

CNC Machine Tool

Winona Campus

OVERVIEW

In the MSC Southeast CNC Machine Tool program, you'll learn the precision skills of the tool and die maker on state-of-the-art equipment.

In the CNC Machine Tool program at MSC Southeast offers the training and education for a rewarding career in the field of precision manufacturing.

It is important to first learn the basic fundamentals of machining and then progressively build your skills. Our program has a strong emphasis on learning the basic skills in machining technology.

You will be instructed in the use of several different high-tech machines while learning blueprint reading, metallurgy, drawing, and the principles of die and mold making. Our curriculum is based on the philosophy that hands-on is the best way to learn machining and die making.

MAJORS WITHIN

CNC Machine Tool	Diploma	58 credits
Precision Machining	Diploma	31 credits
Machining Basics	Certificate	13 credits
Machining Right Skills Now	Certificate	17 credits
Prototype Engineering	Certificate	13 credits

PROGRAM OUTCOMES

Program graduates will be able to:

1. Be employable at entry level machining jobs in related fields.
2. Use the basic skill and knowledge of machine shop operations in manual and CNC machining to produce parts to blueprint specifications.
3. Demonstrate safe work habits.
4. Clearly communicate through verbal and written skills.
5. Use the math and computer skills necessary in the machine trades.

JOB PLACEMENT

Nearly 100%



PROGRAM HIGHLIGHTS

20+ stations of Computer Aided Drafting (CAD) and Computer Aided Machining

(CAM) programming software available for student training

70% of coursework is hands-on

Computer Numerical Control (CNC) machines offers wire electrical discharge machining (edm), turning and milling technology

Focus is on keeping up with the technology used in industry

Employment opportunities are abundant locally as well as regionally

CAREER OPPORTUNITIES

Micro Machining
 Medical Machining
 Moldmaker
 Diemaker
 Toolmaker
 CNC Machinist
 Production Machinist
 General Machinist

PROGRAM COSTS - estimated cost including tuition, books and supplies

CNC Machine Tool	\$12426
Precision Machining	\$6,632
Machining Basics	\$3,295
Machining Right Skills Now	\$3,858
Prototype Engineering	\$3,269

CNC Machine Tool Sample Program Plan

This is a sample course sequence. Please contact your program advisor regarding your academic plans.

CNC Machine Tool - 2-year Diploma

Course No.	Course Name	Credits
First Semester (Fall)		
MACH 1601	Introduction to Precision Machining	4
MACH 1605	Engineering Drawings 1	2
MACH 1610	Precision Measuring and Gauging	2
MACH 1615	Precision Machining Processes	3
GenEd	Elective (see advisor)	3
Semester total		14
Second Semester (Spring)		
MACH 1625	Engineering Drawings 2	2
MACH 1630	Introduction to CNC Theory	3
MACH 1641	Introduction to CNC Precision Machining Technology	4
MACH 1650	Introduction to EDM	2
MACH 1661	Introduction to CAD/CAM	2
	Math or English Requirement (see advisor)	2
Semester total		15
Third Semester (Fall)		
MACH 2633	CNC Precision Machining Mill	4
MACH 2635	CNC Precision Machining Lathe	4
MACH 2637	CAM Programming and Toolmaking Application 1	3
MACH 2660	Advanced CAD/CAM 1	3
	Math or English Requirement (see advisor)	2
Semester total		16
Fourth Semester Spring		
MACH 2639	CAM Programming and Toolmaking Application 2	3
MACH 2640	CNC Precision Machining Capstone	5
MACH 2642	CNC Precision Machining App	4
COMM 1509	Job Seeking Skills	1
Semester total		13
Total Required Credits		58

Machining Right Skills Now - Certificate

Course No.	Course Name	Credits
First Semester (Fall)		
MACH 1601	Introduction to Precision Machining	4
MACH 1605	Engineering Drawings 1	2
MACH 1610	Precision Measuring and Gauging	2
MACH 1615	Precision Machining Processes	3
MACH 1620	Internship	4
GenEd	Math Requirement (see advisor)	2
Total Required Credits		17

Precision Machining - 1-yr Diploma

Course No.	Course Name	Credits
First Semester (Fall)		
MACH 1601	Introduction to Precision Machining	4
MACH 1605	Engineering Drawings 1	2
MACH 1610	Precision Measuring and Gauging	2
MACH 1615	Precision Machining Processes	3
GenEd	Math Requirement (see advisor)	2
GenEd	English Requirement (see advisor)	2
Semester total		15
Second Semester (Spring)		
MACH 1625	Engineering Drawings 2	2
MACH 1630	Introduction to CNC Theory	3
MACH 1641	Introduction to CNC Precision Machining Technology	4
MACH 1650	Introduction to EDM	2
MACH 1661	Introduction to CAD/CAM	2
	Technical Elective (see advisor)	2
COMM 1509	Job Seeking Skills	1
Semester total		16
Total Required Credits		31

Machining Basics - Certificate

Course No.	Course Name	Credits
First Semester (Fall)		
MACH 1601	Introduction to Precision Machining	4
MACH 1605	Engineering Drawings 1	2
MACH 1610	Precision Measuring and Gauging	2
MACH 1615	Precision Machining Processes	3
	Math Requirement (see advisor)	2
Total Required Credits		13

Prototype Engineering - Certificate

Course No.	Course Name	Credits
First Semester (Fall)		
MACH 1601	Introduction to Precision Machining	4
MACH 1605	Engineering Drawings 1	2
MACH 1615	Precision Machining Processes	3
MACH 1625	Engineering Drawings 2	2
MACH 1661	Introduction to CAD/CAM	2
Total Required Credits		13