

## *CNC Machinist Certificate*

(Manufacturing Technology – Associate Degree path)

This certificate program prepares students with the foundational skills needed for setup, operation, and programming of CNC (computer numerical control) machines. Advanced manufacturing methods are taught by employing state-of-the-art technology, including 2-axis programming, CNC probing, high speed machining, and plunge and wire EDM (electrical discharge machining).

This certificate program is designed to prepare students for success in careers in advanced manufacturing across many industries, including automotive die/mold, medical, aerospace, defense, renewable energy, “green” technologies, and consumer products. This program is a good fit for those who enjoy working with their hands and computers, with an emphasis on the shop floor. Graduates of this certificate program are well-rounded in shop floor machining principles, CNC operation, and two dimensional G&M code programming.

A certificate will be awarded to students who successfully complete the following courses:

### Career Preparation and Related Courses

		SUGGESTED SEQUENCE				CREDIT HOURS	CONTACT HOURS	
ATAM 1150	Shop Arithmetic	■	□	□	□	2	32	
ATDD 1900	Machine Tool Blueprint Reading	■	□	□	□	2	32	
ATMT 1150	Machine Tool Laboratory 1	■	□	□	□	3	48	
ATAP 1050	CNC Essentials	■	□	□	□	3	64	
ATQT 1000	Quality Inspection Fundamentals	■	□	□	□	2	32	
ATAM 1160	Algebra	□	■	□	□	2	32	
ATAP 2020	Art-To-Part-Digital Art to 3D CNC Machining	□	■	□	□	2	32	
ATAP 1030	Feeds, Speeds and Advanced Tools	□	■	□	□	2	32	
ATAP 2010	Drafting—2D CAD with MasterCAM	□	■	□	□	2	32	
ATQT 1010	Quality Inspection—Advanced Techniques	□	□	■	□	2	32	
ATAP 2310	CNC Mill G&M Programming & CNC Machining	□	□	■	□	2	32	
ATAP 2330	EDM RAM—G&M Programming & Machining	□	□	■	□	2	32	
ATMT 1160	Machine Tool Laboratory 2	□	□	■	□	3	48	
ATMT 1300	Metallurgy—Characteristics of Ferrous Metals	□	□	□	■	2	32	
ATAP 2320	CNC Lathe G&M Programming & CNC Machining	□	□	□	■	2	32	
ATAP 2340	EDM WIRE—G&M Programming & Machining	□	□	□	■	2	32	
ATAP 2390	Advanced CNC Mill G&M Programming & Machining	□	□	□	■	3	64	
						<b>Total</b>	<b>38</b>	<b>640</b>

In cases where prior training or education is documented, specific courses may be substituted for one or more of the above courses as conditions warrant. Suggested alternate courses, which may also be used as electives toward an associate degree, are listed below for consideration. Contact the Applied Technology and Apprenticeship department for details.

