

# MACHINING, MANUFACTURING TECHNOLOGIES, AAS

## Program Code: Machining-AAS

### Program Description

The Associate of Applied Science, Manufacturing Technologies, Machining is a two-year program designed to provide training and technical job skills to students seeking employment and/or skill upgrades within the manufacturing and machine trades. The program requires students to complete a variety of hands-on learning exercises ranging from manually machined projects to advanced multi-axis CNC tasks. This program is formatted to respond to the needs of industry and the working professional. The TMCC machining emphasis AAS curriculum aligns with the standards set forth by the National Institute for Metalworking Skills (NIMS) and prepares students to earn a variety of NIMS credentials.

Machining Career Map (<https://sites.tmcc.edu/flipbook/career-maps/>)

### Recommended Course Schedule

1st semester		Units
MTT 101	Introduction to Machine Shop	3
MTT 120	Technical Print Reading	3
MPT 140	Quality Control	3
MTT 105	Machine Shop I	3
OSH 222	General Industry Safety	1
U.S. and Nevada Constitutions <sup>2</sup>		3
<b>Semester Total</b>		<b>16</b>
2nd semester		Units
Communications/English <sup>2</sup>		3
Elective <sup>2</sup>		3
Humanities/Diversity <sup>2</sup>		3
MTT 150	Metallurgy I	3
MTT 250	Machine Shop III	3
<b>Semester Total</b>		<b>15</b>
3rd semester		Units
Communications/English <sup>2</sup>		3
Elective <sup>2</sup>		3
MTT 230	Computer Numerical Control I	4
MTT 292	Computer-Aided Manufacturing I	4
<b>Semester Total</b>		<b>14</b>
4th semester		Units
Elective <sup>2</sup>		8
MTT 140	Inspection Techniques	3
MTT 232	Computer Numerical Control II	4
<b>Semester Total</b>		<b>15</b>
<b>Total Units</b>		<b>60</b>

<sup>2</sup> See program recommendations or requirements.

### Program Requirements

AAS degrees are generally non-transfer degrees designed for students to enter the workforce.

To earn an AAS degree, students must:

1. Maintain a minimum cumulative GPA of 2.0 (see requirements for graduation.)
2. Complete a minimum of 15 units within the college.
3. Satisfy General Education requirements for the AAS (<https://catalog.tmcc.edu/degrees-certificates/general-education/aas/>).
4. Have no financial or library obligation to the college.

Code	Title	Units
<b>General Education Requirements</b>		
<i>Diversity</i> <sup>1</sup>		[3]
Recommended:		
AAD 201	History of the Built Environment	
<i>Communications/English</i>		6
Recommended		
ENG 101	Composition I	
or ENG 107	Technical Communications I	
or ENG 100	Composition Enhanced	
or ENG 113	Composition I for International and Multilingual Students	
<i>Fine Arts/Humanities/Social Science</i>		3
Recommended:		
AAD 201	History of the Built Environment	
<i>Human Relations</i> <sup>1</sup>		[3]
Requirement is satisfied through embedded curriculum in the following courses:		
MPT 140	Quality Control	
MTT 230	Computer Numerical Control I	
MTT 232	Computer Numerical Control II	
OSH 222	General Industry Safety	
<i>Mathematics</i> <sup>1</sup>		[3]
Requirement is satisfied through embedded curriculum in the following courses:		
MTT 120	Technical Print Reading	
MPT 140	Quality Control	
MTT 230	Computer Numerical Control I	
MTT 232	Computer Numerical Control II	
MTT 292	Computer-Aided Manufacturing I	
<i>Science</i>		3
Recommended:		
MTT 150	Metallurgy I	
<i>U.S. and Nevada Constitutions</i>		3
Recommended:		
PSC 101	Introduction to American Politics	
<b>Degree Requirements</b>		
MTT 120	Technical Print Reading	3
MPT 140	Quality Control	3
OSH 222	General Industry Safety	1

<b>Emphasis Requirements</b>		
MTT 101	Introduction to Machine Shop	3
MTT 105	Machine Shop I	3
MTT 140	Inspection Techniques	3
MTT 230	Computer Numerical Control I	4
MTT 232	Computer Numerical Control II	4
MTT 250	Machine Shop III	3
MTT 292	Computer-Aided Manufacturing I	4
<b>Elective Requirements</b>		
Select 14 units from the following:		14
CE 290	Work Experience	
MTT 110	Machine Shop II	
MTT 234	Computer Numerical Control III	
MTT 260	Machine Shop IV	
MTT 261	Machine Projects	
MTT 291	CNC Practice	
MTT 293	Computer-Aided Manufacturing II	
Any other MTT course not listed above or WELD course		
<b>Total Units</b>		<b>60</b>

<sup>1</sup> Course may also count toward degree requirements. Please consult with Academic Advising.

## Program Outcomes

Students completing the degree will:

- PSLO1: Read and interpret technical prints for the production and inspection of manufactured work pieces.
- PSLO2: Produce precision machined work pieces within print specifications on manually controlled machine tools.
- PSLO3: Produce precision machined work pieces within print specifications on computer numerical controlled (CNC) machine tools.