

# INTEGRATED METALS: MACHINE TOOL OPERATOR - CERTIFICATE

Limited Entry Certificate | mhcc.edu/IntegratedMetals (<http://mhcc.edu/IntegratedMetals/>)

## Faculty Advisers

**Zach Canjar:** 503-491-7237 | Room IT42 | [Zach.Canjar@mhcc.edu](mailto:Zach.Canjar@mhcc.edu)

**Mark Thomas:** 503-491-7569 | Room IT43 | [Mark.Thomas@mhcc.edu](mailto:Mark.Thomas@mhcc.edu)

This program offers an intro to metalworking jobs. Students will learn basic skills for entry level jobs, and setup / operation of CNC lathes and milling machines.

Students are required to maintain a minimum grade of "C" in all IMTL courses. All core courses must be completed within 5 years in order for the certificate to be awarded.

## Program Outcomes

At the completion of this program, students should be able to:

- Demonstrate and/or describe safe work habits and environmental issues associated with modern manufacturing settings
- Read, interpret and apply blueprints for the production and inspection of manufactured work pieces
- Demonstrate the correct application and use of precision measuring equipment commonly found in a manufacturing setting
- Plan and produce work pieces on a manual drill press, manual engine lathe and manual milling machine to required blueprint specifications using common industry methods
- Demonstrate, explain and/or apply CNC program code and machine tools and software to produce work pieces to required blueprint specifications

*General education courses (such as math, writing, health, etc.) can be taken during any term, or before starting the program.*

### First Quarter

Fall		Credits
IMTL110	Machine Shop I Theory	3
IMTL111	Machine Shop I Lab	3
IMTL114	Blueprint Reading for the Metals Industry	3
IMTL116	Introduction to Precision Measuring	3
IMTL118	Machine Shop Math Applications	2
Human Relations requirement ( <a href="https://catalog.mhcc.edu/degree-certificate-requirements/aas/#human">https://catalog.mhcc.edu/degree-certificate-requirements/aas/#human</a> )		3-4
<b>Credits</b>		<b>17-18</b>

### Second Quarter

Winter		
IMTL130	Machine Shop II Theory	3
IMTL131	Machine Shop II Lab	3
IMTL134	Metallurgy Theory	3
IMTL135	Metallurgy Lab	1

IMTL136	Introduction to CNC (Computer Numerical Control) Machining	3
Select one of the following:		3-4
WR101	Workplace Communications I ★	
WR121Z	Composition I ★ (if planning to transfer)	

**Credits** **16-17**

### Third Quarter

#### Spring

IMTL150	Machine Shop III Theory	3
IMTL151	Machine Shop III Lab	3
IMTL153	CNC (Computer Numerical Control) Machining	4
IMTL155	Industrial Safety	3
MTH095	Intermediate Algebra with Right Triangle Trigonometry ★ (or MTH111Z or higher)	5

**Credits** **18**

**Total Credits** **51-53**

## How to Apply

The machine tool operator certificate program is a limited-entry program. This means you must meet certain criteria before you can apply (<https://mhcc.edu/education-options/degrees-certificates/integrated-metals/machine-tool-operator/get-started/>). The program admits 36 students every fall term. Students of all races, ethnicities, ages, genders, religions, sexual orientations, socio-economic statuses, nationalities, physical abilities, and cognitive differences are welcome!