Apprenticeship Readiness Industrial Pathways Certificate

This certificate program delivers essential skill sets to students who are planning to enter an apprenticeship or other employer-sponsored industrial training program, or are preparing to take a program entrance exam. The successful completion of this certificate demonstrates to prospective employers that students have shown the requisite knowledge, interest, and aptitude to begin a career in the chosen field. A student must earn a minimum 2.0 grade point in each course to receive this certificate.

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

Core Courses		SUGGESTED SEQUENCE	CONTACT HOURS	CREDIT HOURS
ATAM 1150	Mathematics – Shop Arithmetic	■ ☐ ☐ ☐	32	2
ATDD 1900	Drafting – Machine Tool Blueprint Reading	■ ☐ ☐ ☐	32	2
ATTR 1600	Industrial Safety – Skilled Trades	■ ☐ ☐ ☐	32	2
ATTR 1000	Trade Related Preparation	☐ ■ ☐ ☐	48	3
			144	9

AND choose one specialty pathway:

	Manufacturing Pathway			
ATDD 1950	Drafting Essentials	☐ ■ ☐ ☐	32	2
ATMT 1150	Machine Theory – Machine Tool Laboratory 1	☐ ■ ☐ ☐	48	3
ATAP 1050	CNC Essentials	☐ ■ ☐ ☐	64	3
			144	8
	Building Construction Pathway			
ATBC 1100	Blueprint & Math – Residential	☐ ■ ☐ ☐	32	2
ATBC 1150	Blueprint & Math – Commercial	☐ ■ ☐ ☐	32	2
DRAD 2110	Applied Building Construction	☐ ■ ☐ ☐	64	3
			128	7
	Maintenance Pathway			
ATMT 1300	Metallurgy – Characteristics of Ferrous Metals	☐ ■ ☐ ☐	32	2
ATMT 1650	Millwright Theory – Millwright Theory 1	☐ ■ ☐ ☐	32	2
ATWD 1110	Fundamentals of Gas & Arc Welding	☐ ■ ☐ ☐	32	2
			96	6
	Electrical Pathway			
ELEC 1300	Electrical Equipment & Introduction to Machine Circuits	☐ ■ ☐ ☐	32	2
ATBC 1180	Electrical Blueprint Reading – Residential	☐ ■ ☐ ☐	32	2
ATBC 1250	Wiring Residential	☐ ■ ☐ ☐	32	2
			96	6
		Total	**240-288**	**15-17**

Core Course Descriptions

ATAM-1150—Mathematics – Shop Arithmetic ..... 2.00 credit hours

Prerequisite: None. Review of basic arithmetic; whole numbers, fractions, decimals, signed numbers, grouping symbols, square root, ratio and proportion, flat and round tapers, simple and complex gear ratios; practical industrial shop problems are employed. (2 contact hrs) South Campus.

ATDD-1900—Drafting – Machine Tool Blueprint Reading ..... 2.00 credit hours

Prerequisite: None. An introduction to blueprint reading; interpretation of various kinds of lines, position of views, symbols, conventions, dimensioning practices, sectioning, auxiliary views and symmetry with emphasis on techniques employed to show details in relation to assembly drawings. (2 contact hrs) South Campus.

ATTR-1600—Industrial Safety – Skilled Trades ..... 2.00 credit hours

Prerequisite: None. Encompasses safety/health rules, procedures, safety responsibilities, and hazard recognition associated with the following: lockouts, machine tools, machine guarding, hand tools, portable power tools, safe use of energy sources, powered trucks, material handling, hazardous materials, lifting, climbing, ladders, scaffolds, rigging, slings, ropes, cranes, hoists, and basic fire safety. Accident causation, impact, prevention, and basic human anatomy and physiology will be studied. (2 contact hrs) South Campus.

ATTR-1000—Trade Related Preparation ..... 3.00 credit hours

Prerequisite: None. These questions: "What are skilled tradesmen, and what do they do?" are explored through an exposure to industrial processes. Spatial perception is enhanced by doing orthographic projection sketches. The shop uses of the scales and micrometer are covered. A study of some simple machines will enhance mechanical comprehension. There is also a review of math relative to shop application. The student receives diagnostic evaluation through testing in basic math, reading, and comprehension. (3 contact hrs) South Campus.

Career Opportunities

The successful completion of this certificate puts students on a path to pursue rewarding careers in alignment with the chosen pathway. These careers include, but are not limited to: Tool and Die Maker, CNC Machinist, Operator and/or Programmer, Mold Maker, Robotics Technician, Welder, Carpenter, Builder, Electrical Maintenance Technician, Machine Repair Technician, Maintenance Technician, Millwright and Pipefitter.

Associate of Applied Science Degree

An Associate of Applied Science Degree in Building Construction Technology, Maintenance Technology, or Manufacturing Technology (in alignment with the chosen pathway) is offered to those who complete this certificate. The completion of the Macomb Community College Arts and Sciences (general education) requirements is required. Electives may also be necessary in order to reach the minimum of 62 credit hours required to earn the degree.

Transfer Pathways – Bachelor’s Degree Options

For those who would like to transfer and complete a bachelor’s degree, many of our university partners offer transfer options to our Applied Technology students in majors such as engineering technology and industrial technology.

For more information, please contact the Applied Technology and Apprenticeship Department at 586.445.7438 or apprenticeship@macomb.edu.