

Sheet Metal Model Maker Certificate

(Manufacturing Technology – Associate Degree path)

This certificate program is designed to equip students with the foundational skills and knowledge necessary to begin a career as a sheet metal model maker. Through a blend of classroom lecture and hands-on experience, students will learn metalworking processes using conventional and CNC machines to create three-dimensional prototypes of a variety of designs or concepts. Foundational areas, including applied mathematics, welding and drafting, are also covered.

This program is designed to prepare students for success in the sheet metal model making profession. As manufacturing expands and technologies evolve, skilled model makers will be in demand to create prototypes to test the physical properties and usability of designs before they go to production. This program is a good fit for individuals who enjoy being active and working with their hands, with an emphasis on mechanical and technical skills. Those who graduate with this certificate have a solid understanding of the methods, machines and technology used in prototyping.

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

Career Preparation and Related Courses

| | | SUGGESTED SEQUENCE | CREDIT HOURS | CONTACT HOURS |
|-----------|---|--------------------|--------------|---------------|
| ATAM 1150 | Shop Arithmetic | ■ □ □ □ | 2 | 32 |
| ATMT 1210 | Benchwork, Drill Presses & Lathes | ■ □ □ □ | 2 | 32 |
| ATWD 1110 | Fundamentals of Gas & Arc Welding | ■ □ □ □ | 2 | 32 |
| ATAP 1050 | CNC Essentials | ■ □ □ □ | 3 | 64 |
| ATAM 1160 | Algebra | □ ■ □ □ | 2 | 32 |
| ATDD 1950 | Drafting Essentials | □ ■ □ □ | 2 | 32 |
| ATMT 1250 | Shapers, Planers, Mills & Grinders | □ ■ □ □ | 2 | 32 |
| ATWD 1140 | Gas Metal Arc Welding (MIG) | □ ■ □ □ | 2 | 32 |
| ATMT 1300 | Metallurgy—Characteristics of Ferrous Metals | □ ■ □ □ | 2 | 32 |
| ATDD 1960 | Conventions & Symbols | □ □ ■ □ | 2 | 32 |
| ATDD 1970 | Three Dimensional Shape Interpretation | □ □ ■ □ | 2 | 32 |
| ATMT 1150 | Machine Tool Laboratory 1 | □ □ ■ □ | 3 | 48 |
| ATMT 1310 | Metallurgy—Characteristics of Non-Ferrous Metals | □ □ ■ □ | 2 | 32 |
| ATDD 1920 | Geometric Dimensioning & Tolerancing Fundamentals | □ □ □ ■ | 2 | 32 |
| ATMT 1160 | Machine Tool Laboratory 2 | □ □ □ ■ | 3 | 48 |
| ATWD 1150 | Gas Tungsten Arc Welding (TIG) | □ □ □ ■ | 3 | 64 |
| ATAP 2380 | Rapid Prototyping & Reverse Engineering | □ □ □ ■ | 2 | 32 |
| Total | | | 38 | 640 |

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:

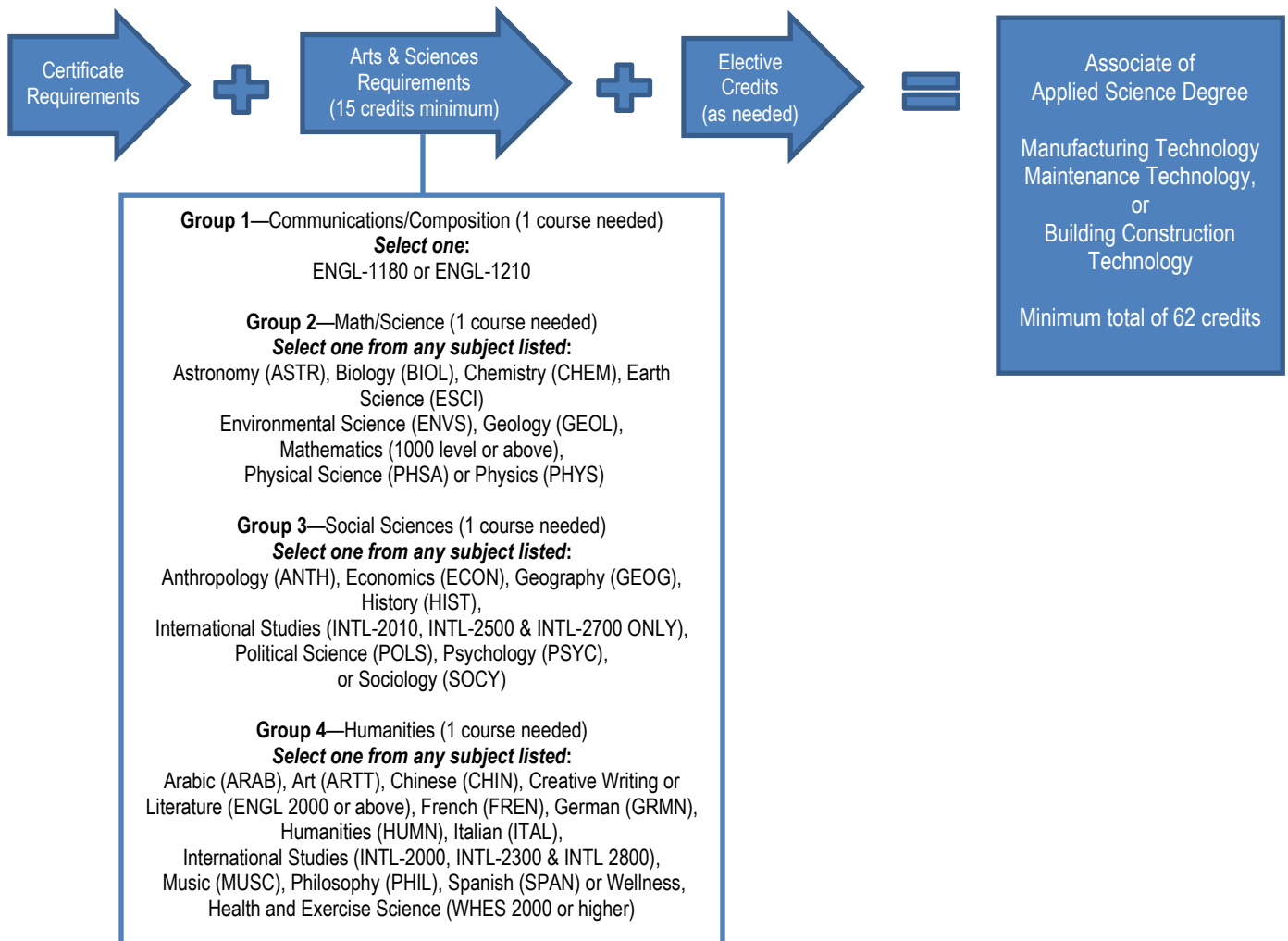
| | | | |
|-----------|----------------------------------|-----------|---|
| ATTR 1600 | Industrial Safety—Skilled Trades | ATDD 1900 | Machine Tool Blueprint Reading |
| ATAM 1170 | Geometry | ATAP 2310 | CNC Mill G&M Programming & CNC Machining |
| ATAM 2150 | Trigonometry | ATAP 2320 | CNC Lathe G&M Programming & CNC Machining |
| ATMT 1950 | Science-Physics 1: Mechanics | ATWD 1130 | Shielded Metal Arc Welding (SMAW) |

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 for the most current information.

For more information on the Sheet Metal Model Maker Certificate Program at Macomb, contact the Applied Technology and Apprenticeship Department at 586.445.7438 or apprenticeship@macomb.edu.