progressive dies, and plastics industry molds. A portion of the program is devoted to producing computer-aided drawings (CAD) of molds and dies, and then using computer-aided manufacturing (CAM) software to generate computer numerical control (CNC) machine language. Students operate CNC machine tools to produce many of their second year projects.



Upon successful completion of this program, students are awarded an Associate in Applied Science Degree.

## INDUSTRIAL TECHNOLOGY

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