### Suggested Alternative/Elective Courses:

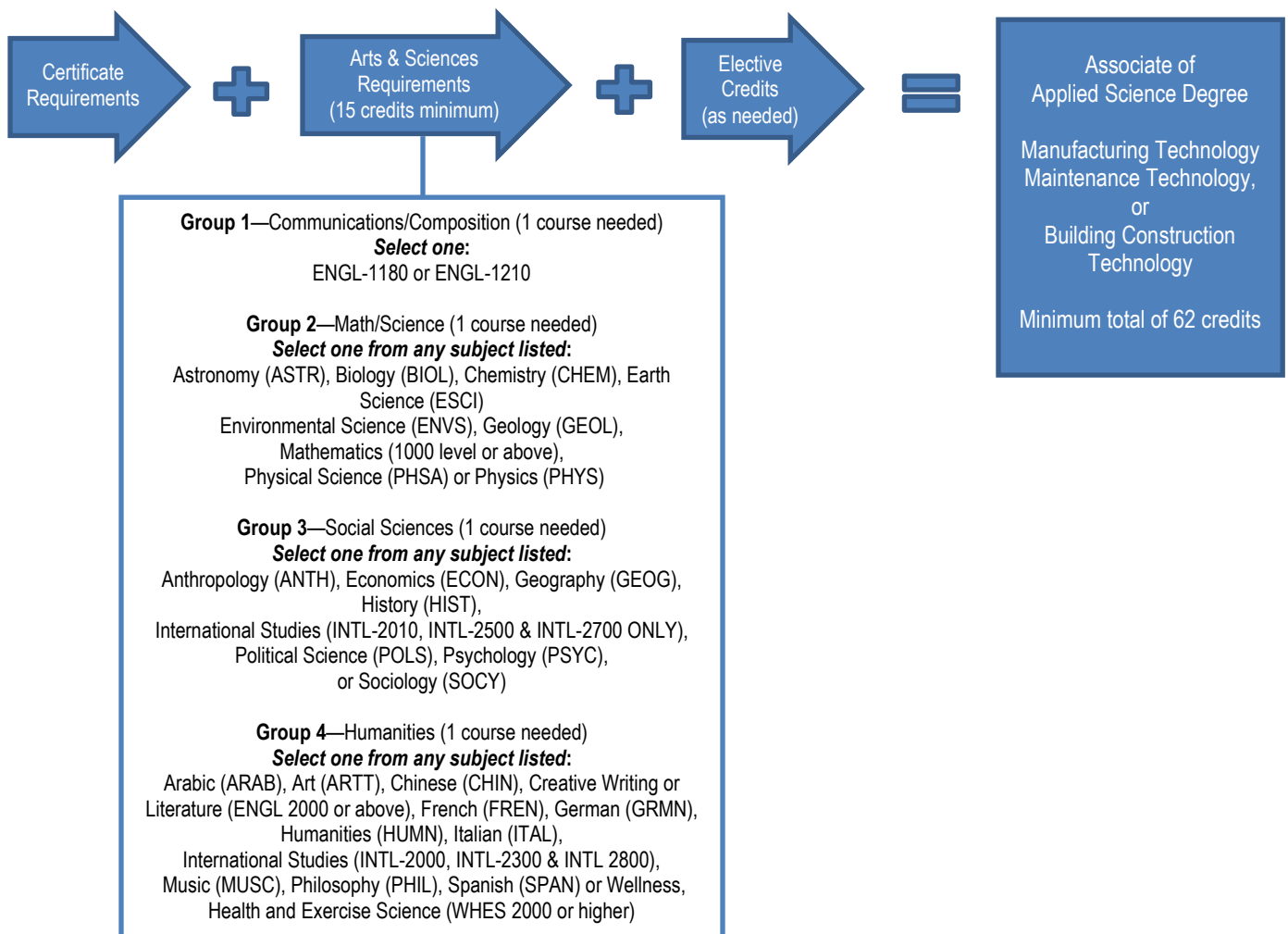
ATTR 1600	Industrial Safety—Skilled Trades	ATDD 1920	Fundamentals of Geometric Dimensioning & Tolerancing
ATTR 1150	Technical Report Writing	ATDD 1950	Drafting Essentials
ATAM 1170	Geometry	ATMT 2350	Metallurgy—Heat Treatment of Ferrous Alloys
ATAM 2150	Trigonometry	ATQT 1060	Coordinate Measuring Machine (CMM) Introduction
ATAP 2030	2D MasterCAM—Mill Programming & Machining	ATQT 1050	Quality Standards and Core Tools
ATMT 1310	Metallurgy—Characteristics of Non-Ferrous Metals	ATMT 1950	Science—Physics 1: Mechanics

## SEE SECOND PAGE/REVERSE SIDE FOR ASSOCIATE DEGREE REQUIREMENTS

## Associate of Applied Science Degree Requirements (Minimum 62 credit hours)

An Associate of Applied Science Degree is offered for those enrolled in or completing an Apprenticeship, Employee-In-Training, or General Certificate Program. Other College requirements apply, including the completion of the arts and sciences (general education) requirements, as well as attaining a minimum overall total of 62 credit hours. See Apprentice Coordinator or Advisor for details.

Students may graduate with an Associate of Applied Science Degree in Manufacturing Technology, Maintenance Technology or Building Construction Technology, depending on the Apprenticeship, Employee-In-Training or General Certificate Program area of specialty.



\*\*Information is subject to change. Please visit [www.macomb.edu](http://www.macomb.edu) for the most current information.\*\*

For more information on the CNC Machinist Certificate Program at Macomb, contact the Applied Technology and Apprenticeship Department at 586.445.7438 or [apprenticeship@macomb.edu](mailto:apprenticeship@macomb.edu).